FLD 982133159



January 10, 1992

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Project No. 13112.29, Task 10

Mr. William Kellenberger Florida Department of Environmental Regulation Northwest District 160 Government Center Tallahassee, FL 32501

RE: Safety-Kleen Corp.--Construction Permit Application, Tallahassee, Florida Facility, FLD 982133159

Dear Bill:

Enclosed are four copies of the Construction Permit Application for the spent ethylene glycol tank at the above-referenced facility. The \$15,000 application fee is also enclosed. The permit application includes Fluid Recovery Service (FRS) wastes as discussed during our pre-application meeting. It is Safety-Kleen's intention once construction of the ethylene glycol tank is complete, to submit the installation tank assessment certification and to modify the operating permit to include both spent ethylene glycol in a tank and FRS wastes.

If you have any questions, please contact me at (813) 682-8094.

Sincerely,

Vietor J. San Quentin

Victor L. San Agustin, P.E. Regional Environmental Engineer Tampa Region

ksc/pjh

Enclosure(s)

c: Satish Kastury - BWPR (ltr only) James Kutzman, USEPA, Region IV (ltr only) Cynthia Norton - ERM





#### HAZARDOUS WASTE CONSTRUCTION PERMIT APPLICATION FOR AN ETHYLENE GLYCOL TANK SAFETY-KLEEN CORP. 3-079-02 SERVICE CENTER TALLAHASSEE, FLORIDA FLD 982133159

#### JANUARY 13, 1992

## RECEIVED JAN 13 1992 Northwest Florida DER

Revised by:

Environmental Resources Management-South, Inc. 9501 Princess Palm Avenue, Suite 100 Tampa, Florida 33619 (813) 622-8727



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#### APPLICATION FOR A HAZARDOUS WASTE FACILITY PERMIT CERTIFICATION TO BE COMPLETED BY ALL APPLICANTS

Facility name: Tallahassee, FL \_\_\_\_ EPA ID#\_ FLD000776773,

#### 1. Operator

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. Further, I agree to comply with the provisions of Chapter 403, Florida Statutes, and all rules and regulations of the Department of Environmental Regulation. It is understood that the permit is only transferable in accordance with Section 17-730, FAC, and, if granted a permit, the Department of Environmental Regulation will be notified prior to the sale or legal transfer of the permitted facility.

11 2.40

Signature of the Operator or Authorized Representative\* SCOTT E. FORE

VICE PRESIDENT - ENVIRONMENT, HEALTH & SAFETY Name and Title (Please type or print)

Date: 12/6/91 \_\_\_\_\_ Telephone :( 708 ) 468-2480

#### 2. Facility Owner

This is to certify that I understand this application is submitted for the purpose of obtaining a permit to construct, operate, or close a hazardous waste management facility on the property as described. As owner of the facility, I understand fully that the facility operator and I are jointly responsible for compliance with the provisions of Chapter 403, Florida Statutes, and all rules and regulations of the Department of Environmental Regulation.

AS.

Signature of the Facility Owner or Authorized Representative\*

VICE PRESIDENT - ENVIRONMENT, HEALTH & SAFETY

Name and Title (Please type or print)

Date:<sup>12/6/91</sup> Telephone:(<sup>708</sup>) <sup>468–2480</sup>

\*Attach a letter of authorization

DER Form # 17-730.900(2)(d) Page 1 of 2 [9-10-91]



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JAN 13 1992

Northwest Florida

DER

#### 3. Land Owner

This is to certify that I, as land owner, understand that this application is submitted for the purpose of obtaining a permit to construct, operate, or close a hazardous waste management facility on the property as described. For hazardous waste discosal facilities, I further understand that I am responsible for providing the notice in the deed to the property required by 40 CFR §264.119 and §265.119, as adopted by reference in Chapter 17-730, FAC.

Signature of the Land Owner or Authorized Representative\* SCOTT E. FORE <u>VICE PRESIDENT - ENVIRONMENT, HEALTH & SAFETY</u> Name and Title (Please type or print)

Date: 12/6/91 Telephone: (708) 468-2480

\*Attach a letter of authorization

4. **Professional Engineer Registered in Florida** [Complete when required by Chapter 471, F.S. or not exempted by Rule 17-730.220(5), F.A.C.]

This is to certify that the engineering features of this hazardous waste management facility have been designed/examined by me and found to conform to engineering principles applicable to such facilities. In my professional judgment, this facility, when properly constructed, maintained and operated, or closed, will comply with all applicable statutes of the State of Florida and rules of the Department of Environmental Regulation.

48

E. that

Signature

Page 2 of 2

Victor E. Hiatt Name (please type)

Florida Registration Number: 26787

Mailing Address: <u>9501 Princess Palm Ave.</u> Suite 100 Street or P.O. Box

Tampa,	FL		33619
City		State	Zip

Date: 12-19-91 \_\_\_\_\_ Telephone( 813) 622-8727

[PLEASE AFFIX SEAL] Part II Modification With E. Math - h/10/92 DER Form # 17-730.900(2)(d)

19-10-91

ENG

PART I

# I

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#### ATTACHMENT I.A

#### **GENERAL INFORMATION**



#### EXHIBIT I.A.20-1

#### FLORIDA APPLICATION FOR A HAZARDOUS WASTE FACILITY PERMIT



#### APPLICATION FOR A HAZARDOUS WASTE FACILITY PERMIT PART I - GENERAL TO BE COMPLETED BY ALL APPLICANTS

A

-11-

Please Type or Print

A. General Information	/4	031-	2069	280	
1. Type of facility: Disposal [] landfill surface impoundment Storade [y]	[]	land treatment miscellaneous	units	[]	
containers piles miscellaneous units	[x ] [ ] [ ]	tanks surface impou	ndment	[x] []	
tanks incineration miscellaneous units		piles surface impou	Indment	[ ]	
2. Type of application: [] TOP [X] co	onstruction [] op	eration [] closu	ire []RD&	D	
3. Application submittal: [X] new [] re	vised	:			-
4. Date current operation began (or is ex	pected to begin):_	January 1,	1990		
5. Facility name: <u>Safety Kleen Co</u>	prporation (3	8-179-02)			
6. EPA/DER I.D. No.:FLD_0007767	73				
7. Facility location or street address: Er	ntrepot Blvd.	Airport In	dustrial	Park, Ta	allahasse
8. Facility mailing address: 777 Big 1	imber Read	Elgin,	IL	60123	_
Street or	P.O. Box	City	State	Zip	
9. Contact person: Rick People	sTele	phone: ( <u>312</u> )	697-8460		•
Title: Environmental Affa	irs Manager	for Service	Centers	<u> </u>	-
. Mailing Address: 777 Big Ti	mber Rd.	Elgin	IL	60123	_
Street or	P.O. Box	City	State	Zip	
10. Operator's name: <u>Safety Kleen</u>	CoprTele	ephone: ( <u>312_)</u>	697-8460		<b>.</b> .
11. Operator's address: 777 Big Tim	nber Road	Elgin	IL	60123	
Street or	P.O. Box	City	State	Zip	
12. Facility owner's name: <u>Safety K1</u>	een Corp. Tele	ephone: ( <u>312)</u> 6	97-8460		_

DER Form # 17-730.900(2)(a) Page 1 of 4 [9-10-91]

· ·				
cility owner's addres	s: <u>777 Big Timher Roa</u> Street or P.O. Box	id Elo City	<u>tin, IL</u> State	<u>60123</u> Zip
4. Legal structure: [ ¾ C . [] Local Governm	corporation [ ] Non-profit Corp nent [ ] State Government [	ooration [] Par ] Federal Goverr	tnership [] Ind nment [] Othe	dividual r
5. If an individual, partner state where the name i	ship, or business is operating ur s registered.	nder an assumed	name, specify th	ie county and
County:	S	tate:	<u></u>	
6. If the legal structure is	a corporation, indicate the state	of incorporation.		
State of incorporation:_	Wisconsin			
7. If the legal structure is	an individual or partnership, list	the owners.		
Name:				
Address:				
	Street or P.O. Box	City	State	Zip
Name				
ddroce:	·····		· · · · · · · · · · · · · · · · · · ·	
Address:	Street or P.O. Eox	City	State	Zip
Name:	······			
Address:	Street or P.O. Box	City	State	Zip
		·		
Name:				
Address:	<u></u>			
	Street of P.U. Eox	City	State	2)p
8. Site ownership status:	[X] owned [] to be purchase	ed [] to be leas	edyears	
If leased, indicate:	[ ] presently leased; the expi	ration date of the	lease is:	
Land owner's name:				
Land owner's name:				

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19. Name of engineer: <u>V</u> i	<u>ctor E. Hiat</u>	t	Regis	tration no.:_	<u>26787</u>	7	
Address: 9501 Pri	ncess Palm A	ve. Ste	100	Tampa,	FL	33619	7:0
	Street or P.U	. BOX		City	50	ate	ZIP
Associated with: <u>Env</u>	vironmental R	esource	<u>s Man</u>	agement			
20. Facility located on Ind	an land: [] yes	[ <sup>X</sup> ] no					
21. Existing or pending en	vironmental permits	s: (attach a	separat	e sheet if n	ecessa	ry)	
NAME OF PERMIT AC	BENCY		JMBER	DAT	E ISSUE	D EXPIR	ATION DATE
Part A IISFI		יד דחחח זי	5773				
			5775			·	<del>.</del>
Hazardous Waste	Storage USEP	A & FLD	ER H	037- <b>1</b> 71	747 4	4-19-90	2-1-95
<b>1</b>				······			
<u> </u>							
	171-101						
	03	_	<u></u>				
B. Site Informatio	10 19 05						
1. Facility location Cou	n Y		Nearest	Community	<u>/:_1al</u>	lahasse	<u>e</u>
Latitude: <u>30<sup>0</sup> 23</u>			Longitu	de: <u>84<sup>0</sup></u>	19'	36" W	
2. Area of facility site (ac	res):3						
- •							

- 3. Attach a scale drawing and photographs of the facility showing the location of all past, present, and future treatment, storage and disposal areas. Also show the hazardous wastes traffic pattern including estimated volume and control.
- 4. Attach topographic map which show all the features indicated in the instruction sheet for this part.

5. Is the site located in a 100-year flood plain? [ ] yes [X] no

DER Form # 17-730.900(2)(a) Page 3 of 4 [9-10-91]

#### C. Land Use Information

1. Present zoning of the site M-2

2. If a zoning change is needed, what should the new zoning be?\_\_\_\_\_

3. Present land use of site General Industry

#### D. Operating Information

1. Is waste generated on site? [] yes [] no

List the SIC codes (4-digit)

7389 5172 5084 5013

2. Attach a brief description of the facility operation, nature of the business, and activities that generate, treat, store or dispose of hazardous waste.

\_\_\_\_

3. Using the following table and codes provided, specify, (1) each process used for treating, storing, or disposing of hazardous waste (including design capacities) at the facility, and (2) the hazardous waste (or wastes) listed or designated in 40 CFR Part 261, including the annual quantities, to be treated, stored, or disposed by each process at the facility. (See the instructions for the list of process codes and units).

See Attachement 1

PROCESS	PROCESS DESIGN CAPACITY	HAZARDOUS	ANNUAL QUANTITY OF HAZARDOUS
CODE	AND UNITS OF MEASURE	WASTE CODE	WASTE AND UNITS OF MEASURE

DER Form # 17-730.900(2)(a) Page 4 of 4 [9-10-91]

#### ATTACHMENT 1 SAFETY-KLEEN CORP. TALLAHASSEE, FLORIDA SERVICE CENTER

Waste Type	Process Code(s)	Estimated Annual Amounts (Tons)	Waste Codes
Spent Mineral Spirits	S01 S02	575	D001 and D-Codes Listed in Note Below
Dumpster Sediment	S01	Included Above	D001 and D-Codes Listed in Note Below
Tank Bottoms	S01	Included Above	D001 and D-Codes Listed in Note Below
Spent Ethylene Glycol	S01 S02	5,000	D-Codes Listed in Note Below
Spent Immersion Cleaner (Old Formula)	S01	22	F002, F004, and D- Codes Listed in Note Below
(New Formula)	S01	Included Above	D-Codes Listed in Note Below
Dry Cleaning Waste	S01	50	D001 or F002 and D- Codes Listed in Note Below
Paint Waste	S01	50	D001, F003, F005 and D-Codes Listed in Note Below
Fluid Recovery Service (FRS) Waste	S01	250	D001, D002, and D- Codes, F-Codes, K- Codes, U-Codes Listed in Note Below

NOTE:

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D-Codes: D004, D005, D006, D007, D008, D009, D010, D011, D018, D019, D021, D022, D023, D024, D025, D026, D027, D028, D029, D030, D032, D033, D034, D035, D036, D037, D038, D039, D040, D041, D042, D043

F-Codes: F001, F002, F003, F004, F005, F006, F019, F024, F039

K-Codes: K006, K016, K019, K022, K029, K030, K031, K048, K049, K050, K051, K052, K085, K086, K095, K096, K009, K010, K011, K013, K014, K015, K002, K003, K004, K005

U-Codes: U001, U002, U003, U009, U031, U037, U043, U044, U051, U052, U055, U056, U057, U068, U069, U070, U071, U072, U075, U077, U078, U079, U080, U083, U084, U107, U108, U110, U112, U113, U117, U118, U121, U125, U140, U154, U159, U161, U162, U165, U169, U171, U188, U191, U196, U210, U211, U213, U220, U226, U227, U228, U239, U359



#### EXHIBIT I.A.20-2

#### PART A PERMIT APPLICATION DECEMBER 1991



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Hazardous Vaste is come as poor foor to be and when the poor foor to be an accord.     Hazardous Waste Permit     Hazardous Waste Permit     Hazardous Waste Permit     Part A     Par	- Stand Use Only and I a			Use Only
Hazardous Waste Permit         Application         Care Accessed       Part A         Part A				
Hazarcousswaste Permit:         Application         Distance of application         <		Martin Master Moort		
Application         Gata Asservation         Mannhold Out/Asservation		Irdousav	aslere	
Cata Ascaures       Part As         Monthy Days       Year         All D. Municarity       B. Secondary ID. Number (Propricebre)         AL D. P. S. 2       S. 3         All D. Municarity       B. Secondary ID. Number (Propricebre)         AL D. P. S. 2       S. 3         All D. Municarity       B. Secondary ID. Number (Propricebre)         AL D. P. S. 2       S. 4         S. A. F. L. T. V. L. K. L. B. E. N. C. O. R. P.         III. Italing duration (Proprice Statements)         A. Street         F. M. T. R. E. P. O.T. B. L. U. D.         Street (continued)         Street (continued)         Street (continued)         B. Lind Type         C. Georgraphic Location         I. M. D. Maride         Street (continued)         B. Lind Type         S. Geographic Location         I. Month         D. S. S. S. S. M. O. S. V. I. P. B. G. M. O. V. I. P. S. V. S.		Applic	ation	
Months: Div:/Vear       (Note of Descender; D. Number of applicable,         It Bundle (6);       Fig. (Index of a particular k for iterange);         Iteration of Facility       Fig. (Index of a particular k for iterange);         Iteration of Facility       Fig. (Index of a particular k for iterange);         Iteration of Facility       Fig. (Index of a particular k for iterange);         Iteration of Facility       Fig. (Index of a particular k for iterange);         Iteration of Facility       Fig. (Index of a particular k for iterange);         Iteration of Facility       Fig. (Index of a particular k for iterange);         Iteration of Facility       Fig. (Index of a particular k for iterange);         Iteration of Facility       Fig. (Index of a particular k for iterange);         Iteration of Facility       Fig. (Index of a particular k for iterange);         Iteration of Facility       Fig. (Index of a particular k for iterange);         Iteration of Facility       Fig. (Index of a particular k for iterange);         Iteration of Facility       Fig. (Index of a particular k for iterange);         Iteration of Facility       Fig. (Index of a particular k for iterange);         Iteration of Facility       Fig. (Index of a particular k for iterange);         Iteration of Facility       Fig. (Index of a particular k for iterange);         Iteration of Facility       Fig. (Index of a	Date Received	Por	L A	
Init Administrative constraints       Init Second any ID. Number (II Second any ID. Numer (II Second any ID. Number (II Second any ID	Monthess Day: / Year	Fal		
A BEA (L) Number (19 Applicable)         A BEA (L) A Marked (19 Applicable)         A F Z T Y - K L E E N C O R P         III. Name of Facury         State 21 Y - K L E E N C O R P         III. Facility Location (physics) address not PC BS dr Autra Number)         A Street         III. Facility Location (physics) address not PC BS dr Autra Number)         A Street         III. Facility Location (physics) address not PC BS dr Autra Number)         A Street         III. Facility Location (physics) address not PC BS dr Autra Number)         A T R P O RT T TW D W S T R T A C P A R 2 K         A L A HASISEE         III. Facility State Code (Code		Read the Desident	S before summing + = =	
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Si A F E T Y K L E E N C O R P III. Facility Location (Physical address not E.O. B35 of Robie Number) ArStreet (Continued): ATRRPORT REPORT BLUD Street (Continued): $ATRRPORT REPORT BLUD Street (Continued): ATRRPORT REPORT REPORT REPORT Street (Continued): Street (Continued): ATRRPORT REPORT REPORT Street (Continued): Street (Continued): ATRRPORT REPORT REPORT REPORT Street (Continued): Street (Contact Address (See Instructions): ACONTACT Address (See I$	li.Name of Facility			
III. Facility Location (Physical address tot P.O. B05 dr. Addre Nimbar))         A: Street         E.N. T. R. E. P. O.T. B. L. U. D.         Street (continued):         A: L. R. P. O. R.T. T.W. D. U. S. T. R.T. A.L. P. A. P.K.         Street (continued):         A: L. A. H.A. S. S. E.E.         Control Code         Given Town:         A: L. A. H.A. S. S. E.E.         Control Code         Guiney Code         Control Code         Control Code         Guiney Code         County Code         Sistate Street <t< td=""><td></td><td>FNCO</td><td>R P</td><td></td></t<>		FNCO	R P	
A: Street       Image: Street (continued):         A: T, R, P, O, R, T, T, W, D, W, S, T, R, T, A, L, P, A, R, K, L, L, A, H, A, S, S, E, E, L, E, L, L, A, H, A, S, S, E, E, L, E, L, L, A, H, A, S, S, E, E, L, E, L, L, A, H, A, S, S, E, E, L, E, L, L, A, H, A, S, S, E, E, L, E, L, L, L, A, H, A, S, S, E, E, L, E, L, L, L, A, H, A, S, S, E, E, L, E, L, L, L, A, H, A, S, S, E, E, L, E, L, L, L, A, H, A, S, S, E, E, L, E, L, L, L, A, H, A, S, S, E, E, L, E, L, L, L, A, H, A, S, S, E, E, L, E, L, L, L, A, H, A, S, S, E, E, L, L, L, A, H, A, S, S, E, E, L, L, L, A, H, A, S, S, E, E, L, L, L, A, H, A, S, S, E, E, L, L, L, A, H, A, S, S, E, E, L, L, L, A, H, A, S, S, E, E, L, L, L, A, H, A, S, S, E, E, L, L, L, A, H, A, S, S, E, E, L, L, L, A, H, A, S, S, E, E, L, L, L, A, H, A, S, S, E, E, L, L, L, A, H, A, S, S, E, E, L, L, L, A, H, A, S, S, E, E, L, L, L, A, H, A, S, S, E, E, L, L, L, A, H, A, S, S, E, E, L, L, L, A, H, A, S, S, E, E, L, L, L, A, H, A, S, S, E, E, L, L, L, A, H, A, S, S, E, L, L, L, A, H, A, S, S, E, E, L, L, L, A, H, A, S, S, E, E, L, L, L, A, H, A, S, S, E, E, L, L, L, A, H, A, S, S, E, E, L, L, L, A, H, A, S, S, E, E, L, L, L, A, H, A, L, L, L, L, A, H, A, L, L, L, L, L, A, H, A, L,	III: Facility Location (Physical address)	not P.O. Box dr Route N	limber)	
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County County Name $\angle   E   O   V  $ D: Facility Existence Data         B: Land Type       C: Geographic Location         [difference]       LATTUDE colored proteins a recorder. $P = 300$ D: Facility Existence Data $p = 300$ D: $\overline{S} \otimes   V   O \otimes   V   (2 9) = 36   W   O   (2 7) / (9 9)   U   U   C   C   (7 9 9)   U   U   C   C   C   (7 9 9)   U   U   C   C   C   C   (7 9 9)   U   U   C   C   C   C   C   (7 9 9)   U   U   C   C   C   C   C   C   C   C$	AULAHASSE		FL	
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B. Land Type       C: Geographic Location         Idinitiation       D: Facility Existence Date         Idinitiation       Differentiation         Idinitiation       Differentiation       Differentiation         Idinitiation       Differentiation       Differentiation         Idinitiation       Differentiation       Differentiation       Differentiation         Idinitiation       Differentiation       Differentiation       Differentiation       Differentiation         Idinitiation       Differentiation       Differentiation       Differentiation       Differentiation       Differentiation         Idinitiation       Differentiation       Differentiation       Differentiation       Differentiation       Differentiation         Idinitiation       Differentiation       Differentiation       Differentiation       Differ				
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IV: Eaclifty Mailing Address         Street or P.O: Box         7       7       7       B       I       G       T       I       M       B       E       R       O       A       D       I <td>B. Land Type C. Geographic Location</td> <td>LONGITUDE (</td> <td>(degrees, minutes: &amp; jecondis).</td> <td>D. Facility Existence Date Month Day. Year</td>	B. Land Type C. Geographic Location	LONGITUDE (	(degrees, minutes: & jecondis).	D. Facility Existence Date Month Day. Year
Street 5t P.O. Box         7       7       7       8       1       G       T       1       M       B       E       R       0       A       D       I       G       I	Lind Type     C: Geographic Location       B. Land Type     C: Geographic Location       (Intercode)     LATITUDE correct matches       P     30       25     5	Eongitude ( 8 N 0 84		D. Facility Existence Date Month-Day-Year O I O I I 9 9 0
7       7       7       B       I       G       T       I       M       B       E       R       O       A       D         City or Town       State       ZIP Code         F       I       G       I       N       I       I       C       0       1       2       3       -         Y. Facility Contact (Person to be contacted regarding waste activities at facility)       I       I       C       0       1       2       3       -         Name (last)       (first)         S       A       M       A       G       1       M       V       I       C       7       0       7       -       8       4       0         Job Title       Phone Number (area code and number)         Job Title       Phone Number (area code and number)         E       G       E       N       V       E       N       G       R       7       0       8       -       6       9       7       -       8       4       0         L       G       R       7       0       8       -       6       9       7       -	Land Type       C: Geographic Location         B. Land Type       C: Geographic Location         (encore code)       Lannuoe available         P       30       25         VY: Facility Mailing Address	Eongitude 8 N O 84	( <b>agreen and a recorder</b> [][]9][]36][4	D. Facility Existence Date Month-Day-Year OIOIOII990
City or Town       State       ZIP Code         E       I       G       I       N         Y       Facility Contact (Person to be contacted regarding waste activities at facility)       I       I       I       0       1       2       3       -         Name (last)       (first)       (first)       (first)       -	Land Type C: Geographic Location (Entrie code) Lannuo corrier minutes i P 30 25 5 V: Facility Mailing Address Street 5r P.O. Box	Eongitude 8 N O 84	( <b>Georges and a seconda</b> ) []]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]	D. Facility Existence Date Month-Day-Year OIOIIOII990
E       I       G       I	Lind Type       C: Geographic Location         B. Land Type       C: Geographic Location         Image: Code (C)       Lannuo (C)         Image: Code (C)       Lannuo (C)         P       30       25         P       30       25         IV: Facility Mailling Address       Street 5r P.O. Box         7       7       7         B       I       G       T		Correct and a second of a seco	D. Facility Existence Date Month-Day-Year OIOIIOII/990
VFacility Contact (Person to be contacted regarding waste activities at facility)Name (last)(first)SAAGACJob TitlePhone Number (area code and number)PEGEGENVENVENFacility Contact Address (See Instructions)AContact AddressBStreet or P.O: BoxX7YT <td>Linit Type       C: Geographic Location         B. Linit Type       C: Geographic Location         Intercode       Lintruce argues measure in         P       30       35         P       30       35         IV: Facility Mailing Address       Street 5r P.O. Box         7       7       7         7       7       B       I         Cthy or Town       Street 5r</td> <td></td> <td>(degrees advance &amp; records 5 2 9 3 6 4 R 0 A D State Z</td> <td>D. Facility Existence Date Month-Day-Year OIOIIOII/9900</td>	Linit Type       C: Geographic Location         B. Linit Type       C: Geographic Location         Intercode       Lintruce argues measure in         P       30       35         P       30       35         IV: Facility Mailing Address       Street 5r P.O. Box         7       7       7         7       7       B       I         Cthy or Town       Street 5r		(degrees advance & records 5 2 9 3 6 4 R 0 A D State Z	D. Facility Existence Date Month-Day-Year OIOIIOII/9900
Name (last)       (flrst)         SANAGE       AGUSTIW         Job Title       Phone Number (area code and number)         Job Title       Phone Number (area code and number)         E       G       E       N         V       E       N       G       R       7         B       E       N       V       E       N       G         A       Contact Address (See Instructions)       State       I       I         A       Contact Address       B       Street or P.O: Box       I       I         X       7       7       B       I       G       T       I       M       B       E       R       O       A       D       I         X       7       7       7       B       I       G       T       I       M       B       E       R       O       A       D       I       <	Lind Type     C: Geographic Location       B. Lind Type     C: Geographic Location       Idition code/     Lintrupe arguing minutes, in       P     30       Q     5       Street br P.O. Box       7     7       7     7       Chry or Town       E     L		Image: State     Image: State       R     O       A     D       State     Z       I     L	D. Facility Existence Date Month: Day. Year O / O / / 9 9 0 P Code 6 0 1 2 3 -
S AIVO       A C A S T VO       V C V C V O Z         Job Title       Phone Number (area code and number)         E       G       E       N       V       E       N       G       R       7       0       8       - 6       9       7       - 8       4       6       0         Facility Contact Address       See Instructions)       B. Street or P.O: Box	Lind Type       C. Geographic Location         B. Lind Type       C. Geographic Location         Idition code/       Limtupe argues minutes in         P       30       35         P       30       35         IV: Facility Mailing Address       Street 5r P.O. Box         7       7       7         B       I       G       T         City or Town       I       G       T         F       I       G       I       N         V: Facility Contact (Person to be contact)       Image: Contact (Person to be contact)	B N O 8 4	ROAD State Z I L ROAD	D. Facility Existence Date Month- Day- Year 0 / 0 / 1 9 9 0 10 Code 6 0 1 2 3 -
Job Title       Phone Number (area code and number)         B       E       G       E       N       V       E       N       G       R       7       0       8       -       6       9       7       -       8       4       6       0         B       E       N       V       E       N       G       R       7       0       8       -       6       9       7       -       8       4       6       0         A       Contact Address Location:       B       Street or P.O: Box       -	$\mathcal{L} \models \mathcal{O} \mathcal{W}$ B. Land TypeC: Geographic LocationIdition code/Lantruce (argues minutes) is $\mathcal{P}$ $\mathcal{B}$ $\mathcal{B}$ $\mathcal{B}$ $\mathcal{O}$ </td <td>B N O 8 4</td> <td>A D R O A D State Z I L A D State Z I L A D State Z A D State Z State Z A D State Z A</td> <td>D. Facility Existence Date Month- Day- Year 0 / 0 / 1 / 9 9 0 1P Code 6 0 1 2 3 -</td>	B N O 8 4	A D R O A D State Z I L A D State Z I L A D State Z A D State Z State Z A D State Z A	D. Facility Existence Date Month- Day- Year 0 / 0 / 1 / 9 9 0 1P Code 6 0 1 2 3 -
B       E       G       I       F       N       V       I       E       N       G       R       .       7       0       8       -       6       9       7       -       8       4       6       0         I. Facility Contact Address       See Instructions)       B       Street or P.O: Box       Image: Contact Address	$\mathcal{L} \models \mathcal{O} \mathcal{W}$ B. Land Type       C: Geographic Location         Idition code       LATTUDE corporations         P $3\mathcal{O}$ $25$ P $3\mathcal{O}$ $25$ IV: Facility Mailing Address $3\mathcal{O}$ $25$ Street 5r P.O. Box $7$ $7$ 7       7 $7$ $B$ $I$ City or Town $F$ $I$ $G$ $T$ Y. Facility Contact (Person to be contained) $S$ $A$ $A$ V. Facility Contact (Person to be contained) $S$ $A$ $A$	B N O 8 4	$\begin{bmatrix} degrees astrong \\ c \\ $	D. Facility Existence Date Month- Day- Year 0 1 0 1 1 9 5 0 1P Code 6 0 1 2 3 - 1 1
A. Contact Address       B. Street or P.O: Box         Incation:       Mailing         X       7       7         Z       7       7         City.or. Town       State         ZIP Code	$\mathcal{L} \models \mathcal{O} \mathcal{W}$ B. Land Type       C: Geographic Location         Idition code       LATTUDE corganization         P $3\mathcal{O}$ $25$ P $3\mathcal{O}$ $25$ $5$ IV: Facility Mailing Address $3\mathcal{O}$ $25$ $5$ Street 5r P.O. Box $7$ $7$ $7$ $7$ City or Town $F$ $I$ $G$ $T$ $I$ V: Facility Contact (Person to be contained) $S$ $A$ $A$ $G$ $T$ S $A$ $A$ $G$ $G$ $T$ $I$ Job Title $A$ $G$ $G$ $T$ $I$	Image: Second	(degree advance decords) $\begin{bmatrix} 2 & 9 \\ 2 & 9 \end{bmatrix} = \begin{bmatrix} 3 & 6 \\ 4 \\ 3 & 6 \end{bmatrix}$ R O A D State Z I L activities at facility) (first) $\begin{bmatrix} 1 & C \\ 7 & 0 \end{bmatrix}$ Phone Number (area	D. Facility Existence Date Month-Day-Year DO / O / / 9 9 0 P Code 6 0 1 2 3 -
Location:       Mailing         X       7       7       7       B       I       G       T       I       M       B       E       R       O       A       D         City:or: Town       State       ZIP Code       T       I       C       T       T       C<	$\mathcal{L} \models \mathcal{O} \mathcal{W}$ B. Land Type       C: Geographic Location         Idition code       LATTUDE corporations         P $\overline{30}$ $\overline{25}$ P $\overline{30}$ $\overline{25}$ $\overline{51}$ IV: Facility Mailing Address $\overline{51}$ $\overline{51}$ $\overline{51}$ Street 5r P.O. Box $\overline{7}$ City or Town $\overline{7}$ $\overline{7}$ $\overline{7}$ $\overline{7}$ $\overline{7}$ $\overline{7}$ F       I. G. I. N $\overline{7}$	E N G R	$\begin{bmatrix} degree advance d econdex \\ \hline l 9 36 \\ \hline l 9 \\ \hline l 9 36 \\ \hline l 9 \\ \hline l 9$	D. Facility Existence Date Month-Day-Year O I O I I I I I I I I I I I I I I I I I
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	$\mathcal{L} \models \mathcal{O} \mathcal{W}$ B. Land TypeC: Geographic LocationIdition codeLantruce corporationIdition codeLantruce corporationP $3\mathcal{O}$ $2\mathcal{S}$ P $3\mathcal{O}$ $2\mathcal{S}$ Street 5r P.O. Box77777BIGTCity or TownFIGFIGV: Facility Contact (Person to be contact)Name (last)SAACJob TitlePGLocation:MailingBStreet or PVFacility Contact AddressBStreet or P	E N G R .	(degree advance decords) (degree advance decords) R 0 A D State Z I L A D (first) V l C T 0 l Phone Number (area 7 0 8 - 6	D. Facility Existence Date Month-Day-Year O I O I O I I 9 9 0 IP Code 6 0 1 2 3 - code and number) 9 7 - 8 4 6 0
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Form Appanied, IGMB No. 2050–2034 Expires 12–31–91 GGA No. 3246–EPA+CT

EPA I D Number (enter from page 1)		Second	ary ID Number (enter from page 15	
FLD982133159				
VII. Operator Information (see instructions)				
Name of Operator				
SAFETY-KLEEN CO	RP.			
Street or P.O. Box				
7 7 7 B I G T I M B E R	R O A	D		
City or Town		State-	ZIP Code	
ELGIN		IL	6 0 1 2 3 -	
			Data Changed	
Phone Number (area code and number)	erator type	• C. Chan	ge of Operator Date Changed Indicator <u>Month Day Ye</u>	ar i
7 0 3 - 6 9 7 - 8 4 6 0	Р	Yes	No	
VIII. Facility Owner (see Instructions)				
A. Name of Facility's Legal Owner				
SAFETY-KLEEN CO	RP			
Streei or P.O. Box	<u></u>			
1771 BIG TIMBER	$D \mid$			
City or Town		State	ZIP Code	
ELGIIN		IIL	60123-	
х у				
Phone Number (area code and number)	B. Cwne	r Type C.	Change of Owner Date Changed Indicator Month Day Y	ar
708-697-8460		Yes	No No	
IX. SIC Codes (4-digit, in order of significance)				
Primary	in the second	- They are write a priority frame. At	Secondary	
7 3 8 9 (description) BUSINESS SERVICES, N.E.C.	5 1	7 2 <sup>(de</sup>	ETROLEUM PRODUCT WHOLESALE	RS.
Secondary		·····	Secondary	
5 0 8 4 (description) 5 0 8 4 (INDUSTRIAL MACHINERY & EQUIPMENT	5 0	1 3 100	AUTOMOTIVE PARTS & SUPPLIES	
X. Other Environmental Permits (see Instructions)				
(enter cade) B. Permit Number		•	C. Description	
R H037-171747	1			
			······	
			· <u>····································</u>	
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Form Approved. CMB No. 2050-0034 Excites 12-31-31 GSA No. 0246-FP4-01

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XIV. Description of Hazardous Waste (continued)	
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Attach to this application a topographic map of the area extending to at least one mile beyond must show the outline of the facility, the location of each of its existing and proposed intake an	property boundaries. The map id discharge structures, each of its
Implementary hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids in rivers and other surface water bodies in this map area. See instructions for precise requirement in this map area.	underground. Include all springs, <u>seed</u> Int <b>s.</b>
XVI. Facility Drawing	
All existing facilities must include a scale drawing of the facility (see instructions for more deta	/// <b>.</b>
All existing facilities must include photographs (aerial or ground-level) that clearly delineate all treatment and disposal areas; and sites of future storage, treatment or disposal areas (see instr	l existing structures; existing storage, uctions for more detail),
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I certify under penalty of law that this document and all attachments were	nrenared under my direction or
supervision in accordance with a system designed to assure that qualified	personnel properly gather and
those persons directly responsible for gathering the information, the information	sons who manage the system, or on submitted is, to be the best of
my knowledge and belief, true, accurate, and complete. I am aware that th submitting false information, including the possibility of fine and imprisonme.	ere are significant penaities for nt for knowing violations.
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Scott E. Fore - VICE PRESIDENT, ENVIRONMENT, HEALTH	I & SAFETY
Operator Signature	Date Signed
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#### I.A.20-3

#### **OPERATING PERMIT**



#### STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION NOTICE OF PERMIT

#### CERTIFIED

In the matter of an Application for Permit By:

DER File No. 171747 Leon County

Safety Kleen Corporation

Enclosed is Permit Number H037-171747 to operate a hazardous waste container and tank storage facility, issued pursuant to Section 403, Florida Statutes.

Any party to this Order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date this Notice is filed with the Clerk of the Department.

Executed in Pensacola, Florida.

State of Florida Department of Environmental Regulation

ROBERT V. KRIEGEL Deputy Assistant Secretary

160 Governmental Center Pensacola, Florida 32501-5794 (904) 436-8300



#### CERTIFICATE OF SERVICE

This is to certify that this NOTICE OF PERMIT and all copies were mailed before the close of business on  $\sqrt{\frac{19.1990}{11.1990}}$  to the listed persons.

Filing and Acknowledgement filed, on this date, pursuant to \$120.52(9), Florida Statutes, with the designated Department clerk, receipt of which is hereby acknowledged.

Anton April 19.19.90 Date

Copies furnished to:

Leon County Board of County Commissioner James Scarbrough, U.S. E.P.A. Region IV Satish Kastury, FDER Gary Early, FDER





### Florida Department of Environmental Regulation

Northwest District • 160 Governmental Center • Pensacola, Florida 32501-5794 • 904-436-8300

Bob Martinez, Governor

Dale Twachtmann, Secretary

John Shearer, Assistant Secretary Robert Kringei, Deputy 1536 and Secretary

CAFET ALEEN CORP.

PERMITTEE:

Safety Kleen Corporation

I.D. Number: 1037P119016 (FLD982133159) Permit/Certification Number: H037-171747 Date of Issue: APR 1 9 1990

Expiration Date: February 1, 1995 County: Leon Latitude/Longitude: 30°23'58"N/84°19'30"W Section/Township/Range: Project: Container & Tank Storage Facility

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule 17-730. The above named applicant, hereinafter called Permittee, is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

1. To operate a Hazardous Waste Container Storage Facility consisting of a container storage area with a maximum capacity of 6,912 gallons.

Container storage will be limited to the following:

EPA Number

Waste Description

F002,	F004		
F002			
F003,	F005,	D001	
D006	, DOO7,	, D008	

Spent Immersion Cleaner Dry Cleaner Waste Paint Waste

2. To operate a Hazardous Waste Tank Storage Facility in accordance with the tank storage plan in Section I.E.3.b.of the application. The maximum amount of waste mineral spirits (D001, D006, D008) which may be stored in the tank is 15,000 gallons.

Operation of the facility will be in accordance with the application dated October 7, 1987 and the additional information received on November 6, 1989.



PERMITTEE: Safety Kleen Corporation Safety Kleen Corporation L.D. Number: 1037P119016 (FLD982133159) Permit/Certification Number: H037-171747 Date of Issue: APR 1 9 1990 Expiration Date: February 1, 1995

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "permit conditions" and are binding and enforceable pursuant to the authority of Sections 403.141, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed and used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
I.D. Number: 1037P119016 (FLD982133159) Permit/Certification Number: H037-171747 Date of Issue: APR 1 9 1990

Expiration Date: February 1, 1995

GENERAL CONDITIONS:

Safety Kleen Corporation

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

- a. Having access to and copying any records that must be kept under the conditions of this permit;
- b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and,
- c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

- a. A description of and cause of non-compliance; and
- b. The period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules. PERMITTEE: Safety Kleen Corporation Safety Kleen Corporation L.D. Number: 1037P119016 (FLD982133159) Permit/Certification Number: H037-171747 Date of Issue: APR 1 9 1990 Expiration Date: February 1, 1995

GENERAL CONDITIONS:

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-730.300, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. The permittee shall comply with the following:

- a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
- b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report or application unless otherwise specified by Department rule.
- c. Records of monitoring information shall include:
  - the date, exact place, and time of sampling or measurement:
  - the person responsible for performing the sampling or measurement;
  - the date(s) analyses were performed;
  - the person responsible for performing the analyses;
  - the analytical techniques or methods used; and
  - the results of such analyses.

Safety Kleen Corporation

I.D. Number: 1037P119016 (FLD982133159) Permit/Certification Number: H037-171747 Date of Issue: APR 1 9 1990 Expiration Date: February 1, 1995

GENERAL CONDITIONS:

14. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

15. The following conditions also shall apply to a hazardous waste facility permit.

- a. The following reports shall be submitted to the Department:
  - (1) Manifest discrepancy report: If a significant discrepancy in a manifest is discovered, the permittee shall attempt to rectify the discrepancy. If not resolved within 15 days after the waste is received, the permittee shall immediately submit a letter report, including a copy of the manifest, to the Department.
  - (2) Unmanifested waste report: Permittee shall submit an unmanifested waste report to the Department within 15 days of receipt of unmanifested waste.
  - (3) Annual report: An annual report covering facility activities during the previous calendar year shall be submitted pursuant to Florida Administrative Code Rule 17-30.
- b. Notification of any noncompliance which may endanger health or the environment, including the release of any hazardous waste that may endanger public drinking water supplies, or the occurrence of a fire or explosion from the facility which could threaten the environment or human health outside the facility, shall be reported verbally to the Department within 24 hours and a written report shall be provided within 5 days. The verbal report shall include the name, address, I.D. number and telephone number of the facility, its owner or operator, the name and quantity of materials involved, the extent of injuries, an assessment of actual or potential hazards, and the estimated quantity and disposition of recovered material. The written submission shall contain:

PERMITTEE:I.D. Number: 1037P119016 (FLD982133159)Permit/Certification Number: H037-171747Safety Kleen CorporationDate of Issue: APR 1 9 1000

Expiration Date: February 1, 1995

GENERAL CONDITIONS:

- (1) A description and cause of noncompliance.
- (2) If not corrected, the expected time of correction, and the steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.
- c. Reports of compliance or noncompliance with, or any progress reports on, requirements contained in any compliance schedule shall be submitted no later than 14 days after each schedule date.
- d. All reports or information required by the Department by a hazardous waste permittee shall be signed by a person authorized to sign a permit application.

SPECIFIC CONDITIONS:

16. The permittee shall, in order to satisfy the requirements of 40 CFR 264.12, notify the Department in writing four weeks prior to receipt of hazardous waste from a foreign source.

17. The permit allows the permittee to store only those wastes specified in Attachment 1.D.2. of the application at the facility. Prior to acceptance of new hazardous wastes, the permittee shall submit to the Department, for approval, waste analysis of the proposed new waste stream. This analysis must also be incorporated in the general waste analysis plan and retained on-site. 40 CFR 264.13

18. The permittee shall, in order to satisfy 40 CFR 264.15, inspect the facility operating, emergency and safety equipment in accordance with the scheduled approved in Attachment I.E.4. of the application. Changes, additions or deletions to the schedule must be approved in writing by the Department. The schedule must be maintained as part of the operating record at the facility.

19. Facility personnel must successfully complete the approved training program specified in Attachment 1.E.5. of the application within six (6) months of employment or assignment to a facility or a new position at the facility. Verification of this training must be kept with the personnel training records and maintained on-site. Personnel shall not work unsupervised until training has been completed. 40 CFR 264.16

20. The contingency plan must be amended and distributed to the appropriate agencies if:

I.D. Number: 1037P119016 (FLD982133159) Permit/Certification Number: H037-171747 Date of Issue: APR 1 9 1990

Safety Kleen Corporation

Expiration Date: February 1, 1995

SPECIFIC CONDITIONS:

A. The facility permit is revised.

B. The plan fails in an emergency.

C. The facility changes in its design, construction, operation, maintenance or other circumstances in a way that increases the potential for fires, explosions or release of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency.

D. The list of emergency coordinators changes.

E. The list of emergency equipment changes. (40 CFR 264.54)

21. The permittee shall follow the emergency procedures specified in 40 CFR 264.56 and approved in Attachment I.E.2. of the application. The permittee shall give proper notification if an emergency situation arises and within 15 days must submit to the Department a written report which includes all information required in 40 CFR 264.56(j).

22. The permittee shall comply with the manifest requirements indicated in 40 CFR 264.71.

23. The permittee, to comply with the requirements of 40 CFR 264.73, shall keep a written operating record at the facility which includes:

A. The description and quantity of each hazardous waste received.

B. The location of each hazardous waste within the facility and the quantity of waste at each location.

C. The results of the waste analysis.

D. The date on which wastes were transported off-site.

E. A summary report and details of incidents that require implementation of the contingency plan.

F. The required copies of manifests.

G. Copy of all reclamation agreements with 100-1000 kg/mo generators.

H. The results of inspections (for three years).

I. Closure plan and cost estimates.

J. Annual certification of waste minimization.

I.D. Number: 1037P119016 (FLD982133159) Permit/Certification Number: H037-171747 Date of Issue: APR 1 9 1990 Expiration Date: February 1, 1995

SPECIFIC CONDITIONS:

Safety Kleen Corporation

These records must be maintained at the facility until completion and certification of closure. 40 CFR 264.73

24. The permittee shall apply for a closure permit at least 180 days prior to beginning closure at the facility. FAC Rule 17-30.260

25. Storage containers must conform to DOT specifications as shown in Exhibits I.E.3-1 through I.E.3-46 of the application, and be managed in accordance with the approved operational plan. Containers shall be kept closed except when adding or removing waste and be handled in a manner that will not allow the containers to rupture or leak. If a container holding hazardous waste is not in good condition, or begins to leak, the waste shall be transferred to another container in good condition. 40 CFR 264.171, 40 CFR 264.173

26. The permittee shall inspect the container storage area in accordance with the schedule and procedures approved in Attachment I.E.4. of the application. 40 CFR 264.174

27. Spilled or leaked waste and accumulated precipitation must be removed from the collection area, analyzed and disposed of in accordance with Attachment I.E.2. of the application. 40 CFR 264.175

28. Incompatible waste shall not be stored in containers or placed in unwashed containers that have previously held an incompatible waste. 40 CFR 264.177

29. The permittee must maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment and spill control equipment in the container storage area. 40 CFR 264.35

30. The permittee shall, as part of the general operating requirements of 40 CFR 264.194:

A. Not place hazardous wastes in a tank system if the probability exists that this may cause the tank system to fail,

B. Use appropriate controls and practices to prevent spills and overflows, and

C. Comply with the requirements of 40 CFR 264.196 if a leak or spill occurs.

31. The permittee shall inspect the tank system as required by 40 CFR 264.195. These requirements include:

I.D. Number: 1037P119016 (FLD982133159) Permit/Certification Number: H037-171747 Date of Issue: APR 1 9 1990

Safety Kleen Corporation

Expiration Date: February 1, 1995

SPECIFIC CONDITIONS:

A. Developing and following a schedule and procedure for inspecting overfilling controls,

B. Inspecting at least once each operating day the above ground portions of the tank system, data from leak detection or monitoring equipment, the construction materials and area inmediately surrounding the tank, and

C. The results of the inspections in A and B of this condition shall be maintained in the operating record of the facility.

32. The permittee shall satisfy the requirements of 40 CFR 264.196 when a tank system or secondary containment system produces a leak or spill, or is determined to be unfit for use. These requirements include, as they are made applicable by 40 CFR 264.196:

- A. Cessation of use; prevent flow or addition of waste.
- B. Removal of waste from tank system or secondary containment system.
- C. Containment of idenitifiable releases to the environment.
- D. Notifications, reports.
- E. Provision of secondary containment, repair or closure.
- F. Certification of major repairs.

33. The permittee shall comply with the protective distance requirements of the tank placement as set forth in Tables 2-1 through 2-6 of the National Fire Protection Association's "Flammable and Combustile Liquids Code" (1977 or 1981) as required by 40 CFR 264.198(b).

34. The permittee shall handle incompatible wastes in accordance with the requirements of 40 CFR 264.199 by not introducing hazardous waste into unwashed tank systems which previously held the incompatible waste or material.

35. The permittee shall be required to certify no later than March 1st annually that the permittee has a program in place to reduce the volume and toxicity of hazardous waste that he generates to the degree determined by the permittee to be economically practicable and the proposed method of treatment, storage or disposal is that practicable method currently available to the permittee which minimizes the present and future threat to human health and the environment. 40 CFR 264.73

36. Upon a written request by the permittee, the Department may make modifications to the permit. TAC Rule 17-730.290(1)

I.D. Number: 1037P119016 (FLD982133159) Permit/Certification Number: H037-171747 Date of Issue: APR 1 9 1990 Expiration Date: February 1, 1995

SPECIFIC CONDITIONS:

Safety Kleen Corporation

37. The Department may modify the conditions in this permit in accordance with the provisions of FAC Rule 17-730.290(1).

38. The permanent Department identification number (GMS No.) for this facility is 1037P119016. Please cite this number on all reports and correspondence concerning this facility. In addition, the EPA I.D. No. FLD982133159 should also be cited.

39. The permittee shall maintain compliance with 40 CFR Part 264 Subpart H, Financial Requirements.

40. Prior to 90 days before expiration of this permit, the permittee shall apply for permit renewal in accordance with the provisions of FAC Rule 17-730.300(1).

41. The Department telephone number for reporting problems, malfunctions or exceedances under this permit is (904) 436-8300, day or night, and for emergencies involving a significant threat to human health or the environment is (904) 488-1320. For routine business, telephone (904) 436-8320 during normal working hours.

Expiration date:

February 1, 1995

Issued this 19Th day of 1990

STATE OF FLORIDA DEPARTMENT OF\_ENVIRONMENTAL REGULARTION

ROBERT V. KRIEGED Deputy Assistant Secretary

# ATTACHMENT I.B SITE INFORMATION

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#### LEGEND

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### ATTACHMENT I.D.2

### **OPERATING INFORMATION**



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# ATTACHMENT I.D.2 OPERATING INFORMATION

#### I.D.2.a DESCRIPTION OF THE BUSINESS

Safety-Kleen Corp. of Elgin, Illinois is an international, service-oriented company whose customers are primarily engaged in automotive repair and industrial maintenance. Since 1968, Safety-Kleen has been offering a leasing service for hydrocarbon and chlorinated solvents and small parts washing equipment. A unique feature of this business concept is that the solvent is produced through recycling the used solvent that is leased to the customers. Approximately two-thirds of the clean solvent leased has been previously used by the customers.

The Safety-Kleen parts washing equipment, together with the solvents, are leased to customers; the leasing charge includes regularly scheduled solvent changes and machine maintenance. The business is conducted from local service centers (sales branches) located in 45 states domestically that warehouse the products and equipment required to service the customers in their sales areas. On a regular basis, service representatives furnish clean solvent to the customers, pick up the used solvent, and ensure that the leased equipment is in good working order. In 1979, Safety-Kleen expanded their scope of operations to make their solvent leasing service available to owners of parts cleaning equipment, regardless of manufacturer, using Safety-Kleen's types of solvents.

Basically, Safety-Kleen handles three types of parts washer solvents: a mineral spirits solvent and old and new formulations of immersion cleaner. The old immersion cleaner solvent is labeled under the trade name of "Immersion Cleaner and Carburetor and Cold Parts Cleaner #609." It is a two-phase system consisting of an upper aqueous (water) layer and lower non-aqueous (solvent) layer. The water phase consists of water and Dresinate TX (sodium soap of tall oil). The solvent phase is composed of methylene chloride, orthodichlorobenzene, cresylic acid, and an amines additive. A new immersion



cleaner is being marketed under the name #699 and will eventually replace the old immersion cleaner. It is a non-chlorinated solvent mixture. The solvent is composed of heavy aromatic naphtha, N-methyl-2-pyrolidon dipropylene glycol methyl ether, monoethanolamine and oleic acid. The waste contains a maximum of 1 percent total The solvents are distributed and collected by their service chlorinated solvents. representatives. Containers are transported in specially-equipped, enclosed route trucks. Clean solvents are distributed from and used solvents returned to the service center where they are stored in separate tanks for the clean and used mineral spirits bulk storage. Warehouse space is dedicated for the storage of both clean and used immersion cleaner containers. Safety-Kleen leases parts washing equipment, including partially filled containers which double as the solvent reservoir of the parts washer. During servicing, the quantity of used solvent removed from each machine ranges from 5 to 20 gallons. The mineral spirits, 609 Immersion Cleaner, 699 Immersion Cleaner, and perchloroethylene from dry cleaning operations are collected in containers.

Periodically, a company truck is dispatched from one of Safety-Kleen's nationwide solvent recycle facilities to the service center to deliver a load of clean solvent and pick up a load of used solvent. Mineral spirits are transported in bulk tank trucks between the service centers and the recycle facilities. The Immersion Cleaner remain in the covered containers during transfer between the service centers and the recycle facilities. Approximately 97 percent of the solvent handled in the parts washer business is mineral spirits, while the remainder is immersion cleaner.

Safety-Kleen's solvent cycle is essentially a closed loop, moving from the service center to the customer, from the customer to the service center, from the service center to the recycle facility and then from the recycle center back to the service center. The small quantities of residue remaining in the storage tanks at the service centers and after distillation of the used solvent at Safety-Kleen's solvent recycling facilities are disposed of in accordance with applicable laws and regulations.



This closed loop supplies Safety-Kleen with most of its solvent requirements; the resultant stabilized cost benefits are passed on to its customers. Ownership of the solvent remains with Safety-Kleen; the service center managers are accountable for the quantities of clean and used solvents handled by their branch operations. The service center is basically a temporary storage and transfer facility. By FDER definition, however, these centers are considered to be the waste generator.

#### **Dry Cleaner Service**

In 1984, Safety-Kleen began offering a service for the collection of filter cartridges and still bottoms contaminated with dry cleaning solvents (usually perchloroethylene). These wastes are containerized or boxed on the customer's premises and are periodically collected by a sales representative. The containerized waste is accumulated in a contained area of the warehouse for shipment to a Safety-Kleen recycle center. Approximately 35 percent of this waste is returned to dry cleaners as usable product.

#### **Paint Waste Collection Service**

In 1986, a paint waste reclamation program was initiated to service automobile body repair businesses. Paint gun cleaning machines are leased to customers with a reservoir of lacquer thinner (for cleaning the paint guns). On a periodic basis the reservoir is replaced and the spent solvent taken back to the facility for shipment to a reclamation facility. Wastes containing various thinners and paints are collected in containers on the customer's premises. The sales representative collects these containers and stores them in the container storage area. These wastes are periodically shipped to a reclaimer and the regenerated solvent is distributed to Safety-Kleen customers for use as product.

#### **Antifreeze Waste Collection Service**

In 1990, Safety-Kleen began offering a service for the collection of spent antifreeze (ethylene glycol) from automobile service stations. These wastes are deposited into a



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carboy or containers by the customer, on the customer's premises, and the carboy is pumped into a tanker truck or into containers by a sales representative. Then, at the Safety-Kleen service center, it is pumped into a storage tank (if handled in bulk) or placed in the container storage warehouse (if handled in containers) for subsequent shipment to a Safety-Kleen recycle center. Approximately 35 percent of this waste is returned to customers as usable product for processing.

#### Fluid Recovery Service

Fluid Recovery Services (FRS) is a program managed by the Safety-Kleen Corp. Service Centers. Although the FRS wastes will be permitted wastes, the service center will continue to manage the FRS wastes as transfer wastes in accordance with 40 CFR 263.12 and FAC 17-730.171. The manifests will not be terminated at the service centers. These wastes may or may not have been originally obtained from Safety-Kleen by the industrial customer. Examples of the types of wastes that may be received from FRS customers include:

- 1. Spent hydrocarbon distillates, such as waste fuel, oil, petroleum, naphtha, etc.
- 2. Lubricating, hydraulic oils, machine oils.
- 3. Industrial halogenated solvents such as 1,1,1-trichloroethane, tetrachloroethylene, freon, trichloroethane.
- 4. Paint and lacquer thinners and paint wastes.
- 5. Other hazardous and non-hazardous halogenated and non-halogenated solvents.

Prior to accepting an FRS customer's waste for recycling, a sample is drawn and analyzed at Safety-Kleen's laboratory in Elgin, Illinois. The containers are not opened



until they reach the recycling center where the contents of the containers are either returned to the customer or properly disposed of.

#### I.D.2.b-1 SPECIFICATIONS OF THE HAZARDOUS WASTE

Eight types of waste result from the servicing of Safety-Kleen customers and the maintenance of the service center. Analytical data for the wastes and specifications for the products are in Appendix D and qualitative descriptions follow.

#### Wastes Resulting From the Parts Washer Service

Spent mineral spirits from parts washers is accumulated in a 15,000-gallon aboveground storage tank via the return and fill station. Containers having the spent solvent are poured into a dumpster (barrel washer) at the return and fill station which in turn empties into the tank. This waste handling method results in three types of mineral spirits waste:

- a. Spent mineral spirits solvent--The spent mineral spirits (sp. gr. = 0.8) solvent is removed from the onsite tank by a tanker truck on a scheduled basis. About 6,000 to 7,000 gallons are removed every two weeks. This waste is ignitable (D001) and toxic using the characteristic leaching procedure (D004, D005, D006, D007, D008, D009, D010, D011, D018, D019, D021, D022, D023, D024, D025, D026, D027, D028, D029, D030, D032, D033, D034, D035, D036, D037, D038, D039, D040, D041, D042, and D043).
- b. <u>Bottom sediment in the tank</u>--Approximately once every two years, it is necessary to remove sediment and other heavy material from the bottom of the tank. A Safety-Kleen vacuum truck is used for this purpose and can collect up to 4,000 gallons of this waste for reclamation. The sediment is ignitable (D001) and toxic using the characteristic leaching procedure (D004, D005, D006, D007, D008, D009, D010, D011, D018, D019, D021, D022, D023, D024, D025, D026, D027,



D028, D029, D030, D032, D033, D034, D035, D036, D037, D038, D039, D040, D041, D042, and D043).

c. <u>Dumpster sediment</u>--Sediment also accumulates in the bottom of the dumpsters in the return and fill station. This sediment is removed manually, sometimes with a shovel, and placed in containers. The containers are stacked two-high in the metal shelter. Approximately ten gallons of sediment is stored in each container, and the container is color-coded to indicate its contents. The chemical composition of this waste is analogous to that of the bottom sediment from the tank.

Immersion cleaner remains in the container in which it was originally used until it is received at the recycle center. Immersion cleaner #609 and #699 are packaged in containers. Containers containing approximately four and one-half gallons of spent solvents are stacked two-high in the container storage area of the warehouse. The old formula (#609) for immersion cleaner contains ortho-dichlorobenzene and methylene chloride (F002) and cresylic acid (F004). The new immersion cleaner formula is a characteristic (toxic) hazardous waste using the toxicity characteristic leaching procedure (D004, D005, D006, D007, D008, D009, D010, D011, D018, D019, D021, D022, D023, D024, D025, D026, D027, D028, D029, D030, D032, D033, D034, D035, D036, D037, D038, D039, D040, D041, D042, and D043).

#### Wastes Resulting From the Dry Cleaner Service

Dry cleaning wastes consist of spent filter cartridges, powder residue from diatomaceous or other powder filter systems and still bottoms. These wastes are packaged on the customer's premises in containers with lock rings. The containers are then stacked two-high and placed in the container storage area of the warehouse. Three types of dry cleaning wastes are handled. Approximately 80 percent of the dry cleaning solvent used is perchloroethylene (F002 and D004, D005, D006, D007, D008, D009, D010, D011, D018, D019, D021, D022, D023, D024, D025, D026, D027, D028, D029, D030,



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D032, D033, D034, D035, D036, D037, D038, D039, D040, D041, D042, and D043), approximately 17 percent is mineral spirits, (D001 and toxic using the characteristic leaching procedure D004, D005, D006, D007, D008, D009, D010, D011, D018, D019, D021, D022, D023, D024, D025, D026, D027, D028, D029, D030, D032, D033, D034, D035, D036, D037, D038, D039, D040, D041, D042, and D043); the remaining 3 percent is trichloro-trifluoroethane (F002 and toxic using the toxicity characteristic leaching procedure D004, D005, D006, D007, D008, D009, D010, D011, D018, D019, D021, D022, D023, D024, D025, D026, D027, D028, D029, D030, D032, D034, D031, D022, D023, D024, D025, D026, D027, D028, D029, D030, D032, D033, D034, D035, D036, D037, D038, D039, D040, D041, D042, and D043).

#### **Paint Wastes**

Paint wastes consist of various lacquer thinners such as, but not limited to, acetone, isopropyl alcohol, methyl ethyl ketone, methyl isobutyl ketone, toluene, xylenes, and acetate compounds (D001, F003, and F005) and is toxic using the toxicity characteristic leaching procedure (D004, D005, D006, D007, D008, D009, D010, D011, D018, D019, D021, D022, D023, D024, D025, D026, D027, D028, D029, D030, D032, D033, D034, D035, D036, D037, D038, D039, D040, D041, D042, and D043).

#### Antifreeze Waste

Antifreeze waste is approximately one-third water and two-thirds antifreeze (ethylene glycol) and contaminants. It is a characteristic (toxic) hazardous waste according to the toxicity characteristic leaching procedure standards (D004, D005, D006, D007, D008, D009, D010, D011, D018, D019, D021, D022, D023, D024, D025, D026, D027, D028, D029, D030, D032, D033, D034, D035, D036, D037, D038, D039, D040, D041, D042, and D043). The waste is collected in a tanker truck or in containers from carboys or containers at the customer's place of business. The tanker trucks empty the waste into a storage tank and this waste is, in turn, periodically pumped into a tanker truck for transport to a reclamation facility. The containerized waste is placed in the



container storage area prior to shipment to a reclamation facility. It is anticipated that approximately 1,000,000 gallons of this waste will be managed at this facility on an annual basis.

A typical composition, and chemical and physical analysis for each of the waste streams listed above is shown in Exhibits I.D.2-9 through I.D.2-14, based on existing data on these wastes generated from similar processes within Safety-Kleen's current and/or potential customers.

#### Fluid Recovery Service Waste

Fluid Recovery Services (FRS) is a program managed by the Safety-Kleen Corp. Service Centers. Under this program, waste types similar to the industrial solvents provided by Safety-Kleen are collected by the service center and processed by the recycle centers. FRS wastes received at the facility are classified as characteristic wastes (D-waste codes), non-specific source wastes (F-waste codes), listed wastes from specific sources (Kwastes), commercial chemical products, manufacturing intermediates or off-specification chemical commercial products (U-waste codes). Most of the time, a waste stream will be some combination of specific components, and be categorized as a D- or F- waste. Exhibit I.D.2-15 provides a list of the EPA waste codes managed at the facility under the FRS program.

Certain other wastes that result from the use of organic solvents are also managed at the service centers. These include the solids and sludges that settle out of the used solvent during handling and processing. Lint, paper, oils, greases, carbons, and metals are examples of materials which may settle or separate out of used solvent. In addition to the listed waste codes these waste may also exhibit a characteristic under the toxicity characteristic leaching procedure.



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Certain solvents are not economically recoverable in their prime form. These are typically solvents of low intrinsic value (e.g., methanol), those where the user's specifications are unattainable or where the mixture cannot be efficiently separated because of the formation of azeotropes, overlapping or close boiling ranges. However, when properly blended and processed, these solvents can be a beneficial source of energy. The Safety-Kleen recycle centers are equipped to process non-recoverable solvent mixtures with still bottoms from recovery of their solvent to produce valuable solvent based fuels.

In each of these end use applications at facilities classified as Industrial Furnaces, the combustion conditions are orders of magnitude more destructive than those specified for incinerators. For each industrial furnace emission controls are in place and covered by existing regulations. Specifications are restrictive for PCBs, herbicides, pesticides, etc., and for other waste that might adversely affect the operation of the unit or the properties of the finished product.

#### I.D.2.b-2 USED MINERAL SPIRITS

The clean mineral spirits solvent is labeled under the trade name of "Safety-Kleen 105 Solvent", so named because of the flash point of the solvent being 105° F (minimum). Chemically, the solvent primarily consists of petroleum hydrocarbon fraction (the mineral spirits) with boiling points between 310° F and 400° F. Impurities such as light aromatic hydrocarbons and chlorinated hydrocarbons usually constitute less than one percent of the total volume. The mineral spirits constituted an average of 99.5 percent of the total volume of the solvent.

The used mineral spirits solvent consists primarily of mineral spirits solvent plus water, solids, oil, and grease picked up in the various degreasing operations. In most instances, no water is associated with the used solvent; however, at times the water content may

range from a few percentage points to as much as approximately 50 percent. The oily bottoms may range from two percent to ten percent by volume in the used solvent.

Chemically the composition of the solvent fraction in the used mineral spirits solvent is essentially the same as the clean solvent, as shown by analysis. Average flash point of the used solvent, however, is 108.3° F., which is slightly higher than that of the clean solvent.

An estimated 323,000-gallons of used mineral spirits are expected to be shipped to the Recycle Center from this facility for reclamation.

#### I.D.2.b-3 USED IMMERSION CLEANER

The clean chlorinated solvent is labeled under the trade name of "Immersion Cleaner and Carburetor and Cold Parts Cleaner #609." It is a two-phase system consisting of an upper aqueous (water) layer and a lower non-aqueous (solvent) layer. The water phase consists of water and Dresinate TX (a sodium soap of tall oil). The solvent phase is composed of methylene chloride, orthodichlorobenzene, cresylic acid, and an amines additive. A new "Immersion Cleaner and Carburetor and Cold Parts Cleaner #699 is also being leased. It is a heavy aromatic naphtha, N-methyl-2-pyrolidon dipropylene glycol methyl ether, monoethanolamine and oleic acid, and contains a maximum of 1 percent total chlorinated solvents.

The used immersion cleaner is basically unchanged from its clean state, except oil, grease, and other solids may be picked up during the various degreasing operations. The spent solvent is non-flammable. It is regarded as toxic because of the contents of various solvents.

During 1984, 1,040 containers of used immersion cleaner #609 were returned to this Service Center from the customers, and were subsequently shipped to the Recycle Center for reclamation. Less than five gallons of solvent plus seal water is expected to be in each container.



#### I.D.2.b-4 USED MINERAL SPIRITS BOTTOM SLUDGE

This is material settled from used mineral spirits in the aboveground tanks. It contains basically soils, oil and grease, and some water picked up in the degreasing operations, together with a small amount of mineral spirits. Analyses have shown that the sludge is an ignitable waste and might also be considered toxic due to its lead and/or cadmium content.

The sludge is removed from the aboveground tank periodically and shipped to Safety-Kleen's facility for reclamation.

#### I.D.2.b-5 USED MINERAL SPIRITS DUMPSTER MUD

This waste material is accumulated in the wet dumpsters when emptying the used mineral spirits from the containers into the aboveground storage tanks. The nature of this waste is similar to the used mineral spirits bottom sludge, except with some small metal parts and less mineral spirits. It is regarded as an ignitable waste and often is also considered a characteristic waste using TCLP standards.

The sludge in the dumpsters is cleaned out frequently. The waste is containerized and shipped to Safety-Kleen's facility for recycling. Approximately 150 containers of dumpster mud will be removed from this service center per year.

#### I.D.2.b-6 DRY CLEANING WASTES

Solvent used in dry cleaning of clothing is commonly tetrachloroethylene (or perchloroethylene). Hence, wastes generated from dry cleaning operations contain various concentrations of the solvent. Basically, wastes generated by dry cleaning facilities are in the following forms:



- 1. Cartridge Filter: In addition to the construction materials consisting of steel, paper, clay, and carbon, the used cartridge retains solvent, oil and grease, and undissolved elements, such as lint and soil. Solvent retained in the filter cartridge generally amounts to less than 50 percent of the total cartridge weight.
- 2. Muck: At some dry cleaning facilities, a mixture of powdered materials is used as the filter medium for the dry cleaning solvent, in lieu of the cartridge filter. This filter medium normally consists of diatomaceous earth and carbon. In addition to lint, soil, oil and grease retained by this medium, between 40 and 50 percent by weight of the "muck" is absorbed solvent.
- 3. Still Residue: After filtration, the dry cleaning solvent is distilled by the dry cleaning machine to remove the dissolved materials from the used solvent. The dissolved materials (still residues) are in liquid form and consist of primarily detergent, oil and grease, vinyl acetate (a sizing compound) and 20 to 30 percent of solvent.

Exhibit I.D.2-11 shows the Material Safety Data Sheet for tetrachloroethylene (or perchloroethylene) solvent.

Actual observations of containers opened at the recycle center indicate that, on average approximately 20 percent of the contents of dry cleaning waste containers is free liquid. It is expected that this facility will ship 12,000 gallons of dry cleaner waste for reclamation annually.

#### I.D.2.b-7 PAINT WASTES

The paint wastes are collected from facilities where the process is managed and the possibility of cross-contamination from other chemicals or wastes is minimal. The contents of the containers are verified by the sales representative when he services the



O

customer and, comparable to the handling of immersion cleaner, the containers are not reopened until they reach the recycle center.

Paint wastes consist of various lacquer thinners (D001, F003, and F005) and paints (D006, D007, and D008). The waste is collected in containers at the customer's place of business and the containers are then palletized and stored in a designated storage area. It is anticipated that 14,300 gallons of paint waste will be shipped annually.

#### I.D.2.b-8 SPENT ANTIFREEZE

Antifreeze waste is approximately one-third water, and two-thirds antifreeze (ethylene glycol) and contaminants. The antifreeze is collected in containers or in bulk.

#### **1.D.2.b-9** FLUID RECOVERY SERVICE WASTES

Spent industrial solvent wastes received at the facility are classified as characteristic wastes (D-waste codes), non-specific source wastes (F-waste codes), listed wastes from specific sources (K-wastes), commercial chemical products, manufacturing intermediates or off-specification chemical commercial products (U-waste codes). Most of the time, a waste stream will be some combination of specific components, and be categorized as a D- or F- waste. The FRS wastes are collected in containers.



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# SAFETY-KLEEN 105 SOLVENT Exhibit I.D.2-1

#### MATERIAL SAFETY DATA SHEET FOR U.S.A. AND CANADA

#### SECTION I – PRODUCT INFORMATION

#### Safety-Kleen Corp. - 777 Big Timber Road - Elgin, IL, U.S.A. 60123 Safety-Kleen Canada Inc. - 3090 Blvd. Le Carrefour - Suite 300 - Chomedy Laval Quebec, Canada H7T 2J7 For Product Technical Information Call 312-694-2700 (U.S.A.); 800-363-2260 (Eastern Canada); 514-686-2040 (Western Provinces/Call Collect)

24-HOUR EMERGENCY TELEPHONE	MEDICAL:	TRANSPORTATION:
These numbers are for emergency use only. If you desire non-emergency	800-752-7869 (U.S.A.)	708-888-4660 (U.S.A.) SAFETY-KLEEN ENVIRONMENT,
information about this product.	312-942-5969 (CANADA)	HEALTH AND SAFETY DEPARTMENT
blease call a telephone number listed above.	RUSH POISON CONTROL CENTER CHICAGO, ILLINOIS, U.S.A.	613-996-6666 (CANADA) CANUTEC
IDENTITY (TRADE NAME):	SAFETY-KLEEN 105 SOLVENT	
SYNONYMS:	PETROLEUM DISTILLATES, PE	TROLEUM NAPHTHA.

HYDROCARBON SOLVENT

#### PETROLEUM DISTILLATES, PETROLEUM NAPHTHA, MINERAL SPIRITS, STODDARD SOLVENT

6617

#### FAMILY/CHEMICAL NAME:

**PRODUCT USAGE:** 

SK PART NUMBER:

### SOLVENT FOR CLEANING AND DEGREASING PARTS

#### SECTION II - HAZARDOUS COMPONENTS ACGIH TLV OSH.A PEL TWA TWA <u>CAS</u> STEL STEL NAME SYNONYM Wt. % NO. LD50ª LC200 (ppm) (ppm) (ppm) (ppm) Parts Washer Solvent Mineral Spirits (Consists predominantly of C9-C13 Saturated Hydrocarbons) 85.0 64741-41-9 100 \*\* N.Av. 100 \*\* N.Av. > 5000\*\* 3400\*\* C3+ Aromatics 12.0 N.Av. Mixture N.Av. N.Av. N.Av. N.Av. N.Av. \*Toluene 0.5 108-88-3 5000 4000 100 150 100 150 \*Xylene 1.0 1330-20-7 100 150 100 150 4300 5000 \*Ethyl Benzene 0.5 100-+1---100 125 100 125 3500 4000° 0-0.5\*\*\* \*1,1,1 Trichloroethane Methyl Chioroform 71-55-6 350 450 350 450 10300 13000 \*Perchloroethylene Tetrachloroethylene 0-0.5 \*\*\* 127-18---25 4000° 200 2529 N.Av. 50 Total Chlorinated Solvents . 0-1.0\*\*\*

N.Av. = Not available.

<sup>a</sup> Orai-Rat LD50 (mg/kg)

See Section X - Other Regulatory Information
 For Stocdard Solvent

<sup>b</sup> Inhalation-Rat LC50 (ppm/4 hours)

<sup>2</sup> Innaiation-Rat LCLo, ppm. 4 hours.

\*\*\* Even though the concentration range coes not fail under the ranges prescribed by WHMIS, this is the coucil range which varies with each baten of the product.



# SECTION III - PHYSICAL DATA

PHYSICAL STATE,				
APPEARANCE AND ODOR:	Combustible liquid, clear, green, with characteristic hydrocarbon odor.			
ODOR THRESHOLD:	Not available.			
BOILING POINT:	304-435°F (151-224°C).			
VAPOR PRESSURE:	2 mm Hg at 63°F (20°C).			
FREEZING POINT:	Not available.			
EVAPORATION RATE:	0.1 (Butyl Acetate = 1).			
VOLATILE:	99.9%			
VOLATILE ORGANIC COMPOUNDS:	6.4 to 6.7 lbs/gal; 770 to 300 g/l			
DENSITY:	Not available.			
VAPOR DENSITY:	4.9 (Air = 1).			
SOLUBILITY IN WATER:	Negligible.			
рH:	Not applicable.			
SPECIFIC GRAVITY:	0.77 to 0.80 at 60/60°F (16/16°C) (Water = 1).			
COEFFICIENT OF WATER/OIL DISTRIBUTION:	Not available.			
MOLECULAR WEIGHT:	142 (Approximately).			
SECTION IV	FIRE AND EXPLOSION HAZARD DATA			
FLASH POINT:	105°F (41°C) SETA			
AUTOIGNITION TEMPERATURE:	473°F (245°C).			
• CONDITIONS OF FLAMMABILITY:	Materials must be moderately heated before ignition can occur.			
FLAMMABLE LIMITS IN AIR:	LOWER: 0.7 Vol. % UPPER: 6.0 Vol. %			
UNUSUAL FIRE AND EXPLOSION HAZARDS:	Decomposition and combustion products may be toxic. Heated containers			
	may rupture, explode or be thrown into the air. Vapors are heavier than air and may travel great distances to ignition source and flash back. Not sensitive to mechanical impact. Material may be sensitive to static discharge, which could result in fire or explosion.			
EXTINGUISHING MEDIA:	may rupture, explode or be thrown into the air. Vapors are heavier than air and may travel great distances to ignition source and flash back. Not sensitive to mechanical impact. Material may be sensitive to static discharge, which could result in fire or explosion. Carbon dioxide, foam, dry chemical, water (mist only).			
EXTINGUISHING MEDIA: FIRE FIGHTING PROCEDURES SPECIAL:	<ul> <li>may rupture, explode or be thrown into the air. Vapors are heavier than air and may travel great distances to ignition source and flash back. Not sensitive to mechanical impact. Material may be sensitive to static discharge, which could result in fire or explosion.</li> <li>Carbon dioxide, foam, dry chemical, water (mist only).</li> <li>NFPA 704 Rating 0-2-0</li> <li>Keep storage containers cool with water spray. Use self-contained breathing apparatus (SCBA).</li> </ul>			

#### SECTION V - REACTIVITY DATA

#### STABILITY:

Stable under normal temperatures and pressures, and not reactive with water.

INCOMPATIBILITY (MATERIALS AND CONDITIONS TO AVOID):

HAZARDOUS POLYMERIZATION:

Avoid oxidizing agents, flames, sparks and high temperatures.

Not known to occur under normal temperatures and pressures.

HAZARDOUS DECOMPOSITION PRODUCTS:

Normaily none.

# SECTION VI – HEALTH HAZARD DATA AND TOXICOLOGICAL PROPERTIES

PRIMARY ROUTES OF EXPOSURE:

Eye and skin contact: inhalation.

EXPOSURE LIMITS:

See Section II.

SIGNS AND SYMPTOMS OF EXPOSURE:

ACUTE:

Eyes: Contact may cause slight to moderate irritation. High vapor concentrations ( > 500 ppm; are irritating to the eyes.

Skin: Prolonged or repeated contact tends to remove skin oils, possibly leading to irritation and dermatitis. No significant skin absorption hazard.

Inhalation (Breathing): High concentrations of vapor or mist may be irritating to the respiratory tract, cause headaches, dizziness, nausea, impaired coordination, anesthesia and may have other central nervous system effects.

Ingestion (Swallowing): Low order of acute oral toxicity. May cause irritation of the throat, nausea, vomiting and symptoms of central nervous system depression. Aspiration into the lungs during ingestion or vomiting may cause mild to severe pulmonary injury and possibly death.

CHRONIC: Prolonged and/or repeated skin contact may cause drying and cracking or dermatitis.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Individuals with pre-existing central nervous system dysfunction may have increased susceptibility to the effects of exposure. Contact with skin may aggravate pre-existing dermatitis.

CARCINOGENICITY: IARC classifies chemicals by their carcinogenic risk, including agents that are known, probable, or possible carcinogens. NTP classifies chemicals as either known carcinogens or for which there is a limited evidence of carcinogenicity in humans or sufficient evidence of carcinogenicity in experimental animals.

Perchloroethylene is listed by IARC as a possible carcinogen and is classified by NTP as having limited evidence of carcinogenicity in humans or sufficient evidence of carcinogenicity in experimental animals.

OTHER POTENTIAL HEALTH HAZARDS: The following information is required by Canadian WHMIS regulations. Irritancy is covered in Signs and Symptoms of Exposure in Section VI. There is no known human sensitization or toxicologically synergistic product. Xylene has demonstrated experimental effects for reproductive toxicity, mutagenicity and teratogenicity. Studies indicate Ethylbenzene and 1111-Trichloroethane are experimental teratogens.

#### SECTION VIL -- EMERGENCY AND FIRST AID PROCEDURES

EVES

SKLV:

For direct contact, fluch eyes with water for 15 minutes lifting upper and lower lids cocastonally. If irritation or redness from exposure to vapors or mists develops, move victim away from exposure into fresh air. Consult physician if irritation or pain persists.

Remove contaminated clothing. Wash skin twice with soap and water. If irritation or paindevelops and persists, consult a physician.
INHALATION: (Breathing) Remove to fresh air immediately. Use oxygen if there is difficulty breathing or artificial respiration if breathing has stopped. Do not leave victim unattended. Seek immediate medical attention if necessary.

INGESTION: (Swallowing) If conscious, drink 4 to 8 ounces of water and seek immediate medical attention. DO NOT induce vomiting.

### SECTION VIII – PRECAUTIONS FOR SAFE USE AND HANDLING AND PREVENTIVE MEASURES

SPILL Remove all ignition sources. Ventilate area and avoid breathing vapors. For large spills, isolate area and deny entry. If possible, contain as a liquid for possible re-refining. Absorb with compatible absorbent material. Shovel into closable container for disposal. Wear protective equipment specified in Section IX. Contain away from surface waters and sewers.

WASTE DISPOSALDispose in accordance with Federal, State, Provincial and local regulations. ContactMETHODS:Safety-Kleen regarding recycling or proper disposal.

**HANDLING** Avoid contact with eyes, skin or clothing. Use in well ventilated area and avoid breathing PRECAUTIONS: vapors or mists. Keep away from heat, sparks and flames.

SHIPPING ANDKeep container tightly closed when not in use and during transport. Empty product containersSTORINGmay contain product residue. Do not pressurize, cut, heat, weld, grind or expose containersPRECAUTIONS:to flame or other sources of ignition.

PERSONAL HYGIENE: Use good personal hygiene. Wash thoroughly with soap and water after handling and before eating, drinking or using tobacco products. Launder contaminated clothing and clean protective equipment before reuse.

### SECTION IX - CONTROL MEASURES AND OTHER PREVENTIVE MEASURES

EYEWhere there is likelihood of spill or splash, wear chemical goggles and faceshield. ContactPROTECTION:lenses should not be worn.

PROTECTIVE GLOVES:

Use nitrile or neoprene gloves to prevent contact with skin.

**RESPIRATORY PROTECTION:** Use NIOSH/MSHA-approved respiratory protective equipment when concentration of vapors or mists exceeds applicable exposure limit. Depending on the airborne concentration, use a respirator or gas mask with appropriate cartridges and canisters. A self-contained breathing apparatus (SCBA) is required for large spills and emergencies. Selection and use of respiratory protective equipment should be in accordance in the U.S.A. with OSHA General Industry Standard 29 CFR 1910.134 and in Canada with CSA Standard Z94.4-M1982.

ENGINEERING CONTROLS: Provide local exhaust or general dilution ventilation needed to maintain concentrations of vapors or mists below applicable exposure limits. Where explosive mixtures may be present, systems safe for such locations should be used.

OTHER PROTECTIVE EQUIPMENT:

E Wear appropriate solvent-resistant boots, apron or other protective clothing where spills and splashes are possible. A source of clean water should be available in work areas for flushing the eyes and skin.

### SECTION X – OTHER REGULATORY INFORMATION

DOT PROPER SHIPPING NAME:

PETROLEUM NAPHTHA COMBUSTIELE LIQUID

DOT CLASS:

DOT ID NUMBER:

UN1255

SARA TITLE III:

Product contains toxic chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372. Toxic constituents are listed with an asterisk in Section II of this Material Safety Data Sheet.

Product poses the following physical and/or health hazards as defined in 40 CFR 370.3 (Sections 311, 312 of SARA Title III):

Immediate (Acute) Health Hazard Delayed (Chronic) Health Hazard Fire Hazard

TDGA:

WHMIS CLASSIFICATION:

NAPHTHA, PETROLEUM CLASS 3.3, UN1255, P.G. III

Class B3, Combustible Liquid; Class D2A, Other Toxic Effects, Very Toxic Material; Class D2B, Other Toxic Effects, Toxic Material

### SECTION XI – PREPARATION INFORMATION

PREPARED BY: Product MSDS Coordinator

FORM PART NO. 32310

ORIGINAL ISSUE DATE: July 20, 1989

REVISED: December 14, 1990

SUPERSEDES: March 12, 1990

User assumes all risks incident to the use of this product. To the best of our knowledge, the information contained herein is accurate. However, Safety-Kleen assumes no liability whatsoever for the accuracy or completeness of the information contained herein. No representations or warranties, either expressed or implied, or merchantability, fitness for a particular purpose or of any other nature are made hereunder with respect to information or the product to which information refers. The data contained on this sneet apply to the material as supplied to the user.

## IMMERSION CLEANER/CARBURETOR AND COLD PARTS CLEANER 609

### MATERIAL SAFETY DATA SHEET

Exhibit I.D.2-2

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## SECTION I -- PRODUCT INFORMATION

Safety-Kleen Corporation - 777 Big Timber Road - Elgin, IL 60123 For Product/Sales Information Call 708/697-8460

EMERGENCY TELEPHONE	MEDICAL:	TRANSPORTATION:
These numbers are for emergency use only. If you desire non-emergency information about this product, please call the telephone number listed above.	800/942-5969 or 312/942-5969 RUSH POISON CONTROL CENTER CHICAGO, ILLINOIS (24 HOURS)	800/424-9300 CHEMTREC

#### IDENTITY (TRADE NAME):

#### IMMERSION CLEANER/CARBURETOR AND COLD PARTS CLEANER 609

SK PART NUMBER:

609, 6631, 50

N/A

FAMILY/CHEMICAL NAME:

**PRODUCT USAGE:** 

#### **REMOVING CARBON RESIDUE FROM PARTS**

SECTION II -- HAZARDOUS COMPONENTS

NAME	SYNONYM	- <u>q</u>	- CAS <u>NO.</u>	OSHA PEL (ppm)	ACGIH TLV (ppm)
Cresylic Acid	Mixed Cresols	- 11.9	1319-77-3	5 (Skin)	5 (Skin)
Perroleum Sulfonate Contains: Hexylene Glycol Diethylene Glycol	Surfactant Blend	7.4	107-41-5 111-46-6	25(C) N/E	25(C) N/E
*Methylene Chloride	Dichloromethane	31.7	75-09-2	500 1000(C)	50
Di-chlorobenzenes: • (o-dichlorobenzene) • (p-dichlorobenzene) • (m-dichlorobenzene)	ODCB	10 <i>.5</i> 10.5 10.5	95-50-1 106-46-7 541-73-1	50(C) 75 110 STEL NÆ	50(C) 75 110 STEL N/E
Complex Amines Contains: Propargyl Alcohol *Isopropyl Alcohol	Rust Inhibitor	0.4	107-19-7 67-ර3-0	1 (Skin) 400 500 STEL	1 (Skin) 400 500 STEL
Triethanolamine	TEA	0.4	102-71-6	N/E	N/E
Water		16.3	7732-18-5	N/E	N/E

• See Section X - Other Regulatory Information N/E = Not Established

(C) = Cailing Concentration

## SECTION III -- PHYSICAL DATA

PHYSICAL STATE, APPEARANCE AND ODOR: Liquid - clear, dark amber, with aromatic odor. Two distinct layers comprise the product; top layer water, lower layer solvent.

**BOILING POINT:** 

102° - 395° F

MELTING POINT:	Not known
EVAPORATION RATE:	1.0 (Water = 1)
PERCENT VOLATILE:	Majority
VAPOR DENSITY:	Same as Water
VAPOR PRESSURE:	Same as Water
SOLUBILITY IN WATER:	Completely miscible in all proportions.
pH:	9-10 in water phase
SPECIFIC GRAVITY:	1.19 (Water = 1.0)
MOLECULAR WEIGHT:	Use molecular weights of individual components.
VOLATILE ORGANIC COMPOUNDS:	750 g/L

### SECTION IV -- FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:

Non-Flammable

Non-Flammable

Non-Flammable

None Special

Not Known

CONDITIONS OF FLAMMABILITY:

AUTOIGNITION TEMPERATURE:

FLAMMABLE LIMITS IN AIR - LOWER:

EXTINGUISHING MEDIA:

FIRE FIGHTING PROCEDURES - SPECIAL: None; product is non-flammable. NFPA 704 Rating 3-2-0

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Although product is non-flammable, flames, welding arcs or other high temperature sources can cause decomposition. This decomposition can yield corrosive and toxic gases, vapors mists or fumes. Use a self-contained breathing apparatus (SCBA).

UPPER: Non-Flammable

#### HAZARDOUS COMBUSTION PRODUCTS:

Although product is non-flammable, flames, welding arcs or other high temperature sources can cause decomposition. This decomposition can yield corrosive and toxic gases, vapors, mists or fumes (e.g. hydrogen chloride, phosgene, carbon monoxide, etc.)

### SECTION V -- REACTIVITY DATA

#### STABILITY:

INCOMPATIBILITY: (CONDITIONS TO AVOID)

HAZARDOUS POLYMERIZATION:

HAZARDOUS DECOMPOSITION PRODUCTS:

Normally stable.

Strong oxidizing agents (e.g. chlorine, peroxides, strong acids)

Not known to occur under normal conditions.

Normally none; however, flames and weiding arcs can produce corrosive and toxic gases, vapors and fumes (e.g. hydrogen chloride, phosgene, carbon monoxide).

## SECTION VI -- HEALTH HAZARD DATA

PRIMARY ROUTES OF EXPOSURE:

Inhalation, skin and eye contact, skin absorption.

#### HEALTH HAZARD DATA/SIGNS AND SYMPTOMS OF EXPOSURE:

ACUTE:

Skin: Corrosive to living tissue and is rapidly absorbed through the skin causing systemic poisoning. Contact with unprotected skin can cause discoloration, irritation, blistering and slow healing chemical burns. Partial anesthetic properties may mask affects.

Eyes: Contact with liquid may cause severe chemical burns and produce permanent damage.

Inhalation: May result in severe respiratory irritation; gastrointestinal distress (nausea, vomiting), central nervous system depression (headache, drowsiness, dizziness, confusion) and tingling or numbress of the extremities. Severe exposures may lead to respiratory failure, coma and death.

*Ingestion*: May produce burning pain in the mouth and stomach, severe abdominal pain with nausea, vomiting, slow respiration and irregular pulse, and dark blue skin discoloration. Symptoms similar to those for inhalation also may occur.

CHRONIC: Exposure to high concentrations may lead to damage to the liver, kidneys and lungs. Contact with skin may cause dermatitis, gastrointestinal disorders and produce symptoms similar to those for inhalation.

#### **OTHER POTENTIAL HEALTH HAZARDS:**

Metabolism of methylene chloride may elevate carboxyhemoglobin levels.

MEDICAL CONDITION AGGRAVATED BY	S
LAI OSURE.	susceptibility to the effects of exposure. Contact with skin may aggravate pre-existing dermatitis.
CARCINOGENICITY:	Methylene chloride is listed by NTP and IARC as a suspected carcinogen. P-dichlorobenzene is listed by IARC as a suspected carcinogen.

#### SECTION VII -- EMERGENCY AND FIRST AID PROCEDURES

- ES: For direct contact, flush eyes with clean water for 15 minutes lifting upper and lower lids occasionally. Consult physician if irritation persists. If irritation or redness from exposure to vapors or mists develop, move victim away from exposure and into fresh air.
- SKIN: Remove contaminated clothing. Wash skin twice with soap and water. If irritation develops and persists, consult a physician.
- *INGESTION:* Aspiration hazard. If conscious, dilute with 4 to 8 ounces of water and seek immediate medical attention. DO NOT induce vomiting.

INHALATION: Remove to fresh air immediately. Use oxygen if there is difficulty breathing or artificial respiration if respiration has stopped. Do not leave victim unattended. Seek immediate medical attention if necessary.

### SECTION VIII -- PRECAUTIONS FOR SAFE USE AND HANDLING

SPILL PROCEDURES:

URES: Ventilate area and avoid breathing vapors. Absorb spill with oil absorbent or soda ash. Catch and collect for recovery as soon as possible. Shovel into closable container for disposal. Wear protective equipment specified below. Contain away from surface waters and sewers.

WASTE DISPOSAL METHODS:

Dispose in accordance with Federal. State and local regulations. Contact Safety-Kleen regarding recycling.



HANDLING PRECAUTIONS:

Keep away from heat, sparks and open flames. Use adequate ventilation. Avoid contact with skin, eyes and clothing. Avoid breathing vapors.

SHIPPING AND STORING PRECAUTIONS:

PERSONAL HYGIENE: Empty product containers may contain product residue. Do not pressurize, cut, heat, weld, grind or expose containers to flame or other sources of ignition. Keep container tightly closed when not in use and during transport.

Use good personal hygiene. Wash thoroughly with soap and water after handling and before eating, drinking or using tobacco products.

## SECTION IX - CONTROL MEASURES

**VENTILATION:** Provide local exhaust or general dilution ventilation, as determined necessary, to maintain concentrations of vapors below applicable exposure limits.

**PROTECTIVE GLOVES:** Wear Viton gloves to prevent skin contact.

EYE PROTECTION: Where there is a likelihood of contact with the face and/or eyes, wear a faceshield and chemical goggles. Contact lenses should not be worn.

RESPIRATORY PROTECTION:

Use NIOSH-approved respiratory protective equipment when concentration of vapors exceeds applicable exposure limit. Depending on the airborne concentration, use a respirator or gas mask with appropriate cartridges or canisters (for organic vapors). A self-contained breathing apparatus (SCBA) is required for large spills and emergencies. Selection and use of respiratory protective equipment should be in accordance with OSHA General Industry Standard 29 CFR 1910.134 - Respiratory Protection.

OTHER PROTECTIVE EQUIPMENT:

A source of clean water should be available in the work area for flushing eyes and skin. Wear solvent-resistant boots, apron or other protective clothing where spills or splashes are possible.

### SECTION X -- OTHER REGULATORY INFORMATION

DOT PROPER SHIPPING NAME:

Compound, Cleaning Liquid

DOT CLASS:

DOT ID NUMBER:

SARA TITLE III:

. .

Corrosive Liquid

NA1760

Product contains a toxic chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372. Toxic constituents are listed with an asterisk in Section II of this Material Safety Data Sheet.

Product poses the following physical and/or health hazard(s) as defined in 40 CFR 370.3 (Sections 311, 312 of SARA Title III):

Immediate (Acute) Health Hazard Delayed (Chronic) Health Hazard

## SECTION XI -- PREPARATION INFORMATION

PREPARED BY:

SK Product Review Committee

FORM NO. 900-14-002

ORIGINAL ISSUE DATE: July 20, 1989 REVISED: December 1, 1989 SUPERSEDES: July 20, 1939

User assumes all risks incident to the use of this product. To the best of our knowledge, the information contained herein is accurate. However, Safety-Kleen assumes no liability whatsoever for the accuracy or completeness of the information contained herein. No representations or warranter, while express or implied, or merchantability, fitness for a particular purpose or of any other patters are made hereinder with respect to information or the product to whith information refers. The data contained on this sheet applies to the material as supplied to the user.

# SAFETY-KLEEN IMMERSION CLEANER AND COLD PARTS CLEANER 699

## MATERIAL SAFETY DATA SHEET

Exhibit I.D.2-3

### SECTION I -- PRODUCT INFORMATION

Safety-Kleen Corporation - 777 Big Timber Road - Elgin, IL 60123 For Product/Sales Information Call 708/697-3460

	EMERGENCY TELEPHONE	MEDICAL:	TRANSPORTATION:	
These numbers are for emergency use only. If you desire non-emergency information about this product, please call the telephone number listed above.		800/942-5969 or 312/942-5969 RUSH POISON CONTROL CENTER CHICAGO, ILLINOIS (24 HOURS)	800/424-9300 CHEMTREC	
IDENTIT	Y (TRADE NAME):	SAFETY-KLEEN IMMERSION CLEAN PARTS CLEANER 699	NER AND COLD	

SK PART NUMBER:

6861, 699

N/A

FAMILY/CHEMICAL NAME:

REMOVING CARBON RESIDUE FROM PARTS

PRODUCT USAGE:

# SECTION II -- HAZARDOUS COMPONENTS

YE.	SYNONYM	TYPICAL <u>% BY WT</u> .	CAS NO.	OSHA PEL (pom)	ACGIH TLY (pom)
Aromatic 150	Heavy Aromatic Naphtha		64742-94-5	100 (Exron)	100 (Exton)
*(May contain up to 5% Naphth	ualene)		91-20-3	10 15 STEL	10 15 STEL
N-Methyl-2-Pyrrolidone	NMP		872-50-4	100 (BASF)	100 (BASF)
Dipropylene Glycol Methyl Ether	Dipropylene Glycol Monomethyl Ether		34590-94-8	100 150 STEL	100 150 STEL
Monoethanolamine	Ethanolamine		141-43-5	3 6 STEL	3 6 STEL
Oleic Acid	Red Oil		112-80-1	N/E	N/E
Water			7732-18-5		-
**(Total chlorinated solvents)		1.0 (Max)			

N/E = Not Established

\* See Section X - Other Regulatory Information

\*\*May contain methylene chloride and/or tetrachioroethylene in concentrations > 0.1%

### SECTION III -- PHYSICAL DATA

Clear, reddish brown liquid with hydrocarbon odor.

PHYSICAL STATE, APPEARANCE AND ODOR: "OILING RANGE: "MELTING POINT:

EVAPORATION RATE:

 $< 10^{\circ} F$ 1.0 (Water = 1)

210° - 439° F

PERCENT VOLATILE:	92 WL %
VAPOR DENSITY:	2.6 (Air = 1.0)
APOR PRESSURE:	10.9 mm Hg at 25° C
SOLUBILITY IN WATER:	Completely miscible in all proportions.
pH:	10.8, 50/50 (Water/Solvent)
SPECIFIC GRAVITY:	0.95 (Water = 1.0)
MOLECULAR WEIGHT:	127, Average molecular weight of components.
VOLATILE ORGANIC COMPOUNDS:	N/E

## SECTION IV -- FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:

SETA, 142° F (Min.)

AUTOIGNITION TEMPERATURE:

Ignitable, if material is heated above its flash point.

**UPPER:** 7.0

FLAMMABLE LIMITS IN AIR - LOWER:

CONDITIONS OF FLAMMABILITY:

EXTINGUISHING MEDIA:

None Special

Not Known

0.8

FIRE FIGHTING PROCEDURES - SPECIAL: NFPA 704 Rating 2-2-0

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Decomposition and combustion products may be toxic. Heated tanks may rupture, explode or be thrown into the air. Vapors are heavier than air and may travel great distances to ignition source and flashback.

### HAZARDOUS COMBUSTION PRODUCTS:

Thermal decomposition and burning may produce carbon monoxide, oxides of nitrogen and acrid smoke.

## SECTION V -- REACTIVITY DATA

STABILITY:

Normally stable.

INCOMPATIBILITY: (CONDITIONS TO AVOID) Strong oxidizing agents (e.g. chlorine, peroxides, strong acids)

HAZARDOUS POLYMERIZATION:

Not known to occur under normal conditions, oxides of nitrogen and acrid smoke. Glycol ethers have been shown to form explosive peroxides.

HAZARDOUS DECOMPOSITION PRODUCTS: Normally none; however, incomplete burning may yield carbon monoxide.

### SECTION VI -- HEALTH HAZARD DATA

PRIMARY ROUTES OF EXPOSURE:

Inhalation, skin and eye contact, skin absorption.

HEALTH HAZARD DATA/SIGNS AND SYMPTOMS OF EXPOSURE:

ACUTE: Skin: Corrosive to living tissue and is absorbed through the skin causing systemic poisoning. Contact with unprotected skin can cause discoloration, irritation, blistering and slow healing chemical burns.

Eyes: Contact with liquid may cause severe chemical burns and produce permanent damage.



Inhalation: May result in severe respiratory irritation; gastrointestinal distress (nausea, vomiting), central nervous system depression (headache, drowsiness, dizziness, confusion) and tingling or numbness of the extremities. Severe exposures may lead to respiratory failure, coma and death.

*Ingestion*: May produce burning pain in the mouth and stomach, severe abdominal pain with nausea, vomiting, slow respiration and irregular pulse. Symptoms similar to those for inhalation also may occur.

CHRONIC: Exposure to high concentrations may lead to damage to the liver, kidneys and lungs. Contact with skin may cause dermatitis, gastrointestinal disorders and produce symptoms similar to those for inhalation.

#### OTHER POTENTIAL HEALTH HAZARDS:

Dipropylene glycol methyl ether is a mild allergen.

MEDICAL CONDITION AGGRAVATED BY	S
EXPOSURE:	Individuals with pre-existing liver, kidney, lung or cardiovascular dysfunction may have increased
	susceptibility to the effects of exposure. Contact with skin may aggravate pre-existing dermatitis.

CARCINOGENICITY: Naphthalene is an experimental tumorigen. Mutagenic data exists and Naphthalene is included in EPA Genetic Toxicology Program. Oleic acid is an experimental tumorigen. Methylene Chloride and Tetrachloroethylene are listed by IARC and NTP as suspected carcinogens.

### SECTION VII -- EMERGENCY AND FIRST AID PROCEDURES

EYES:

IN:

For direct contact, flush eyes with clean water for 20 minutes lifting upper and lower lids occasionally. Consult physician if irritation persists. If irritation or redness from exposure to vapors or mists develop, move victim away from exposure and into fresh air. ¢

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Remove contaminated clothing. Wash skin twice with soap and water. If irritation develops and persists, consult a physician.

*InvGESTION:* Aspiration hazard. If conscious, dilute with 4 to 8 ounces of water and seek immediate medical attention. DO NOT induce vomiting.

INHALATION: Remove to fresh air immediately. Use oxygen if there is difficulty breathing or artificial respiration if respiration has stopped. Do not leave victim unattended. Seek immediate medical attention if necessary.

### SECTION VIII -- PRECAUTIONS FOR SAFE USE AND HANDLING

SPILL PROCEDURES:	Ventilate area and avoid breathing vapors. Absorb spill with oil absorbent or soda ash. Catch and collect for recovery as soon as possible. Shovel into closable container for disposal. Wear protective equipment specified below. Contain away from surface waters and sewers.
WASTE DISPOSAL METHODS:	Dispose in accordance with Federal, State and local regulations. Contact Safety-Kleen regarding recycling.
HANDLING PRECAUTIONS:	Keep away from heat, sparks and open flames. Use adequate ventilation. Avoid contact with skin, eyes and clothing. Avoid breathing vapors.
SHIPPING AND STORING RECAUTIONS:	Empty product containers may contain product residue. Do not pressurize, cut, heat, weld, grind or expose containers to flame or other sources of ignition. Keep container tightly closed when not in use and during transport.
A LRSONAL HYGIENE:	Use good personal hygiene. Wash thoroughly with soap and water after handling and before eating, drinking or using tobacco products.

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### SECTION IX - CONTROL MEASURES

chemical goggles. Contact lenses should not be worn.

VENTILATION:

ATION: Provide local exhaust or general dilution ventilation, as determined necessary, to maintain concentrations of vapors below applicable exposure limits.

PROTECTIVE GLOVES: Wear neoprene gioves to prevent skin contact.

EYE PROTECTION:

RESPIRATORY PROTECTION:

Use NIOSH-approved respiratory protective equipment when concentration of vapors exceeds applicable exposure limit. Depending on the airborne concentration, use a respirator or gas mask with appropriate cartridges or canisters (for organic vapors). A self-contained breathing apparatus (SCBA) is required for large spills and emergencies. Selection and use of respiratory protective equipment should be in accordance with OSHA General Industry Standard 29 CFR 1910.134 - Respiratory Protection.

Where there is a likelihood of contact with the face and/or eyes, wear a faceshield and

OTHER PROTECTIVE EQUIPMENT:

A source of clean water should be available in the work area for flushing eyes and skin. Wear solvent-resistant boots, apron or other protective clothing where spills or splashes are possible.

## SECTION X -- OTHER REGULATORY INFORMATION

DOT PROPER SHIPPING NAME:

DOT CLASS:

Corrosive Liquid

Compound, Cleaning Liquid

NA1760

SARA TITLE III:

DOT ID NUMBER:

Product contains a toxic chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372. Toxic constituents are listed with an asterisk in Section II of this Material Safety Data Sheet.

Product poses the following physical and/or health hazard(s) as defined in 40 CFR 370.3 (Sections 311, 312 of SARA Title III):

Immediate (Acute) Health Hazard Delayed (Chronic) Health Hazard Fire Hazard Reactivity Hazard

### SECTION XI -- PREPARATION INFORMATION

PREPARED BY:SK Technical ServicesFORM NO.900-14-057ORIGINAL ISSUE DATE:December 1, 1989REVISED: July 13, 1990SUPERSEDES: April 6, 1990

User assumes all risks incident to the use of this product. To the best of our knowledge, the information contained herein is accurate. However, Safety-Kleen assumes no liability whatsoever for the accuracy or completeness of the information contained herein. <u>No representation or warranties, either express or implied</u>, or merchantability, fitness for a particular purpose or of any other nature are made hereunder with respect to information or the product to which information refers. The data contained on this sheet applies to the material as supplied to the user.

## PERCHLOROETHYLENE

## MATERIAL SAFETY DATA SHEET FOR U.S.A. AND CANADA

## SECTION 1 -- PRODUCT INFORMATION

#### Safety-Kleen Corp. - 777 Big Timber Road - Elgin, IL, U.S.A. 60123 Safety-Kleen Canada Inc. - 3090 Blvd. Le Carrefour - Suite 300 - Chomedy Laval Quebec, Canada H7T 2J7 For Product Technical Information Call 312-694-2700 (U.S.A.); 800-363-2260 (Eastern Canada); 514-686-2040 (Western Provinces/Call Collect)

24-HOUR EMERGENCY TELEPHONE	MEDI	C.4L:		TRAN	SPORTATION:	· · · · · · · · ·	
These numbers are for emergency use	800-752-	800-752-7869 (U.S.A.)		708-838-4660 (T.S.A.)			
only. If you desire non-emergency				SAFETY-KLEEN ENVIRONMENT.			
please call a telephone number listed above.	RUSH POISON CHICAGO, ILI	CONTROL C	CENTER	613-996-66666 (CANADA) CANUTEC		(ADA)	
IDENTITY (TRADE NAME):	PERCHLOROETHYLENE						
SYNONYMS:	TET	RACHLOF	ROETHYLEN	E			
SK PART NUMBER:	775.	10778, 307	78				
FAMILY/CHEMICAL NAME:	CHI	LORINATE	D HYDROCA	RBON			
PRODUCT USAGE:	DR	Y CLEAND	NG SOLVENT	•			-
MSDS FORM PART NO.:	823-	42					
SI	ECTION 2 H	AZARDO	US COMP(	ONENTS			
NAME <u>SYNONYM</u>	<u>CAS</u> Wt. & <u>NO.</u>	<u>OSF</u> <u>TWA</u>	HA PEL STEL	ACGI TWA	<u>H TLV</u> <u>STEL</u>	<u>LD50</u> ª	LC50 <sup>3</sup>
•Perchloroethylene Tetrachloroethylen	e 99.5-100 127-13-÷	ppm 25	ppm N.Av.	50 50	ррт 200	2629	34200
N.Av. = Not Available •See Section 10-Other Regulatory Informatio	<sup>1</sup> Oral-Rat LD50 <sup>b</sup> Inhalation-Rat	) (mg/kg) LC50 (mg/m <sup>3</sup> )	'S hours)				
	SECTION	3 PHY	SICAL DA	ГА			
PHYSICAL STATE,							
APPEARANCE AND ODOR:	Clear, color	iess, liquid v	vith a mild ethe	er-like odor.			
ODOR THRESHOLD:	50ppm (For Perchloroethylene).						
BOILING POINT:	250°F-121°C For Barohiomethylenes.						
VAPOR PRESSURE:	14mm Highlich (F. 2010) - For Perland roethy lene (						
FREEZING POINT:	-7.6°F -22°C For Perchlorpethylene .						
EVAPORATION RATE:	2.3 Eury) a	electric = 1	Eur Perunuan	etty (ette .			

100 -

VOLATILE ORGANIC COMPOUNDS: 13.5 ibs/gal: 1523 g 1

DENSITY:

NOLATILE:

13.5 lbs cal. For Perchloroethylenes.

VAPOR DENSITY:	5.7 (Air = 1) (For Perchloroethylene).
SEBILITY IN WATER:	Slight (For Perchloroethylene).
рН	7-10
SPECIFIC GRAVITY:	1.523 (Water = 1) (For Perchloroethylene).
COEFFICIENT OF WATER/OIL DISTRIBUTION:	Not available.
MOLECULAR WEIGHT:	165.8 (For Perchloroethylene).

### SECTION 4 -- FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:	Not applicable.
AUTOIGNITION TEMPERATURE:	Not applicable.
CONDITIONS OF FLAMMABILITY:	Heat, sparks and flame.
FLAMMABLE LIMITS IN AIR:	LOWER: Not applicable. UPPER: Not applicable.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	Decomposition and combustion products may be toxic. Heated containers may rupture, explode or be thrown into the air. Not sensitive to mechanical impact or static discharge.
EXTINGUISHING MEDIA:	Carbon dioxide, dry chemical.
CEDURES SPECIAL:	Perchloroethylene NFPA 704 Rating 2-0-0 Keep storage containers cool with water spray. Use self-contained breathing apparatus (SCBA).
HAZARDOUS COMBUSTION PRODUCTS:	Thermal decomposition and burning may produce phosgene, chloride fumes and carbon monoxide.

## SECTION 5 -- REACTIVITY DATA

ST.ABILITY: -

Stable under normal temperatures and pressures, and not reactive with water.

Avoid alkalies. May form explosive mixtures with metals and alkaline

INCOMPATIBILITY (MATERIALS AND CONDITIONS TO AVOID):

HAZARDOUS POLYMERIZATION:

Not known to occur under normal temperatures and pressures.

HAZARDOUS DECOMPOSITIONNone under normal temperatures and pressures. However, thermal<br/>decomposition may produce phosgene chloride fumes and carbon monoxide.

materials.

### SECTION 6 -- HEALTH HAZARD DATA AND TOXICOLOGICAL PROPERTIES

PRIMARY ROUTES OF EXPOSURE:

Eye and skin contact: inhalation.

EXPOSURE LIMITS:

See Section 1.

NS AND SYMPTOMS OF EXPOSURE:

ACUTE: Even Cona

TE: Eyes: Contact may cause slight to moderate irrutation.

Skin: Prolonged or repeated contact tends to remove skin oils, possibly leading to trutation and dermitties. M significant skin absorption hazard.

Inhalation (Breathing): High concentrations of vapor or mist may be irritating to the respiratory tract, cause headaches, dizziness, nausea, impaired coordination, anesthesia and may have other central nervous system effects.

Ingestion (Swallowing): May cause irritation of the throat, nausea, vomiting and symptoms of central nervous system depression. Aspiration into the lungs during ingestion or vomiting may cause mild to severe pulmenary injury and possibly death.

CHRONIC:

Repeated or prolonged exposure may cause conjunctivitis. Prolonged and or repeated skin contact may cause drying and cracking or dermatitis. Repeated inhalation may cause respiratory tract irritation, central nervous system depression, liver and kidney damage.

Individuals with pre-existing skin, eye, liver, kidney, cardiovascular or central nervous system MEDICAL CONDITIONS AGGRAVATED BY dysfunction may have increased susceptibility to the effects of exposure. Contact with skin may EXPOSURE: aggravate pre-existing dermatitis.

CARCINOGENICITY: IARC classifies chemicals by their carcinogenic risk, including agents that are known, probable or possible carcinogens. NTP classifies chemicals as either known carcinogens or for which there is a limited evidence of carcinogenicity in humans or sufficient evidence of carcinogenicity in experimental animals.

> Perchloroethylene is listed by IARC as a possible carcinogen. Perchloroethylene is classified by NTP as having limited evidence of carcinogenicity in humans or sufficient evidence of carcinogenicity in experimental animals.

Also see Section 10.

OTHER POTENTIAL HEALTH HAZARDS: The following information is required by Canadian WHMIS regulations. Irritancy is covered in Signs and Symptoms of Exposure in Section 6. There is no known human sensitization. toxicologically synergistic product, reproductive toxicity, mutagenicity, or teratogenicity associated with this product.

## SECTION 7 -- EMERGENCY AND FIRST AID PROCEDURES

EYES: For direct contact, flush eves with water for 15 minutes lifting upper and lower lids occasionally. If irritation or redness from exposure to vapors or mists develops, move victim away from exposure into fresh air. Consult physician if irritation or pain persists.

SKIN: Remove contaminated clothing and shoes. Wash skin twice with soap and water. Consult physician if irritation or pain persists.

INHALATION: Remove to fresh air immediately. Use oxygen if there is difficulty breathing or artificial respiration (Breathing) if breathing has stopped. Do not leave victim unattended. Seek immediate medical attention if necessary.

INGESTION: If conscious, drink 4 to 8 ounces of water and seek immediate medical attention. DO NOT induce (Swallowing) vomiting.

## SECTION 8 -- PRECAUTIONS FOR SAFE USE AND HANDLING AND PREVENTIVE MEASURES

SPILL PROCEDURES:	Remove all ignition sources. Ventilate area and avoid breathing vapors. For large spills, isolate area and deny entry. If possible, contain as a liquid for possible re-refining. Absorb with compatible absorbent material. Shovel into closable container for disposal. Wear protective equipment specified in Section 9. Contain away from surface waters and sewers.
WASTE DISPOSAL METHODS:	Dispose in accordance with federal, state, provincial and local regulations. Clintact Safety-Elect regarding recycling of proper disposal.
HANDLING PRECAUTIONS:	x Norré contactivité eyes, skin, clothing or shoes. Use in well ventilated area and a tra contactory Vapore or mister. Keep away from hear, sparks and flames.
SHIPPING AND STORING PRECAUTIONS:	Need pontainer tryptily closed when not in use and during transport. Empty product pontainer i mu pontain product residue. Bo not pressurize, out, heat, weld, yrind or expose containers to clume or other sources of ignition. See Section 10 for Packing Group information.
PERSONAL HYGIENE:	Use good personal hygiene. Wash thoroughly with soap and water after handling and better suiteg drinking or using tobacco products. Clean contaminated clothing, shoes and protective equipment before rows

### SECTION 9 -- CONTROL MEASURES AND OTHER PREVENTIVE MEASURES

EYE PROTECTION:

Where there is likelihood of spill or splash, wear chemical goggles and faceshield. Contact lenses should not be worn.

PROTECTIVE GLOVES:

Use polyvinvi alcohoi. Terlon or Viton<sup>®</sup> gioves to prevent contact with skin.

**RESPIRATORY PROTECTION:** Use NIOSH/MSHA-approved respiratory protective equipment when concentration of vapors or mists exceeds applicable exposure limit. Depending on the airborne concentration, use a full-face respirator or gas mask with appropriate cartridges and canisters. A self-contained breathing apparatus (SCBA) is required for large spills and emergencies. Selection and use of respiratory protective equipment should be in accordance in the U.S.A. with OSHA General Industry Standard 29 CFR 1910.134 and in Canada with CSA Standard Z94.4-M1982.

ENGINEERING Provide local exhaust or general dilution ventilation needed to maintain concentrations of vapors CONTROLS: Or mists below applicable exposure limits. Where explosive mixtures may be present, systems safe for such locations should be used.

OTHER PROTECTIVE EQUIPMENT: Wear appropriate solvent-resistant boots, apron or other protective clothing where spills and spiashes are possible. A source of clean water should be available in work areas for flushing the eyes and skin.

### SECTION 10 -- OTHER REGULATORY INFORMATION

DOT PROPER SHIPPING NAME:	TETRACHLOROETHYLENE		
OT CLASS:	Class 6.1		
DOT ID NUMBER:	UN1897, Packing Group III (Reportable Quantity = 100 lbs/container)		
SARA TITLE III:	Product contains a toxic chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372. Toxic constituent is listed with an asterisk in Section 2 of this Material Safety Data Sheet.		
• •	Product poses the following physical and/or health hazards as defined in 40 CFR 370.3 (Sections 311, 312 of SARA Title III):		
	Immediate (Acute) Health Hazard Delayed (Chronic) Health Hazard		
CALIFORNIA:	This product contains detectable amounts of Perchloroethylene CAS No. 127-18-4 and Trichloroethylene CAS No. 79-01-6. These materials are listed by the State of California as known carelinogens.		
TDGA:	Tetrachioroethylene, Class 6.1, UN1397, Packing Group III		
WHMIS CLASSIFICATION:	D1B (Poisonous and Infectious Materials, Immediate and Serious Toxic Effects, Toxic Material): D2A (Poisonous and Infectious Materials, Other Toxic Effects, Very Toxic Material): D2B (Poisonous and Infectious Materials, Other Toxic Effects, Toxic Materia)		
SEC	TION 11 PREPARATION INFORMATION		

PREPARED BY: Product MSDS Coordinator

REVISED: March 21, 1991

ORIGINAL ISSUE DATE: July 20, 1935

SUPERSEDES: December 1, 1989

User assumes all moke incident to the use of this product. To the best of our knowledge, the information contained herein is accurate. However, Safety-Facen

SAFETY-KLEEN DRY CLEANING GRADE SOLVENT F 780

# MATERIAL SAFETY DATA SHEET

# SECTION I -- PRODUCT INFORMATION

Exhibit I.D.2-5

## Safety-Kleen Corporation - 777 Big Timber Road - Elgin, IL 60123 For Product/Sales Information Call 708/697-8460

EMERGENCY TELEPHONE	MEDICAL:	TRANSPORTATION:	
These numbers are for emergency use only. If you desire non-emergency information about this product, please call the telephone number listed above.	800/942-5969 or 312/942-5969 RUSE POISON CONTROL CENTER CHICAGO, ILLINOIS (24 HOURS)	800/424-9300 CHEMTREC	

IDENTITY (TRADE NAME): SAFETY-KLEEN DRY CLEANING GRADE SOLVENT F 780

SK PART NUMBER:

780

FAMILY/CHEMICAL NAME:

**PRODUCT USAGE:** 

DRY CLEANING SOLVENT

## SECTION II -- HAZARDOUS COMPONENTS

CHLORINATED/FLUORINATED HYDROCARBON

	:				•
NAME	STNONYM .	<b>9</b> ,3	сля <u>NO.</u>	CSHA PEL (ETT)	ACGEH TLV (ppm)
*Trichlorottilluorochane	Furocarbon 113	- 100	76-13-1	1000	1000

• See Section X - Other Regulatory Information

## SECTION III -- PHYSICAL DATA

PHYSICAL STATE, APPEARANCE AND ODOR:	Liquid - clear, colorless liquid with slight ethereal odor.
BOILING POINT:	117.6° F
MELTING POINT:	Not Applicable
EVAPORATION RATE:	$0.1 (CCI_4 = 1)$
PERCENT VOLATILE:	100%
YAPOR DENSITY:	6.5 (Air = 1)
VAPOR PRESSURE:	334 mm Hg @ 77° F
SOLUBILITY IN WATER:	0.02% by weight (77° F)
pH:	Not Applicable
SPECIFIC GRAVITY:	1.57 (Weter = 1, @ 77° F)
MOLECULAR WEIGHT:	137
VOLATILE ORGANIC COMPOUNDS:	None

OTHER POTENTIAL HEALTH HAZARDS: None Known

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Individuals with pre-existing lung, skin and cardiovascular system dysfunction may have increased susceptibility to effects of the exposure. Contact with skin may aggravate pre-existing dermatitis.

CARCINOGENICITY: No components are listed by OSHA, NTP or LARC as known or suspected carcinogens.

## SECTION VII -- EMERGENCY AND FIRST AID PROCEDURES

- EYES: Fiush eyes with water for 20 minutes lifting upper and lower lids occasionally. Consult physician if irritation persists. If irritation or redness from exposure to vapors or mists develop, move victim away from exposure and into fresh air.
- SKIN: Remove contaminated clothing. Wash skin twice with scap and water. If irritation persists, consult a physician.

INGESTION: Aspiration hazard. If conscious, dilute with 4 to 8 ounces of water and seek immediate medical attention. DO NOT induce vomiting.

INHALATION: Remove to fresh air immediately. Use oxygen if there is difficulty breathing or artificial respiration if breathing has stopped. Do not leave victim unattended. Seek immediate medical attention if necessary.

## SECTION VIII -- PRECAUTIONS FOR SAFE HANDLING AND USE

## SPILL

PROCEDURES:

Isolate area and deny entry. Ventilate area and avoid breathing vapors. Remove residue with inert sortent such as sand, oil dry or other absorbent material. Shovel into closable container for disposal. Wear protective equipment specified below. Contain away from surface waters and sewers.

WASTE DISPOSAL METHODS:

Dispose in accordance with Federal, State and local regulations. Contact Safety-Kleen regarding recycling.

HANDLING PRECAUTIONS: Do not get into eyes, on skin or clothing. Avoid breathing vapors or mists.

SHIPPING AND STORING PRECAUTIONS:

Empty product containers may contain product residue. Do not pressurize, cut, heat, weld, grind or expose containers to flame or other sources of ignition. Keep container tightly closed when act in use and during transport. Do not store above 125° F.

PERSONAL HYGIENE:

Use good personal hygiene. Wash thoroughly with scap and water after handling and before eating, drinking or using tobacco products.

## SECTION IX - CONTROL MEASURES

VENTILATION: Provide local exhaust or general dilution ventilation as determined necessary to maintain concentrations of vapors below applicable exposure limits.

PROTECTIVE GLOVES:

PROTECTION:

EYE

Wear neoprene or nitrile gloves for repeated or prolonged contact.

Where there is likelihood of spill or splash, wear chemical goggles or faceshield. Contact lenses should not be worn.

RESPIRATORY PROTECTION:

Use NIOSH-approved respiratory protective equipment when concentration of vapors exceeds applicable exposure limit. Depending on the airborne concentration, use a respirator or gas mask with appropriate cartridges and canisters (chemical cartridge for organic vapors). A selfcontained breathing apparatus (SCBA) is required for large spills and emergencies. Selection and use of respiratory protective equipment should be in accordance with OSHA General Industry Standard 29 CFR 1910.134 - Respiratory Protection.

OTHER PROTECTIVE EQUIPMENT:

A source of clean water should be available in work area for flushing eyes and skin. Wear rubber boots, apron and other protective clothing as need to protect against contact with skin.

## SECTION X -- OTHER REGULATORY INFORMATION

Cleaning Compound N.O.I.

*DOT PROPER* SHIPPING NAME:

DOT CLASS:

None

None

SARA TITLE III:

DOT ID NUMBER:

Product contains a toxic chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372. Toxic constituents are listed with an asterisk in Section II of this Material Safety Data Sheet.

Product poses the following physical and/or health hazard(s) as defined in 40 CFR 370.3 (Sections 311, 312 of SARA Title III):

Immediate (Acute) Health Hazard Delayed (Chronic) Health Hazard

## SECTION XI -- PREPARATION INFORMATION

PREPARED BY:

SK Product Review Committee

FORM NO. 900-14-021

ORIGINAL ISSUE DATE: July 20, 1989

REVISED: December 1, 1989

SUPERSEDES: July 20, 1989

User assumes all risks incident to the use of this product. To the best of our knowledge, the information contained herein is accurate. However, Safety-Kleen assumes to liability whatsoever for the accuracy or completeness of the information contained herein. <u>No contractionations or warranties, rither attents</u> or implied, or matcheniability, finget for a periodic propose of of any other nature are made hereined to the providing the providing warranties with correct to information or the providing warrant information related. The data contained on this stored applies to the material as supplied to the user.

# SECTION I -- PRODUCT INFORMATION

## Safer7-Kleen Corporation - 777 Big Timber Road - Elgin, IL 60123 For Product/Sales Information Call 312/697-3460

EMERGENCY TELEPHONE	MEDICAL:	TRANSPORTATION:
These numbers are for emergency use only. If you desire non-emergency information about this produce, please call the telephone number listed above.	800/942-5969 or 312/942-5969 RUSE POISON CONTROL CENTER CEICAGO, ILLINOIS (24 EOURS)	800/424-9300 CHEMTREC

SYNONYMS: SX PART NUMBER:

IDENTITY (TRADE NAME):

SAFETY-KLEEN 140 PARTS WASHING SOLVENT

PETROLEUM DISTILLATES, PETROLEUM NAPHTHA

6616

FAMILYICHEMICAL NAME:

PRODUCT USAGE:

HYDROCARBON SOLVENT

SOLVENT FOR CLEANING AND DEGREASING PARTS

# SECTION II - HAZARDOUS COMPONENTS

Ē	<u>e</u> .	C۲2 یم	CSEA PEL (EFEL)	ACCEH TLV (7771)
Marcal Spizia	992	64742-38-7	100 (Siociari Scive:)	100 (Stocifarti Sciv <del>e</del> :)
Dye (constant Xylene)	EQ.	1320-20-7	100 120 STEL	100 120 STEL
Ani-Static Agent (compains Xylene)	l <del>pon</del>	1330-20-7	100 120 STEL	100

## SECTION III - PHYSICAL DATA

PHYSICAL STATE, APPEARANCE AND ODOR:	Liquid - clear, green, with characteristic hydrocarbon odor.
BOILING POINT:	360° - 400° F
MELTING POINT:	Not Available
EYAPORATION RATE:	(Tolucae = 1) $0.2$
PERCENT VOLATILE:	९९.९ <i>न्</i>
VAPOR DENSITY:	4.9 (Air = 1)
POR PRESSURE:	2 mm of Hg 21 63° F.
SOLUBILITY IN WATER:	Negligicie

# SAFETY-KLEEN 140 SOLVENT-MS

## MATERIAL SAFETY DATA SHEET

## SECTION I -- PRODUCT INFORMATION

Safety-Kleen Corporation - 777 Big Timber Road - Elgin, IL 60123 For Product/Sales Information Call 708/697-8460

EMERGENCY TELEPHONE	MEDICAL:	TRANSPORTATION:
These numbers are for emergency use only. If you desire non-emergency information about this product, please call the telephone number listed above.	800/942-5969 or 312/942-5969 RUSH POISON CONTROL CENTER. CHICAGO, ILLINOIS (24 HOURS)	800/424-9300 CHEMTREC

IDENTITY (TRADE NAME):

#### SAFETY-KLEEN 140 SOLVENT-MS

SYNONYMS:

PETROLEUM DISTILLATES, PETROLEUM NAPHTHA

HYDROCARBON SOLVENT

6616

SK PART NUMBER:

FAMILY/CHEMICAL NAME:

PRODUCT USAGE:

#### SOLVENT FOR CLEANING AND DEGREASING PARTS

	SECT	TION II H	AZARDOUS COMPO	)NENTS	
NAME	<u>SYNONYM</u>	. <u></u>	CAS <u>NO</u> .	OSHA PEL (pom)	ACGIH TLV <u>(ppm)</u>
Mineral Spirits	Petroleum Distillates	99.9	64742-88-7	100 (Stoddard Soivent)	100 (Stoddard Soivent)
"Dve (contains Xylene)		.003	1330-20-7	100 150 STEL	100 150 STEL
*Anti-Static Agent (contains Xylene)		0.0001	1330-20-7	100 150 STEL	100 150 STEL

\* See Section X - Other Regulatory Information

## SECTION III -- PHYSICAL DATA

PHYSICAL STATE. APPEARANCE AND ODOR:	Combustible liquid - clear, green, with characteristic hydrocarbon odor.
BOILING POINT:	360 - 400 F
MELTING POINT:	Not Available
EVAPORATION RATE:	Butyl Aberate = 1: 0.08
PERIENT VOLATILE:	
VAROR DENSITY:	5.43 (Air = 1)
VAPOR PRESSURE:	0.5 mm of Hg at 68 - F
SOLUBILITY IN WATER:	Negligible

pH:	Not Applicable
SPECIFIC GRAVITY:	0.770 to 0.311
MOLECULAR WEIGHT:	Approximately 142

VOLATILE ORGANIC COMPOUNDS: 770 g/L

## SECTION IV -- FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:

CONDITIONS OF

140 F (TCC)

F

AUTOIGNITION TEMPERATURE: 473

FLAMMABILITY: Materials must be moderately heated before ignition can occur.

FLAMMABLE LIMITS IN AIR - LOWER: 1.0% UPPER: 7.0%

EXTINGUISHING MEDIA: Carbon dioxide, foam, dry chemical, water (mist only).

FIRE FIGHTING PROCEDURES -- SPECIAL: NFPA 704 Rating 0-2-0

Keep storage tanks cool with water spray. Use self-contained breathing apparatus (SCBA).

#### UNUSUAL FIRE AND EXPLOSION HAZARDS:

Decomposition and combustion products may be toxic. Heated tanks may rupture, explode or be thrown into the air. Vapors are heavier than air and may travel great distances to ignition source and flashback.

HAZARDOUS COMBUSTION PRODUCTS:

Thermal decomposition and burning may produce carbon monoxide.

## SECTION V -- REACTIVITY DATA

STABILITY:

Normally stable even under fire exposure conditions and is not reactive with water. Normal firefighting procedures may be used.

INCOMPATIBILITY (CONDITIONS TO AVOID):

Strong oxidizing agents (e.g. chlorine, peroxides, strong acids).

HAZARDOUS POLYMERIZATION:

Not known to occur under normal conditions.

HAZARDOUS DECOMPOSITION PRODUCTS:

Normally none: however, incomplete burning may yield carbon monoxide.

## SECTION VI -- HEALTH HAZARD DATA

PRIMARY ROUTES OF EXPOSURE:

Skin and eye contact; infalation.

# HEALTH HAZARD DATA SIGNS AND SYMPTOMS OF EXPOSURE:

ACUTE:

E: Skin: Prolonged or repeated contact tends to remove skin oils, possibly leading to irritation in dermatitis. No significant skin absorption hazard.

Eyes: Contact may cause slight to moderate irritation. High vapor concentrations ( > 500 ppm, are irritating to the eyes.

Inhalation: High concentrations of vapor or mist may be irritating to the respiratory tract, cause headaches, dizziness, nausea, impaired coordination, anesthesia anesthetic and may have other central nervous system effects.

*Ingestion*: Low order of acute oral toxicity. May cause irritation of the throat, nausea, vomiting and symptoms of central nervous system depression. Aspiration into the lungs during ingestion or vomiting may cause mild to severe pulmonary injury and possibly death.

CHRONIC: Prolonged and/or repeated contact may cause drying and cracking of the skin or dermatitis.

OTHER POTENTIAL HEALTH HAZARDS: None Known

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Individuals with pre-existing central nervous system dysfunction may have increased susceptibility to the effects of exposure. Contact with skin may aggravate pre-existing dermatitis.

CARCINOGENICITY: None of the ingredients are known or suspected carcinogens.

#### SECTION VII -- EMERGENCY AND FIRST AID PROCEDURES

- EYES: For direct contact, flush eyes with water for 15 minutes lifting upper and lower lids occasionally. Consult physician if irritation or pain persists. If irritation or redness from exposure to vapors or mists develop, move victim away from exposure into fresh air.
- SKIN: Remove contaminated clothing. Wash skin twice with soap and water. If irritation develops and persists, consult a physician.
- *INGESTION:* If conscious, dilute with 4 to 8 ounces of water and seek immediate medical attention. DO NOT induce vomiting.
- *INHALATION:* Remove to fresh air immediately. Use oxygen if there is difficulty breathing or artificial respiration if respiration has stopped. Do not leave victim unattended. Seek immediate medical attention if necessary.

### SECTION VIII -- PRECAUTIONS FOR SAFE USE AND HANDLING

SPILL PROCEDURES:	Remove all ignition sources. Ventilate area and avoid breathing vapors. For large spills, isolate area and deny entry. If possible, contain as a liquid for possible re-refining. Absorb onto sand or other absorbent material. Shovel into closable container for disposal. Wear protective equipment specified below. Contain away from surface waters and sewers.
WASTE DISPOSAL METHODS:	Dispose in accordance with Federal, State, and local regulations. Contact Safety-Kleen regarding recycling.
HANDLING PRECAUTIONS:	Avoid contact with eyes, skin or clothing. Use in well ventilated area and avoid breathing vapors or mists. Keep away from heat, sparks and open flames.
SHIPPING AND STORING PRECAUTIONS:	Empty product containers may contain product residue. Do not pressurize, cut, heat, welc, grind or expose containers to flame or other sources of ignition. Keep container tightly closed when not in use and during transport.
PERSONAL HYGIENE:	Use good personal hygiene. Wash thoroughly with soup and water after handling and before eating, drinking or using tobacco products. Launder contaminated clothing and clean protective equipment before reuse.

## SECTION IX - CONTROL MEASURES

VENTILATION:	Provide local exhaust or general dilution ventilation as determined necessary to maintain concentrations of vapors or mists below applicable exposure limits. Where explosive mixtures may be present, systems safe for such locations should be used.
PROTECTIVE GLOVES:	Use nitrile or neoprene gloves to prevent contact with skin.
EYE PROTECTION:	Where there is likelihood of spill or splash, wear chemical goggles or faceshield. Contact lenses should not be worn.
RESPIRATORY PROTECTION:	Use NIOSH-approved respiratory protective equipment when concentration of vapors or mists exceeds applicable exposure limit. Depending on the airborne concentration, use a respirator or gas mask with appropriate cartridges and canisters (for organic vapor with mist prefilter). A self-contained breathing apparatus (SCBA) is required for large spills and emergencies. Selection and use of respiratory protective equipment should be in accordance with OSHA General Industry Standard 29 CFR 1910.134 - Respiratory Protection.
OTHER PROTECTIVE EQUIPMENT:	Wear solvent-resistant boots, apron or other protective clothing where spills and splashes are possible. A source of clean water should be available in work areas for flushing the eyes and skin.

### SECTION X -- OTHER REGULATORY INFORMATION

DOT PROPER SHIPPING NAME:

DOT CLASS:

DOT NUMBER:

SARA TITLE III:

-

Petroleum Naphtha

Combustible Liquid

UN 1255

Product does not contain a toxic chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

Product poses the following physical and/or health hazard(s) as defined in 40 CFR 370.3 (Sections 311, 312 of SARA Title III):

> Immediate (Acute) Health Hazard Delaved (Chronic) Health Hazard Fire Hazard

## SECTION XI -- PREPARATION INFORMATION

PREPARED BY: SK Product Review Committee FORM NO. S241S 1448-200-14-004.

CRYGINAL IBSUE DATE: Chily 21, 1939 REVISED: December 1, 1939 SUPERSEDES: Child 21, 1944

ουν το το βραστομούου το προφρογό αια ρεγοριάζει. Το προτρετικό του καθατουργότας παιοπάσπατικα ου πιστερικής σ Εξωρά το υπορία το παριτή αποροφορία το παραστορικό επαριστασία ρέτας παραταπόστας αροστό. <u>Το προγραφικός το υπορ</u> 1917 - Τις το παργότις παραταπόδημα ή αροστάτι το προστάσια οι τη από ταροπαίος παραγόρους του το το του το παρο inmutojon og afte i fine auta alomalined om tras sheet applies to the material as supplied to the aser.

SAFETY-KLEEN HEAVY DUTY LACQUER THINNER 6782 Exhibit I.D.2-7

MATERIAL SAFETY DATA SHEET

# SECTION I - PRODUCT INFORMATION

Safety-Kleen Corporation - 777 Big Timber Road - Elgin, IL 60123 For Product/Sales Information Call 708/697-8460

EMERGENCY TELEPHONE	MEDICAL:	TRANSPORTATION:	
These numbers are for emergency use only. If you desire non-emergency information about this produce, please call the telephone number listed above.	800/942-5969 or 312/942-5969 RUSH POISON CONTROL CENTER CHICAGO, ILLINOIS (24 HOURS)	800/424-9300 CEEMTREC	

IDENTITY (TRADE NAME):

FAMILY/CHEMICAL NAME:

. ....

SAFETY-KLEEN HEAVY DUTY LACQUER THINNER 6782

SK PART NUMBER:

5320, 5825

N/A

• , •

PRODUCT USAGE:

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LACQUER THINNER

## SECTION II - HAZARDOUS COMPONENTS

	:	· · ·	CLS	CSHA. PEL	ACGIH TLY
E	SYNONYM	<u>.</u>	<u>NO.</u>	<u>(man)</u>	(mm)
	Tahal	5-60	108-38-3	100 110 STEL	100 110 STEL -
*Xyicce	Xylci	5-20	1330-20-7	ico 150 stel	100 140 STEL
Heptane	B-ficture	NE	142-32-5	400 500 STEL	400 500 STEL
•Methyl Ethyl Keions	MEK	5-40	78-73-5	200 300 STEL	200 300 STEL
•Methyl Isoburyl Keicne	MIBK	0.1-10	108-10-1	50 75 STEL	50 75 STEL
Methylcyclonezme	Cyclohenyimethane	0.100	103-37-2	400	400
•Accione	2-Propancie	2-20	67-54-1	750 1000 STEL	750 1000 STEL
*Cycloheune		<i>,</i>	110-32-7	300	300
•المحتجمينا	Iscenceyi Alechol	0.1-20	ଗ-ସ୍ଟ-୨	400 500 STEL	400 500 STEL
• <u>Methanol</u>	Merbyl Alcobol	2-10	67-563	200 210 STEL	200 210 STEL
Lucal Spirin	VM & ? Naciona	0.1-20	3030-30-6	300 400 STEL	300
Ethand	Ethyl Alechel	0.1-10	64-17-5	1000	1000
yi Acetate	Buryi Acaus	0.1-12	12-36-4	110 200 STEL	110 200 STEL
ia - syl Accuse	Locouryi Ester Actic Acti	0.1-15 •	110-19-0	120	120
Ethyl 3-Ethoxypropionate	3-Etherypropienic Acid Ethyl Ester	N/E	763-6 <del>3-3</del>	NÆ	NÆ
M/E - Max Exceluter	•				••

• See Series X - Other Be

## SECTION III -- PHYSICAL DATA

<b>PYSICAL STATE,</b> <b>PEARANCE AND ODOR:</b>	Liquid - coloriess, clear, with a characteristic solvent odor.
O! YG POINT:	-131 - 347° F
- G POINT:	Not Applicable
APORATION RATE:	3.68 (N-Buryl = 1)
PERCENT VOLATILE:	100%
APOR DENSITY:	3.02 (Air = 1)
YAPOR PRESSURE:	94.7 mm Hg @ 20 ° C
Solubility in water:	Appreciable
7 <b>E:</b>	Not Applicable
SPECIFIC GRAVITY:	-0.302 (Water = 1)
MOLECULAR WEIGHT:	Use melecular weight of individual components.
YOLATILE ORGANIC COMPOUNDS:	802 z/L
	· · ·

# SECTION IV -- FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:	< 20° F (TCC)
AUTOIGNITION TEMPERATURE:	Not Available
CONDITIONS OF FLAMMABILITY:	Normal temperatures and pressures.
FLAMMABLE LIMITS IN AIR - LOWER:	1.0% UPPER: 13.2%
EXTINGUISEING MEDIA: Carbon	n dioxide, fcam, dry chemical, water (mist only)
FIRE FIGHTING PROCEDURES - SPECIAL:	NFPA 704 Rating 2-3-0

Water may be used to cool containers and firefighters. However, water could cause free solvent to float and spread fire. UNUSUAL FIRE AND EXPLOSION HAZARDS:

Flammable liquid. Most components are Class 1B with flash point below 73° F and boiling point above 100° F.

EAZARDOUS COMBUSTION PRODUCTS: Carbon Menoxide

## SECTION V -- REACTIVITY DATA

### STABILITY:

INCOMPATIBILITY: (CONDITIONS TO AYOID)

HAZARDOUS P<u>OL</u>YMERIZATION:

ARDOUS DECOMPOSITION PRODUCTS:

Stable under normal temperatures and conditions.

Heat sparks, flames, fire, strong oxidizing agents.

Not known to occur under normal conditions.

Normally none. Incomplete burning may yield carbon monoxide.

## SECTION VI - HEALTH HAZARD DATA

PRIMARY ROUTES

Inhalation, skin and eve contact. -

## HEALTH HAZARD DATA/SIGNS AND SYMPTOMS OF EXPOSURE:

Skin: Conmet may cause irritation, dryners and cracking. Prolonged or repeated contact may remove skin cula, possibly leading to irritation and dermanitis. Material is readily absorbed through skin.

Eyes: Direct connet may cause severe initiation and temporary corneal damage. Vapora may cause activately redness, tearing, initiation and pain. Conjunctivitis may occur upon chronic exposure.

Inhalation: Can cause headache, diminess, confusion, nausea, vomiting, irritation of the respiratory system and other central nervous system effects including unconsciousness in extreme cases.

Ingestion: Can cause burning of the mouth, threat and abdomen, nausea, vomiting, diarthea, symptoms of the central nervous system depression, including weakness, diminess, slow and shallow respiration, unconsciousness and convulsions. Aspiration into the lungs during ingestion or vomiting may cause mild to severe pulmonary injury and possible death.

CHRONIC: Inhalanian: Prolonged overexposure may cause damage to the liver, kidney, spieen, lungs or nervous system.

### OTHER POTENTIAL HEALTH HAZARDS:

ACUTE:

Reports have associated prolonged and repeated occupational exposure to solvents with permanent brain and/or central nervous system damage. Intentional misuse by deliberately concentrating and inhaling this material may be harmful or fatal. Observe all appropriate control measures.

#### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Individuals with pre-existing liver, kidney, spleen, lungs, skin or nervous system dysfunction may have increased susceptibility to the effects of the exposure. Contact with skin may aggravate pre-existing dermatize.

CARCINOGENICITY: No components are known or suspected carcinogens.

## SECTION VII - EMERGENCY AND FIRST AID PROCEDURES

- EYES: For direct connect, flush eyes with clean water for 15 minutes lifting upper and lower lids occasionally. Consult physician if irritation persists. If irritation or redness from exposure to vapors or mists develop, move victim away from exposure and into fresh air.
- SKIN: Remove contaminated clothing. Wash skin twice with scap and water. If imitation develops and persists, consult a physician.

INGESTION: Aspiration hazard. If conscious, dilute with 4 to 8 ounces of water and seek immediate medical attention. EO NOT induce vomiting.

INHALATION: Remove to fresh air immediately. Use oxygen if there is difficulty breathing or artificial respiration if respiration has supped. Do not leave victim unattended. Seek immediate medical attention if necessary.

## SECTION VIII - PRECAUTIONS FOR SAFE USE AND HANDLING

#### SPILL PROCEDURES:

URES: Remove all ignition sources. Isolate area and deny entry. If possible, contain as a liquid for possible recycling. Absorb onto sand or other absorbent material. Showel into diosable container for disposal Wear protective equipment specified below. Contain away from surface waters and sewers.

ASTE DISPOSAL ETHODS:

Dispose in accordance with Federal. State and local regulations. Contact Safety-Kleen regarding recycling.

TE HANDLING PRECAUTIONS:

Do not get into eyes, on skin or clothing. Avoid breathing vapors. DO NOT smoke when handling this product.

PRECAUTIONS:

PERSONAL ETGIENE:

Empty product containent may contain product residue. Do not pressurize, dut heat, weld, grind or expose containers to flame or other sources of ignition. Keep container tizhely closed when not in use and during manager

Use good personal hygiene. Wash thoroughly with scap and water after handling and before econg. drinking or using tobacco products.

# SECTION IX - CONTROL MEASURES

VENTILATION:

Provide local exhaust or general dilution ventilation as determined necessary, when concentrations of vanors exceed applicable exposure limits. Where explosive mixtures may be present, systems sale for such locations should be used.

PROTECTIVE GLOVES:

To protect against contact with skin, wear mittile gioves.

ETE PROTECTION:

Where there is likelihood of eve contact, wear chemical zozzies. Contact lenses should not be worn.

RESPIRATORY PROTECTION:

Use MIGSH-approved respiratory protective equipment when concentration of vapora exceeds applicable exposure limit. Depending on the airforme concentration, use a requirator or tas mark with appropriate carridges and canisters (for organic vapors). A self-contained breathing apparatus (SCEA), is required for large spills and emergencies. Selection and use of respiratory protective equipment should be in accordance with OSHA General Industry Standard 29 CFR 1910.134 - Restratory . Protection

#### OTHER PROTECTIVE EQUIPMENT:

A source of clean water should be available in the work area for flushing eyes and skin. Wear rubber auron or other protective clothing as needed to protect against spills or splash.

SECTION X - OTHER REGULATORY INFORMATION

DOT PROPER SEIPPING NAME:

DOT CLASS:

DOT ID NUMBER:

SARA TITLE III:

Paint-Related Material

Flammable Liquid

NALSS UNPLY

Product contains a toxic chemical or chemicals subject to the recording requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372. Toxic constituents are listed with an asterisk in Section E of this Material Safery Dam Sheet.

Product poses the following physical and/or health hazard(s) as defined in 40 CFR 3703 (Sections 311, 312 of SARA Title III):

> Immédiate (Acute) Health Hazard Delayed (Chronic) Health Hammi Fire Harard

## SECTION XI - PREPARATION INFORMATION

PREPARED BY: SK Product Review Committee FORM NO. 900-14-055 GINAL ISSUE DATE: July 20, 1939 REVISED: December 1, 1989 SUPERSEDES: July 20, 1939

User unmer all risks incident to the use of this product. To the best of our knowledge, the information contained herein is accurate. However, Safery unmer no liability whatspeer for the accuracy or completeness of the information contained herein. No representations or warrander, either mornis or m מיה הייני המינה להוצוע למי ז המולה אין היינים יותר אין לי היי כיל אין היינים אין היינים אין היינים אין היינים א הבי באום ככתושותכם כם נושו ומכבו זקסווכו נו נום בשובדשו זו ועקסוובם נו נום שונו.

SAFETY-KLEEN MULTI-USE LACQUER THINNER 6801 Exhibit I.D.2-8

# MATERIAL SAFETY DATA SHEET

# SECTION I -- PRODUCT INFORMATION

### Safety-Kleen Corporation - 777 Big Timber Road - Elgin, IL 60123 For Product/Sales Information Call 708/697-3460

EMERGENCY TELEPHONE	MEDICAL:	TRANSPORTATION:	
These numbers are for emergency use only. If you desire non-emergency information about this product, please call the telephone number listed above.	800/942-5969 or 312/942-5969 RUSH POISON CONTROL CENTER CHICAGO, ILLINOIS (24 HOURS)	800/424-9300 CHEMTREC	

SECTION II - HAZARDOUS COMPONENTS

IDENTITY (TRADE NAME):

#### SAFETY-KLEEN MULTI-USE LACQUER THINNER 6301

SX PART NUMBER:

6301

N/A

FAMILY/CHEMICAL NAME:

**PRODUCT USAGE:** 

Ι.

## LACQUER THINNER

					:
E E	STNONIM		CAS NO.	OSHA PEL (Epin)	ACGIH TLV (zzm)
inene	Toinci	11-43	108-38-3	100 150 STEL	100 150 STEL
•Xyiec	Xyiol	3-4	1330-20-7	100 150 STEL	100 - 110 STEL
•Methyl Ethyl Keicne	MEK	° <b>-</b> 5	78-93-3	200 300 STEL	200 300 STEL
•Methyl Loburyl Keione	MEK .	-3	108-10-1	50 75 5151	50 75 STEL
•Acatone	2-Propincae	20-30 -	67-64-1	750 1000 STEL	750 1000 STEL
•Iscerconsol	. Bo <del>grog</del> yi Aleehol	5-15	ଟ-ଶ-୨	400 500 STEL	400 500 STEL
Special Laced Spirin	VM & ? Napitra	0.5-32	3030-30-6	300 400 STEL	300 STEL
Isoburyl Accuse	Isoburyi Ester Acaric Acid	0.1-15	110-19-0	150	150
Ethyl 3-Ethexypropionate	3-Ethexy <del>propieni</del> e Acid Ethyl Etter	- 5	763-69-9	NÆ	N/E
N/E = Not Established					

\* See Section X - Other Regulatory Information

	SECTION III PHYSICAL DAT	'A
YSICAL STATE, PEARANCE AND ODOR:	Liquid - coloriess, clear, with a character	istic solvent eder.
⊿OILING POINT:	- 131 - 347° F	
MELTING POINT:	Not Applicable	:
EVAPORATION RATE:	3.30 (N-Buryl = 1)	-4

APOR DENSITY:	3.02 (Air = 1)
APOR PRESSURE:	73.6 mm Hg @ 20° C
OLUBILITY IN WATER:	Appreciable
Н.	Not Applicable
*PECIFIC GRAVITY:	-0.8000 - 0.8438 (Water = 1)
MOLECULAR WEIGHT:	Use molecular weight of individual components.
<b>VOLATILE ORGANIC COMPOUNDS:</b>	800 - 844 g/L

## SECTION IV -- FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:

< 20° F (TCC)

Not Available

AUTOIGNITION TEMPERATURE:

CONDITIONS OF FLAMMABILITY: Normal temperatures and pressures.

FLAMMABLE LIMITS IN AIR - LOWER: 1.0%

EXTINGUISHING MEDIA: Carbon dioxide, foam, dry chemical, water (mist only)

FIRE FIGHTING PROCEDURES - SPECIAL: NFPA 704 Rating 2-3-0

Water may be used to cool containers and fire fighters. However, water could cause free solvent to float and spread fire.

UPPER: 13.2%

UN-SUAL FIRE AND EXPLOSION HAZARDS:

Flammable liquid. Most components are Class 1B with flash point below 73° F and boiling point above 100° F.

HAZARDOUS COMBUSTION PRODUCTS: Carbon Monoxide

•	SECTION V REACTIVITY DATA	•
		-

STABILITY:

HAZARDOUS

POLYMERIZATION:

Stable under normal temperatures and conditions.

Heat sparks, flames, fire, strong oxidizing agents.

INCOMPATIBILITY: (CONDITIONS TO AVOID)

Not known to occur under normal conditions.

EAZARDOUS DECOMPOSITION PRODUCTS:

Normally none. Incomplete burning may yield carbon monoxide.

### SECTION VI - HEALTH HAZARD DATA

PRIMARY ROUTES

Infalation, skin and eye contact

HEALTH HAZARD DATA/SIGNS AND SYMPTOMS OF EXPOSURE:

ACUTE: Skin: Contact may cause irritation, dryness and cracking. Prolonged or repeated contact may remove skin cils. possibly leading to irritation and dermatitis. Material is readily absorbed through skin.

Eyes: Direct contact may cause severe infinden and temporary comeal damage. Vapors may cause accounts redness, searing, irritation and pain. Conjunctivitis may occur upon chronic exposure.

Inhalation: Can cause headache, dimmess, confusion, nausea, vomiting, irritation of the respiratory system and other central nervous system effects including unconsciousness in extreme cases.

Ingestion: Can cause burning of the mouth, threat and abdomen, nausea, vomiting, diarthea, symptoms of the central servous system decression, including weakness, diminess, sicw and shallow respiration. unconsciousness and convulsions. Assuration into the lungs during ingestion or vomiting may cause mild to severe pulmonary injury and possible death.

Inhalation: Prolonged overexposure may cause damage to the liver, kidney, spleen, lungs or nervous system. CHRONIC:

#### OTHER POTENTIAL HEALTH HAZARDS:

Reports have associated prolonged and repeated occupational exposure to solvents with permanent brain and/or central nervous system damage. Intentional misuse by deliferately concentrating and inhaling this material may be harmful or fami. Observe all appropriate control measures.

#### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Individuals with tre-existing liver, kidney, spleen, lungs, skin or nervous system dysfunction may have increased susceptibility to the effects of the exposure. Contact with skin may aggravate tre-existing dermains.

CARCINOGENICITY: No components are known or suspected carcinogens.

## SECTION VII - EMERGENCY AND FIRST AID PROCEDURES

For direct connect, flush even with clean water for 15 minutes lifting unter and lower lids occasionally. EYES: Consult physician if irritation persists. If irritation or redness from exposure to vapors or mists develop, move vicim away from exposure and into fresh air.

Remove contaminated clothing. Wash skin twice with scap and water. If irritation develops and SXIN: persiste, consult a physician.

Aspiration hazard. If conscious, dilute with 4 to 8 cunces of water and seek immediate medical INGESTION: attention. DO NOT induce vomiting.

INHALATION: Remove to fresh air immediately. Use oxygen if there is difficulty breathing or artificial resolution if respiration has stopped. Do not leave victim unamended. Seek immediate medical attention if necessary.

#### SECTION YIII -- PRECAUTIONS FOR SAFE USE AND HANDLING

#### SPILL **PROCEDURES:**

Tica - main - manal hyperana " Wheth them white white and

Remove all ignition sources. Isolate area and deny entry. If possible, contain as a liquid for possible recycling. Absorb onto sand or other absorbent material. Shovel into closable container for dimension Wear protective equipment specified below. Contain away from surface waters and sewers.

WASTE DISPOSAL METHODS:

Dispose in accordance with Federal, State and local regulations. Contact Safety-Kleen recerding resyciizz.

HANDLING **ERECAUTIONS:** 

Do not get into eyes, on skin or clothing. Avoid breathing vapors. DO NOT smoke when handling this <del>pro</del>duct.

IPPING AND SIGRING PRECAUTIONS:

> PERSONAL WYCIENE.

Empty product containers may contain product residue. Do not pressurize, out, hear, weld, mind or expose containers to flame or other sources of ignition. Keep container tightly closed when not in use and during transport.

	SECTION IX - CONTROL MEASURES		
YENTILATION:	Provide local exhaust or general dilution ventilation as determined necessary, when concentrations of vapors exceed applicable exposure limits. Where explosive mixtures may be present, systems said for such locations should be used.		
PRESECTIVE GLOVES:	To protect against contact with skin, wear nimile glover.		
EYE PROTECTION:	Where there is likelihood of eye conmot, wear chemical goggies. Contact lenses should not be worn.		
RESPIRATORY PROTECTION:	Use NIOSH-approved respiratory protective equipment when concentration of vapors exceeds applicable exposure limit. Depending on the airborne concentration, use a respirator or gas mask with appropriate carridges and consisters (for organic vapors). A self-contained breathing apparents (SCEA) is required for large spills and emergencies. Selection and use of respiratory protective equipment should be in accordance with OSHA General Industry Standard 29 CFR 1910.134 - Respiratory Protection.		
OTHER PROTECTIVE EQUIPMENT:	A source of cienn water should be available in the work area for flushing eyes and sidn. Wear rubber apron or other protective clothing as needed to protect against spills or splash.		
	SECTION X OTHER REGULATORY INFORMATION		
DOT PROPER SHIPPING NAME:	· Paint-Related Material		
DOT CLASS:	Flammable Liquid		
D. D. NUMBER:	NA1253		
SARA TITLE III:	Product contains a toxic chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372. Toxic constiments are listed with an asterisk in Section II of this Material Safery Data Sheet.		
· · · ·	Product poses the following physical and/or health hazard(s) as defined in 40 CFR 370.3 (Sections 311, 312 of SARA Title III):		
· · · ·	Immediate (Acute) Health Hazard Delayed (Chronic) Health Hazard Fire Hazard		
	SECTION XI - PREPARATION INFORMATION		
PREPARED BY:	SK Product Review Committee FORM NO. 900-14-055		

ORIGINAL ISSUE DATE: July 20, 1989

REVISED: December 1, 1989 SUPERSEDES: July 20, 1989

Annuer all data incident to the use of this product. To the best of our knowledge, the information contained herein is semante. However, Drivey-Flam assumes no Hability whatsoever for the secondry or completeness of the information contained herein. No recommendant of warman within manual or the comparison white information of any other assumed as an and a hormation with other to information or the product to which information The data contained on this short applies to the mandal as supplied to the user.

# HEAVY DUTY LACQUER THINNER

## MATERIAL SAFETY DATA SHEET FOR U.S.A. AND CANADA

# SECTION I -- PRODUCT INFORMATION

#### Safety-Kleen Corp. - 777 Big Timber Road - Elgin, IL, U.S.A. 60123 Safety-Kleen Canada Inc. - 3090 Blvd. Le Carrefour - Suite 300 - Chomedy Laval Quebec, Canada H7T 2J7 For Product Technical Information Call 312-694-2700 (U.S.A.); 800-363-2260 (Eastern Canada); 514-686-2040 (Western Provinces/Call Collect)

24-HOUR EMERGENCY TELEPHONE	MEDIC.AL:	TRANSPORTATION:		
These numbers are for emergency use	800-752-7869 (U.S.A.)	708-888-4660 (U.S.A.)		
only. If you desire non-emergency information about this product.	312-942-5969 (CANADA)	SAFETY-KLEEN ENVIRONMENT. HEALTH AND SAFETY DEPARTMENT		
please cail a telephone number listed above.	RUSH POISON CONTROL CENTER CHICAGO, ILLINOIS, U.S.A.	613-996-66666 (CANADA) CANUTEC		
IDENTITY (TRADE NAME):	HEAVY DUTY LACQUER	RTHINNER		
SYNONYMS:	NONE			
SK PART NUMBER:	5820, 5825, 15820, 15825, 9	95825		
FAMILY/CHEMICAL NAME:	NONE			
PRODUCT USAGE:	LACOUER THINNER			

## SECTION II -- HAZARDOUS COMPONENTS

NAME	SYNONYM	<u>Wt. %</u>	<u>CAS</u> <u>NO.</u>	<u>OSH</u> TWA ppm	<u>STEL</u> ppm	<u>ACGIF</u> <u>TWA</u> ppm	<u>HTLV</u> STEL ppm	LD50ª	<u>LC55</u> 9
*Toluene	Methyl benzene	9.6-62.7*=	108-83-3	100	150	100	150	5000	4000 <sup>4</sup>
*Xviene	Dimethyl benzene	0-10.4==	1330-20-7	100	150	100	150	4300	5000
*Ethyl benzene	Phenylethane	0-10.4	100-41-4	100	125	ICO	125	3500	4000°
*Acetone	Dimethyl ketone	0-19.2	67-54-1	750	1000	750	1000	5300	50100 <sup>7</sup>
"Methyl ethyl ketone	MEK	9.3-39.3	78-93-3	200	300	200	300	2737	22500
Ethyl acetate	Acetic ether	0-18.4**	1-1-73-5	400	N.Av.	400	N.Av.	5620	16004
Methyl propyl katona	2-Pentanone	0-29.5	107-37-9	200	250	200	250	3733	1365
"Methyl isobutyl ketone	4-Methyl- 2-pentanone	0-29.5	108-10-1	50	75	50	75	2080	8000
Isobutyl acetate	2-Methyi propyi adatata	0-13.4	110-19-0	150	N.Av.	150	N.Av.	12400	< [···] =
N-Butyl sostate	Baty: etnances;e		.22		1.5	- 2 · -	2 •:		· ·
Prioglana gijoll metnyi stnar asatata	1704 antil (g. 92 perce acros apatula	21 × 21 +	· . · <sup>*</sup> . •	1 <del></del>	· _	·. ·	·		
Thistopy, sloop of	Marnan	14 Jer	-7.55.5	1991 Skins		DIN Bikun	111 11.0	֥ <u>;</u>	· -
Elayi 1.2003	Einandi		<del>:</del> 4-17-1		N 144	1144	N Av		<u>:</u>
Isopropyl alcohol	leopropanoi	<u>}*</u>	57-63-2	(د[بل	<b>1</b> 2	4.°•)		5-1-5	

N-Butyl alcohol	Butanol	.)_9.5 <b>*</b> ⁼	71-36-3	51) (Skin) (Cailing)	N.Av.	50 Skin) (Ceiling)	N.Av.	<u>1</u> 90	3060
Aliphatic arbons	N.Av.	·): <u>]                                  </u>	109-56-0°	500°	7500	5004	750 <sup>2</sup>	N.Av. <sup>2</sup>	3254.1
Co to C20 Alignatic hydrocarbons	N.Av.	0-9.6	54741-41-9 <sup>d</sup>	:00 <sup>4</sup>	N.Av.	لەرە:1	N.Av.	> 5000 <sup>d</sup>	N.Av.
•1.1.1-Trichloroethane	Methyl chloroform	0-1.0**	71-55-6	350	450	350	450	10300	13000
Methylene chloride	Dichloromethane	0-1.0**	75-09-2	500	2000 <sup>m</sup>	50	174	1600	33000*
•Perchloroethylene	Tetrachioro- ethyiene	0-1.0**	127-18-4	25	N.Av.	50	200	2629	34299 <sup>7</sup>

Total chlorinated compounds 0-1.0\*\*

N.Av. = Not Available

\*See Section X-Other Regulatory Information \*\*Even though the concentration range does not fail under the ranges prescribed by WHMIS, this is the actual range which varies with each batch of the product. <sup>a</sup>Orai-Rat LD50 (mg/kg) <sup>b</sup>Inhalation-Rat LC50 (ppm/4 hours) <sup>a</sup>For Pentane <sup>d</sup>For Stoddard Solvent <sup>d</sup>Inhalation-Rat LCL5 (ppm/4 hours) <sup>f</sup>Inhalation-Rat LC50 (mg/m<sup>3</sup>/8 hours) <sup>2</sup>Inhalation-Rat LC50 (ppm/8 hours) Inhalation-Rat LC50 (ppm/6 hours) Inhalation-Rat LC50 (ppm/10 hours) <sup>8</sup>Inhalation-Rat LC50 (mg/m<sup>2</sup> 00 minutes) Inhalation-Mus LCL0 (gm/m<sup>2</sup> 0 hours) <sup>m</sup>5 minutes in any 2 hours

## SECTION III -- PHYSICAL DATA

PHYSICAL STATE, APPEARANCE AND ODOR:	Clear, coloriess liquid with a solvent odor.
DR THRESHOLD:	Not available.
BOILING POINT:	133°F to 342°F (56°C to 172°C) (based on a similar UNOCAL <sup>®</sup> product) (Approximately).
VAPOR PRESSURE:	94.7 mm Hg at 68°F (20°C) (based on a similar UNOCAL <sup>®</sup> product) (Approximately).
FREEZING POINT:	-200°F to -8°F (-129°C to -22°C) (Approximately).
EVAPORATION RATE:	3.7 (Butyl Acetate = 1) (based on a similar UNOCAL <sup><math>\mathfrak{D}</math></sup> product) (Approximately).
VOLATILE:	100 %
VOLATILE ORGANIC COMPOUNDS:	6.9 lbs/gal; 830 g/l
DENSITY:	6.9 lbs/gai
VAPOR DENSITY:	2.2 to 3.9 (Air = 1) (Approximately).
SOLUBILITY IN WATER:	Partial.
₽H.	Not applicable.
SPECIFIC GRAVITY:	0.82 Water = 1.
COEFFICIENT OF WATER.OIL TRIBUTION:	Not available.
MOLECULAR WEIGHT:	of to 114 Approximately .

## SECTION IV -- FIRE AND EXPLOSION HAZARD DATA

<100°F (<37°C) Tay Closed Cup

AUTOIGNITION TEMPERATURE:

CONDITIONS OF FLAMMABILITY:

FLAMMABLE LIMITS IN AIR:

UNUSUAL FIRE AND EXPLOSION HAZARDS:

EXTINGUISHING MEDIA:

PROCEDURES -- SPECIAL:

FIRE FIGHTING

Not available.

Heat, sparks and flame.

LOWER: 1.0 Vol. % (based on a similar UNOCAL<sup>®</sup> product) (Approximately). UPPER: 13.2 Vol. % (based on a similar UNOCAL<sup>®</sup> product) (Approximately).

Decomposition and combustion products may be toxic. Heated containers may rupture, explode or be thrown into the air. Vapors are heavier than air and may travel great distances to ignition source and flash back. Not sensitive to mechanical impact. Material may be sensitive to static discharge, which could result in fire or explosion.

Carbon dioxide, foam, dry chemical, water (mist only).

NFPA 704 Rating 2-3-0 Product could float on water and spread fire. Keep storage containers cool with water spray. Use self-contained breathing apparatus (SCBA).

HAZARDOUS COMBUSTION PRODUCTS:

Thermal decomposition and burning may produce carbon monoxide.

## SECTION V -- REACTIVITY DATA

STABILITY:

Stable under normal temperatures and pressures, and not reactive with water.

INCOMPATIBILITY (MATERIALS AND CONDITIONS TO AVOID):

HAZARDOUS POLYMERIZATION:

HAZARDOUS DECOMPOSITION PRODUCTS:

Avoid acids, alkalies, oxidizing agents, heat, sparks and flame.

Not known to occur under normal temperatures and pressures.

None under normal temperatures and pressures. Thermal decomposition may produce carbon monoxide.

## SECTION VI -- HEALTH HAZARD DATA AND TOXICOLOGICAL PROPERTIES

PRIMARY ROUTES OF EXPOSURE:

Eye and skin contact; inhalation.

EXPOSURE LIMITS:

See Section II.

SIGNS AND SYMPTOMS OF EXPOSURE:

ACUTE: Eyes: Contact may cause severe irritation. Vapors may cause noticeable redness, tearing, irritation and pain.

*Skin:* Prolonged or repeated contact tends to remove skin oils, possibly leading to irritation and dermatitis. No significant skin absorption hazard.

Inhalation (Breathing): Vapor or mist can be irritating to the respiratory tract, cause headaches, dizziness, confusion, nausea, vomiting, impaired coordination, anesthesia and may have other central nervous system effects, including unconsciousness in extreme cases.

Ingestion (Swallowing): Can cause burning of the mouth, throat and abdomen, nausea, vomiting, diarthea, symptoms of central nervous system depression, including weakness, diminess, slow and shallow respiration, unconsciousness and convulsions. Aspiration into the lungs during ingestion or vomiting may cause mild to serve pulmonary injury and possibly death.

CHRONIC:

Conjunctivitis may occur upon chronic exposure. Prolonged and or repeated skin contact  $\pi u_i$  cause drying and cracking or dermatitis and inhalation may cause damage to the liver, kidne, spleen, longs or nervous system.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Individuals with pre-existing liver, kidney, spleen, lungs or nervous system dysfunction may have increased susceptibility to the effects of exposure. Contact with skin may aggravate pre-existing dermatitis.

CARCINOGENICITY:

IARC classifies chemicals by their carcinogenic risk, including agents that are known, probable or possible carcinogens. NTP classifies chemicals as either known carcinogens or for which there is a limited evidence of carcinogenicity in humans or sufficient evidence of carcinogenicity in experimental animals. ACGIH recognizes two categories of carcinogens, confirmed or suspected human carcinogens.

Methylene chloride and Perchloroethylene are listed by IARC as possible carcinogens. Methylene chloride and Perchloroethylene are classified by NTP as having limited evidence of carcinogenicity in humans or sufficient evidence of carcinogenicity in experimental animals. Methylene chloride is recognized by ACGIH as a suspected human carcinogen.

Also see Section X.

OTHER POTENTIAL HEALTH HAZARDS: Reports have associated prolonged and repeated occupational exposure to solvents with permanent brain and/or central nervous system damage. Intentional misuse by deliberately concentrating and inhaling this material may be harmful or fatal. Observe all appropriate control measures

The following information is required by Canadian WHMIS regulations. Irritancy is covered in Signs and Symptoms of Exposure in Section VI. There is no known human sensitization or toxicologically synergistic product associated with this product. Toluene and Xyiene have demonstrated experimental effects for reproductive toxicity, mutagenicity and teratogenicity. Ethyl benzene and Ethyl alcohol have demonstrated experimental effects for teratogenicity and mutagenicity. Methyl ethyl ketone and 1,1,1-Trichloroethane have shown experimental effects for teratogenicity. There is limited experimental evidence of reproductive toxicity and bacterial mutagenicity associated with Methylene chloride.

### SECTION VII -- EMERGENCY AND FIRST AID PROCEDURES

EYES:

For direct contact, flush eyes with water for 15 minutes lifting upper and lower lids occasionally. If irritation or redness from exposure to vapors or mists develops, move victim away from exposure into fresh air. Consult physician if irritation or pain persists.

SKIN:

Remove contaminated clothing and shoes. Wash skin twice with soap and water. Consult physician if irritation or pain persists.

*INHALATION:* Remove to fresh air immediately. Use oxygen if there is difficulty breathing or artificial respiration (*Breathing*) if breathing has stopped. Do not leave victim unattended. Seek immediate medical attention if necessary.

*INGESTION:* If conscious, drink 4 to 8 ounces of water and seek immediate medical attention. DO NOT induce (Swallowing) vomiting.

### SECTION VIII -- PRECAUTIONS FOR SAFE USE AND HANDLING AND PREVENTIVE MEASURES

SPILL Remove all ignition sources. Ventilate area and avoid breathing vapors. For large spills, isolate **PROCEDURES:** area and deny entry. If possible, contain as a liquid for possible re-refining. Absorb with compatible absorbent material. Shovel into closable container for disposal. Wear protective equipment specified in Section IX. Contain away from surface waters and sewers. WASTE DISPOSAL Dispose in accordance with federal, state, provincial and local regulations. Contact Safety-Kleen METHODS: regarding recycling or proper disposal. HANDLING Avoid contact with eves, skin, clothing or shoes. Use in well ventilated area and good breathing PRECAUTIONS: vapors or mists. Reen away from heat, sparks and flames. SHIPPING AND Keep container tightly closed when not in use and during transport. Empty product containers may STORING contain product residue. Do not pressurize, out, heut, weld, grind or expose containers to flame PRECAUTIONS: or other sources of ignition. See Section X for Packing Group information. PERSONAL Use good personal hygiene. Wash thoroughly with soap and water after handling and before eating. HYGIENE: drinking or using tobacco products. Clean contaminated clothing, shoes and protective equipment before reuse.

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### SECTION IX -- CONTROL MEASURES AND OTHER PREVENTIVE MEASURES

Where there is likelihood of spill or splash, wear chemical goggles and faceshield. Contact lenses EYE PROTECTION: should not be worn. PROTECTIVE GLOVES: Use polvethylene, ethylene vinyl or similar gloves to prevent contact with skin. RESPIRATORY Use NIOSH/MSHA-approved respiratory protective equipment when concentrations of vacors or **PROTECTION:** mists exceeds applicable exposure limit. A self-contained breathing apparatus (SCBA) is recurred for large spills and emergencies. Selection and use of respiratory protective equipment should be in accordance in the U.S.A. with OSHA General Industry Standard 29 CFR 1910.134 and in Canada with CSA Standard Z94,4-M1982. ENGINEERING Provide local exhaust or general dilution ventilation needed to maintain concentrations of vapors CONTROLS: or mists below applicable exposure limits. Where explosive mixtures may be present, systems safe for such locations should be used. OTHER PROTECTIVE Wear appropriate solvent-resistant boots, apron or other protective clothing where spills and EQUIPMENT: splashes are possible. A source of clean water should be available in work areas for flushing the eves and skin.

## SECTION X -- OTHER REGULATORY INFORMATION

DOT PROPER SHIPPING NAME:

DOT CLASS:

DOT ID NUMBER:

SARA TITLE III:

Class 3

PAINT RELATED MATERIAL

California as known carcinogens.

UN1263, Packing Group II

Product contains toxic chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372. Toxic constituents are listed with an asterisk in Section II of this Material Safety Data Sheet.

Product poses the following physical and/or health hazards as defined in 40 CFR 370.3 (Sections 311, 312 of SARA Title III):

This product contains detectable amounts of Methylene chloride CAS No. 75-09-2 and Perchloroethylene CAS No. 127-18-4. These materials are listed by the State of

Immediate (Acute) Health Hazard Delayed (Chronic) Health Hazard Fire Hazard

CALIFORNIA:

TDGA:

WHMIS CLASSIFICATION:

PAINT RELATED MATERIAL, Class 3.2, UN1263, Packing Group H

Class B2 (Flammable and Combustible Materials, Flammable Liquid); Class D1B (Poisonous and Infectious Materials, Immediate and Serious Toxic Effects, Toxic Material);

Class D2A (Poisonous and Infectious Materials, Other Toxic Effects, Very Toxic) Material (

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## SECTION XI -- PREPARATION INFORMATION

PREPARED BY: Product MSDS Coordinator FORM PART NO. 82343

ORIGINAL ISSUE DATE: July 20, 1989

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REVISED: February 28, 1991

SUPERSEDES: December 1, 1989

User assumes all risks incident to the use of this product. To the best of our knowledge, the information contained herein is accurate. However, Safety-Kleen assumes no liability whatsoever for the accuracy or completeness of the information contained herein. <u>No representations or warranties, either expressed ar</u> implied, or merchantability. fitness for a particular purpose or of any other nature are made hereunder with respect to information or the product to which information refers. The data contained on this sheet apply to the material as supplied to the user.



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The attached data package covers TCLP analyses of materials obtained from Safety-Kleen Recycle Centers during July of 1990. Each Recycle Center prepared samples for each waste stream received and/or generated. Each sample represents a composite of individual samples received for testing over a fixed period of time. For example, the Parts Washer Solvent sample at each Recycle Center was generated by keeping in a refrigerator a small retain from each tanker received from individual SK Branches over a two week period. At the end of the two weeks, all the retains were combined into one jar.

All composited materials were shipped in coolers immediately upon generation with formal chain-of-custody forms to GT Environmental Laboratories certified for the states involved with each individual recycle center. These laboratories performed the analyses, making sure all holding time restrictions were met.

The resulting data is presented in several different formats. The first page of each set includes a summary of physical and chemical properties their mean and range. It is important to note that <u>all</u> samples, including liquids, were extracted for the TCLP organic phase of the work.

The next set shows volatiles data for whole samples. These samples had to be diluted considerably to bring everything on scale. Thus, the detection limits are relatively high. These data can be used where the sample would normally just be filtered and analyzed for TCLP organic constituent content.

The third set of data is a comparison of the TCLP extracted and non-extracted components. This is useful where one is close to the regulatory limits.

The final page of each set is the detailed, site-bysite data from which the initial summary page was generated. Again, the organic data is for a TCLP extract of the whole sample.

The data summaries have been provided to the Recycle Centers, who in turn have sent the data to the individual SX Branches whose waste streams were included in the composites.

#### SAMPLE IDENTIFICATION CODES

PWS - Spent Parts Washer Solvent

- IC Spent Immersion Cleaner
- PGC Spent Paint Gun Cleaner
- DCS Spent Dry Cleaning Solvent
- DM PWS Dumpster Mud
- PWBD Parts Washer Solvent Distillation Bottoms
- MDB Miscellaneous Distillation Bottoms
- CLW Chlorinated Waste Water
- NCLW Nonchlorinated Waste Water
  - PWCS Parts Washer Cooker Solids
- DCCS Dry Cleaner Cooker Solids
- FUEL Blended Outbound Fuel for Kiln

ACAMADONELY -- **X**a 100000000 14 52000000 34 benz acid 3407904 benzyi 'cé ben(alanthr Dentabyren benibitiuar Denightion Senikifluar Surbenanth >-201407000 5-20-01 3-2C1-125 48ronenon C2C:8 C2HOCI C2H5C1 CC:4 C3 CH2C12 CH38r CH3C: CHBr2CI CHRM CH8rC12 CHC:2 chrymn4 4-Claniline Cibenz C-Denz C:8-benz C:Sbenzane Clobutadien C:5-13-but Clacycoent 3.3°Ci25enz C:5-0 4CiChieonni 2-Cinaph CiSchena C:5-gnenci 2Ct-onend 4Ctonenon 2-0'VE c: cr3 eci 222 e-1.0-002 sben(a.njan 1.1-002

1.2-CCA

1.1-002

1.2-002

1.2-0013

1.3-00:3

1.4-00:8

Acentechtra

Anthenman Acensonthytene Lonicom -**Jenterson** Armenia MC-Chyhaxylphtialace Sarium **Banzoic** Acid Benzene Senzy Alconol **Benzoialanttiracene** Benzola byrene 3enzo(b)fluoranthene Benzoig, f., giornene Benzolkifluoranmene BUTADOULAR big2-Chiorethoxymethane Sel2-Chiorcemy) Ener bi#2-Chiorosecorceys) Ether 4-Bromoonenyi phenyi Ether Hexachioroethane Vinvi Chioride Chiorcethane Carbon Tetrachionde Cadmium Methylene Chloride Bromomethane Chloromethane Cibromochioromethane Bromotorm Bromodicaloromethane Chioroform Chrymne 4-Chloroaniline Chierobenzene Chloropenzane Hexachioropenzane Hexachiorcoenzene Hexacatorocutadiene Hexachiorocutadiene Hexachlorocyclopentadiene 3.3'-Cichiorobenzidine Merachiorosthane 4-Chicro-3-methylphenol 2-Chioronaphthalene Pentachiorophenoi Pentachiorophenol 2-Chiaraonenai 4-Chiorophenyl phenyl Ether 2-Chiarosonyi Vinyi Elher Cromium Mechylonencie (total) Circon Cisuíde stan I. 2--Cientorcorcoane Dicenzora, hianthracane 1.1-Dictiorcemane 1,2-Cichloroemane 1,1-Cichiorcemene 1,1-Dichioroemene (torai) 1,2-Cichiaraomisma 1.3-Cichioropenzane

1,4-Dichlorocenzane

#### Abbreviation Key

2.4-4Cion demonthal dibenturan 1-0-04000 d-n-octone 2.4dntroone 2.4-ONT 4.5dn2Meg 1.2-0C7A 2.5-ONT em-benz Juoranthen ducrene. :2 2-nex'one ₽đ ind[123-cd] icocharane VEX 2-441400 2Me-oneno Alia-cheno 2.4Mean'a Me2onthai Naon' ene 2-ntroanil 3-ntroanil 4-ntroanil. nitrobenz N-nitroea N-nitroeo 4ntroonenci 2ntroch of 1122804 PCE OH chenanthre phenol pyrene pyridine Se sa ----1.1.1-TCA 1.12-TCA TCE 1-1.3-0025 1.2.4-70:8 2.4.5(Cion 2.4.5-702 2.4.5Cion 2.4 5-702 tauene VChioride -----174044 **....** matta :2 coo error no analywe

2.4-Cichioroonenai Ciemyionmalate Cibenzoruran Ci-n-ournonmalate Ci-n-composition and 2.4-Cinitroonence 2.4-Cintrolaiuene 4 5-Cinitro-2-methylanence 1,2-Cichioroprosene 2.5-Dinitrotayene Ethylbenzene Puoranmene Rugrene fantooint 2-mexanone Vercurv Indendi 1 2, 3-c. 3 layrene leconorone 2-Butanone (methyl ethyl tatonel 2-Methylnaonthalene 4-Methyl-2-pentanone 2-Methylonenci 4-Methylohenol 2.4-Dimethylonenol Oimethylonthalate Nachthalene 2-Nitroaniline 3-Nitroeniline 4-Nitroaniline Nitrobenzene N-Nitroeodionenylamined N-Nitroso-di-n-gropytamine 4-Nitrochenoi 2-Nitroonenci Land 1.1.2.2-Tetrachiorcethane Tetrachiorcethene 2H Phenanthrane Phenod Pyrana Pyridine Salenium soecific gravity Syrene 1,1,1-Trichloroethane 1.1.7-Trichloroathene Trichloroethene trans-1,3-Clettioropropene 1 2.4-Trichloropenzane 2,4,5-Trichlorconendi 1.4.5-Trichlorconence 2,4,5-Trienterconence 2, 4, 5-Friensorconence Toluar-e Viny Chiende Viny Acatale Xylenes (total) not applicable MARY ARACT - NO ARAIYSE



# Farts Washer Solvent Wastes

Parameter	Reg. Limit	# Samp	Avg	Min	Max
рH	<2 cr >10	7	. 5.5	5.5	8.0
SG	па	. 7	0.79	0.73	0.30
<u>ep</u>	< 100	7	112	73	151
As	5	7	0.CO	0.00	0.00
Ea	100	7	0.47	0.00	1.20
Cd	1	7	0.05	0.00	0.07
Cr	5	7	0.00	0.00	0.02
25 25	5	7	0.90	0.47	1.60
Hg	0.2	7	0.00	0.00	0.00
Sə	1	7	0.00	0.00	0.00
Ag	5	7	0.00	0.00	0.00
cresol	200	7	2.70	0.00	9.00
2.4-0NT	0.13	7	0.63	0.00	4,40
Cl6-benz	0.13	7	0.00	0.00	0.00
Cl6-13-but	0.5	7.	0.00	0.00	0.00
Ci6-eth	3	7	0.00	0.00	0.00
nitrobenz	2	.7	0.00	0.00	0.00
CI5-phenol	100	7	0.00	0.00	0.00
pyridine	5	7	0.00	0.00	0.00
2.4.5-TCP	400	7	0.00	0.00	0.00
2.4.6-TCP	2	7	0.00	0.00	0.00
benzene	0.5	7	0.04	0.00	0.15
CCI4	0.5	7	0.00	0.00	0.00
Citenz	100	7	0.00	0.00	0.00
CHCI3	6	7	0.06	0.00	0.41
1.4-0018	7.5	7	0.05	0.00	0.38
1.2-004	0.5	7	0.00	0.00	0.00
1.1-005	0.7	7	0.00	0.00	0.00
MEX	< 200	7	0.74	0.00	3.90
PC3	0.7	7	0.55	0.00	2.30
TCE	0.5	7	0.07	0.00	0.49
VChlorida	e C.2	7	0.00	0.00	0.00

### Physical Properties and TCLP Analysis, ppm

Less than values are treated as zeros in the statistical analysis. Greater than values are treated as the value in the statistical analysis.



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# Parts Washer Solvent Wastes

# Volatile Organics (EPA 8240) Analysis, ppm

), Para	motor	CH3CI	CH38r	C2H3CI	C2H5CI	CH2Cl2	acolono	CS2	1.1-DCE	1.1-DCA	1.2-DCE	CHCI3
1 40	SHE											
٨١	CL	-: 100	< 100	< 100	< 100	< 50	< 1000	< 50	< 50	< 50	< 50	< 50
w	DE	< 120	< 120	< 120	< 120	< 60	< 1200	< 60	< 60	< 60	< 60	< 60
W	EL	< 120	< 120	< 120	< 120	< 62	< 1200	< 62	< 62	< 62	< 62	< 62
W	HI.	< 120	< 120	< 120	< 120	69	< 1200	< 62	< 62	< 62	< 62	< 62
٨1	1 E	< 100	< 100	< 100	< 100	< 50	< 1000	< 50	< 50	< 50	< 50	< 50
A.1	ATA	< 250	< 250	< 250	< 250	120	< 2500	< 120	< 120	< 120	< 120	< 120
$\mathcal{C}_{1}$	ΠĒ	< 600	< 600	< 600	< 600	< 300	< 6000	< 300	< 300	< 300	< 300	< 300
Para	mətər	1.2-DCA	JAI <sup>2</sup> K	1.1.1-TCA	CC14	v-acetate	CHID/CI2	1.2-DCPA	1.3-DCPE	TCE	CH0/2CI	1.1.2-YCA
1.40	SHE	· ··· <b>··</b> ···· ·				······································						
A.1	CI	< 50	< 1000	< 50	< 50	< 500	< 50	< 50	< 50	410	< 50	< 50
W	DE	< 60	< 1200	380	< 60	< 600	< 60	< 60	< 60	, < 60	< 60	< 60
w	EL	< 62	< 1200	750	< 62	< 620	< 62	< 62	< 62	< 62	< 62	< 62
w	HE	< 62	< 1200	480	< 62	< 620	< 62	< 62	< 62	< 62	< 62	< 62
Å.	16	< 50	< 1000	300	< 50	< 500	< 50	<sup>′</sup> < 50	< 50	61	< 50	< 50
<b>A I</b>	A/A	< 120	< 2500	< 120	< 120	< 1200	< 120	< 120	< 120	< 120	< 120	< 120
С	<u>Më</u>	< 300	< 6000	2300	< 300	< 3000	< 300	< 300	< 300	< 300	< 300	< 300
Рага	nalaz	tionzono	2-CVF	1.3-DCPE	CHRCL	Ma-2-000	2-haviona	PCF	1 1 2 2PCA	toluona	Ct. hunz	ath - Nanz
140	CI11											din thom
	<u> </u>		< 100	< 50	<u>~ 50</u>	< 500	< 500	96	- 50	18/)	- 60	67
11/	06 06	<. 50 2. 60	< 120	< 60	00 × 50	< 600	< 600	720	< 60	480	< 60	40 400
147	1712	< 00 < 60	~ 120	< 60	< 60 -< 60	< 620	< 630	020	< 62	400	< 60	320
11/	111		~ 120	< 62	2.62	< 620	< 620	10//0	< 62	340	< 62	310
17	11		< 100	~ 60	~ 02	~ 600	~ 500	1.5.67	< 50	2040	N U2 2 60	
	11.	× 190	2:060	< 100	< 120	< 1200	- 1200	< 120	< 120	420	× a0 2 190	130
лт С	$\overline{H}^{\pm}$	-: 300	< 600	< 300	< 300	< 3000	< 3000	1500	< 300	1500	< 300	140 540

# Parts Washer Solvent Wastes

# Volatile Organics (EPA 8240) Analysis, ppm

	motor CONT	styrana	xylunaa	1.2-DCIB	1.3-DCI0	1.4-DCIB	
- 170	$\frac{SII}{CI}$		660	< 100	< 100	< 1(X)	
IV	DE	< 60	4100	790	290	< 60	
W	t <sup>e</sup> t -	- 62	2500	< 62	< 62	< 62	
W	ΗĒ	90	3400	340	< 62	90	
٨f	1E	< 50	1300	140	< 100	< 100	
M	<b>XIA</b>	< 120	920	< 250	< 250	< 250	
C	ne.	17000	3900	1900	380	1500	

### Parts Washer Solvent Wastes TCLP Organics And EPA 8240/8270 Analyses, ppm

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		Parameter	crosol	2.4-DNT	Cl6-benz	Cl6-13-but	Cl6-eth	nitrobanz	Ci5-phonol	pyridina	2.4.5-TCP	2.4.6-TCP	
		Hog Limit	200	0.13	0.13	0.5	3	2	100	5	400	2	
IAL	5/11	E ANALYSIS								na			
Al	CL	TCLP	0	< 0.033	< 0.033	< 0.033	< 0.033	< 0.033	< 0.17	< 0.17	< 0.033	< 0.033	
	CI.	8240/8270	< 1	< 1	< 1	< 1	< 1	< 1	< 5	na	< 1	< 1	
W	DE	TCLP	3	< 0.033	< 0.033	< 0.033	< 0.033	< 0.033	< 0.17	< 0.17	< 0.033	< 0.033	
W	DE	8240/8270	280	< 100	< 100	< 100	< 100	< 100	< 500	na	< 100	< 100	
W	EL.	TCLP	6.7	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 5.0	< 1.0	< 1.0	
W	EL	8240/8270	< 1200	< 1200	< 1200	< 1200	< 1200	< 1200	< 6200	na	< 1200	< 1200	
11	HE	TCLP	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 1.6	< 1.6	< 0.33	< 0.33	
w	HE	824(V8270	< 1200	< 1200	< 1200	< 1200	< 1200	< 1200	< 6200	ла	< 1200	< 1200	
	ΪË	TCLP	< 0.009	< 0.033	< 0.033	< 0.000	< 0.033	< 0.033	< 0.17	< 0.17	< 0.033	< 0.033	
/	<u> </u>	0240/0270	< 50	< 50	< 50	< 50	< 60	< 50	< 250	na.	< 50	< 50	
	AIA.	<i>TCLP</i>	< 0.67	4.4	< 0.67	< 0.67	< 0.67	< 0 67	< 3.3	< 3.3	< 0.67	< 0.67	• • • • •
_ 11	_ AIA	8240/8270	< 100	< 100	< 100	< 100	< 100	, < 100	< 500	na	< 100	< 100	
C	- NE	<i>TCLP</i>	0.21	< 0.033	< 0.033	< 0.033	< 0.033	< 0.033	< 0.17	< 0.17	< 0.033	< 0 033	
<u> </u>	<u> HE</u>	8240/0270	< 100	< 100	< 100	< 100	< 100	< 100	< 500	na	< 100	< 100	
		Paramétor	banzono	, CCI4	Cibonz	CHC13	1.4-DCIB	1.2-DCA	1.1-DCE	MEK	PCE	ĨĊĔ	VChlorklu
		Nog Limit	0.5	0.5	100	6	7.5	0.5	0.7	200	0.7	0.5	0.2
LAD	SHE	ANALYSIS											
A.F	CL.	TCLP	- 🖌 O	< 0.10	< 0.10	< 0.10	< 0.20	< 0.10	< 0.10	< 2.0	0.61	< 0.10	< 0 20
	Ct	8240/0270	s. 50	< 50	< 50	< 50	< 100	< 50	< 50	< 1000	96	410	< 100
W	DE	ICLP	< 0.10	< 0,10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 2.0	0.16	< 0.10	< 0.20
IV	DE	8240/8270	< 60	< 60	< 60	< 60	< 60	< 60	< 60	< 1200	720	< 60	< 120
IV	EL.	TCLP	≪ 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	3.9	2.8	< 0.10	< 0.20
W	ĒĿ	8240/0270	< 62	< 62	< 62	< 62	< 62	< 62	< 62	< 1200	930	< 62	< 120
W	HE	TCLP	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 2.0	< 0.10	0.49	< 0.20
W	HE.	8240/8270	< 62	< 62	< 62	< 62	90	< 62	< 62	< 1200	1900	< 62	< 120
×1	11.	TCLP	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	< 0.10	< 0.10	< 2.0	0.50	< 0.10	< 0 20
λ1	1 E	8240/8270	< 50	< 50	< 50	< 50	< 100	< 50	< 50	< 1000	140	61	< 100
. 11	AIA	TCLP	0.15	< 0.10	< 0.10	0.41	< 0.20	< 0.10	< 0.10	< 2.0	0.15	< 0.10	< 0.20
٨f	AIA	8240/8270	< 120	< 120	< 120	< 120	< 250	< 120	< 120	< 2500	< 120	< 120	< 250
C	<b>NE</b>	YCLP	0.12	< 0.05	< 0.05	< 0.05	0.38	< 0.05	< 0.05	1.3	0.27	< 0.05	< 0.1
~	· · · ·	112111111211		~ 300	< 300	< 300	1500	< 300	< 300	< 6000	1500	\$ 300	< 600
C .	$HU^{\circ}$	01400170	× 500	<	~ 000				•••••			* (11)()	

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# Parts Washer Solvent Wastes

### Physical Properties and TCLP Metals Analysis, ppm

	Paramotor	pH	<b>\$</b> G	FP -	As	Ba	Cd	Cr	Pb	- Ho	Sa	Ag
	flag Limit	<2 or >10	na	< 100	5	100	1	5	5	0.2	1	5
LAD	SHE											
M	CL	5.5	0.79	125	< 0.5	0.51	0.041	< 0.01	0.47	< 0.001	< 0.2	< 0.01
W	DE	6.5	0.799	110	< 0.05	0.6	< 0.05	< 0.05	1.3	< 0.01	< 0.05	< 0.05
W	EL	7	0.777	151	< 0.05	06	0.06	< 0.05	0.5	< 0.01	< 0.05	< 0.05
W	HE	6.5	0.775	95	< 0.05	1.2	0.07	< 0.05	1.2	< 0.01	< 0.05	< 0.05
Åf	1 E	G	0.78	115	< 0.5	0.27	0.055	< 0.01	0.74	0.002	< 0.2	< 0.01
M	AHA	6.5	0.8	110	< 0.5	< 1.0	0.059	0.017	1.6	0.0018	< 0.2	< 0.01
С	NE	8	0.79	78	< 1	0.09	0.05	< 0.02	0.5	< 0.002	< 1	< 0 05

### TCLP Semi Volatiles Analysis, ppm

	Paramotor	crosol	2.4-DNT	Cl6-banz	CI6-13-but	Cl6-ath	nitrobenz	CIS-phonol	pyrktina	2.4.5-TCP	2.4.6-YCP	
	Nog Limit	200	0.13	0.13	0.5	3	2	100	5	400	2	
LAD	SITE											
A.1	CL	9	< 0.033	< 0.033	< 0 033	< 0.033	< 0.033	< 0.17	< 0.17	< 0.033	< 0.033	
W	DE	3	< 0 033	< 0 033	< 0.033	< 0.033	< 0.033	< 0.17	< 0.17	< 0.033	< 0 033	
W	EL	67	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 5.0	< 1.0	< 1.0	•
W	HE	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 1.6	< 1.6	< 0.33	< 0.33	
Åf	1 E	< 0.033	< 0.033	< 0.033	< 0 033	< 0.033	< 0.033	< 0.17	< 0.17	< 0 033	< 0.033	
11	ALA -	< 0.67	4.4	< 0.67	< 0.67	< 0.67	< 0.67	< 3.3	< 3.3	< 0.67	< 0.67	
С	<i>NE</i>	0.21	< 0.033	< 0.033	< 0 033	< 0.033	< 0.033	< 0.17	< 0.17	< 0 033	< 0.033	

#### TCLP Volatiles Analysis, ppm

		Paramotor	bonzono	CCI4	Clbenz	CHCI3	1.4-DCIB	1.2-DCA	1.1-DCE	MEK	PCE	TCE	VChlorktø
		Rog Llinit	0.5	0.5	100	6	7.5	0.5	0.7	200	0.7	05	0.2
LAD	SHE												
11	CL.		× 0.10	< 0.10	< 0.10	< 0.10	< 0.20	< 0.10	< 0.10	< 2 0	0.61	< 0.10	< 0 20
W	DE		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 2.0	0.16	< 0.10	< 0.20
W	EL		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	3-9	2.8	< 0.10	< 0.20
W	ĦĒ		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 2.0	< 0.10	0.49	< 0.20
	115		× 0.10	< 0.10	< 0.10	< 0.10	< 0.20	< 0.10	< 0.10	< 2.0	0.58	< 0.10	< 0.20
71	HA		0.15	< 0.10	< 0.10	0.41	< 0.20	< 0.10	< 0.10	< 2.0	0.15	< 0.10	< 0 20
$\mathcal{C}$	<i>nt</i> :		0.12	< 0.05	< 0.05	< 0.05	0.38	< 0.05	< 0.05	1.3	0.27	< 0.05	< 0.1

# Physical Properties and TCLP Analysis, pom

<u>raramater</u>	Feg. Limit	# Samo	Avg	Min	Max
рH	<2 or >10	0	7.3	5.5	10.0
SG	. na	1	1 2	1.2	1.2
FP	< 100	. 6	107	EC	160
25	5	ŝ	0	C	
Ea	100	ŝ	Q.63	0.28	1 00
Cd	ţ	6	1.46	0.30	7 30
C <i>:</i>	5	ô	0.04	0.00	0.00 0.16
25 ·	5	õ	98.03	1.30	573.00
Ηg	0.2	5	0.00	0.00	0.00
Sa	1	6	0.00	a.ca	0.00
Âg	5	6	0.00	0.00	0.00
crasol	200	5	22.31	0.00	95.00
2.4-0NT	0.13	5	0.00	0.00	. 0.00
Cl6-benz	0.13	6	0.00	0.00	
C16-13-but	0.5	6	0.00	0.00	0.00
Cl6-eth	3	6	0.00	0.00	0.00
nitrobenz	2	6	a.da	0.CO	0.04
CI5-phenol	100	6	0.00	0.00	0.00
pyridine	5	5	0.00	0.00	0.00
2.4.5-TCP	400	ô	0.00	0.00	0.00
2.4.6-TCP	2	5	0.00	0.00	0.00
benzene	0.5	6	0.12	0.00	0.52
CC:4	0.5	5	0.03	0.00	0.17
Clbenz	100	- 5	0.72	0.00	4 30
CHCI3	ô	5	0.00	0.00	0.00
1.4-0015	7.5	6	0.82	a.ca	4 40
1.2-0CA	G.5	5	0.00	a.ca	0.00
1.1-002	0.7	5	0.00	a.ca	0.00 0.00
MEK	200	6	2.50	a.ca	15.00
PCE	0.7	5	0.92	0.00	3.80
TCE	0.5	6	G. 1 G	0.00	0.00
YChlorids	0.2	5	0.00	0.00	0.00

Less than values are treated as teros in the statistical analysis. Greater than values are treated as the value in the statistical analysis.



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# Volatile Organics (EPA 8240) Analysis, ppm

7.1	mator	CHBCI	CH307	C2H3CI	C2115CI	C112C12	acotono	CS2	1.1-DCE	1.1-DCA	1.2 (DCE	CHCI3
Ð	SHE											
Ī	CL.	< 100	< 100	< 100	< 100	< 50	< 1000	< 50	< 50	< 50	< 50	29
V	DE	< 10	< 10	< 10	< 10	< 5.0	< 100	< 5 0	< 5.0	< 5.0	< 5.0	< 5 0
V	E. I.	< 110	< 110	< 110	< 110	< 55	< 1100	< 55	< 55	< 55	< 55	< 55
1	1 E	< 330	< 330	< 330	< 330	610	< 3300	< 170	< 170	< 170	< 170	< 170
2	ne	< 1000	< 1000	< 1000	< 1000	< 500	< 10000	< 500	< 500	< 500	< 500	< 500
	mataz	1.9.1\(\)		1.1.1.7/24	CCH	v-scotato	C1101/C12	1.2-DCPA	CALIXAPE	106	CH052C1	1.1.2.104
1	SHF			1.1.1-1.0.4		• 4001410						1.1.2.107
1	$\frac{G_{III}}{CI}$	< 50	- T(X)()	48	< 50	< 500	< 50	< 50	< 50	< 50	< 50	< 50
v	DE	< 5.0	s: 100	t t	< 5.0	< 50	< 5.0	< 5.0	< 5.0	6.4	< 5.0	< 5.0
V	£1	< 55	s 1100	750	< 55	< 550	< 55	< 55	< 55	< 55	< 55	< 55
1	1 E	< 170	< 3300	1500	< 170	< 1700	< 170	< 170	< 170	< 170	< 170	< 170
;	ΠĒ	≪500	< 10000	2300	< 500	< 2500	< 500	< 500	< 500	< 500	< 500	< 500
Y.41	nətər	banzana	2 · CVE	1.3-DCPE	CHIDr3	Ma-2-pan	2-hax'ona	PCE	1.1.2 2PCA	tokiana	CI-bonz	ath-bonz
۱ <i>D</i>	SHE											
t	CI	< 50	< 100	< 50	< 50	< 500	< 500	230	< 50	440	< 50	150
v	DE	52	- (	< 5.0	< 5.0	< 50	< 50	84	< 5 0	550	< 5.0	270
v	EL -	< 55	\$ 110	< 55	< 55	< 550	< 550	740	< 55	500	430	1700
1	1 E	< 170	< 340	< 170	< 170	< 1700	< 1700	260	< 170	530	< 170	2(8)
2	<b>N</b> E	< 500	< 1000	< 500	< 500	< 5000	< 5000	1000	< 500	4600	< 500	1800
				•								

313	motor	styrono	xylanas	1.2-DCIU	1.3-DCB	1.4~DCIB	
40	SHE						
Ũ.	CI	< 50	1200	< 100	< 100	< 100	to the second second second second second second second second second second second second second second second
V	DE	< 5.0	13000	< 5.0	47	< 5.0	
, <b>V</b>	ΕL	<: 55	1500	250	< 55	100	
М	11.	< 170	1400	<170	<170	<170	
С	$H^{1}$	< 500	0700	< 500	< 500	< 500	

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### Volatilo Organics (EPA 0240) Analysis, ppm

elor	CH3CI	<ul> <li>CH307</li> </ul>	C2143CI	C2115CI	CH2Cl2	acotono	CS2	L1-DCE	I.1-DCA	1 2 DCE	CHCB
ÎLÊ											
CI	< 100	< 100	< 100	< 100	< 50	< 1000	< 50	< 50	< 50	< 50	29
DE	< 10	< 10	< 10	< 10	< 5.0	< 100	< 5.0	< 5.0	< 5 0	< 5.0	< 5 0
E1	< 110	< 110	< 110	< 110	< 55	< 1100	< 55	< 55	< 55	< 55	< 55
115	< 330	< 300	< 330	< 330	610	< 3300	< 170	< 170	< 170	< 170	< 170
<b>DE</b>	< 1000	< 1000	< 1000	< 1000	< 500	< 10000	< 500	< 500	< 500	< 500	< 500
							•				
elor	1,2 DCA	JAL K	F. I. I - TCA	CCI4	v-acetate	CHD+C12		1.3-DCPE	1CE	CHID:2CI	1.1.2-1CA
JIE											
CL	< 50	< 1000	48	< 50	< 5(X)	< 50	< 50	< 50	< 50	< 50	< 50
DE	< 5.0	< 100	11	< 5.0	< 50	< 5.0	< 5.0	< 5 0	<b>6</b> 4	< 5 0	< 5.0
EL	< 55	< 1100	750	< 55	< 550	< 55	• < 55	< 55	< 55	< 55	< 55
LE.	< 170	< 3300	1500	< 170	< 1700	< 170	< 170	· < 170	< 170	< 170	< 170
<i>NE</i>	< 500	< 10000	2300	< 500	< 2500	< 500	< 500	< 500	< 500	< 500	< 500
ulur	honzono	2 · CVE	1.3-DCPE	CH0/3	Ma-2-pan	2-hax'ona	PCE	1.1.2.2PCA	toluene	Cl-bonz	oth-bonz
SHE								- /			
CL	< 50	< 100	< 50	< 50	< 500	< 500	230	< 50	440	< 50	150
DE	52	< 10	< 5.0	< 5 0	< 50	< 50	84	< 5.0	550	< 5 0	270
EL	< 55	< 110	< 55	< 55	< 550	< 550	740	< 55	500	430	1700
1 E	< 170	< 340	< 170	< 170	< 1700	< 1700	260	< 170	530	< 170	200
ne –	< 500	< 1000	< 500	< 500	< 5000	< 5000	1000	< 500	4600	< 500	1800

styrono xylonos 1.2-DCIB 1.3-DCIB 1.4-DCIB

SHE						· · · ·
CI	< 50	1200	< 100	< 100	< 100	
DE	< 5.0	13000	< 5.0	47	< 5.0	
11	<. 55	1200	250	< 55	100	
11	< 170	1400	×.170	<170	<170	
$Ht^{2}$	< 500	8700	< 500	< 500	< 500	

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### Semivolatile Organics (EPA 0270) Analysis, ppm

metər	phanol	b -2CL othr	2Cl-phonol	1.3-DCID	1.4 · DCIB	bonzyl 'ol	1.2-DCIB	2Ma-phano I	5-2CI-1PE	4Mo-phono	Nintroso
SHE	• • • • • • • •										
CL	< 2200	- 2200	< 2200	< 2200	< 2200	< 4400	< 2200	< 2200	< 2200	< 2200	< 2200
DE	< 3.0	< 3.0	< 3 0	< 3.0	< 3.0	< 3.0	< 3 0	25	< 3.0	< 3.0	< 3.0
E L	< 1100	< 1100	< 1100	< 1100	< 1100	< 2100	< 1100	< 1100	< 1100	< 1100	< 1100
1 E	230	-: 64	< 63	< 63	200	< 130	450	420	< 63	350	< 63
ΠE	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100
CL.	< 2500	< 2500	< 2500	<b>9</b> 9XXX9	220000	< 5100	610000	< 2500	< 2500	< 2500	< 2500

matar	C2C16	nitrobanz	Isophorone	2ntroph <sup>1</sup> ol	2.4Meph'el	bonz ackl	b-2Clothox	2.4-dClph	1.2.4 - ICIB	Naph'ono	4 - Clanifine
SHE											
CL	< 2200	< 2200	< 2200	< 2200	< 2200	< 11000	< 2200	< 22()()	< 2200	< 2200	< 4400
DE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 15	< 3 0	< 3 0	< 3 0	180	< 3.0
ĒL	< 1100	< 1100	< 1100	< 1100	< 1100	< 5300	< 1100	< 1100	< 1100	1200	< 2100
1 E	< 63	< 63	< 63	< 63	< 63	< 310	< 63	· < 63	< 63	430	< 130
ΠĒ	< 100	< 100	< 100	< 100	< 100	< 500	< 100	< 100	< 100	1400	< 100
CL	< 25(8)	< 2500	< 2500	< 2500	6800	< 12000	< 2500	< 2500	< 2500	< 2500	< 5100

meter Clobuladion (CD).tophnl 2. Monaph. Clocycpont. 2.4.6(Clph. 2.4.5(Clph. 2-Clnaph. 2-ntroanil. Mo2phthal. aconaphthy 2.6-DNT

SIII:					•						
CI	< 2200	< 4400	< 2200	< 2200	< 2200	< 2200	< 2200	< 11000	< 2200	< 2200	< 2200
DE	< 3.0	. < 3.0	120	< 3.0	< 3.0	< 15	< 3.0	< 15	< 3 0	< 3.0	< 3.0
Et	< 1100	< 2100	< 1100	< 1100	< 1100	< 1100	< 1100	< 5300	< 1100	< 1100	< 1100
115	< 63	< 130	140	< 63	< 63	< 63	< 63	< 310	< 63	< 60	< 63
ne.	< 100	< 100	1900	< 100	< 100	< 500	< 100	< 500	< 100	< 100	< 100
CL	< 2500	×. 5100	< 2500	< 2500	< 2500	< 2500	< 2500	< 12000	< 2500	< 2500	< 2500

# SAFETY-KLEEN MULTI-USE LACQUER THINNER 6801

# MATERIAL SAFETY DATA SHEET

# SECTION I -- PRODUCT INFORMATION

#### Safery-Kleen Corporation - 777 Big Timber Road - Elgin, IL 60123 For Product/Sales Information Call 708/697-3460

	EMERGENCY TELEPHONE	MEDICAL:	TRANSPORTATION:	
	These numbers are for emergency use only. If you desire non-emergency information about this product, please call the telephone number	800/942-5969 or 312/942-5969 RUSH POISON CONTROL CENTER CEICAGO, ILLINOIS (24 HOURS)	800/424-9300 CHEWTREC	
	Used above			
_			• • • • • • • • • • • • • • • • • • •	

#### IDENTITY (TRADE NAME): SAFETY-KLEEN MULTI-USE LACQUER THINNER 6301

6301

NA

SX PART NUMBER:	
FAMILY/CHEMICAL NAME:	

PRODUCT USAGE:

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LACQUER THINNER

•				00***	10000
VAME	STOOM	<u> </u>	CAS 80.	2227 221 (2227)	TLY (mm)
	Toluci	11-43	1C <b>S-</b> 38-3	100 110 STEL	100 110 STEL
Xylee	Xylcl	3-4	1330-20-7	100 110 STEL	100 • 110 STEL
•Meihyl Eihyl Keitae	MEK	• -5 •	73-93-3	200 . 300 STEL	200 300 STEL
•Methyl Isoburyl Keicze	MEK . ·	-3	108-10-1	50 75 5155	SO 75 STEL
•Acecare	2. <del>7.0922</del> 020	20-30	67-54-i ·	750 1000 STEL	750 1000 STEL
•Lopropiaci	Is <del>cerce</del> yi Aleenel	5-15	67-63-0	400 500 STEL	400 \$00 STEL
Special Laced Spirin	VM & P Naphtha	0.5-32	3060 <b>2</b> 38	300 · · · 400 STEL	300 57.22
Isoburyl Accuse	لنضيبها كنح لمحتد لمحط	0.1-15	110-19-0	120	150
Ethyl 3-Ethoxypropionate	3-Ethex/ <del>propioni</del> e Acid Ethyl Etter	- 5	763-69-9	NÆ	ME

N/E = Not Established \* See Section X - Cuber Regulatory Information

# SECTION III -- PHYSICAL DATA

BHYSICAL STATE, PEARANCE AND ODOR:
ooiling point:

Liquid - coloriesz, clear, with a characteristic solvent odor.

-131 - 347° F

Not Applicable

EVAPORATION RATE:

MELTING POINT:

3.30 (N-Buryl = 1)

APOR DENSITY:	3.02 (Aur = 1)
APOR PRESSURE:	73.5 mm Hg @ 20º C
OLUBILITY IN WATER:	Appreciable
<i>E:</i>	Not Applicable
PECIFIC GRAVITY:	-0.8000 - 0.3438 (Water = 1)
OLECULAR WEIGHT:	Use molecular weight of individual components.
OLATILE ORGANIC COMPOUNDS:	800 - 844 g/L

# SECTION IV -- FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:

 $< 20^{\circ}$  F(TCC)

Not Available

AUTOIGNITION TEMPERATURE:

CONDITIONS OF FLAMMABILITY: Normal imperatures and pressures.

FLAMMABLE LIMITS IN AIR - LOWER: 1.0%

EXTINGUISHING MEDIA:

FIRE FIGHTING PROCEDURES - SPECIAL: NFPA 704 Rating 2-3-0

Water may be used to cool containers and fire fighters. However, water could cause free solvent to float and spread fire.

UPPER: 13.2%

#### UAL FIRE AND EXPLOSION HAZARDS:

Flammable liquid. Most components are Class 1B with flash point below 73° F and boiling point above 100° F.

HAZARDOUS COMBUSTION PRODUCTS: Carbon Monoxide

SECTION V -- REACTIVITY DATA

STABILITY:

Stable under normal temperatures and conditions.

Heat starks, flames, fire, strong oxidining agents.

Carbon dioxide, feam, dry chemical, water (mist only)

INCOMPATIBILITY: (CONDITIONS TO AVOID)

HAZARDOUS POLYMERIZATION:

Not known to occur under normal conditions.

EAZARDOUS DECOMPOSITION PRODUCTS:

Normally none. Incomplete burning may yield carbon monoxide.

#### SECTION VI - HEALTH HAZARD DATA

PRIMARY ROUTES

Initalation, skin and eye contact

HEALTH HAZARD DATA/SIGNS AND SYMPTOMS OF EXPOSURE:

ACUTE: Skin: Contact may cause irritation, dryness and cracking. Prolonged or repeated contact may remove skin cils. possibly leading to irritation and dermatitis. Material is readily absorbed through skin.

Eyes: Direct contact may cause severe irritation and temporary contest damage. Vapors may cause actionale redness, tearing, irritation and pain. Conjunctivitis may occur upon chronic exposure.

Inhalation: Can cause heridache, dirainess, confusion, nausea, vomiting, irritation of the respiratory system and other central nervous system effects including unconsciousness in extreme cases.



CHRONIC: Inhalation: Prolonged overexposure may cause damage to the liver, kidney, spicen, lungs or nervous system.

#### OTHER POTENTIAL HEALTH EAZARDS:

Reports have associated prolonged and repeated occupational exposure to solvents with permanent brain and/or control nervous system damage. Intentional misuse by deliberately concentrating and inhaling this material may be harmful or fami. Observe all appropriate control measures.

#### MEDICAL CONDITIONS AGGRAYATED BY EXPOSURE:

Individuals with pre-existing liver, kidney, spicen, lungs, skin or nervous system dysfunction may have increased susceptibility to the effects of the exposure. Contact with skin may aggravate pre-existing dermatics.

CARCINOGENICITY: No components are known or suspected carcinogens.

#### SECTION VII – EMERGENCY AND FIRST AID PROCEDURES

EYES:

SXIN:

For direct contact, flush eyes with clean water for 15 minutes lifting upper and lower lids occasionally. Consult physician if irritation persists. If irritation or reducts from exposure to vapors or mists develop, move victim away from exposure and into fresh air.

Remove contaminated clothing. Wash skin twice with scop and water. If initiation develops and persists, consult a physician.

INGESTION: Aspiration hazard. If conscious, dilute with 4 to 8 cunces of water and seek immediate medical attention. EO NOT induce vomiting.

INHALATION: Remove to fresh air immediately. Use oxygen if there is difficulty breathing or artificial respiration if respiration has supped. Do not leave victim unattended. Seek immediate medical attention if necessary.

#### SECTION VIII -- PRECAUTIONS FOR SAFE USE AND HANDLING

SPILL PROCEDURES:

Remove all ignition sources. Isolate area and deny entry. If possible, contain as a liquid for possible recycling. Absorb onto sand or other absorbent material. Showel into closable container for disposal. Wear protective equipment specified below. Contain away from surface waters and sewers.

WASTE DISPOSAL METHODS:

Dispose in accordance with Federal, State and local regulations. Contact Safety-Ween regarding recycling.

HANDLING <u>PR</u>ECAUTIONS:

IPPING AND STORING PRECAUTIONS:

PERSONAL

Do not get into eyes, on skin or cipiling. Avoid breathing vapors. DO NOT smoke when handling this product.

Empty product containers may contain product residue. Do not pressurize, cut, heat, weld, grind or expose containers to flame or other sources of ignition. Keep container tightly closed when not in use and during rensport.

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ENTILATION:	Provide local exhaust or general dilution ventilation as determined necessary, when concentrations of vapors exceed applicable exposure limits. Where explosive mixtures may be present, systems are for such locations should be used.
ROTECTIVE +LC	To protect against contact with skin, wear nittile gioves.
IE ROTECTION:	Where there is likelihood of eye contact, wear chemical goggies. Contact lenses should not be worm.
ESPIRATORY ROTECTION:	Use NIOSH-approved respiratory protective equipment when concentration of vapors exceeds applicable exposure limit. Depending on the airborne concentration, use a respirator or gas mask with appropriate carridges and canisters (for organic vapors). A self-contained breathing apparants (SCEA) is required for large spills and emergencies. Selection and use of respiratory protective equipment should be in accordance with CSHA General Industry Standard 29 CFR 1910.134 - Respiratory Protection.
OTHER PROTECTIVE EQUIPMENT:	A source of eight water should be available in the work area for flushing eyes and sidn. Wear robber apron or other protective clothing as needed to protect against spills or splash.
	SECTION X - OTHER REGULATORY INFORMATION
DOT PROPER SHIPPING NAME:	Paint-Related Material
DOT CLASS:	Flammable Liquid
DO NUMBER:	NA1253
SARA TITLE III:	Product contains a toxic chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372. Toxic constituents are listed with an astarisk in Section II of this Material Safery Data Sheet.
:	Product poses the following physical and/or health hearrd(s) as defined in 40 CFR 370.3 (Sections 311, 312 of SARA Title III):
	Immediace (Acate) Health Hazard Delayed (Carcaic) Health Hazard Fire Hazard
	SECTION XI - PREPARATION INFORMATION
PREPARED BY:	SK Product Review Committee FORM NO. 900-14-056
ORIGINAL ISSUE DA	.TE: July 20, 1939 REVISED: December 1, 1989 SUPERSEDES: July 20, 1989
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# Somivolatilo Organics (EPA 8270) Analysis, ppm

101	or 3-ntroanli aconaphtho 2.4dntropho 4nt		Antrophonol d	not dibonturan 2.4-DNT		dothphthal	4Clphanpha Iluorana		4 -ntroanit	4 6dn2Mop	
HE											
CI.	< 11000	< 2200	< 11000	< 11000	< 2200	< 2200	< 2200	< 2200	< 2200	< 11000	< 11000
Œ	< 15	< 3.0	< 15	< 15	< 3.0	< 3 0	< 3.0	< 3 0	< 3.0	< 15	< 15
f1	< 5300	< 1100	< 5300	< 5300	< 1100	< 1100	< 1100	< 1100	< 1100	< 5300	< 5300
1 <i>E</i> -	< 310	< 63	< 310	< 310	< 63.	< 63	< 63	< 63	< 63	< 310	< 310
nE -	< 500	< 100	< 500	< 500	< 100	< 100	< 100	< 100	< 100	< 500	< 500
CI	< 12000	< 2500	< 12000	< 12000	< 2500	< 2500	< 2500	< 2500	< 2500	< 12000	< 12000

107	N-nitroso	ABrphanph	Cibbonzone	ClSphonol	phonanthro	anthracone	d-n-butpht	fluoranthon	pyrana	bulboophth	3 3'Cl2banr
1E											
CL	< 2200	< 2200	< 2200	< 11000	< 2200	< 22()0	< 2200	< 2200	< 2200	< 2200	< 4400
DE	< 3.0	< 3.0	< 3.0	< 15	5.2	< 3.0	20	< 3 0	< 3 0	< 3 0	< 6.0
EL	< 1100	< 1100	< 1100	< 5300	< 1100	< 1100	< 1100	< 1100	< 1100	< 1100	< 2100
LE -	< 63	< 63	< 63	< 310	< 63	< 63	< 63	< 63	< 63	< 63	< 130
ne –	< 100	< 100	< 100	< 500	< 100	< 100	210	< 100	< 100	920	< 200
CL –	< 2500	< 2500	< 2500	< 12000	< 2500	< 2500	< 2500	< 2500	< 2500	< 2500	< 5100

101	bonjajanthi	chrysono	b2othhoxph c	t-n-octpht	ban[b]fluor	bonklilluor	bonfalpyron l	nd[123-cd]	dbon[a h]an t	autopyter	
ШE –											
CI	< 2200	< 2200	< 2200	< 2200	< 2200	< 2200	< 2200	< 2200	< 2200	< 2200	
DE	< 3.0	< 3.0	50	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	
ĒL	< 1100	< 1100	< 1100	< 1100	< 1100	< 1100	< 1100	< 1100	< 1100	< 1100	
1 E	< 63	< 63	110	< 63	< 63	< 63	< 63	< 63	< 63	< 63	
ΠĒ	< 100	-: 100	1700	100	< 100	< 1(X)	< 100	< 100	< 100	< 100	
CL	< 2500	< 2500	< 2500	< 2500	< 2500	< 2500	< 2500	< 2500	< 2500	< 2500	

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Physical Properties and TCLP Metals Analysis, ppm

									•		
Paramoler	pH	<u>\$0</u>	E P	٨s	Da	Cđ	Cr	Pb	Ho	50	٨Q
Nog Limit	+2 or $>10$	na	< 100	5	100	1	5	5	0.2		5
HE .											
1	10	11.a	145	< 0.5	0.85	0.8	0.06	22	0.002	< 0.2	< 0.01
E	1	na	60	< 0.05	1	0.84	< 0.05	570	< 0.01	< 0.05	< 0.05
1	8	i na	115	< 0.05	0.9	<b>ا</b> .	< 0.05	1.3	< 0.01	< 0.05	< 0.05
£	6-5	na	85	< 0.5	0.47	2	0.01	1.3	< 0.004	< 0.2	< 0.01
F	7.9	1.2	85	< 1	0.41	2.8	0 02	46	< 0.002	< 1	< 0.5
ı	15	па	> 160	< 0.5	0.28	1.3	0.16	8.8	< 0.001	< 0.2	< 0.01

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#### TCLP Somi Volatiles Analysis, ppm

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Parameter	crosol	2.4 DBT	Cl6-bonr (	36-13-bot 👘	Citi-oth	nitrobanz (	CIS-phonol	pyrktina	2.4.5 JCP	2-4-6+1CP	
Dog Limit	200	0.13	0.13	0.5	3	2	100	5	400	2	
HE .											
Υ.	10	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 1.7	< 1.7	< 0.33	< 0.33	
₩E	5	< 0.033	< 0.033	< 0 033	< 0 033	< 0.033	< 0.17	< 0.17	< 0 000	< 0.033	
1	96	< 0.091	< 0.091	< 0.091	< 0.091	< 0.091	< 0.46	< 0.46	< 0.091	< 0.091	
E	< 0.033	< 0.033	< 0.033	< 0 033	< 0 033	< 0.033	< 0.17	< 0.17	< 0.033	< 0.033	
MË	0.88	< 0.066	< 0.066	< 0.066	6.066	< 0 066	< 0.34	< 0 34	< 0.066	< 0.066	
И.	22	< 0.67	< 0.67	< 0.67	< 0.67	< 0 67	< 3.3	< 3.3	< 0.67	< 0.67	

### TCLP Volatilos Analysis, ppm

Paramotor	banzona	CCH	Cibonz	CHCI3	1.4-DCiB	1.2-DCA	1.1-DCE	МЕК	PCE	1CE	VChlorkla
1 Nop Limit	0.5	0.5	100	6	7.5	0.5	0.7	200	. 07	0.5	0.2
TE											
7	0.11	< 0.10	< 0.10	< 0.10	< 0.20	< 0.10	< 0.10	< 2 0	0.96	< 0.10	< 0.20
$\mathcal{H}$	0.52	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 2.0	< 0.10	< 0.10	< 0.20
1	+ 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0 10	< 2.0	0 16	< 0.10	< 0.20
£	< 0.10	< 0.10	< 0.10	< 0.10	0.52	< 0.10	< 0.10	< 2 0	0.64	< 0.10	< 0.20
HE	0.1	< 0.05	< 0.05	< 0.05	< 0 1	< 0.05	< 0.05	15	0.17	0.14	< 0.1
1	-:0.10	0.17	4.3	< 0.10	> 4.4	< 0.10	< 0.10	< 2.0	3-6	0.45	< 0.20

Exhibit I.D.2-11

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### Immersion Cleaner Wastes

#### Physical Properties and TCLP Analysis, ppm

Parameter	Eeg. Limit	# Samo	Avg	Min	Max
рн	<2 or >10	. 4	9.3	3.0	10.2
SG	па	4	1.05	0.93	1.20
29 2	< 100	4	125	35	185
As .	5	. 4	0.C <b>0</b>	0.00	0.00
Ea	100	4	0.29	0.00	0.70
Cđ	1	4	0.91	0.32	2.30
Cr	5	4	C.28	0.06	0.51
25	5	4	3.60	0.20	11.00
Hg	0.2	4	0.00	0.00	0.00
Sa	1	4	0.00	0.00	0.00
Ag	5	4	0.00	0.00	0.00
cresci	200	3	400.00	0.00	1200.00
2.4-DNT	0.13	3	0.00	0.00	0.00
Ci6-benz	0.13	3	0.001	0.00	0.00
C16-13-but	0.5	3-	0.00	0.00	0.00
Cl6-eth	3	. 3	0.00	0.00	0.00
nitrobenz	2	3	0.00	0.00	0.00
Ci5-chenol	100	3	G CO	0.00	0.00
pyridine	5	3	0.00	0.00	0.00
2.4.5-TCP	400	3	0.00	0.00	0.00
2.4.6-TCP	2	3	0.00	0.00	0.00
benzene	0.5	4	0.04	0.00	0.16
CCI4	0.5	4	0.63	0.00	2.50
Cibenz	100	4	4.39	0.00	13.00
CHCI3	. 6	4	0.14	0.00	0.56
1.4-0019	7.5	4	13.75	1.60	32.00
1.2-0CA	C.5	4	1.43	0.00	3.60
1.1-802	0.7	4	0.03	0.00	0.11
MEK	200	4	4.85	0.00	15.00
PCE	0.7	4	1.97	0.00	4,40
TCE	0.5	4	1.38	0.00	4,40
VChloride	0.2	4	0.do	0.CC	0.00

Less than values are treated as zeros in the statistical analysis. Greater than values are treated as the value in the statistical analysis.



# **Immersion Cleaner Wastes**

### Volatilo Organics (EPA 8240) Analysis, ppm

na	motor	СИЗСІ	C11387	C3H3C1	C2145CI	C112C12	aculone	CS2	1.1-DCE	1.1-DCA	1.2 DCE	CHCI3
Ð	SHE			•								
1	CL	< \$000	× 5000	< 5000	< 5000	350000	< 50000	< 2500	< 2500	< 2500	< 2500	2700
V	DE	< 8400	s. 8400	< 8400	< 8400	162000	< 84000	< 4200	< 4200	< 4200	< 4200	< 4200
<b>V</b> '	EL	< 1100	< 1100	< 1100	< 1100	< 530	< 11000	< 530	< 530	< 530	< 530	< 530
2.	NE	< 120	< 120	< 120	< 120	2200	< 1200	< 60	< 60	< 60	< 60	< 60
	ï								• •			
1/a	motor	1,2-DCA	мыс	1.1.1-TCA	CCI4	v-acetate	CHBrCl2	1.2-DCPA	1.3-DCPE	ŤĊE	CH0r2Ci	1.1.2-TCA
AD.	SHE											
.1	CI	< 2500	-: 50000	< 2500	< 2500	< 25000	< 2500	< 2500	< 2500	< 2500	< 2500	< 2500
V	DE	< 4200	< 84000	< 4200	< 4200	< 42000	< 4200	< 4200	< 4200	< 4200	< 4200	< 4200
V	EL	< 530	< 11000	< 530	< 530	< 5300	< 530	< 530	< 530	< 530	< 530	< 530
9	<i>HE</i>	< 60	< 1200	< 60	< 60	< 600	< 60	< 60	< 60	< 60	< 60	< 60
			6 / N //*	4 9 1X/MT	0100-0		0 houters					
2/2/	10101	Denrene	2 · CVI:	1.3-DGP1:	CHIN3	M0-2-pon	2-nox 000	<u> </u>	1.1.2.2PCA	10100018	Ct-banz	olh-bonz
10	<u>5/11:</u>			< 0600	< 2600	- 26000	< 26000		< 26.00	< 2600	<b>6</b> 4 4 4	0000
	00	< 2300	*. SIAA)	< 2500 + 1000	< 2500	< 25000	< 23000	3600	< 2500	< 2500	2800	< 2500
,V	DI:	< 4200	< 8400	< 4200	< 4200	< 42(00)	< 42000	< 4200	< 4200	< 4200	63000	< 4200
,V	El	< 530	< 1100	< 530	< 530	< 5300	< 5300	< 530	< 530	< 530	< 530	< 530
С	NE -	< 60	< 120	< 60	< 60	< 600	< 600	480	< 60	190	< 60	89

aramələr		Styrono	xylanas	1.2-DCIB	1.3-DCIB	1.4-DCiB	
AD.	SHE						
AT .	CL	< 2500	2500	< 5000	12000	24000	
ŧ٧	DE	< 4200	< 4200	161000	21000	43000	
W	11	< 530	< 530	2000	< 530	600	
С	ΠĒ	210	590	590	170	270	

# Immersion Cleaner Wastes

# Semivolatile Organics (EPA 8270) Analysis, ppm

'a	matar	phonol	b 2Cl-athr	2CI-phonol	1.3-DCIB	1.4-DCIB	banzyt 'ol	1.2-DCiB	2Ma-phone	b-2CI-IPE	4Ma-phano	N-ntroso
Ő	SHE											
T	CI	55	< 10	< 10	26	58	< 20	180	49	< 10	32	< 10
1	DE	3800	< 1000	< 1000	< 1000	< 1000	< 1000	1600	1400	< 1000	1900	< 1000
1	11	< 1100	< 1100	< 1100	< 1100	< 1100	< 2100	1200	< 1100	< 1100	< 1100	< 1100
;	ΠE	< 100	s. 100	< 100	100	330	180	< 100	< 100	< 100	< 100	< 100
<i>r</i> a	motor	C2C16	nltrobunz	Isophorone	2ntroph*ol	2.4Mophfol	bonz ackt	b-2Clathox	2.4-dClph	1.2.4-TCIB	Naph'ono	4 - Claniline
Ð	SHE											
Ē	CI.	< 10	s 10	< 10	< 10	< 10	< 50	< 10	< 10	< 10	< 10	< 20
1	DE:	< 1(XX)	< 1000	< 1000	< 1000	< 1000	< 5000	< 1000	< 1000	< 1000	< 1000	< 1000
/	EL	< 1100	< 1100	< 1100	< 1100	< 1100	< 5300	< 1100	< 1100	< 1100	34000	< 2100
;	NE	< 100	< 100	< 100	< 100	< 100	< 500	- < 100	< 100	< 100	35000	< 100
(a)	nalar	Clóbutadian	14Cl09Aophnl	2-Monaph	Cl6cycpent	2.4.GtClph	2.4.5tClph	2-Cloaph	2-ntroanil	Me2phthal	aconaphthy	2.6-DNF
0	SHE								,			
1	CL	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 50	< 10	< 10	< 10
V	DE	< 1000	< 1000	< 1000	< 1000	< 1000	< 5000	< 1000	< 5000	< 1000	< 1000	< 1000
/	EL	< 1100	< 2100	< 1100	< 1100	< 1100	< 1100	< 1100	< 5300	< 1100	< 1100	< 1100
	<i>NE</i>	< 1(X)	< 100	1300	< 100	< 100	< 500	< 100	< 500	< 100	< 100	< 100
ran	notor	3 -ntroanit	aconaptithe	2.4dntropha	Antrophonol	dibonturan	2.4-DNT	dethphthat	4Clphonpho	fluorono	4 ntroanii	4.6dn2Map
0	SITE		.,									
1	CI	₹ 50	< 10	< 50	< 50	< 10	< 10	< 10	< 10	< 10	< 50	< 50
/	DE:	< 5000	< 1000	< 5000	< 5000	< 1000	< 1000	< 1000	< 1000	< 1000	< 5000	< 5000
/	EL	< 5300	< 1100	< 5300	< 5300	< 1100	< 1100	< 1100	< 1100	< 1100	< 5300	< 5300
•	₽E.	< 500	< 100	< 500	< 500	< 100	< 100	< 100	< 100	< 100	< 500	< 500

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# **Immersion Cleaner Wastes**

### Semivolatile Organics (EPA 8270) Analysis, ppm

'ai	nətər	N-ntroso	4Diphanph	Clébenzene	Cl5phonol	phonanthro	anthracono	d-n-butpht	fluoranthon	руголо	butbanphth	3.3 Cl2bonr
0	SHE											
1.	CL	< 10	< 10	< 10	< 50	< 10	< 10	< 10	< 10	< 10	< 10	< 20
V	DE	-: 1(KK)	< 1000	< 1000	< 5000	< 1000	< 1000	< 1000	< 1000	< 1000	< 1000	< 2(NX)
V	EL	< 1100	-: 1100	< 1100	< 5300	< 1100	< 1100	< 1100	< 1100	< 11(H)	< 1100	< 2100
2	ΠĒ	< 100	< 100	< 100	< 500	< 100	< 100	< 100	< 100	< 100	< 100	< 200

# rameter benjajanthr chrysene b2ethhexph d-n-octpht benjbjiluor benjkjiluor benjajpyren indj123-cdj dbenja hjan benjohilper

U	5/11C											
Ĩ	CI	< 10	s. 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	
V	DE	< 1000	< 1000	< 1000	< 1000	< 1000	< 1000	< 1000	< 1000	< 1000	< 1000	
V	EL	< 1100	< 1100	< 1100	< 1100	< 1100	< 1100	< 1100	< 1100	< 1100	< 1100	
2	ne.	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	



### Physical Properties and TCLP Metals Analysis, ppm

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		Parameter	pH	SG	1P < 100	As	Da 100	Ca	Cr	Pb	110	50	Γ Au
		HUQ I IIII	<2.01 > 10	<u></u>	<u> </u>	<b>.</b>	100	·····	<b></b>		0 2		D
1 AD	SHE			_									
Al	CL		8	1.2	95	< 0.5	0.44	2.3	0.51	11	0.001	< 0 2	< 0.01
w	DE		9	1.11	85	< 0.05	0.7	04	0.48	2	< 0.01	< 0.05	< 0.05
<b>W</b> .	EL		10	0.945	185	< 0.05	< 0.3	0.32	0.06	1.2	< 0.01	< 0.05	< 0.05
C	- ME		10/2	0.93	135	< 1	< 0.02	0.64	0.07	0.2	< 0.002	< 1	< 0.5

TCLP Semi Volatiles Analysis, ppm

Paramotor		crosol	2.4-DNF	Cl6-bonz	CIG-13-but	C16-øth	nltrobanz	CIS-phonol	pyrktina	2.4.5-1CP	2.4.6~TCP	
	Nog Umit	200	0.13	0.13	0.5	Э	2	100	5	400	2	
ÂĎ	SHE					•	•	• • •				
A1	Cl ·	s. 1-0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 5.0	< 1.0	< 1.0	
Ŵ	DE	1200	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 1.7	< 1.7	< 0.33	< 0.33	
W	EL	matrix	matrix	matrix	matrix	matrix	matrix	matrix	matrix	matrix	matrix	
С	NE	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 1.7	< 1.7	< 0.33	< 0.33	

		Ê				TCLP Volatiles Analysis, ppm							
		Parameter	bonzona	CCI4	Cibanz	CHCI3	1.4-DCIB	1.2-DCA	1.1-DCE	MEK	PCE	ICE	VChlorkfø
		Nog Limit	0.5	0.5	100	6	1.5	0.5	0.7	200	0.7	0.5	02
Î A D	SHE	- · · ·											
11	CL.		0.16	2.5	> 4.4	0.56	> 4.4	3.6	< 0.10	> 4.4	> 4.4	> 1.1	< 0.20
W	DE		< 0.10	< 0.10	13	< 0.10	17	2.1	0.11	15	0.68	1.1	< 0 20
W	EL		≪ 5	< 5	< 5	< 5	32	< 5	< 5	< 100	< 5	< 5	< 10
C	nt:		· 0.05	< 0.05	0.14	< 0.05	1.6	< 0.05	< 0.05	< 1	2.8	< 0.05	< 0.1

Physical Pro	perties	and	TCLP	Analy	ysis,	moq.
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Parameter	Feç. Limit	# Samp	Avg	Min	Max
pri	<2 or >10	3	7.0	5.0	3.0
SG	na	2	1.14	1.03	1.25
<u>,                                    </u>	< 100	3	90	80	105
As	5	3	0.00	0.00	0.00
Ea	100	3	0.52	0.37	0.3C
Cđ	1	3	0.25	0.05	0.45
Cr	5	3	G.13	0.13	0.26
Pb	5	3	1.00	0.20	1.70
Нg	0.2	3	0.00	0.00	0.00
Se	1	3	0.00	0.00	0.00
Ag	5	3	0.00	0.00	0.00
cresol	200	3	0.02	0.00	0.06
2.4-0NT	0.13	3	0.00	0.00	0.00
C:6-benz	0.13	3	0.00	0.00	0.00
C16-13-but	0.5	3	0.00	0.00	0.00
Ci6-eth	3	3-	0.00	0.00	0.00
nitrobenz,	2	3	0.00	0.00	0.00
CIS-prienci	100	3	0.00	0.90	0.00
pyridine	5	3	0.00	0.00	0.00
2.4.5-TCP	400	3	0.00	0.00	0.00
2.4.6-TCP	2	3	0.00	0.00	0.00
benzene	0.5	3	0.00	0.00	0.00
CCI4	0.5	3	0.00	0.00	0.00
Cibenz	100	3	0.00	0.00	0.00
CHCI3	6	3	0.00	0.00	0.00
1.4-0018	7.5	3	0.00	0.00	0.00
1.2-0CA	0.5	3	0.00	0.00	0.00
1.1-DCE	0.7	3	0.05	0.00	0.14
MEK	200	3	0.00	0.00	0.00
PCE	0.7	3	4.40	4,40	4,40
TCE	0.5	3	0.06	0.00	0.17
VChloride	0.2	3	0.00	0.00	0.00

Less than values are treated as zeros in the statistical analysis. Greater than values are treated as the value in the statistical analysis.

# Volatilo Organics (EPA 8240) Analysis, ppm

Paramoto	r CH3CI	C11307	C2H3CI	C2115C1	C112C12	acotono	<u>CS2</u>	1.1-DCE	1.1-DCA	1.2-DCE	CHCI3
LAD SILE								·			
W DE	< 10	< 10	< 10	< 10	< 5.0	200	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
W 111	~ 7700	< 7700	< 7700	< 7700	< 3900	< 77000	< 3900	< 3900	< 3900	< 3900	< 3900
M LE	< 300	< 300	< 300	< 300	< 150	< 3000	< 150	< 150	< 150	< 150	< 150
Parameter	1,2-DCA	MEK	1.1.1-TCA	CCI4	v-acetate	C110/C12	1.2-DCPA	1.3-DCPE	ICE	CHB(2C)	1.1.2-1CA
LAD SHE											
W DE	< 5.0	< 100	18	< 5.0	< 50	< 5.0	< 5.0	< 5.0	6.4	< 5.0	< 5.0
W HE	× 3900	-: 3900	< 3900	< 3900	< 39000	< 3900	< 3900	< 3900	< 3900	< 3900	< 3900
AI LE	• 150	< 3000	< 150	< 150	< 1500	< 150	< 150 ×	< 150	< 150	< 150	< 150
Parameter	benzene	2 - CVI	1.3-DCPE	<u>CHBr3</u>	<u>Ma-2-pon</u>	2-hox'ona	<u> </u>	1.1.2.2PCA	toluona	Cl-bonz	eth-benz
TAD SHE		<b>:</b>									
W DE	< 5.0	10	< 5.0	< 5.0	< 50	< 50	25000	< 5.0	32	< 5.0	< 5.0
W HE	< 3900		< 3900	< 3900	< 39000 -	< 39000	510000	< 3900	4800	< 3900	< 3900
AL LE	< 450	< 300	< 150	< 150	< 1500	< 1500	72000	< 150	< 150	< 150	< 150

Parai	nətər	styrana	xylonos	1.2-DCIB	1.3 · DCID	1.4-DCI0	
LAD	SHE						
W	DE	< 5.0	62	130	36	76	
W	111:	-: 3900	14000	< 3900	< 3900	< 3900	
<b>X</b> /	115	< 150	< 150	< 150	< 150	< 150	

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### Semivolatile Organics (EPA 8270) Analysis, ppm

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			1									
Para	mətər	phonol	b-2Cl-athr	2CI-phanol	1.3-DCIB	1.4-DCIB	banzyl fol	1.2-DCIB	2Ma-phan	o b-2CI-IPE	4Ma-phon	o N-ntroso
LAD	SITE	• · · · · · · · · · · · · · · ·										
IV	DE	-: 3 0	< 3.0	< 3.0	3.8	3.8	< 3.0	< 3.0	13	< 3.0	15	< 3 0
w	<i>m</i> ë	< 110	< 710	< 770	< 770	< 770	< 1500	< 770	· < 770	< 770	< 110	) <770
A.f	1E	74	< 42	< 42	< 42	< 42	< 84	< 42	< 42	< 42	< 42	< 42
												•
Para	mətər	C2C16	nltrobonz	Isophorona	2ntroph of	2.4Mephiol	bonz ackl	b-2Clothox	2.4-dClph	1.2.4-1CiB	Naph'ene	4 - Claniline
LAD	SHE											
W	DE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 15	< 3.0	< 3 0	< 3 0	27	< 3.0
W	111	< 170	s: 170	< 770	< 770	< 770	< 3900	< 770	< 770	< 110	< 770	< 1500
Å I	1 E	- 42	< 42	< 42	< 42	< 42	< 200	' < 42	< 42	< 42	< 42	< 84
** -												
Parai	nətər	Clibbutadian	i 4Cl3Etophnl	2-Monaph	Cl6cycpent	2.4.6(Clph	2.4.5(Clph	2-Clnaph	2-ntroanll	Me2phthal	aconaphthy	2.6-1241
IAD	SHE							,				
W	DE	< 3.0	< 3.0	3.9	< 3.0	< 3.0	< 15	< 3 0	< 15	< 3.0	< 3.0	< 3.0
1V	HE	< 110	-C 1500	< 770	< 770	< 770	< 770	< 710	< 3900	< 770	< 770	< 770
ЛÌ	1E		< 84	< 42	< 42	< 42	< 42	< 42	< 200	`< 42	< 42	< 42
Paran	notor	3-ntroanil	aconaphtho	2.4dntropho	Antrophonol	dibonfuran	2.4-DNT	dothphthal	4Clphonphe	fluoronu	4-ntroanil	4.6dn2Mop
LAD	SHE											
w	DE	× 15	-: 3-0	< 15	< 15	< 3.0	< 3.0	9	< 3.0	< 3.0	< 15	< 15
W	нE	< 3900	< 710	< 3900	< 3900	< 770	< 770	< 770	< 770	< 770	< 3900	< 3900
A.f	1 E -	< 200	< 42	< 200	< 200	< 42	< 42	< 42	< 42	s. 42	< 200	< 200

#### Somivolatilo Organics (EPA 8270) Analysis, ppm

Para	motor	N-nltroso	ABiphanph	Clabanzana	Cl5phonot	phananthro	anthracono	d-n-butpht	fluoranthon	ργιοπο	butbonphth	3 3'Cl2bonz
LAD	SHE											
W	DE	< 3.0	< 3.0	< 3.0	< 15	< 3 0	< 3 0	28	. < 3.0	< 3.0	180	< 6 0
W	HE	< 110	< 770	< 770	< 3900	< 770	< 770	< 770	< 770	< 770	< 170	< 1500
X/	115	s. 42	< 42	< 42	< 200	< 42	< 42	< 42	< 42	< 42	110	< 84

#### Parameter benjajanihi chiysene b2ethhexph d-n-octpht benjbjfluor benjkjfluor benjajpyren indj123-cdj dbenja hjan benjohijper TAD SITE

INU	5110											
W	DE	< 3.0	< 3.0	320	34	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	
w	11E	<: 770	< 770	< 770	< 770	< 770	< 770	< 770	< 770	<b>&lt;</b> 770	< 770	
<i>k1</i>	LE -	< 42	< 42	64	< 42	< 42	< 42	< 42	< 42	× 42	< 42	



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# Dry Cleaner Solvent Wastes

Physical Properties and TCLP Metals Analysis, ppm												
4	Paramotor	pH	5G	FP	As	Ha	Cđ		Pb'	Ha	50	٨٥
	Nog Lund	<2 or >40	na	< 100	5	100	1	5	5	0.2	1	5
ALL S	HE -										· · · · · · · · · · · · · · · · · · ·	
w	DE	7	1.03	80	< 0.05	0.8	0 24	0.15	1.7	< 0.01	< 0.05	< 0.05
W	HE	6	1.25	85	< 0.05	0.4	0.05	0.13	02	< 0.01	< 0.05	< 0 05
٨Ŧ	1 E	8	matrix	105	< 0.5	0.37	0.45	0 26	1.1	< 0.001	< 0.2	< 0.01

# TCLP Semi Volatiles Analysis, ppm

	Parameter	crosol	2.4 - DNT	Cl6-benz C	216-13-but	Cl6-oth	ntrobanz (	Ct5-phonol	pyrklina	2.4.5~1CP	2.4.6-YCP	
	Nog Limit	200	0.13	0.13	0.5	3	2	100	5	400	2	
AU SIT	E											
W DE		• 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 1.7	< 1.7	< 0.33	< 0.33	
V HE		< 0.060	< 0.060	< 0.060	< 0.060	< 0 060	< 0.060	< 0.30	< 0.30	< 0.060	< 0.060	
M LE		0.029	< 0.033	< 0.033	< 0 033	< 0.033	< 0.033	< 0.17	< 0.17	< 0.033	< 0 033	

### TCLP Volatiles Analysis, ppm

	Paramotor Nop-Linut	banzona 0.5	CC14 0 5	Cibanz 100	CHC13 6	1.4 DCID 7.5	1.2-DCA 0.5	1.1-DCE 0.7	MEK 200	PCE - 0.7	1Cf 0.5	VChlorkta 0-2
ÂŨ	SHE											
W	DE	- 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 2.0	> 4.4	< 0.10	< 0.20
w	HE	<. 0 ±0	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.14	< 2.0	> 4.4	0.17	< 0.20
٨1	1 E	×. 0.10	< 0.10	< 0.10	< 0.10	< 0.20	< 0.10	< 0.10	< 2.0	> 4.4	< 0.10	< 0.20

# Paint Gun Cleaner Wastas

# Physical Properties and TCLP Analysis, com

<u>Parameter</u>	Reg. Limit	# Samo	Avg	Min	Hax
рH	<2 cr >10	2	6.3	6.0	6.5
SG	na	2	0.394	0.351	0.937
==	< 100	2	75	75	75
As	5	2	0.00	0.00	a aq
Ea	100	2	0.30	0.60	1 00
Cd	1	2	0.36	0.00	C 72
C:	5	2	0.48	0.21	0.72
25 25	5	2	1.35	0.30	2 40
Hg	0.2	2	0.00	0.00	0.00
Sa	1	2	0.00	0.00	0.00
Ag	5	2	0.00	0.00	0.00
cresci	200	2	4.85	0.00	9.70
2.4-0NT	0.13	.2	0.00	0.00	0.00
Cl6-benz	0.13	2	0.00	0.00	0.00
Ci6-13-but	0.5	2	0.00	0.00	0.00
Ci6-eth	3	2 -	0.00	0.00	0.00
nitrobenz	2 `	2	0.00	0.00	0.00 0.00
CIS-prenci	100	2	0.00	0.00	0.00
pyricine	5	2	0.00	0.00	0.00
2.4.5-TCP	400	2	0.00	0.00	0.00
2.4.6-TCP	2	2	0.00	0.00	0.00
benzene	0.5	2	C.16	C.14	0.18
CCI4	0.5	2	0.00	0.00	
Clbenz	100	2	0.00	a.ca	0.00 0.00
CHCI3	6	2	0.00	0.00	0.00
1.4-0018	7.5	2	0.00	C.CO	0.00
1.2-0CA	0.5	2	0.06	0.00	0.12
1.1-0CE	0.7	2	0.00	0.00	0.00
MEK	200	2	2100.00	200.00	4000 00
PCE	0.7	2	0.31	0.00	0.61
TCE -	0.5	2	0.80	0.00	1 60
VChloride	9.2	2	0.00	0.00	0.00

Lass than values are treated as zeros in the statistical analysis Greater than values are treated as the value in the statistical analysis



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# Paint Gun Cleaner Wastes

# Volatile Organics (EPA 8240) Analysis, ppm

ian	utar	CH3CI	CH3Br	C2H3CI	C2115C1	CH12C12	acotono	<u>CS2</u>	1.1-DCE	1.1-DCA	1.2-DCE	CHCI3
0 3	SINE											
,	DE	< 11000	< 11000	< 11000	< 11000	< 5600	< 120000	< 5600	< 5600	< 5600	< 5600	< 5600
•	DO	< 11000	< 11000	< 11000	< 11000	270000	< 110000	< 5300	< 5300	< 5300	< 5300	< 5300
				£ .								

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(3	motor	1,2 DCA	LAE K	1.1.1-1CA	CCI4	v-acetale	CHDrCl2	1.2-DCPA	1.3-DCPE	TCE	CHB/2Cl	1.1.2-1CA
ñ	SHE											
1	DE	~ 5600	< 120000	< 5600	< 5600	< 56000	< 5600	< 5600	< 5600	< 5600	< 5600	< 5600
1	DØ	< 5300	< 110000	< 5300	< 5300	< 53000	< 5300	< 5300	< 5300	< 5300	< 5300	< 5300

121	mətər	bonzona	2 CVE	1.3-DCPE	CHD/3	Ma-2-pan	2-hax'ona	PCE 1.	1.2.2PCA	toluono	CI-boaz	ath-bonz
Ð	SHE							,			\ \	
V	DE	< 5600	< 11000	< 5600	< 5600	< 56000	< 56000	< 5600	< 5600	290000	< 5600	33000
V	DO	< 5300	< 11000	< 5300	< 5300	< 53000	< 53000	< 5300	< 5300	300000	< 5300	13000

nam	otor	styrono	Rytonia	1.2 · DC(B	1.3 · DCIB	1.4-DCIB	
10 5	MIE -	• • • • • • • • • • • • •	•••••				
V	DE:	< 5600	54000	< 5600	< 5600	< \$600	
V	100	+: 5300	55000	< 5300	< 5300	< 5300	

# Paint Gun Cleaner Wastes

# Semivolatile Organics (EPA 8270) Analysis, ppm

'ar.	amatar	phonol	b-2CI-athr	2CI-phonol	1.3-DCIB	1.4-DCID	bonzyl 'ol	1.2-DCIB	2Ma-phan	o b-2CI-114	4Ma-phan	n N-ntroso
ÂL	I SITE											
W	DE:	< 1(XX)	< 1000	< 1000	< 1000	< 1000	) < 1000	< 1000	< 1000	< 1000	< 1000	< 1000
w	DO	< 1100	< 1100	< 1100	< 1100	< 1100	) < 2100	< 1100	< 1100	< 1100	< 1100	< 1100
Чл.	inətər	C?C16	ntrobonz	Isophorona	2ntroph*ol	2.4Meph'o	L bonz acid	b-2Clathox	2.4-dClph	1.2.4-1Ci0	Naph'ono	4 - Claniilne
Ä	SHE										••••	
W	DE	< 1000	< 1000	< 1000	< 1000	< 1000	< 5000	< 1000	< 1000	< 1(XX)	< 1000	< 1000
• <b>•</b>	00	< 1100	< 1100	< 1100	< 1100	< 1100	< 5300	< 1100	< 1100	< 1100	< 1100	< 2100
2	mator	Clobulation	n 4CE9Aophn	12-Manaph	Clocycpont	2.4.6(Clph	2.4.5tClph	2-Cloaph	2-ntroanit	Mo2phthal	acenaphthy	2.6 DNT
<u>AÐ</u>	SHE											
w	DE	< 1000	< 1000	< 1000	< 1(XX)	< 1000	< 5000	< 1000	< 5000	< 1000	< 1000	< 1000
w	(X)	< 1100	< 2100	< 1100	< 1100	< 1100	< 1100	<'1100	< 5300	< 1100	< 1100	< 1100
) ava	motor	3-ntroanll	aconaphtho	2.4dntropha	Antrophonol	l dibonturan	2.4-DNT	dothphthal '	ACiphenphe	luorene	4 - ntroanll	4.6dn2Map
All	SHE											
W	DE	< 5000	< 1000	< 5000	< 5000	< 1000	< 1000	< 1000	< 1000	< 1000	< 5000	< 5000
W	DO	< 5300	< 1100	< 5300	< \$300	< 1100	< 1100	< 1100	< 1100	< 11(X)	< \$300	< 5300
272	mətər	N-ntroso	ABrphonph	Clóbonzanð	Cisphonol	phonanthro	anthracene	d-n-bulpht	lluoranthon	ругала	butbonphth	3.3°Cl2bonz
AU 	5/11:				. ( 0.0.0	• • • • • •						
W	<i>Dt</i> :	-: 1000	- 1000	< 1(xx)	< 2000	< 1000	< 1000	< 1000	< 1000	< 1(88)	< 1000	< 2000
	DO	< 1100	≤ 1100	< 1100	< 5300	< 1100	< 1100	< 1100	< 1100	< 1100	1600	< 2100
ici AD	nətər SIHE	bon[a]anthr	chiysona	b2athhaxph (	d-n-octpht	ban[b]fluor	bon[k]lluor	bon[a]pyron	liid[123-cd]	dbun[a h]an	bon[ghi]por	····
W	DE	< 1000	< 1000	< 1000	< 1000	< 1000	< 1000	< 1000	< 1000	(XX)1 >	< 1000	
NV I	DO	- 1100	· 1100	< 1100	< 1100	< 1100	< 1100	< 1100	< 1100	< 1100	< 1100	

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#### Physical Proportios and TCLP Metals Analysis, ppm

	Paramotor Nog Limit	pH < 2 or ≻10	50. na	FP < 100	As 5	100 Ba	Cd 1	C1 5	146 5	Hg . 0.2	Sa 1	Ag 5
LAD SHE												
W DE		6	0.851	75	< 0.05	1	< 0 05	0.21	0.3	< 0.01	< 0.05	< 0.05
W DO		6.5	0.937	75	< 0.05	0.6	0.72	0.72	2.4	< 0.01	< 0.05	< 0 05

# TCLP Semi Volatiles Analysis, ppm

		Parameter	crosol	2.4-DNT	Cl6-bonz C	216-13-but	Cl6-oth	nitrobonz (	CIS-phonol	pyrklina	2.4.5~1CP	2.4.6-1CP
		Hay Limit	200	0.13	0.13	0.5	3	2	100	5	400	2
1 AD	SHE											
W	DE		< 0.033	< 0.033	< 0.033	< 0.033	< 0.033	< 0.033	< 0.17	< 0.17	< 0.033	< 0.033
١V	DO		9.7	< 2.6	< 2.6	< 2.6	< 2.6	< 2.6	< 13	< 13	< 2.6	< 2.6

	P	aramulor	bonzano	CC14	Cibenz	CHCI3	1.4-DCID	1.2-DCA	1.1-DCE	мек	PCE	TCE	VChlorklu
	n	og Llinit	0.5	0.5	100	6	7.5	0.5	0.7	200	0.7	0.5	0 2
LAU	SHE												
W	DE		0.18	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	4000	< 0.10	< 0.10	< 0.20
W	DO		0.14	< 0.10	< 0.10	< 0.10	< 0.10	0.12	< 0.10	> 200	0.61	1.6	< 0.20

#### TCLP Volatilos Analysis, ppm.

# Antifroozo Wastos

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		- · .			Physical Pr	oportios an	d TCLP M	otals Analy	sis, ppm				
		Paramotor	pH	<u>50</u>	FP	εΛ	Da	Cd	Cr	Pb	110	50	٨
		nop. that se	2 or >10	na	< 100	6	100	1	5	5	0.2	1	ť
TAIT	SHE								<u> </u>				
11/	'nŰ		7.5	1.04	> 200	< 0.05	< 0,3	< 0.05	< 0.05	0.3	< 0.01	< 0.05	< 0.0!
W	1:1.		4	1.13	> 200	< 0.05	0.3	< 0.05	< 0.05	< 0, 1	< 0.01	< 0.05	< 0.05
W	112		8.5	1.05	> 200	< 0.05	< 0.3	< 0.05	< 0.05	0.2	< 0.01	< 0.05	< 0.05
							.•						

# TGLP Semi Volatiles Analysis, ppm

	Paramotor	crosol -	2.4-081	Clū-bonz (	Cl6-13-but	Cl6-olb	ntrobonz Cl	5-phonol	pyrklino	2.4.5-1CP	2.4.6-101	
	Dag. Lintt	200	0,13	0,13	0.5	· <b>3</b>	2	100		400	2	
TAU .	ŜĤĔ					4	•					
11/	110	- 0.04	< 0.01	< 0.04	< 0.04	< 0.04	< 0.04	< 0,2	< 0,2	< 0.04	< 0.04	
IV	I.I.	0.2	< 0.07	< 0.07	< 0.07	< 0.07	< 0.07	< 0.35	< 0.35	< 0.07	< 0.07	
W	117.	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05 .	< 0,25	< 0.25	< 0.05	< 0.05	

						TCLP Vol	atilos Analy	yala, ppm					
		Paramotor Nop. 1 hult	bonzonu 0.5	CCI4 0.5	Cibonz 100	cjicia 0	1.4-DCID 7.5	1.2-DCA 0.5	1.1-DCE 0.7	541EIC 200	PCE - 0.7	TC4 0.5	VChiorlita 0.2
TAD	SHE					,		•	· · · · · · · · · · · · · · · · · · ·				
117	nii		+ 0.10	+: 0, 10	< 0,10	< 0,10	< 0,10	< 0,10	< 0,10	< 2.0	0,13	0,97	< 0.20
11/	11.		0.32		< 0,10	< 0.10	< 0,10	< 0.10	< 0.10	< 2.0	0.12	< 0,10	< 0,20
W	114.		×: 0, 10	< 0.10	< 0,10	< 0,10	< 0,10	• < 0.10	< 0.10	< 2,0	0.54	< 0,10	< 0.10

C-2 Exhibit I.D.2-14

### EXHIBIT I.D.2-15

# FLUID RECOVERY SERVICE WASTE TYPES

EPA Hazardous	
Waste No.	Description
D001	Solid waste that exhibits the characteristic of ignitability, but is not listed as a hazardous waste.
D002	Solid waste that exhibits the characteristic of corrosivity, but is not listed as a hazardous waste.
D004	Solid waste that exhibits the characteristic of toxicity for arsenic at 5.0 mg/L or more.
D005	Solid waste exhibiting the characteristic of toxicity for barium at 100 mg/L or more.
D006	Solid waste exhibiting the characteristic of toxicity for cadmium at $1.0 \text{ mg/L}$ or more.
D007	Solid waste exhibiting the characteristic of toxicity for chromium at $5.0 \text{ mg/L}$ or more.
D008	Solid waste exhibiting the characteristic of toxicity for lead at 5.0 mg/L or more.
D009	Solid waste exhibiting the characteristic of toxicity for mercury at 0.2 mg/L or more.
D010	Solid waste exhibiting the characteristic of toxicity for selenium at 1.0 mg/L or more.
D011	Solid waste exhibiting the characteristic of toxicity for silver at 5.0 mg/L or more.
D018	Solid waste exhibiting the characteristic of toxicity for benzene at 0.5 mg/L or more.
D019	Solid waste exhibiting the characteristic of toxicity for carbon tetrachloride at $0.5 \text{ mg/L}$ or more.
D021	Solid waste exhibiting the characteristic of toxicity for chlorobenzene at 100.0 mg/L or more.
D022	Solid waste exhibiting the characteristic of toxicity for chloroform at 6.0 mg/L mg/L or more.

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# EXHIBIT I.D.2-15 - Continued

# FLUID RECOVERY SERVICE WASTE TYPES

EPA Hazardous	
Waste No.	Description
D023	Solid waste exhibiting the characteristic of toxicity for o-Cresol at 200.0 mg/L or more.
D024	Solid waste exhibiting the characteristic of toxicity for m-Cresol at 200.0 mg/L or more.
D025	Solid waste exhibiting the characteristic of toxicity for p-Cresol at 200.0 mg/L or more.
D026	Solid waste exhibiting the characteristic of toxicity for Cresol at 100.0 mg/L or more.
D027	Solid waste exhibiting the characteristic of toxicity for 1,4 Dichlorobenzene at 7.5 mg/L or more.
D028	Solid waste exhibiting the characteristic of toxicity for 1,2 Dichloroethane at $0.5 \text{ mg/L}$ or more.
D029	Solid waste exhibiting the characteristic of toxicity for 1,1 Dichloroethylene at $0.7 \text{ mg/L}$ or more.
D030	Solid waste exhibiting the characteristic of toxicity for 2,4 Dinitrotoluene at $0.13 \text{ mg/L}$ or quantification limit.
D032	Solid waste exhibiting the characteristic of toxicity for Hexachlorobenzene at $0.13 \text{ mg/L}$ or quantification limits.
D033	Solid waste exhibiting the characteristic of toxicity for Hexachlorobutadiene at $0.5 \text{ mg/L}$ or more.
D034	Solid waste exhibiting the characteristic of toxicity for Hexachloroethane at above 3.0 mg/L or more.
D035	Solid waste exhibiting the characteristic of toxicity for Methyl Ethyl Ketone (MEK) at 200 mg/L or more.
D036	Solid waste exhibiting the characteristic of toxicity for Nitrobenzene at 2.0 mg/L or more.
D037	Solid waste exhibiting the characteristic of toxicity for Pentachlorophenol at 100.0 mg/L or more.



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# EXHIBIT I.D.2-15 - Continued

# FLUID RECOVERY SERVICE WASTE TYPES

EPA Hazardous	
Waste No.	Description
D038	Solid waste exhibiting the characteristic of toxicity for Pyridine at 5.0 mg/L or quantification limit.
D039	Solid waste exhibiting the characteristic of toxicity for Tetrachloroethylene at $0.7 \text{ mg/L}$ or more.
D040	Solid waste exhibiting the characteristic of toxicity for Trichloroethylene at $0.5 \text{ mg/L}$ or more.
D041	Solid waste exhibiting the characteristic of toxicity for 2,4,5-Trichlorophenol at $400.0 \text{ mg/L}$ or more.
D042	Solid waste exhibiting the characteristic of toxicity for 2,4,6-Trichlorophenol at $2.0 \text{ mg/L}$ or more.
D043	Solid waste exhibiting the characteristic of toxicity for Vinyl Chloride at $0.2 \text{ mg/L}$ or more.
F001	The following spent halogenated solvents used in degreasing: tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1- trichloroethane, carbon tetrachloride, chlorinated fluorocarbons, spent solvent mixtures/blends used in degreasing, and still bottoms from the recovery of these spent solvents and spent solvent mixtures.
F002	The following spent halogenated solvents: tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, orthodichlorobenzene, trichlorofluoromethane, 1,1,2-trichloroethane, spent solvent mixtures and blends, and the still bottoms from the recovery of these spent solvents and spent solvent mixtures.
F003	The following spent non-halogenated solvents: xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, methanol, spent solvent mixtures and blends, and the still bottoms from the recovery of these spent solvents and spent solvent mixtures.
F004	The following spent non-halogenated solvents: cresols and cresylic acid, nitrobenzene, spent solvent mixtures and blends, and still bottoms from the recovery of these spent solvents and spent solvent mixtures.


## FLUID RECOVERY SERVICE WASTE TYPES

EPA Hazardous Waste No.	Description
F005	The following spent non-halogenated solvents: toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, 2- nitropropane, spent solvent mixtures and blends, and the still bottoms from the recovery of these spent solvents and spent solvent mixtures.
F006	Wastewater treatment sludges from electroplating operations except from the following processes: 1) sulfuric acid anodizing of aluminum; 2) tin plating on carbon steel; 3) zinc plating (segregated basis) on carbon steel; 4) aluminum or zinc-aluminum plating on carbon steel; 5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel; and 6) chemical etching and milling of aluminum.
F019	Wastewater treatment sludges from the chemical conversion coating of aluminum.
F024	Wastes, including but not limited to, distillation residues, heavy ends, tars, and reactor clean-out wastes from the production of chlorinated aliphatic hydrocarbons, having carbon content from one to five, utilizing free radical catalyzed processes. (This listing does not include light ends, spent filters and filter aids, spent dessicants, wastewater, wastewater treatment sludges, spent catalysts and wastes listed in 261.32).
F039	Multisource leachate for wastes other than F020 - F023, F026, F027, and F028.
K006	Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous and hydrated).
K016	Heavy ends of distillation residues from the production of carbon tetrachloride.
K019	Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production.
K022	Distillation bottom tars from the production of phenol/acetone from cumene.
K029	Waste from the product steam stripper in the production of 1,1,1- trichloroethane.
K030	Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene.



# FLUID RECOVERY SERVICE WASTE TYPES

EPA	
Hazardous Waste No.	Description
K031	By product solts generated in the production of MSMA and encodulic paid
KU31	By-product saits generated in the production of MSMA and cacodyne acid.
K048	Dissolved air flotation float from the petroleum refining industry.
K049	Slop oil emulsion solids from the petroleum refining industry.
K050	Heat exchanger bundle cleaning sludge from the petroleum refining industry.
K051	API separator sludge from the petroleum refining industry.
К052	Tank bottoms (leaded) from the petroleum refining industry.
K085	Distillation or fractionation column bottoms from the production of chlorobenzene.
K086	Solvent washes and sludges, caustic washes and sludges or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps and stabilizers containing chromium and lead.
K095	Distillation bottoms from the production of 1,1,1-trichloroethane.
к096	Heavy ends from the heavy ends column from the production of 1,1,1- trichloroethane.
к009	Distillation bottoms from production of acetaldehyde from ethylene.
K010	Distillation side cuts from the production of acetaldehyde from ethylene.
K011	Bottom stream from the wastewater stripper in the production of acrylonitrile.
K013	Bottom stream from the acetonitrile column in the production of acrylonitrile.
K014	Bottoms from the acetonitrile purification column in the production of acrylonitrile.
K015	Still bottoms from the distillation of benzyl chloride.
K002	Wastewater treatment sludge from the production of chrome yellow and orange pigments.
K003	Wastewater treatment sludge from the production of molybdate orange pigments.
К004	Wastewater treatment sludge from the production of zinc yellow pigments.



# FLUID RECOVERY SERVICE WASTE TYPES

EPA Hazardous	
Waste No.	Description
K005	Wastewater treatment sludge from the production of chrome green pigments.
U001	Acetaldehyde
U002	Acetone
U003	Acetonitrile
U009	Acrylonitrile
U019	Benzene
U031	n-Butyl Alcohol
U037	Chlorobenzene
U043	Ethane, chloro-
U044	Chloroform
U051	Creosote
U052	Cresol (Cresylic Acid)
U055	Cumene
U056	Benzene, Hexahydro-
U057	Cyclohexanone
U068	Methylene bromide
U069	1,2 Benzenedicarboxylic Acid, dibutyl ester
U070	Benzene, 1,2 - dichloro-
U071	Benzene, 1,3 - dichloro-
U072	Benzene, 1,4 - dichloro-
U075	Methane Dichlorodifluoro-
U077	Ethane, 1,2, - dichloro-
U078	Ethene, 1,2 - dichloro-



# FLUID RECOVERY SERVICE WASTE TYPES

EPA Hazardous Waste No.	Description
U079	Ethene, 1,2 - dichloro-
U080	Methylene Chloride
U083	Propane, 1,2 - dichloro-
U084	1 - Propane, 1,3 - dichloro
U107	1,2 - Benzenedicarboxylic acid
U108	1,4-Diethyleneoxide
U110	Dipropylamine
U112	Ethyl acetate
U113	Ethyl acrylate
U117	Ethyl ether
U118	Ethyl methacrylate
U121	Trichloromonofluoromethane
U125	Furfural
U140	Isobutyl alcohol
U154	Methanol (Methyl Alcohol)
U159	Methyl ethyl ketone
U161	Methyl isobutyl ketone
U162	Methyl methacrylate
U165	Naphthalene
U169	Nitrobenzene
U171	2-Nitropropane
U188	Phenol
U191	2-Picoline



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## FLUID RECOVERY SERVICE WASTE TYPES

EPA Hazardous Waste No.	Description
U196	Pyridine
U210	Tetrachloroethylene
U211	Methane, tetrachloro
U213	Tetrahydrofuran
U220	Toluene
U226	1,1,1 Trichloroethane
U227	1,1,2 Trichloroethane
U228	Trichloroethylene
U239	Xylene
U359	2-Ethoxyethanol



## ATTACHMENT I.D.3

# WASTE ANALYSIS REPORTS

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# ATTACHMENT I.D.3 WASTE ANALYSIS REPORTS

## I.D.3 WASTE ANALYSIS REPORTS

A typical composition of the analysis of hazardous wastes handled at the facility is described in Section I.D.2. Waste analysis reports and product specifications are in Exhibits I.D.2-9 through I.D.2-15.



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## ATTACHMENT I.D.4

# WASTE ANALYSIS PROGRAM

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# ATTACHMENT I.D.4 WASTE ANALYSIS PROGRAM

### I.D.4.a-1 WASTE ANALYSIS--GENERAL

The used solvents are the primary feed stock for regeneration of Safety-Kleen's clean solvent products. Quality control of the used solvents is critical to the Recycle Center to safely recycle the material and to assure quality products. The closed loop system of managing the clean and used solvents is therefore designed to minimize the possibility of product contamination from outside sources. Within the closed loop, ownership of the material remains with Safety-Kleen and the product is leased to the customer.

Prior to leasing a parts cleaning machine, the customer's business activity is reviewed. Where the possibility exists for contamination of the mineral spirits, i.e., pesticide, herbicide, pharmaceutical, printing operations, the process is reviewed to ensure that contamination of the product does not occur.

Sales representatives are instructed to visually examine the spent product when the machines are serviced, noting the consistency and volume of material recovered. If problems are noted, the machine is removed from the customer.

The dry cleaning wastes are collected from dry cleaning facilities where only a single chemical is handled at the facility and chances of cross contamination by other chemicals or wastes are minimal. In addition, each shipment from the dry cleaning facility will be manifested with signature of the owner (generator) for the type of materials contained in the containers.



#### I.D.4.a-2 WASTE ANALYSES AT THE SERVICE CENTER

All the materials collected at the Service Center and subsequently shipped to the Safety-Kleen recycle facility are either managed at all times in the closed loop system or will be collected from a single purpose process. General nature and quality of these materials are known and Safety-Kleen's operating experiences have shown that the collected materials do not usually deviate from expectation and impact the recycling process. As an additional safeguard, Safety-Kleen's personnel are instructed to inspect all materials before returning them to the service centers.

For these reasons, all waste analyses are performed at the recycle facility, as described in the following section, and only visual and physical inspection is conducted in conjunction with service center operations. Due to the great variability in the composition of FRS wastes; their application or use; and the source industry, Safety-Kleen Corp. characterizes each stream from each generator separately. When a FRS waste stream is considered, Safety-Kleen Corp. obtains a representative sample from the generator for pre-qualification analysis and a material survey with information about the waste stream. The waste stream pre-qualification analysis is the analytical testing required by Safety-Kleen Corp. to make a technical judgement as to whether the proposed waste stream is consistent with the survey and meets operational and permit criteria.

In accordance with 40 CFR 264.13(a), Safety-Kleen will also perform physical and chemical analysis of a waste stream when it is notified or has reason to believe that the process or operation generating the waste has changed, or when the result of inspection indicates that the waste to be collected does not match the waste designated. It is Safety-Kleen's practice that suspected nonconforming material must not be accepted until an analysis has been done or the material must be rejected.



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## **I.D.4.a-3** WASTE ANALYSES AT THE RECYCLE FACILITY

Analyses performed at the recycle facilities are undertaken to safeguard the recycling process and to assure the product quality. The following tables summarize a typical waste analysis plan at the recycle facility related to the hazardous materials returned from the service center:

Exhibit I.D.4-1	Parameters and Rationale for Hazardous Waste Identification
Exhibit I.D.4-2	Parameters and Test Methods
Exhibit I.D.4-3	Methods Used to Sample Hazardous Wastes
Exhibit I.D.4-4	Frequency of Analysis

In addition to the aforementioned analyses, TCLP analyses for all compounds, except pesticides, will be conducted every five years on all characteristic hazardous waste streams (example; used mineral spirits, 699 IC). Any compounds which are positively detected in the waste stream will be added to the parameter list for that waste stream on Exhibit I.D.4-1.

## I.D.4.a-4 WASTE ANALYSIS PLAN UPDATE

This waste analysis plan will be modified if a new waste product is brought in and if sampling and material management methods change.

Monitoring and revision of the plan status is the responsibility of Environmental Department staff at Safety-Kleen Corporate Office in Elgin, Illinois.



## PARAMETERS AND RATIONALE FOR HAZARDOUS WASTE IDENTIFICATION

I	Iazardous Waste	Parameter <sup>a</sup>	Rationale
1.	Used Immersion Cleaner (609IC)	Methylene Chloride Orthodichlorobenzene Cresylic Acid	Formula contains these ingredients: F002 & Cresylic Acid F004.
2.	Used Immersion Cleaner (699IC)	TCLP	May contain TCLP compounds.
3.	Used Mineral Spirits	Flash Point TCLP	May exhibit ignitable characteristics (D001); may contain TCLP compounds.
4.	Mineral Spirits Tank Bottom Sludge and Free Water	TCLP Flash Point	The sludge and free water may contain TCLP compounds and the sludge has a flash point of 105° F (D001).
5.	Mineral Spirits Dumpster Mud	TCLP Flash Point	The sludge and free water may contain TCLP compounds and the sludge has a flash point of 105° F (D001).
6.	Dry Cleaning Wastes	Perchloroethylene Trichlorotrifluoroethane Flash Point TCLP	Three separate formulas exist for dry cleaning products. Two formulas contain ingredients of F002 waste. All three may contain TCLP compounds and one may exhibit ignitable characteristics (D001).



#### **EXHIBIT I.D.4-1 (Continued)**

### PARAMETERS AND RATIONALE FOR HAZARDOUS WASTE IDENTIFICATION

Hazardous Waste		Parameter <sup>a</sup>	Rationale
7.	Paint Wastes	Acetone Isopropyl Alcohol Methyl Ethyl Ketone Methyl Isobutyl Ketone Toluene Xylenes Acetate Compounds Flash Point TCLP	Contains ingredients of F003 and F005 wastes, and may contain TCLP compounds. May exhibit ignitable characteristics (D001).
8.	Spent Antifreeze	TCLP	May contain TCLP compounds
9.	Fluid Recovery Service (FRS) Wastes	Volatile Organic Analysis Flash Point PCB Content pH <sup>b</sup>	Contains ingredients of F codes <sup>c</sup> , K codes <sup>d</sup> , U codes <sup>e</sup> , and may contain TCLP compounds. May exhibit ignitable (D001) and corrosive (D002) characteristics.

<sup>a</sup> TCLP Waste Codes: D004-D011, D018, D019, D021-D030, D032-D043.
<sup>b</sup> Fueling Blending Wastes Only.

<sup>c</sup> F-Codes F001, F002, F003, F004, F005, F006, F019, F024, F039

- <sup>d</sup> K-Codes K006, K016, K019, K022, K029, K030, K031, K048, K049, K050, K051, K052, K085, K086, K095, K096, K009, K010, K011, K013, K014, K015, K002, K003, K004, K005
- <sup>e</sup> U-Codes U001, U002, U003, U009, U031, U037, U043, U044, U051, U052, U055, U056, U057, U068, U069, U070, U071, U072, U075, U077, U078, U079, U080, U083, U084, U107, U108, U110, U112, U113, U117, U118, U121, U125, U140, U154, U159, U161, U162, U165, U169, U171, U188, U191, U196, U210, U211, U213, U220, U226, U227, U228, U239, U359



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## PARAMETERS AND TEST METHODS

Parameter	Test Method	Reference
pH	pH Meter	ASTM Standard D1293-65
Flash Point	Tag closed cup tester	ASTM Standard D56-79
TCLP	Toxicity Characteristic Leaching Procedure	40 CFR 261, Appendix II
Hydrocarbons and Volatile Organics	Gas Chromatography (GC)	Modified Methods Based on "Test Methods for Evaluation of Solid Waste, Physical/Chemical Methods," SW-846, USEPA and ASTM Standards



Hazardous Waste	Reference for Sampling	Sampler	Description of Sampling Method
1. Used Immersion Cleaner	Sampling a drum "Samplers and Sampling Procedures for Hazardous Waste Streams," EPA/600/2- 80/018	Test Methods for the Evaluation of Solid Waste Physical/ Chemical Methods, SW-846, USEPA	Representative composite sample using drum sampler
2. Used Mineral Spirits	Sampling a tank "Samplers and Sampling Procedures for Hazardous Waste Streams," EPA/600/2- 80/018	Same as 1	For tanksBomb sampler (similar to weighted bottle sampler)
3. Mineral Spirits, Tank Bottom Sludge, and Free Water	Same as 2	Same as 2	Same as 2
4. Mineral Spirits Dumpster Mud	Same as 1	Same as 1	Same as 1
5. Dry Cleaning Wastes	Same as 1	Same as 1	Same as 1
6. Paint Wastes	Same as 1	Same as 1	Same as 1
7. Spent Antifreeze	Same as 1 or 2	Same as 1 or 2	Same as 1 or 2
8. Fluid Recovery Service (FRS) Wastes	Same as 1	Same as 1	Same as 1

## METHODS USED TO SAMPLE HAZARDOUS WASTES



# FREQUENCY OF ANALYSIS

	Hazardous Waste	<b>Frequency</b> <sup>a</sup>
1.	Used Immersion Cleaner 609	Gas chromatograph annually TCLP every five years
2.	Used Immersion Cleaner 699	Gas chromatograph annually TCLP every five years
3.	Used Mineral Spirits	Gas chromatograph annually Flash point annually
4.	Mineral Spirits, Tank Bottom Sludge, and Free Water	Gas chromatograph annually TCLP every five years
5.	Mineral Spirits Dumpster Mud	Gas chromatograph annually TCLP every five years
6.	Dry Cleaning Wastes	Gas chromatograph annually TCLP every five years
7.	Paint Wastes	Gas chromatograph annually TCLP every five years
8.	Spent Antifreeze	Gas chromatography annually TCLP every five years
9.	Fluid Recovery Service (FRS) Wastes	In accordance with 40 CFR 264.13(a), Safety-Kleen will also perform physical and chemical analysis of a waste stream when it is notified or has reason to believe that the process or operation generating the waste has changed, or when the result of inspection indicates that the waste to be collected does not match the waste designated.



### ATTACHMENT I.D.5

## TRAFFIC CONTROL AND VOLUMES



## ATTACHMENT I.D.5 TRAFFIC CONTROL AND VOLUMES

### **I.D.5 TRAFFIC CONTROL AND VOLUMES**

The non-building areas of the facility are paved with asphalt, concrete, or gravel as noted on the site plan in Exhibit I.D.3-7. The majority of the vehicular traffic and loading/unloading operations occur at and near the return and fill area, and it is paved with asphalt and concrete. Capital Circle is the major access road to the facility. The access road was designed in accordance with engineering criteria appropriate for sustaining the traffic volume and loading for the industrial activities in this area. The vans that daily travel the routes between the service center and its customers use the twolane Entrepot Boulevard. The trucks dispatched from the recycle center to deliver and pick up fresh and used solvents perform these activities at the aboveground tank area. Traffic from this facility is not expected to have a major effect on local traffic conditions. Exhibit I.D.5-1 presents anticipated 1987 average daily traffic counts for the entire region.



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## ATTACHMENT I.D.6

# MANIFEST, RECORDKEEPING, AND REPORTING



## ATTACHMENT I.D.6 MANIFEST, RECORDKEEPING, AND REPORTING

### I.D.6 PROCEDURE FOR RECORDKEEPING

Shipments of the product and used solvents are handled by invoices. In addition, the quantities of used solvents shipped to the recycle center and those shipped from regulated generators to the service center are manifested. Shipments of mineral spirits dumpster sediment are also manifested accordingly. Manifest copies are kept at the service center and the recycle center for three years.

In accordance with 40 CFR 264.76, unmanifested waste reports will be submitted to the DER office in Tallahassee should a shipment be received without a manifest.



# ATTACHMENT I.E.1

## SECURITY MEASURES



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# ATTACHMENT I.E.1 SECURITY MEASURES

### **I.E.1 SECURITY MEASURES**

In accordance with 40 CFR 264.14, access to the facility is controlled using the following methods:

- 1. Entry to the drum storage and return and fill areas are controlled through gates and doors. All gates and doors are locked when the facility is not in operation.
- Warning signs are posted at the entrances to the facility. They are marked "Danger - Unauthorized Personnel Keep Out" and are legible from 25 feet.

The combination of doors and warning signs prevents unknowing entry and minimizes the potential for unauthorized entry of people or livestock into the facility.



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# ATTACHMENT I.E.2 CONTINGENCY PLAN



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# ATTACHMENT I.E.2 CONTINGENCY PLAN

#### **GENERAL INFORMATION**

The contingency plan and emergency procedures are designed to ensure that Safety-Kleen is prepared to address emergency situations rapidly and in such a manner as to prevent or minimize hazards to human health or the environment from fire, explosion, or any unplanned, sudden, or non-sudden release of hazardous material constituents to the air, soil, surface water, or ground water at the facility.

The provisions of the contingency plan are carried out immediately whenever there is a fire, explosion, or release of hazardous materials which could threaten human health or the environment, and according to the procedures contained in this plan which describe the actions facility personnel shall take in response to an emergency.

The business activities carried on from the Service Center relate to the leasing and servicing of Safety-Kleen Parts Cleaning Equipment, including the provision of a solvent leasing service for the customers. The clean solvents are distributed from and the used solvents are returned to the service center, where separate aboveground storage tanks are utilized for the storage of clean and used mineral spirits (solvent) and clean and used antifreeze, and warehouse space is designated for the storage of containers of both clean and used immersion cleaner, dry cleaning wastes (chlorinated solvent), antifreeze, paint waste, Fluid Recovery Service (FRS) wastes, and tank and dumpster sediments.

The mineral spirits are transported in covered containers between the Service Center and customers. Upon returning to the Service Center, the used mineral spirits are

IE2-1



transferred from the containers into a wet dumpster (solvent return receptacle) in which coarse solids in the mineral spirits are retained. The used mineral spirits in the wet dumpster is pumped into a 15,000-gallon aboveground tank for storage. The used mineral spirits solvent is picked up periodically by a bulk tank truck from our Recycle Center, which, upon arrival at the Service Center, delivers a load of clean mineral spirits. The sludge in the wet dumpster is periodically cleaned out, containerized, and temporarily stored in the container storage area for later shipment to the Recycle Center for reclamation.

Spent antifreeze is accumulated in containers and a tank. The containers are placed in the container storage area for shipment to a Safety-Kleen Recycle Center.

The immersion cleaners #609 and #699, remain in covered containers at all times during transportation and storage. The solvent is not transferred to another container while being used by the customers and in storage at the Service Center. The dry cleaning wastes are picked up at commercial dry cleaning establishments in containers and stored at the service center. The containers are picked up periodically for reclamation at the recycle center.

Dry cleaning wastes consist of spent filter cartridges, powder residue from diatomaceous or other powder filter systems, and still bottoms. The still bottoms and powder residue are packaged on the customer's premises in containers. The containers are managed like the immersion cleaner containers and are picked up periodically for reclamation at the recycle center.

Paint wastes are collected in containers and handled similarly to the immersion cleaner.

The FRS wastes are packaged in polyethene or steel containers which are not opened until they reach the recycle center.

Containers will be palletized whenever possible (four 55-gallon, five split 30 gallon (also known as 20 gallon) or 30 gallon, nine 16- or 15- or 13.5-gallon or 12 five-gallon containers) to facilitate shipping and storage. Pallets may be stacked up to six feet high or two containers high (whichever is higher) while in storage and during transport. This will prevent the containers from contacting any standing liquid while they are in storage.

The waste products except FRS exhibit essentially the same biological, physical, and chemical properties as the fresh product. Used products are basically fresh products with impurities of dirt and metals. The MSDSs provided in Appendix A represent the biological, physical, and chemical properties of the fresh products.

### **EMERGENCY NOTIFICATION**

### **Emergency Coordinator**

The Branch Manager or his designate is the emergency coordinator and one of the sales representative is his alternate. Exhibit I.E.2-1 includes the names, home addresses, and both office and home phones of the primary emergency coordinator and his alternate. At least one employee will be either present on the facility premises or on call with responsibility for coordinating all emergency response measures at all times. This primary emergency coordinator and alternate emergency coordinator will be thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristics of materials handled, the location of all records within the facility, and the facility layout. In addition, these





coordinators have the authority to commit the resources needed to carry out the contingency plan.

### **EMERGENCY RESPONSE AGENCIES AND TEAM MEMBERS**

The agencies and response team members to be notified whenever an imminent or actual emergency occurs are presented in Exhibit I.E.2-1. A Telephone Notification Log is shown in Exhibit I.E.2-2.

### ACTIONS OF THE EMERGENCY COORDINATOR

Whenever there is an imminent or actual emergency situation, the emergency coordinator (or his or her designee when the emergency coordinator is on call) must immediately:

- a. Activate internal or communication systems to notify all facility personnel. The relatively small size of this Service Center makes direct verbal communication the most expedient form of emergency notification. The emergency coordinator may also elect to proceed to the front of the building and repeatedly sound a car horn to notify building occupants of an emergency. A head count will be performed by the emergency coordinator.
- b. Notify appropriate state or local agencies with designated response roles if their help is needed.
- c. Summon the primary emergency coordinator, if he is absent.

Whenever a release, fire, or explosion occurs, the emergency coordinator must immediately identify the character, exact source, amount, and areal extent of any

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released materials. Because of the limited types of chemicals in storage, the identification processes can easily be performed visually.

Procedure for Assessing Possible Hazard to the Environment and Human Health:

- a. After identification of the character, source, amount, and extent of a release, fire, or explosion, the emergency coordinator must decide whether the situation can be contained or cleaned up by plant personnel and equipment.
- b. If a fire or explosion is determined uncontrollable by plant personnel or threatening neighboring establishments or population, assistance from a local emergency response agency shall be summoned immediately and an evacuation order be requested.
- c. In case of a release outside of the containment area that is deemed immediately uncontainable or unrecoverable, the local emergency response agency and/or specialty cleanup contractor shall be called in.
- d. After termination of a fire or explosion, containment and preliminary cleanup of a spill, evaluate whether residues in the form of gas or liquid have become airborne, seeped into ground water, and/or flowed into surface water bodies.
- e. Expert assistance should be requested to determine whether the escaped materials are potentially harmful and whether the receiving medium ultimately will be a populated area, public water supply source, a private well, or an environmentally sensitive area.



IE2-5

f. Additional steps shall then be taken to mitigate the potential impact on the environment and human health, in accordance with expert recommendations.

If the emergency coordinator determines that the facility has had a release, fire, or explosion that could threaten human health, or the environment outside the facility, the coordinator must report those findings, as follows:

- a. If the assessment indicates that evacuation of local areas may be advisable, the coordinator must immediately notify appropriate authorities. The coordinator must be available to help appropriate officials decide whether local areas should be evacuated.
- b. The coordinator must immediately notify the FDER-Northwest District, 160 Government Center, Pensacola, Florida 32501 (904) 436-8363 and the government-designated emergency coordinator (Florida Division of Emergency Management (904) 488-1324), or the National Response Center (800) 424-8802, by telephone.

The report must include:

- (1) Name and telephone number of notifier;
- (2) Name and address of facility;
- (3) Time and type of incident (e.g., release, fire);
- (4) Name and quantity of material(s) involved, to the extent known;
- (5) The extent of injuries, if any; and
- (6) The possible hazards to human health, or the environment outside the facility.



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Immediate assistance in assessing and responding to an emergency is obtained by the emergency coordinator by calling the 24-hour emergency number of the Safety-Kleen Corporation Environmental, Health and Safety Department ((708) 888-4660).

During an emergency, the emergency coordinator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous waste at the facility. These measures must include, where applicable, stopping processes and operations, collecting and containing released waste, and removing or isolating containers.

If the facility stops operations in response to a fire, explosion, or release, the emergency coordinator must monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.

Immediately after an emergency, the emergency coordinator must provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility.

The emergency coordinator must ensure that, in the affected area(s) of the facility:

- a. No waste that may be incompatible with the released material is treated or stored until cleanup procedures are completed; and
- b. All emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.

The owner or operator must notify the appropriate state and local authorities that the facility is in compliance with the requirements of the preceding paragraph, before operations are resumed in the affected area(s) of the facility.

The owner or operator must note in the operating record the time, date, and details of any incident that requires implementing the contingency plan. Within 15 days after the incident, the owner must submit a written report on the incident to the FDER-Northwest District, 160 Government Center, Pensacola, Florida 32501 (904) 436-8363. The report must include:

- a. Name, address, and telephone number of the owner or operator;
- b. Name, address, and telephone number of the facility;
- c. Date, time, and type of incident (e.g., fire, explosion);
- d. Name and quantity of material(s) involved;
- e. The extent of injuries, if any;
- f. An assessment of actual or potential hazards to human health or the environment, where this is applicable; and
- g. Estimated quantity and disposition of recovered material that resulted from the incident.



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### POTENTIAL SPILL SOURCES

The following is a list of activities that have the potential for a small scale (less than 30 gallons of waste) pollution incident.

a. Moving of containers.

Every time a container is moved, the possibility exists that it could tip over or be dropped. To minimize the possibility of spillage of solvent under those conditions, all container lids must be secured before the container is moved.

- b. Delivery truck container transfers.
  - Individual delivery containers contain from five to 30 gallons of waste, a quantity which can be contained by oil sorbent clay or pads, if accidentally spilled.
  - (2) Each vehicle is equipped with a hoist and hand cart for ease of moving clean solvent off the truck and into the customer's shop and returning the dirty solvent to the truck.
  - (3) Clamp type lids are on containers during movement to prevent a spill.
  - (4) Each truck should contain a shovel and a quantity of sorbent material to contain a minor spill.
  - (5) The cargo should be secured in the route vehicle before transit.



#### **Spills Inside Buildings**

In the event of a spill indoors, the doors and windows should be opened to improve the ventilation in the confined area. Following the instructions of the Material Safety Data Sheet (MSDS), the worker would enter the area wearing rubber gloves, boots, and respirator and mop up the liquid and return it to dirty storage. The cleanup is completed only when the workers have cleaned themselves and the emergency equipment with soap and water.

#### **Spills on Concrete Pads**

Concrete pads in loading and unloading areas are, in most cases, equipped with emergency containment. Under most spill conditions, product can be totally contained on the concrete surface and in the catchment system. Upon containment, arrangements must be immediately undertaken to recover the material. Any soil that may be involved must be removed and treated as a hazardous waste.

#### Tank Spills or Leakage

Aboveground tanks are underlain by a concrete slab and surrounded by a concrete dike to contain any spilled or leaked solvent. The containment system has been sized in accordance with the regulations, and the product will be totally contained under most spill conditions. Should a spill occur, arrangements must be immediately undertaken to recover the material. In the event of leakage, tank repair or replacement will be initiated. Any soil that may be involved must be removed and treated as hazardous waste.

#### **Spill Control Procedures**

If a harmful discharge occurs:



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- a. Stop the discharge, if possible. Discharges from leaking containers can be stopped by immediately transferring the liquid to a good container. It may be possible to stop discharges from tanks by manually closing valves. In the event of a tank fracture, solvent will collect in the secondary containment.
- b. Retain, contain, or slow the flow of the material, if possible, by diking with sorbent pad or dirt. Appropriate personal protective equipment should be worn. Collect contaminated soil with a shovel and containerize it. Pump and mop up the liquid from the floor or pavement into a good container, and return the container to storage and then later to the recycle center for reclamation/disposal. The area and equipment that comes in contact with the spill must be decontaminated with soap and water. All residues resulting from containment and decontamination should be collected for proper disposal at a Safety-Kleen recycle center.
- c. If the material escapes the containment efforts, <u>immediately</u> call the cleanup contractor that specializes in spill cleanup (Exhibit I.E.2-1). Record the date, time, and name of person taking the message. Call the primary emergency coordinator, if he is absent.
- d. Immediately recover spilled solvent to reduce property and environmental damage using the emergency and safety equipment stored onsite for such situations (Exhibit I.E.2-3) or call in emergency response contractors (Exhibit I.E.2-1). Start recovery operations immediately. In the event of a release which cannot be remediated using the methods described above, an appropriate long-term cleanup project must be agreed upon with the FDER-Northwest District, 160 Government Center, Pensacola, Florida 32501 (904) 436-8363.



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- e. After recovery of spilled solvent, wash all contaminated impervious surfaces and equipment with soap and water. The residue of spill- or fire-contaminated soils and waste waters must be removed and disposed of at a Safety-Kleen recycle center. In addition, the recovered solvent will be sent to a Safety-Kleen recycle center for reclamation. Any equipment which cannot be decontaminated, and all rinsewater, will be disposed of as hazardous waste.
- f. Report any incident as soon as possible to Safety-Kleen Corporate Environmental Department on the 24-hour telephone line: (708) 888-4660. If the Environmental Department does not respond within 30 minutes, call the National Response Center (telephone: (800) 424-8802) and FDER-Northwest District, 160 Government Center, Pensacola, Florida 32501 (904) 436-8363.

The person reporting a spill should be prepared to give his name, position, company name, address, and telephone number. The person reporting also should give the nature of the material spilled (e.g., immersion cleaner, etc.) and, if possible, some estimate of the amount, and whether it is near a stream or could enter a stream by flowing through ditches or storm sewers.

If assistance is needed, the emergency coordinator should describe the containment status and specify any additional equipment needed. When reporting a spill, record the date and time of the call and the name of the person answering the call at the above number.

Spill prevention plans are reviewed with facility personnel every year, and records of the training are kept at the facility.

Every spill must be recorded on the attached form with the revision of the contingency plan to prevent similar spills in the future. A copy of this report will be sent to the Corporate Environment Health and Safety Department.

Reports of emergency incidents will be transmitted to FDER-Northwest District, 160 Government Center, Pensacola, Florida 32501 (904) 436-8363 within 15 days of occurrence. This report shall include:

- a. Name, address, and telephone number of the owner of operator;
- b. Name, address, and telephone number of the facility;
- c. Date, time, and type of incident (e.g., fire, explosion);
- d. Name and quantity of materials involved;
- e. The extent of injuries, if any;
- f. An assessment of actual or potential hazards to human health or the environment, where this is applicable;
- g. Estimated quantity and disposition of recovered material that resulted from the incident; and
- h. Provide a sketch depicting the location and extent of the spill, if applicable.



#### **DECONTAMINATION**

Once the spilled material has been cleaned-up, the spill area and equipment used during the spill clean-up must be decontaminated and/or disposed.

Concrete surfaces/containment areas:

- Concrete surfaces/containment areas will be cleaned with a detergent solution and then rinsed with hot water. The rinsate will be collected via wet vacuum and placed in containers. Visual inspection will be used to determine the success of the decontamination procedure.
- The intent of the surface decontamination is to prevent current or future releases of materials to the environment. It is believed that a vigorous cleaning with detergent is sufficient to prevent releases to the environment during normal operations. Potential for hazards from residual materials to future occupants of the facility are addressed in the Closure Plans for the facility and the decontamination procedures incorporated therein.

#### Equipment

The equipment used to clean the area includes mops, pails, scrub brushes, and a wet/dry vacuum. Equipment which is considered reusable (i.e., pails, wet/vac, hoses) will be washed with detergent and the wash water and rinsate collected. All non-reusable equipment and/or equipment which is not capable of being decontaminated will be containerized and disposed of as hazardous waste.



#### Wash Water and Rinsate

If the rinsate or other wastes generated in the clean-up process is determined to be hazardous, it will be properly disposed of as a hazardous waste; otherwise, the material will be disposed of as an industrial waste. It should be noted that wash water and rinsate will not be allowed to drain to the waterway.

#### EMERGENCY RESPONSE EQUIPMENT AND COMMUNICATION

Due to the small size of the facility, routine communication will be accomplished by voice communication. Emergency alarms will be available at the tank farm, return/fill shelter, and warehouse. Telephones are used in case of a spill or fire emergency to summon assistance. Emergency numbers will be posted by each phone in the office. Included with these phone numbers is the 24-hour spill number for the Corporate Environmental Department at the corporate office in Elgin, Illinois. Other emergency response equipment will be kept in a small storage area inside the warehouse near the return/fill dock. This equipment will include mops and buckets, soap, shovels, and spill sorbent pads. Rubber gloves, boots, pumps, and a wet/dry vacuum cleaner will be stored in an emergency supply area near the container storage area. Descriptions and uses of the equipment are provided in Exhibits I.E.2-3 and I.E.2-4. Adequate aisle space will be provided in the container storage area for movement in an emergency situation.

The equipment available at the facility for emergency situations will be adequate for most cases. Large or serious emergency situations will be remediated by local emergency response teams or special emergency response or cleanup contractors. The facility will be constructed and operated in accordance with National Fire Protection Association (NFPA) standards and applicable local ordinances. Applicable health and safety standards will also be observed at the service center. A recent air quality

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survey conducted by an independent industrial hygienist at the Los Angeles service center has shown that air quality at a typical service center is within Threshold Limit Values (TLV) as specified by OSHA and local air pollution control criteria; no respirator or special protection unit is deemed mandatory.

#### FIRE CONTROL PROCEDURES

Call the Fire Department.

Center aisles are available in container storage areas to permit fire department personnel to pass with fire fighting equipment.

Act quickly with the fire extinguisher to put out the fire before it spreads.

Call the Police Department and local hospital (Exhibit I.E.2-1) when injury occurs, and/or the order of on-lookers and traffic is to be maintained.

#### AVAILABILITY AND REVISION OF THE CONTINGENCY PLAN

This plan and all revisions to the plan are kept at the facility and regularly updated throughout the operating life of the facility.

Copies of this document are provided to local authorities and organizations listed under the Preparedness and Prevention Plan, which may be called upon to provide emergency services.

This plan and all revisions to the plan are made readily available to employees working at the facility.



This plan is reviewed and updated, if necessary, whenever:

- a. The facility license is modified to allow new process wastes to be stored or treated, or applicable regulations are revised;
- b. The list or location of emergency equipment changes;
- c. The facility changes in its design, construction, operation maintenance, or other circumstances in a way that:
  - Materially increase the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or
  - (2) Changes in response necessary in an emergency.
- d. The names, addresses, or phone numbers of emergency coordinators change;
- e. The employee assigned to each emergency task changes, or
- f. The plan fails when implemented in an emergency.

#### **ARRANGEMENTS WITH LOCAL AUTHORITIES**

Once the facility is constructed, arrangements will be made to familiarize the Police Department, Fire Department, and local emergency response teams with the layout of the facility, properties of hazardous materials handled (Material Safety Data Sheets) at the facility and associated hazards, places where facility personnel would normally be working, entrances to and roads inside the facility, and possible evacuation routes.



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Potential primary and secondary spill control contractors as well as sorbent suppliers are identified in the Contingency Plan and Emergency Procedures.

Arrangements will be made to familiarize the local hospital with the properties of hazardous waste handled at the facility and the types of injuries or illnesses which would result from fires, explosions, or releases at the facility.

Appendix B includes examples of letters which will be transmitted, after the site is constructed, to local authorities for emergency response in the event of an incident where public health or environment is threatened.

#### **EVACUATION PLAN**

In an uncontrolled emergency, all persons are to be evacuated from the area by means of a verbal cry and assemble across from the entrance drive to the facility. Assure that all personnel are accounted for and out of the area. The emergency coordinator may elect to use a car horn as a means of emergency notification. A head count will be performed by the emergency coordinator.

The Fire Department must be notified at the time of evacuation either from a safe onsite building or neighboring facilities.

Clearly marked exits exist in warehouse and office areas.

#### **REQUIRED REPORTS**

Copies of all reports of spills must be kept onsite until closure.



#### EXHIBIT I.E.2-1

#### **EMERGENCY NOTIFICATION**

#### **Emergency Coordinators**

Primary: Steve Becker 2616 Nez Pierce Tallahassee, FL 32303 Home: (904) 562-3968 Office: (904) 576-9764 Alternates: E 8 7

Brenda Parker 8578 Manor Drive Tallahassee, FL 32303 Home: (904) 562-3705 Office: (904) 576-9764

#### **Emergency Notification Phone Numbers**

Safety-Kleen Environmental Affairs Department Telephone (312) 888-4660 (24-hour number)

National Response Center Telephone (800) 424-8802

Florida Department of Environmental Regulation, Northwest District, (904) 436-8360 Northwest Florida Water Management District, Havana (904) 487-1770

#### **Emergency Team to be Notified**

Tallahassee Fire Department 327 North Adams Tallahassee, FL 32301 (904) 877-4326 or 911

Tallahassee Police Department 234 East 7th Avenue Tallahassee, FL 32303 (904) 222-0765 or 911

Tallahassee Memorial Regional Medical Center 1300 Miccosukee Road Tallahassee, FL 32303 (904) 681-1155

Industrial Waste, Inc. Ellyson Industrial Park, Box 34 Pensacola, FL 32514 (904) 479-1788



#### EXHIBIT I.E. 2-2

				_
SAFE	ETY-K	LEEN	COR	2
Field	Spill	Repoi	rt Fori	n

	Repo	ort all spills to the Safety-K	(leen E	nviro	nment, H	lealth and Sa	afety Dept	. immediately.	
1.	Facility Number_				Facili	ty Location_			
2.	Date of spill	Time	e			a.m./	p.m.		
3.	Report from:	·······			. <u></u>	<u></u>	Title		
4.	Location of spill:	· · · · · · · · · · · · · · · · · · ·							
5.	Material spilled:_				·		Quant	ity	
6.	Any injuries or pr	operty damage? Yes	or	No	If yes	s, explain		<u>.</u>	
7.	Cause of spill? (E	Explain in detail.)				· · · · · · · · · ·			
8.	Describe the sce contained)	ne in detail (including nearl	by surf	ace w	ater or s	ewer and dist	tance, type	e of surface spille	d on, was spiil
9.	Describe clean-u	p action taken in detail. H	ow mu	ch ma	aterial w	as not recove	ered?		
10. 11. 12.	Person involved Vehicle # Accident resulted	in incidentCompa Compa d from activities involving (	iny	all tha	at apply):				
	SK Fleet	Branch Personnel			Outsid	e Carrier		Customer	Other
13.	List any emerger	ncy agencies at scene							
14.	Are there homes	or businesses nearby?	Yes	or	No	Distance?_			
15.	Notification:	S-K Environment Dept. 1-800-669-5740 1-312-888-4660 (24 hr.)*			Nat'l R 1-8	esponse Cen 00-424-8802	nter	_ Stat 1	e -
Dat	e/time:	······································					·		
Cor	ntact name:			. <u> </u>	<u>.                                    </u>		······		
Cor	mments rec'd:	······································		. <u> </u>					
				. <u> </u>			······		
							<u></u>		
Rep	oort Number:			. <u> </u>					
16.	Action taken to p	revent recurrence							• • • • • •
	-	Use back of fo	rm if a	dditio	nal spac	e is needed	for any ite	m.	

17. Signature\_\_\_\_

After completing this form, file copy 1 in the Spill Incident File at the branch, and send copy 2 to the SK Environment, Health and Safety Department in Elgin and copy 3 to the Regional Environmental Engineer.

\*NOTE: After 11/11/89 telephone number will be (708) 888-4660

500-08-06 (R/7/89)

Date Received by EHS\_\_\_\_\_

### EXHIBIT I.E.2-3

### EMERGENCY RESPONSE EQUIPMENT

Description	Type/Capacity	Location	Quantity
Fire Extinguisher	ABC (10 lb)	Container Storage Area	3
Fire Extinguisher	ABC	Tank Storage Area	1
Eyewash	Fountain	Container Storage Area	1
Eyewash	Fountain	Return/Fill Shelter	1
First-Aid		Container Storage Area	1
Telephones	Standard	Manager's Office	1
Telephones	Standard	Secretary's Desk	1
Telephones	Standard	Container Storage Area	2
Gloves	Rubber	Emergency Equip. Area	Min. 3
Boots (optional)	Rubber	Emergency Equip. Area	Min. 3
Protective Clothing	Apron	Emergency Equip. Area	Min. 3
Eye Protection	Goggles/Safety Glasses	Emergency Equip. Area	Min. 3
Sorbent Material	Oil Absorbing	Emergency Equip. Area	Min. 1 bale
Shovel	Standard	Emergency Equip. Area	Min. 1
Mop and Bucket	Standard	Emergency Equip. Area	Min. 1
Pump	Hand-held, Electric	Emergency Equip. Area	Min. 1
Wet/Dry Vacuum	Portable, Electric	Emergency Equip. Area	1
Empty Containers for Over Pack	30, 55, and 85 gallons	Container Storage Area	9
Alarm	N/A	Tank Storage Area	1
Alarm	N/A	Container Storage Area	1
Alarm	N/A	Return/Fill Shelter	1



### EXHIBIT I.E.2-4

## DESCRIPTION AND USES OF EMERGENCY EQUIPMENT

Item	Location	Use/Description
Gloves	Locker Room	The rubber or plastisol gloves sold by Safety-Kleen are to be used when handling the solvents.
Safety Glasses or Face Mask	Locker Room	Whichever the worker prefers is to be worn when loading or unloading solvent.
Plastic Aprons	Locker Room	For situations where a solvent may get on the worker's clothing.
Eyewash Stand	Centrally for smaller centers	The workers should operate the stand and become familiar with its operation.
Showers	Locker Room	
Fire Extinguisher	Points where solvent is transferred	An ABC extinguisher is a universal system used on paper, wood, and electrical, as well as solvent fires. The extinguishers must be full and carry an inspection tag. The accepted extinguisher is available as S-K Part No. 4009.
Absorbent Material	Loading/Unloading Area and Warehouse	An adequate supply will be on hand to handle small spills. A 50-pound bag, S-K Part No. 8890, will also be kept in the warehouse to remediate and prevent the spread of large spills.





### EXHIBIT I.E.2-4 - Continued

### DESCRIPTION AND USES OF EMERGENCY EQUIPMENT

Item	Location	Use/Description
Portable Pumps Wet/Dry Vacuum	Warehouse	For use in picking up liquid spills in the container containment area, or other paved areas, and to transfer materials associated with a spill.
Recovery Containers	Warehouse	Emergency storage of spilled product, cleaning fluids, or other materials associated with a spill.
Plastic	Warehouse	To be used for containment of decontamination zones.
Duct Tape	Warehouse	Taping of protective clothing, containment plastic, and other miscellaneous uses.
First-Aid Supplies	Locker Room	Minor first-aid needs and health problems.
Shovels and Mops	Warehouse	To be used to collect spills and spill residue.
Communication Equipment	Throughout the Facility	Six telephones with paging/loudspeaker systems are available in the office and warehouse for internal and external communications.
Decontamination Equipment	Warehouse	Two brushes, a box of detergent and cloth rags are available for decontamination of clean-up equipment.





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### APPENDIX A

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### MATERIAL SAFETY DATA SHEETS



### SAFETY-KLEEN 105 SOLVENT

### MATERIAL SAFETY DATA SHEET FOR U.S.A. AND CANADA

#### SECTION I – PRODUCT INFORMATION

#### Safety-Kleen Corp. - 777 Big Timber Road - Elgin, IL, U.S.A. 60123 Safety-Kleen Canada Inc. - 3090 Blvd. Le Carrefour - Suite 300 - Chomedy Laval Quebec, Canada H7T 2J7 For Product Technical Information Call 312-694-2700 (U.S.A.); 800-363-2260 (Eastern Canada); 514-686-2040 (Western Provinces/Call Collect)

24-HOUR EMERGENCY TELEPHONE	MEDICAL:	TRANSPORTATION:		
These numbers are for emergency use	800-752-7869 (U.S.A.)	708-888-4660 (U.S.A.) SAFETY-KLEEN ENVIRONMENT		
information about this product,	312-942-5969 (CANADA)	HEALTH AND SAFETY DEPARTMENT		
listed above.	RUSH POISON CONTROL CENTER CHICAGO, ILLINOIS, U.S.A.	613-996-6666 (CANADA) CANUTEC		
IDENTITY (TRADE NAME):	SAFETY-KLEEN 105 SOLVENT			
SYNONYMS:	PETROLEUM DISTILLATES, PETROLEUM NAPHTHA.			

PETROLEUM DISTILLATES, PETROLEUM NAPHTHA, MINERAL SPIRITS, STODDARD SOLVENT

SOLVENT FOR CLEANING AND DEGREASING PARTS

6617

#### FAMILY/CHEMICAL NAME:

#### **PRODUCT USAGE:**

SK PART NUMBER:

#### HYDROCARBON SOLVENT

# SECTION II -- HAZARDOUS COMPONENTS

					·				
NAME	SYNONYM	Wt. 8	<u>CAS</u> <u>NO</u> .	OSHA <u>TWA</u> (ppm)	<u>PEL</u> <u>STEL</u> (ppm)	ACGII <u>TWA</u> (ppm)	<u>H TLV</u> STEL (ppm)	LD50 <sup>a</sup>	LCSOp
Parts Washer Solvent (Consists predominantly of C9-C13 Saturated	Mineral Spiriu								
Hydrocarbons)		85.0	64741-41-9	100	N.Av.	100	N.Av.	> 5000	3400
C8+ Aromatics		12.0	Mixture	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.
*Toluene		0.5	108-88-3	100	150	100	150	5000	4000
*Xylene		1.0	1330-20-7	100	150	100	150	4300	5000
*Ethyl Benzene		0.5	1001	100	125	100	125	3500	4000°
*1,1,1 Trichloroethane	Methyl Chloroform	0-0.5***	71-55-6	350	450	350	450	10300	18000
*Perchloroethylene	Tetrachloroethylene	0-0.5***	127-18	25	N.Av.	50	200	2529	4000 <sup>2</sup>
Total Chlorinated Solvents		0-1.0							

N.Ay. = Not available.

· See Section X - Other Regulatory Information

<sup>a</sup> Oral-Rat LD50 (mg/kg)

<sup>b</sup> Inhalation-Rat LC50 (ppm/4 hours)

\*\*For Stoddard Solvent

\*\*\*Even though the concentration range does not fail under the ranges prescribed by WHMIS. this is the actual range which varies with each batch of the product.

<sup>2</sup> Inhalation-Rat LCLo (ppm.4 hours)



### SECTION III – PHYSICAL DATA

PHYSICAL STATE, APPEARANCE AND ODOR:	Combustible liquid, clear, green, with characteristic hydrocarbon odor.					
ODOR THRESHOLD:	Not available.					
BOILING POINT:	304-435°F (151-224°C).					
VAPOR PRESSURE:	2 mm Hg at 63°F (20°C).					
FREEZING POINT:	Not available.					
EVAPORATION RATE:	0.1 (Butyl Acetate = 1).					
VOLATILE:	99.9%					
VOLATILE ORGANIC COMPOUNDS:	6.4 to 6.7 lbs/gal; 770 to 800 g/l					
DENSITY:	Not available.					
VAPOR DENSITY:	4.9 (Air = 1).					
SOLUBILITY IN WATER:	Negligible.					
pH: -	Not applicable.					
SPECIFIC GRAVITY:	0.77 to 0.80 at 60/60°F (16/16°C) (Water = 1).					
COEFFICIENT OF WATER/OIL DISTRIBUTION:	Not available.					
MOLECULAR WEIGHT:	142 (Approximately).					
SECTION IV	FIRE AND EXPLOSION HAZARD DATA					
FLASH POINT:	105°F (41°C) SETA					
AUTOIGNITION TEMPERATURE:	473°F (245°C).					
. CONDITIONS OF FLAMMABILITY:	Materials must be moderately heated before ignition can occur.					
FLAMMABLE LIMITS IN AIR:	LOWER: 0.7 Vol. % UPPER: 6.0 Vol. %					
UNUSUAL FIRE AND EXPLOSION HAZARDS:	Decomposition and combustion products may be toxic. Heated container may rupture, explode or be thrown into the air. Vapors are heavier than air and may travel great distances to ignition source and flash back. No sensitive to mechanical impact. Material may be sensitive to stati discharge which could result in fire or explosion					

EXTINGUISHING MEDIA:

FIRE FIGHTING PROCEDURES -- SPECIAL:

HAZARDOUS COMBUSTION PRODUCTS:

Carbon dioxide, foam, dry chemical, water (mist only).

NFPA 704 Rating 0-2-0 Keep storage containers cool with water spray. Use self-contained breathing apparatus (SCBA).

Thermal decomposition and burning may produce carbon monoxide.

### SECTION V – REACTIVITY DATA

#### STABILITY:

Stable under normal temperatures and pressures, and not reactive with water.

INCOMPATIBILITY (MATERIALS AND CONDITIONS TO AVOID):

HAZARDOUS POLYMERIZATION:

Avoid oxidizing agents, flames, sparks and high temperatures.

Not known to occur under normal temperatures and pressures.

HAZARDOUS DECOMPOSITION **PRODUCTS**:

Normally none.

#### SECTION VI – HEALTH HAZARD DATA AND TOXICOLOGICAL PROPERTIES

PRIMARY ROUTES OF EXPOSURE:

Eye and skin contact; inhalation.

EXPOSURE LIMITS:

See Section II.

SIGNS AND SYMPTOMS OF EXPOSURE:

ACUTE:

*Eyes*: Contact may cause slight to moderate irritation. High vapor concentrations ( > 500 ppm) are irritating to the eyes.

Skin: Prolonged or repeated contact tends to remove skin oils, possibly leading to irritation and dermatitis. No significant skin absorption hazard.

Inhalation (Breathing): High concentrations of vapor or mist may be irritating to the respiratory tract, cause headaches, dizziness, nausea, impaired coordination, anesthesia and may have other central nervous system effects.

Ingestion (Swallowing): Low order of acute oral toxicity. May cause irritation of the throat, nausea, vomiting and symptoms of central nervous system depression. Aspiration into the lungs during ingestion or vomiting may cause mild to severe pulmonary injury and possibly death.

CHRONIC: Prolonged and/or repeated skin contact may cause drying and cracking or dermatitis.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Individuals with pre-existing central nervous system dysfunction may have increased susceptibility to the effects of exposure. Contact with skin may aggravate pre-existing dermatitis.

CARCINOGENICITY: IARC classifies chemicals by their carcinogenic risk, including agents that are known, probable, or possible carcinogens. NTP classifies chemicals as either known carcinogens or for which there is a limited evidence of carcinogenicity in humans or sufficient evidence of carcinogenicity in experimental animals.

Perchloroethylene is listed by IARC as a possible carcinogen and is classified by NTP as having limited evidence of carcinogenicity in humans or sufficient evidence of carcinogenicity in experimental animals.

OTHER POTENTIAL<br/>HEALTH HAZARDS:The following information is required by Canadian WHMIS regulations. Irritancy is<br/>covered in Signs and Symptoms of Exposure in Section VI. There is no known<br/>human sensitization or toxicologically synergistic product. Xylene has demonstrated<br/>experimental effects for reproductive toxicity, mutagenicity and teratogenicity.<br/>Studies indicate Ethylbenzene and 1,1,1-Trichloroethane are experimental teratogens.

#### SECTION VII -- EMERGENCY AND FIRST AID PROCEDURES

EYES:

For direct contact, flush eyes with water for 15 minutes lifting upper and lower lids occasionally. If irritation or redness from exposure to vapors or mists develops, move victim away from exposure into fresh air. Consult physician if irritation or pain persists.

Remove contaminated clothing. Wash skin twice with soap and water. If irritation or pain develops and persists, consult a physician.

SKIN:

INHALATION: (Breathing) Remove to fresh air immediately. Use oxygen if there is difficulty breathing or artificial respiration if breathing has stopped. Do not leave victim unattended. Seek immediate medical attention if necessary.

INGESTION: Swallowing) If conscious, drink 4 to 8 ounces of water and seek immediate medical attention. DO NOT induce vomiting.

#### SECTION VIII – PRECAUTIONS FOR SAFE USE AND HANDLING AND PREVENTIVE MEASURES

Remove all ignition sources. Ventilate area and avoid breathing vapors. For large spills, isolate SPILL **PROCEDURES:** area and deny entry. If possible, contain as a liquid for possible re-refining. Absorb with compatible absorbent material. Shovel into closable container for disposal. Wear protective equipment specified in Section IX. Contain away from surface waters and sewers. WASTE DISPOSAL Dispose in accordance with Federal, State, Provincial and local regulations. Contact **METHODS:** Safety-Kleen regarding recycling or proper disposal. HANDLING Avoid contact with eyes, skin or clothing. Use in well ventilated area and avoid breathing **PRECAUTIONS:** vapors or mists. Keep away from heat, sparks and flames. SHIPPING AND Keep container tightly closed when not in use and during transport. Empty product containers **STORING** may contain product residue. Do not pressurize, cut, heat, weld, grind or expose containers **PRECAUTIONS:** to flame or other sources of ignition. PERSONAL Use good personal hygiene. Wash thoroughly with soap and water after handling and before eating, drinking or using tobacco products. Launder contaminated clothing and clean protective HYGIENE: equipment before reuse.

#### SECTION IX -- CONTROL MEASURES AND OTHER PREVENTIVE MEASURES

EYEWhere there is likelihood of spill or splash, wear chemical goggles and faceshield. ContactPROTECTION:lenses should not be worn.

Use nitrile or neoprene gloves to prevent contact with skin.

PROTECTIVE GLOVES:

RESPIRATORY PROTECTION: Use NIOSH/MSHA-approved respiratory protective equipment when concentration of vapors or mists exceeds applicable exposure limit. Depending on the airborne concentration, use a respirator or gas mask with appropriate cartridges and canisters. A self-contained breathing apparatus (SCBA) is required for large spills and emergencies. Selection and use of respiratory protective equipment should be in accordance in the U.S.A. with OSHA General Industry Standard 29 CFR 1910.134 and in Canada with CSA Standard Z94.4-M1982.

ENGINEERING Provide local exhaust or general dilution ventilation needed to maintain concentrations of vapors CONTROLS: or mists below applicable exposure limits. Where explosive mixtures may be present, systems safe for such locations should be used.

*OTHER PROTECTIVE EQUIPMENT:* 

Wear appropriate solvent-resistant boots, apron or other protective clothing where spiils and splashes are possible. A source of clean water should be available in work areas for flushing the eyes and skin.

#### SECTION X - OTHER REGULATORY INFORMATION

DOT PROPER SHIPPING NAME:

DOT CLASS:

PETROLEUM NAPHTHA

COMBUSTIBLE LIQUID

DOT ID NUMBER:

UN1255

SARA TITLE III:

Product contains toxic chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372. Toxic constituents are listed with an asterisk in Section II of this Material Safety Data Sheet.

Product poses the following physical and/or health hazards as defined in 40 CFR 370.3 (Sections 311, 312 of SARA Title III):

Immediate (Acute) Health Hazard Delayed (Chronic) Health Hazard Fire Hazard

TDGA:

NAPHTHA, PETROLEUM CLASS 3.3, UN1255, P.G. III

WHMIS CLASSIFICATION:

Class B3, Combustible Liquid; Class D2A, Other Toxic Effects, Very Toxic Material; Class D2B, Other Toxic Effects, Toxic Material

#### SECTION XI – PREPARATION INFORMATION

PREPARED BY: Product MSDS Coordinator

FORM PART NO. 82310

ORIGINAL ISSUE DATE: July 20, 1989

REVISED: December 14, 1990

SUPERSEDES: March 12, 1990

User assumes all risks incident to the use of this product. To the best of our knowledge, the information contained herein is accurate. However, Safety-Kleen assumes no liability whatsoever for the accuracy or completeness of the information contained herein. No representations or warranties, either expressed or implied, or merchantability, fitness for a particular purpose or of any other nature are made hereunder with respect to information or the product to which information refers. The data contained on this sheet apply to the material as supplied to the user.

### PERCHLOROETHYLENE

### MATERIAL SAFETY DATA SHEET FOR U.S.A. AND CANADA

### SECTION 1 -- PRODUCT INFORMATION

Safety-Kleen Corp. - 777 Big Timber Road - Elgin, IL, U.S.A. 60123 Safety-Kleen Canada Inc. - 3090 Blvd. Le Carrefour - Suite 300 - Chomedy Laval Quebec, Canada H7T 2J7 For Product Technical Information Call 312-694-2700 (U.S.A.); 800-363-2260 (Eastern Canada); 514-686-2040 (Western Provinces/Call Collect)

24-HOUR EMERGENCY TELEPHONE	MEDIC-1L:	TRANSPORTATION:
These numbers are for emergency use	800-752-7869 (U.S.A.)	708-888-4660 (U.S.A.) SAFETY-KLEEN ENVIRONMENT
information about this product.	312-942-5969 (CANADA)	HEALTH AND SAFETY DEPARTMENT
listed above.	RUSH POISON CONTROL CENTER CHICAGO, ILLINOIS, U.S.A.	613-996-6666 (CANADA) CANUTEC
IDENTITY (TRADE NAME):	PERCHLOROETHYLENE	
SYNONYMS: -	TETRACHLOROETHYLE	INE
SK PART NUMBER:	775, 10778, 30778	
FAMILY/CHEMICAL NAME:	CHLORINATED HYDRO	CARBON
PRODUCT USAGE:	DRY CLEANING SOLVEN	T
MSDS FORM PART NO.:	82342	·

### SECTION 2 -- HAZARDOUS COMPONENTS

NAME	<u>SYNONYM</u>	. <u>Wt. %</u>	<u>CAS</u> NO.	<u>OSHA F</u> TWA ppm	<u>STEL</u> ppm	<u>ACGIH T</u> TWA ppm	<u>LV</u> <u>STEL</u> ppm	LD50ª	<u>LC50</u> 6
*Perchloroethylene	Tetrachloroethylene	99.5-100	127-13-4	25	N.Av.	50	200	2629	34200
N.Av. = Not Available *See Section 10-Other R	egulatory Information	a Ora <sup>b</sup> Inh	il-Rat LD50 (m alation-Rat LC.	g/kg) 50 (mg/m <sup>3</sup> /8 ho	ours)				

#### SECTION 3 -- PHYSICAL DATA

PHYSICAL STATE, APPEARANCE AND ODOR:	Clear, colorless. liquid with a mild ether-like odor.
ODOR THRESHOLD:	50ppm (For Perchloroethylene).
BOILING POINT:	250°F (121°C) (For Perchioroethylene).
VAPOR PRESSURE:	14mm Hg 1: 5537 (2010) (For Perchioroethylene
FREEZING POINT:	-7.6°F (-22°C) (For Perchloroethylene).
EVAPORATION RATE:	2.3 (Butyl Abetate = 1) (For Perchloroethylene).
VOLATILE:	100 %
VOLATILE ORGANIC COMPOUNDS:	13.5 lbs/gal: 1623 g/l
DENSITY:	13.5 ibs/gal (For Perchloroethylene).

VAPOR DENSITY:	5.7 (Air = 1) (For Perchloroethylene).
SOLUBILITY IN WATER:	Slight (For Perchloroethylene).
	7-10
SPECIFIC GRAVITY:	1.523 (Water = 1) (For Perchloroethylene).
COEFFICIENT OF WATER/OIL DISTRIBUTION:	Not available.
MOLECULAR WEIGHT:	165.8 (For Perchloroethylene).

#### SECTION 4 -- FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:

Not applicable.

AUTOIGNITION TEMPERATURE: Not applicable.

CONDITIONS OF FLAMMABILITY: Heat, sparks and flame.

FLAMMABLE LIMITS IN AIR: LOWER: Not applicable. UPPER: Not applicable.

apparatus (SCBA).

UNUSUAL FIRE AND - Decomposition and combustion products may be toxic. Heated containers may EXFLOSION HAZARDS: rupture, explode or be thrown into the air. Not sensitive to mechanical impact or static discharge.

EXTINGUISHING MEDIA: Carbon dioxide, dry chemical.

EIRE FIGHTING CEDURES -- SPECIAL:

HAZARDOUS COMBUSTION PRODUCTS:

Thermal decomposition and burning may produce phosgene, chloride fumes and carbon monoxide.

Keep storage containers cool with water spray. Use self-contained breathing

#### SECTION 5 -- REACTIVITY DATA

Perchloroethylene NFPA 704 Rating 2-0-0

STABILITY:

Stable under normal temperatures and pressures, and not reactive with water.

Avoid alkalies. May form explosive mixtures with metals and alkaline

INCOMPATIBILITY (MATERIALS AND CONDITIONS TO AVOID):

materials. Not known to occur under normal temperatures and pressures.

MALARDOUS POLYMERIZATION:

HAZARDOUS DECOMPOSITION PRODUCTS:

None under normal temperatures and pressures. However, thermal decomposition may produce phosgene chloride fumes and carbon monoxide.

### SECTION 6 -- HEALTH HAZARD DATA AND TOXICOLOGICAL PROPERTIES

PRIMARY ROUTES OF EXPOSURE:

Eye and skin contact: inhalation.

EXPOSURE LIMITS:

See Section 2.

#### SIGNS AND SYMPTOMS OF EXPOSURE:



Eyes: Contact may cause slight to moderate irritation.

Skin: Prolonged or repeated contact tends to remove skin oils, possibly leading to irritation and dermatiris. No significant skin absorption hazard.

Inhalation (Breathing): High concentrations of vapor or mist may be irritating to the respiratory tract, cause headaches, dizziness, nausea, impaired coordination, anesthesia and may have other central nervous system effects.

Ingestion (Swallowing): May cause irritation of the throat, nausea, vomiting and symptoms of central nervous system depression. Aspiration into the lungs during ingestion or vomiting may cause mild to severe pulmonary injury and possibly death.

irritation, central nervous system depression, liver and kidney damage.

CHRONIC:

tures

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Individuals with pre-existing skin, eye, liver, kidney, cardiovascular or central nervous system dysfunction may have increased susceptibility to the effects of exposure. Contact with skin may aggravate pre-existing dermatitis.

Repeated or prolonged exposure may cause conjunctivitis. Prolonged and/or repeated skin contact

may cause drying and cracking or dermatitis. Repeated inhalation may cause respiratory tract

IARC classifies chemicals by their carcinogenic risk, including agents that are known, probable or CARCINOGENICITY: possible carcinogens. NTP classifies chemicals as either known carcinogens or for which there is a limited evidence of carcinogenicity in humans or sufficient evidence of carcinogenicity in experimental animals.

> Perchloroethylene is listed by IARC as a possible carcinogen. Perchloroethylene is classified by NTP as having limited evidence of carcinogenicity in humans or sufficient evidence of carcinogenicity in experimental animals.

Also see Section 10.

OTHER POTENTIAL HEALTH HAZARDS: The following information is required by Canadian WHMIS regulations. Irritancy is covered in Signs and Symptoms of Exposure in Section 6. There is no known human sensitization. toxicologically synergistic product, reproductive toxicity, mutagenicity, or teratogenicity associated with this product.

#### SECTION 7 -- EMERGENCY AND FIRST AID PROCEDURES

EYES: For direct contact, flush eyes with water for 15 minutes lifting upper and lower lids occasionally. If irritation or redness from exposure to vapors or mists develops, move victim away from exposure into fresh air. Consult physician if irritation or pain persists.

SKIN: Remove contaminated clothing and shoes. Wash skin twice with soap and water. Consult physician if irritation or pain persists.

INHALATION: Remove to fresh air immediately. Use oxygen if there is difficulty breathing or artificial respiration (Breathing) if breathing has stopped. Do not leave victim unattended. Seek immediate medical attention if necessary.

INGESTION: If conscious, drink 4 to 8 ounces of water and seek immediate medical attention. DO NOT induce (Swallowing) vomiting.

#### SECTION 8 -- PRECAUTIONS FOR SAFE USE AND HANDLING AND PREVENTIVE MEASURES

SPILL Remove all ignition sources. Ventilate area and avoid breathing vapors. For large spills, isolate **PROCEDURES:** area and denv entry. If possible, contain as a liquid for possible re-refining. Absorb with compatible absorbent material. Shovel into closable container for disposal. Wear protective equipment specified in Section 9. Contain away from surface waters and sewers. WASTE DISPOSAL Dispose in accordance with federal, state, provincial and local regulations. Contact Safety-Kleen **METHODS:** regarding recycling or proper disposal. HANDLING Avoid contact with eyes, skin, clothing or shoes. Use in well ventilated area and avoid breathing PRECAUTIONS: vapors or mists. Keep away from heat, sparks and flames. SHIPPING AND Keep container tightly closed when not in use and during transport. Empty product containers may STORING contain product residue. Do not pressurize, cut, heat, weld, grind or expose containers to flame PRECAUTIONS: or other sources of ignition. See Section 10 for Packing Group information. Use good personal hygiene. Wash thoroughly with soap and water after handling and before sating. PERSONAL drinking or using tobacco products. Clean contaminated clothing, shoes and protective equipment HYGIENE:



before reuse.

#### SECTION 9 -- CONTROL MEASURES AND OTHER PREVENTIVE MEASURES

ETE PROTECTION: Where there is likelihood of spill or splash, wear chemical goggles and faceshield. Contact lenses should not be worn.

**PROTECTIVE** GLOVES:

Use polyvinyl alcohol, Teflon or Viton<sup> $\mathfrak{D}</sup>$  gloves to prevent contact with skin.</sup>

**RESPIRATORY PROTECTION:** Use NIOSH/MSHA-approved respiratory protective equipment when concentration of vapors or mists exceeds applicable exposure limit. Depending on the airborne concentration, use a full-face respirator or gas mask with appropriate cartridges and canisters. A self-contained breathing apparatus (SCBA) is required for large spills and emergencies. Selection and use of respiratory protective equipment should be in accordance in the U.S.A. with OSHA General Industry Standard 29 CFR 1910.134 and in Canada with CSA Standard Z94.4-M1982.

**ENGINEERING CONTROLS:** Provide local exhaust or general dilution ventilation needed to maintain concentrations of vapors or mists below applicable exposure limits. Where explosive mixtures may be present, systems safe for such locations should be used.

OTHER PROTECTIVE EQUIPMENT: Wear appropriate solvent-resistant boots, apron or other protective clothing where spills and splashes are possible. A source of clean water should be available in work areas for flushing the eyes and skin.

#### SECTION 10 -- OTHER REGULATORY INFORMATION

DOT PROPER SHIPPING NAME:	TETRACHLOROETHYLENE
T CLASS:	Class 6.1
DOT ID NUMBER:	UN1897, Packing Group III (Reportable Quantity = 100 lbs/container)
SARA TITLE III:	Product contains a toxic chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372. Toxic constituent is listed with an asterisk in Section 2 of this Material Safety Data Sheet.
; • -	Product poses the following physical and/or health hazards as defined in 40 CFR 370.3 (Sections 311, 312 of SARA Title III):
	Immediate (Acute) Health Hazard Delayed (Chronic) Health Hazard
CALIFORNIA:	This product contains detectable amounts of Perchloroethylene CAS No. 127-13-4 and Trichloroethylene CAS No. 79-01-6. These materials are listed by the State of California as known carcinogens.
TDGA:	Tetrachloroethylene, Class 6.1, UN1897, Packing Group III
WHMIS CLASSIFICATION:	D1B (Poisonous and Infectious Materials, Immediate and Serious Toxic Effects, Toxic Material): D2A (Poisonous and Infectious Materials, Other Toxic Effects, Very Toxic Material):
	D2B (Poisonous and Infectious Materials, Other Toxic Effects, Toxic Material

#### SECTION 11 -- PREPARATION INFORMATION

PREPARED BY: Product MSDS Coordinator

REVISED: March 20, 1991

ORIGINAL ISSUE DATE: July 20, 1989

SUPERSEDES: December 1, 1989

User assumes all risks incident to the use of this product. To the best of our knowledge, the information contained herein is accurate. However, Safety-Kleen assumes no fishility whatsoever for the accuracy or completeness of the information contained herein. No corresponditions or warranties, either expressed or

## SAFETY-KLEEN 140 SOLVENT-MS

#### MATERIAL SAFETY DATA SHEET

### SECTION I -- PRODUCT INFORMATION

Safety-Kleen Corporation - 777 Big Timber Road - Elgin, IL 60123 For Product/Sales Information Call 708/697-8460

EMERGENCY TELEPHONE	MEDICAL:	TRANSPORTATION:
These numbers are for emergency use only. If you desire non-emergency information about this product. piease call the telephone number listed above.	800/942-5969 or 312/942-5969 RUSH POISON CONTROL CENTER CHICAGO, ILLINOIS (24 HOURS)	800/424-9300 CHEMTREC

IDENTITY (TRADE NAME):

SAFETY-KLEEN 140 SOLVENT-MS

SYNONYMS:

PETROLEUM DISTILLATES, PETROLEUM NAPHTHA

HYDROCARBON SOLVENT

6616

SK PART NUMBER:

FAMILY/CHEMICAL NAME:

PRODUCT USAGE:

#### SOLVENT FOR CLEANING AND DEGREASING PARTS

TUTUDDATE COMPANY

	SECTION II HAZARDOUS COMPONENTS					
NAME -	SYNONYM	. <u>50</u>	CAS <u>NO</u> .	OSHA PEL (pom)	ACGIH TLV (opm)	
Mineral Spirits	Petroleum Distillates	99.9	64742-88-7	100 (Stoddard Solvent)	100 (Stoddard Soivent)	
•Dye (contains Xylene)		.003	1330-20-7	100 150 STEL	100 150 STEL	
<ul> <li>Anti-Static Agent (contains Xylene)</li> </ul>		0.0001	1330-20-7	100 150 STEL	100 150 STEL	

\* See Section X - Other Regulatory Information

### SECTION III -- PHYSICAL DATA

PHYSICAL STATE, APPEARANCE AND ODOR:	Combustible liquid - clear, green, with characteristic hydrocarbon odor.
BOILING POINT:	360 - 400 F
MELTING POINT:	Not Available
EVAPORATION RATE:	(Butyl Acetate = 1) 0.08
PERCENT VOLATILE:	े. इ. २.२२
VAPOR DENSITY:	5.48 (Air = 1)
VAPOR PRESSURE:	0.5 mm of Hg at 63 F
SOLUBILITY IN WATER:	Negligible

Not Applicable

SPECIFIC GRAVITY: MOLECULAR WEIGHT:

pH:

0.770 to 0.811 Approximately 142

VOLATILE ORGANIC COMPOUNDS: 770 g/L

SECTION IV -- FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 140 F (TCC)

AUTOIGNITION TEMPERATURE:

CONDITIONS OF FLAMMABILITY:

Materials must be moderately heated before ignition can occur.

FLAMMABLE LIMITS IN AIR - LOWER: 1.0% UPPER: 7.0%

EXTINGUISHING MEDIA: Carbon dioxide, foam, dry chemical, water (mist only).

FIRE FIGHTING PROCEDURES -- SPECIAL: NFPA 704 Rating 0-2-0

473

F

Keep storage tanks cool with water spray. Use self-contained breathing apparatus (SCBA).

#### UNUSUAL FIRE AND EXPLOSION HAZARDS:

Decomposition and combustion products may be toxic. Heated tanks may rupture, explode or be thrown into the air. Vapors are heavier than air and may travel great distances to ignition source and flashback.

HAZARDOUS COMBUSTION PRODUCTS:

Thermal decomposition and burning may produce carbon monoxide.

### SECTION V -- REACTIVITY DATA

STABILITY:

Normally stable even under fire exposure conditions and is not reactive with water. Normal firefighting procedures may be used.

*INCOMPATIBILITY* (CONDITIONS TO AVOID):

Strong oxidizing agents (e.g. chlorine, peroxides, strong acids).

HAZARDOUS POLYMERIZATION:

Not known to occur under normal conditions.

HAZARDOUS DECOMPOSITION PRODUCTS:

Normally none; however, incomplete burning may yield carbon monoxide.

### SECTION VI -- HEALTH HAZARD DATA

PRIMARY ROUTES OF EXPOSURE:

Skin and eye contact: inhalation.

#### HEALTH HAZARD DATA/SIGNS AND SYMPTOMS OF EXPOSURE:

ACUTE: Skin: Prolonged or repeated contact tends to remove skin oils, possibly leading to irritation and dermatitis. No significant skin absorption hazard.

Eyes: Contact may cause slight to moderate irritation. High vapor concentrations ( > 500 ppm) are irritating to the eyes.

Inhalation: High concentrations of vapor or mist may be irritating to the respiratory tract, cause headaches, dizziness, nausea, impaired coordination, anesthesia anesthetic and may have other central nervous system effects.

*Ingestion*: Low order of acute oral toxicity. May cause irritation of the throat, nausea, vomiting and symptoms of central nervous system depression. Aspiration into the lungs during ingestion or vomiting may cause mild to severe pulmonary injury and possibly death.

CHRONIC: Prolonged and/or repeated contact may cause drying and cracking of the skin or dermatitis.

OTHER POTENTIAL HEALTH HAZARDS: None Known

#### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Individuals with pre-existing central nervous system dysfunction may have increased susceptibility to the effects of exposure. Contact with skin may aggravate pre-existing dermatitis.

CARCINOGENICITY: None of the ingredients are known or suspected carcinogens.

#### SECTION VII -- EMERGENCY AND FIRST AID PROCEDURES

EYES:

SPILL

- For direct contact, flush eyes with water for 15 minutes lifting upper and lower lids occasionally. Consult physician if irritation or pain persists. If irritation or redness from exposure to vapors or mists develop, move victim away from exposure into fresh air.

# SKIN: Remove contaminated clothing. Wash skin twice with soap and water. If irritation develops and persists, consult a physician.

INGESTION: If conscious, dilute with 4 to 8 ounces of water and seek immediate medical attention. DO NOT induce vomiting.

INHALATION: Remove to fresh air immediately. Use oxygen if there is difficulty breathing or artificial respiration if respiration has stopped. Do not leave victim unattended. Seek immediate medical attention if necessary.

#### SECTION VIII -- PRECAUTIONS FOR SAFE USE AND HANDLING

**PROCEDURES:** Remove all ignition sources. Ventilate area and avoid breathing vapors. For large spills, isolate area and deny entry. If possible, contain as a liquid for possible re-refining. Absorb onto sand or other absorbent material. Shovel into closable container for disposal. Wear protective equipment specified below. Contain away from surface waters and sewers.

WASTE DISPOSAL METHODS: Dispose in accordance with Federal, State, and local regulations. Contact Safety-Kleen regarding recycling.

Avoid contact with eyes, skin or clothing. Use in well ventilated area and avoid breathing vapors or mists. Keep away from heat, sparks and open flames.

SHIPPING AND STORING PRECAUTIONS:

HANDLING PRECAUTIONS:

Empty product containers may contain product residue. Do not pressurize, cut, heat, weld, grind or expose containers to flame or other sources of ignition. Keep container tightly closed when not in use and during transport.

PERSONAL HYGIENE:

Use good personal hygiene. Wash thoroughly with soap and water after handling and before eating, drinking or using tobacco products. Launder contaminated clothing and clean protective equipment before reuse.

### SECTION IX -- CONTROL MEASURES

Use nitrile or neoprene gloves to prevent contact with skin.

VENTILATION:

Provide local exhaust or general dilution ventilation as determined necessary to maintain concentrations of vapors or mists below applicable exposure limits. Where explosive mixtures may be present, systems safe for such locations should be used.

PROTECTIVE GLOVES:

EYE PROTECTION:

Where there is likelihood of spill or splash, wear chemical goggles or faceshield. Contact lenses should not be worn.

RESPIRATORY PROTECTION:

Use NIOSH-approved respiratory protective equipment when concentration of vapors or mists exceeds applicable exposure limit. Depending on the airborne concentration, use a respirator or gas mask with appropriate cartridges and canisters (for organic vapor with mist prefilter). A self-contained breathing apparatus (SCBA) is required for large spills and emergencies. Selection and use of respiratory protective equipment should be in accordance with OSHA General Industry Standard 29 CFR 1910.134 - Respiratory Protection.

OTHER PROTECTIVE EQUIPMENT: -

- Wear solvent-resistant boots, apron or other protective clothing where spills and splashes are possible. A source of clean water should be available in work areas for flushing the eyes and skin.

#### SECTION X -- OTHER REGULATORY INFORMATION

DOT PROPER SHIPPING NAME:

DOT CLASS:

DOT NUMBER:

SARA TITLE III:

Petroleum Naphtha

Combustible Liquid

UN 1255

Product does not contain a toxic chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

Product poses the following physical and/or health hazard(s) as defined in 40 CFR 370.3 (Sections 311, 312 of SARA Title III):

Immediate (Acute) Health Hazard Delayed (Chronic) Health Hazard Fire Hazard

#### SECTION XI -- PREPARATION INFORMATION

PREPARED BY:

SK Product Review Committee

FORM NO. S2418 (was 900-14-004)

ORIGINAL ISSUE DATE: July 20, 1989

REVISED: December 1, 1989 SUPERSEDES: July 20, 1939

Loar assances of risks increase to the accounter. To the best of our knowledge, the information contained herein is accounted. However, Solety-Kleen assumes no liability whatsoever for the accuracy or completeness of the information contained herein. <u>No representations or summation</u> and representations or mericantability, filness for a randoular purpose or of any other nature are made hereinder with representations or the products, which information reports. The data contained on this meet applies to the material as supplied to the user.

### HEAVY DUTY LACQUER THINNER

### MATERIAL SAFETY DATA SHEET FOR U.S.A. AND CANADA

### SECTION I -- PRODUCT INFORMATION

#### Safety-Kleen Corp. - 777 Big Timber Road - Elgin, IL, U.S.A. 60123 Safety-Kleen Canada Inc. - 3090 Blvd. Le Carrefour - Suite 300 - Chomedy Laval Quebec, Canada H7T 2J7 For Product Technical Information Call 312-694-2700 (U.S.A.); 800-363-2260 (Eastern Canada); 514-686-2040 (Western Provinces/Call Collect)

24-HOUR EMERGENCY TELEPHONE	MEDICAL:	TRANSPORTATION:
These numbers are for emergency use	800-752-7869 (U.S.A.)	708-888-4660 (U.S.A.)
information about this product,	312-942-5969 (CANADA)	HEALTH AND SAFETY DEPARTMENT
listed above.	RUSH POISON CONTROL CENTER CHICAGO, ILLINOIS, U.S.A.	613-996-6666 (CANADA) CANUTEC
IDENTITY (TRADE NAME):	HEAVY DUTY LACQUE	RTHINNER
SYNONYMS:	NONE	
SK PART NUMBER:	5820, 5825, 15820, 15825,	95825
FAMILY/CHEMICAL NAME:	NONE	
PRODUCT USAGE:	LACQUER THINNER	

SECTION II -- HAZARDOUS COMPONENTS

#### OSHA PEL CAS ACGIH TLV LC 50<sup>0</sup> NAME SYNONYM <u>Wt. %</u> NO. TWA STEL TWA STEL LD50<sup>a</sup> ppm ppm ppm ppm \*Toluene Methyl benzene 9.6-62.7\*\* 108-88-3 100 150 100 5000 4000° 150 \*Xylene Dimethyl benzene 0-10.4\*\* 1330-20-7 100 150 100 150 4300 5000 0-10.4\*\* 100 125 4000° \*Ethyl benzene Phenylethane 100-11-4 100 125 3500 1000 50100<sup>4</sup> \*Acetone Dimethyl ketone 0-19.2--67-54-1 750 750 1000 5300 23500<sup>f</sup> \*Methyl ethyl ketone MEK 9.8-39.3--78-93-3 200 300 200 300 2737 Ethyl acetate Acetic ether 0-18.4\*\* 141-73-6 400 N.Av. 400 N.Av. 5620 1600-2 250 Methyl propyl ketone 2-Pentanone 0-29.5--107-87-9 200 200 250 3730 2009 \*Methyl isobutyl ketone 4-Methvl-0-29.5--108-10-1 50 75 50 75 2080 3000 2-pentanone Isobutyl acetate 2-Methyl propyl 0-18.4--110-19-0 150 N.Av. 150 N.Av. 13400 3000\* acetate :22-36-4 N-Butyl acetate Butyl einancate 0-18,477 150 200 150-200 13:500 2 <u>`\_``</u>\_\_--N A Propylana giyool mathyl T-Memory-2 N.A., 1331 ether acetate propanoi acetate 200 \*Methyl alcohoi )-2.9\*\* 57-36-0 200 150 250 5523 Methanol 42,7476 Skin (Skin) Skin (Skin) Ethyl alcohol Ethanoi 0-9.5\*\* 64-17-5 1000 $\mathbf{E}(\mathbf{A})$ N.A. † 160 10000 $N, \Delta \nu,$ Isopropyl alcohol 0-9.5\*\* 57-53--) 500 1(4) Isopropanoi 400 500 5045 1.101.1

•N-Butyl alcohol	Butanoi	0-9.6**	71-36-3	50 (Skin) (Ceiling)	N.Av.	50 (Skin) (Ceiling)	N.Av.	790	8000
Cg Aliphatic tarbons	N.Av.	0-42.1**	109-66-0°	600°	750°	600°	750	N.Av. <sup>2</sup>	325 <sup>e,1</sup>
C3 to C20 Aliphatic hydrocarbons	N.Av.	0-9.6**	64741-41-9 <sup>d</sup>	100 <sup>d</sup>	N.Av.	100 <sup>1</sup>	N.Av.	> 5000 <sup>d</sup>	N.Av.
•1.1,1-Trichloroethane	Methyl chloroform	0-1.0	71-55-6	350	450	350	450	10300	18000
Methylene chloride	Dichloromethane	0-1.0**	75-09-2	500	2000 <sup>m</sup>	50	174	1600	88000*
*Perchloroethylene	Tetrachioro- ethylene	0-1.0**	127-18-4	25	N.Av.	50	200	2629	34200 <sup>f</sup>
Total chlorinated compo	unds	0-1.0**							
N.Av. = Not Available •See Section X-Other R ••Even though the conc fail under the ranges p this is the actual range	Regulatory Information entration range does no preseribed by WHMIS, which varies with eac	aOr bIn st spo dFo n cIn	ral-Rat LD50 (m halation-Rat LC or Pantane or Stoddard Solv halation-Rat LC	ng/kg) 50 (ppm/4 ho vent Lo (ppm/4 ho	urs) urs)	<sup>3</sup> Inhalation <sup>1</sup> Inhalation <sup>1</sup> Inhalation <sup>2</sup> Inhalation <sup>4</sup> Inhalation	-Rat LC50 (ppn Rat LC50 (ppm Rat LC50 (ppm -Rat LC50 (mg. Mus LCL0 (gm	n/8 hours) /6 hours) /10 hours) /m <sup>3</sup> /30 minutes /m <sup>3</sup> /2 hours)	;;
batch of the product.		<sup>(</sup> Ini	nalation-Rat LC	50 (mg/m <sup>3</sup> /8)	hours)	<sup>m</sup> 5 minutes	in any 2 hours		

### SECTION III -- PHYSICAL DATA

	PHYSICAL STATE, APPEARANCE AND ODOR:	Clear, colorless liquid with a solvent odor.
(	OR THRESHOLD:	Not available.
	BOILING POINT:	133°F to 342°F (56°C to 172°C) (based on a similar UNOCAL <sup>®</sup> product) (Approximately).
	VAPOR PRESSURE:	94.7 mm Hg at 68°F (20°C) (based on a similar UNOCAL <sup>®</sup> product) (Approximately).
	FREEZING POINT:	-200°F to -8°F (-129°C to -22°C) (Approximately).
	EVAPORATION RATE:	3.7 (Butyl Acetate = 1) (based on a similar UNOCAL <sup><math>\mathfrak{D}</math> product) (Approximately).</sup>
	VOLATILE:	100 %
	VOLATILE ORGANIC COMPOUNDS:	6.9 lbs/gal; 830 g/l
	DENSITY:	6.9 lbs/gal
	VAPOR DENSITY:	2.2 to 3.9 (Air = 1) (Approximately).
	SOLUBILITY IN WATER:	Partiai.
	pН	Not applicable.
	SPECIFIC GRAVITY:	0.83 (Water = 1).
4	COEFFICIENT OF WATER/OIL DISTRIBUTION:	Not available.
	MOLECULAR WEIGHT:	65 to 114 (Approximately).

### SECTION IV -- FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:

. . . . . . . .

1.101.111

AUTOIGNITION TEMPERATURE:

CONDITIONS OF FLAMMABILITY:

LAMMABLE LIMITS IN AIR:

UNUSUAL FIRE AND EXPLOSION HAZARDS:

EXTINGUISHING MEDLA:

FIRE FIGHTING PROCEDURES -- SPECIAL:

HAZARDOUS COMBUSTION PRODUCTS:

Not available.

Heat, sparks and flame.

LOWER: 1.0 Vol.% (based on a similar UNOCAL<sup>®</sup> product) (Approximately). UPPER: 13.2 Vol.% (based on a similar UNOCAL<sup>®</sup> product) (Approximately).

Decomposition and combustion products may be toxic. Heated containers may rupture, explode or be thrown into the air. Vapors are heavier than air and may travel great distances to ignition source and flash back. Not sensitive to mechanical impact. Material may be sensitive to static discharge, which could result in fire or explosion.

Carbon dioxide, foam, dry chemical, water (mist only).

NFPA 704 Rating 2-3-0 Product could float on water and spread fire. Keep storage containers cool with water spray. Use self-contained breathing apparatus (SCBA).

Thermal decomposition and burning may produce carbon monoxide.

### SECTION V -- REACTIVITY DATA

STABILITY:

Stable under normal temperatures and pressures, and not reactive with water.

INCOMPATIBILITY (MATERIALS AND CONDITIONS TO AVOID):

HAZARDOUS POLYMERIZATION:

HAZARDOUS DECOMPOSITION PRODUCTS:

Avoid acids, alkalies, oxidizing agents, heat, sparks and flame.

Not known to occur under normal temperatures and pressures.

None under normal temperatures and pressures. Thermal decomposition may produce carbon monoxide.

### SECTION VI -- HEALTH HAZARD DATA AND TOXICOLOGICAL PROPERTIES

PRIMARY ROUTES OF EXPOSURE:

Eye and skin contact; inhalation.

• EXPOSURE LIMITS:

See Section II.

SIGNS AND SYMPTOMS OF EXPOSURE:

ACUTE: Eyes: Contact may cause severe irritation. Vapors may cause noticeable redness, tearing, irritation and pain.

Skin: Prolonged or repeated contact tends to remove skin oils, possibly leading to irritation and dermatitis. No significant skin absorption hazard.

Inhalation (Breathing): Vapor or mist can be irritating to the respiratory tract, cause headaches, dizziness, confusion, nausea, vomiting, impaired coordination, anesthesia and may have other central nervous system effects, including unconsciousness in extreme cases.

Ingestion (Swallowing): Can cause burning of the mouth, throat and abdomen, nausea, vomiting, diarrhea, symptoms of central nervous system depression, including weakness, dizziness, slow and shallow respiration, unconsciousness and convulsions. Aspiration into the lungs during ingestion or vomiting may cause mail to severe pulmonary injury and possibly death.

CHRONIC:

Conjunctivitis may occur upon chronic exposure. Prolonged and/or repeated skin contact may cause drying and cracking or dermatitis and inhalation may cause damage to the liver, kidney, spieen, lungs or nervous system.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Individuals with pre-existing liver, kidney, spleen, lungs or nervous system dysfunction may have increased susceptibility to the effects of exposure. Contact with skin may aggravate pre-existing dermatitis. CARCINOGENICITY:

IARC classifies chemicals by their carcinogenic risk, including agents that are known, probable or possible carcinogens. NTP classifies chemicals as either known carcinogens or for which there is a limited evidence of carcinogenicity in humans or sufficient evidence of carcinogenicity in experimental animals. ACGIH recognizes two categories of carcinogens, confirmed or suspected human carcinogens.

Methylene chloride and Perchloroethylene are listed by IARC as possible carcinogens. Methylene chloride and Perchloroethylene are classified by NTP as having limited evidence of carcinogenicity in humans or sufficient evidence of carcinogenicity in experimental animals. Methylene chloride is recognized by ACGIH as a suspected human carcinogen.

Also see Section X.

OTHER POTENTIAL HEALTH HAZARDS: Reports have associated prolonged and repeated occupational exposure to solvents with permanent brain and/or central nervous system damage. Intentional misuse by deliberately concentrating and inhaling this material may be harmful or fatal. Observe all appropriate control measures

The following information is required by Canadian WHMIS regulations. Irritancy is covered in Signs and Symptoms of Exposure in Section VI. There is no known human sensitization or toxicologically synergistic product associated with this product. Toluene and Xylene have demonstrated experimental effects for reproductive toxicity, mutagenicity and teratogenicity. Ethyl benzene and Ethyl alcohol have demonstrated experimental effects for teratogenicity and mutagenicity. Methyl ethyl ketone and 1,1,1-Trichloroethane have shown experimental effects for teratogenicity. There is limited experimental evidence of reproductive toxicity and bacterial mutagenicity associated with Methylene chloride.

#### SECTION VII -- EMERGENCY AND FIRST AID PROCEDURES

EYES:

For direct contact, flush eyes with water for 15 minutes lifting upper and lower lids occasionally. If irritation or redness from exposure to vapors or mists develops, move victim away from exposure into fresh air. Consult physician if irritation or pain persists.

SKIN:

Remove contaminated clothing and shoes. Wash skin twice with soap and water. Consult physician if irritation or pain persists.

INHALATION: Remove to fresh air immediately. Use oxygen if there is difficulty breathing or artificial respiration (Breathing) if breathing has stopped. Do not leave victim unattended. Seek immediate medical attention if necessary.

INGESTION: If conscious, drink 4 to 8 ounces of water and seek immediate medical attention. DO NOT induce (Swallowing) vomiting.

#### SECTION VIII -- PRECAUTIONS FOR SAFE USE AND HANDLING AND PREVENTIVE MEASURES

SPILL **PROCEDURES:** 

Remove all ignition sources. Ventilate area and avoid breathing vapors. For large spills, isolate area and deny entry. If possible, contain as a liquid for possible re-refining. Absorb with compatible absorbent material. Shovel into closable container for disposal. Wear protective equipment specified in Section IX. Contain away from surface waters and sewers.

WASTE DISPOSAL Dispose in accordance with federal, state, provincial and local regulations. Contact Safety-Kleen regarding recycling or proper disposal.

HANDLING PRECAUTIONS:

**METHODS:** 



SHIPPING AND STORING PRECAUTIONS:

PERSONAL HYGIENE:

vapors or mists. Keep away from heat, sparks and flames. Keep container tightly closed when not in use and during transport. Empty product containers may

Avoid contact with eyes, skin, clothing or shoes. Use in well ventilated area and avoid breathing

contain product residue. Do not pressurize, cut, heat, weld, grind or expose containers to flame or other sources of ignition. See Section X for Packing Group information.

Use good personal hygiene. Wash thoroughly with soap and water after handling and before eating. drinking or using tobacco products. Clean contaminated clothing, shoes and protective equipment before reuse.

#### SECTION IX -- CONTROL MEASURES AND OTHER PREVENTIVE MEASURES

EYE PROTECTION: Where there is likelihood of spill or splash, wear chemical goggles and faceshield. Contact lenses should not be worn.

PROTECTIVE GLOVES:

RESPIRATORY

**PROTECTION:** 

Use polyethylene, ethylene vinyl or similar gloves to prevent contact with skin.

Use NIOSH/MSHA-approved respiratory protective equipment when concentrations of vapors or mists exceeds applicable exposure limit. A self-contained breathing apparatus (SCBA) is required for large spills and emergencies. Selection and use of respiratory protective equipment should be in accordance in the U.S.A. with OSHA General Industry Standard 29 CFR 1910.134 and in Canada with CSA Standard Z94.4-M1982.

ENGINEERING CONTROLS: Provide local exhaust or general dilution ventilation needed to maintain concentrations of vapors or mists below applicable exposure limits. Where explosive mixtures may be present, systems safe for such locations should be used.

OTHER PROTECTIVE EQUIPMENT: Wear appropriate solvent-resistant boots, apron or other protective clothing where spills and spiashes are possible. A source of clean water should be available in work areas for flushing the eyes and skin.

### SECTION X -- OTHER REGULATORY INFORMATION

DOT PROPER SHIPPING NAME:	PAINT RELATED MATERIAL
DOT CLASS:	Class 3
DOT ID NUMBER:	UN1263, Packing Group II
SARA TITLE III:	Product contains toxic chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372. Toxic constituents are listed with an asterisk in Section II of this Material Safety Data Sheet.
	Product poses the following physical and/or health hazards as defined in 40 CFR 370.3 (Sections 311, 312 of SARA Title III):
-	Immediate (Acute) Health Hazard Delayed (Chronic) Health Hazard Fire Hazard
CALIFORNIA:	This product contains detectable amounts of Methylene chloride CAS No. 75-09-2 and Perchloroethylene CAS No. 127-18-4. These materials are listed by the State of California as known carcinogens.
TDGA:	PAINT RELATED MATERIAL, Class 3.2, UN1263, Packing Group II
WHMIS CLASSIFICATION:	Class B2 (Flammable and Combustible Materials, Flammable Liquid): Class D1B (Poisonous and Infectious Materials, Immediate and Serious Toxic Effects, Toxic Material): Class D2A (Poisonous and Infectious Materials, Other Toxic Effects, Very Toxic Material): Class D2B (Poisonous and Infectious Materials, Other Toxic Effects, Toxic Journal)

#### SECTION XI -- PREPARATION INFORMATION

PREPARED BY: Product MSDS Coordinator

FORM PART NO. 82343

ORIGINAL ISSUE DATE: July 20, 1989

REVISED: February 28, 1991

SUPERSEDES: December 1, 1989

User assumes all risks incident to the use of this product. To the best of our knowledge, the information contained herein is accurate. However, Safety-Kleen assumes no liability whatsoever for the accuracy or completeness of the information contained herein. <u>No representations or warranties, either expressed or</u> implied, or merchantability, fitness for a particular purpose or of any other nature are made hereunder with respect to information or the product to which information refers. The data contained on this sheet apply to the material as supplied to the user.



### SAFETY-KLEEN IMMERSION CLEANER AND COLD PARTS CLEANER 699 MATERIAL SAFETY DATA SHEET

### SECTION I -- PRODUCT INFORMATION

Safety-Kleen Corporation - 777 Big Timber Road - Elgin, IL 60123 For Product/Sales Information Call 708/697-8460

Γ	EMERGENCY TELEPHONE	MEDICAL:	TRANSPORTATION:
	These numbers are for emergency use only. If you desire non-emergency information about this product, please call the telephone number listed above.	800/942-5969 or 312/942-5969 RUSH POISON CONTROL CENTER CHICAGO, ILLINOIS (24 HOURS)	800/424-9300 CHEMTREC
IDENTIT	Y (TRADE NAME):	SAFETY-KLEEN IMMERSION CLEA PARTS CLEANER 699	NER AND COLD

SK PART NUMBER:

. 6861, 699

N/A

FAMILY/CHEMICAL NAME:

**PRODUCT USAGE:** 

#### **REMOVING CARBON RESIDUE FROM PARTS**

SECTION II HAZARDOUS COMPONE	NTS
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<b>E</b>	SYNONYM	TYPICAL - <u>% BY WT</u> .	CAS NO.	OSHA PEL (ppm)	ACGIH TLY (ppm)
Aromatic 150	Heavy Aromatic Naphtha Cleaning Solvent, 140 (60) Class		64742-94-5	100 (Exxon)	100 (Exton)
*(May contain up to 5% Nap	hthalene)		91-20-3	10 15 STEL	10 15 STEL
N-Methyl-2-Pyrrolidone	NMP		872-50-4	100 (BASF)	100 (BASF)
Dipropylene Glycol Methyl Ether	Dipropylene Glycol Monomethyl Ether		34590-94-8	100 150 STEL	100 150 STEL
Monoethanolamine	Ethanolamine		141-43-5	3 6 STEL	3 6 STEL
Oleic Acid	Red Oil		112-80-1	N/E	N/E
Water			7732-18-5		_
**(Total chlorinated solvent	(11)	1.0 (Max)			

N/E = Not Established

\* See Section X - Other Regulatory Information

\*May contain methylene chloride and/or tetrachloroethylene in concentrations > 0.1%

### SECTION III -- PHYSICAL DATA

PHYSICAL STATE, PEARANCE AND ODOR:	
<b>PILING RANGE:</b>	÷
MELTING POINT:	
EVAPORATION RATE:	

Clear, reddish brown liquid with hydrocarbon odor.

210° - 439° F < 10° F 1.0 (Water = 1)

S. Fore Mann Three . . . . . . . . Cold Parts Cleaner 699 - Pare 1 of 4

PERCENT VOLATILE:	92 WL %
VAPOR DENSITY:	2.6 (Air = 1.0)
VAPOR PRESSURE:	10.9 mm Hg at 25° C
<b>UBILITY IN WATER:</b>	Completely miscible in all proportions.
pH:	10.8, 50/50 (Water/Solvent)
SPECIFIC GRAVITY:	0.95 (Water = 1.0)
MOLECULAR WEIGHT:	127, Average molecular weight of components.
VOLATILE ORGANIC COMPOUNDS:	N/E

#### SECTION IV -- FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:	SETA, 142° F (Min.)	
AUTOIGNITION TEMPERATURE:	Not Known	
CONDITIONS OF FLAMMABILITY:	Ignitable, if material is heated above its flash point.	
FLAMMABLE LIMITS IN AIR - LOWER:	0.8 <b>UPPER:</b> 7.0	
EXTINGUISHING MEDIA:	None Special	
FIRE FIGHTING PROCEDURES - SPECIAL:	NFPA 704 Rating 2-2-0	

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Decomposition and combustion products may be toxic. Heated tanks may rupture, explode or be thrown into the air. Vapors are heavier than air and may travel great distances to ignition source and flashback.

HAZARDOUS COMBUSTION PRODUCTS:

Thermal decomposition and burning may produce carbon monoxide, oxides of nitrogen and acrid smoke.

#### SECTION V -- REACTIVITY DATA

(e.g. chlorine, peroxides, strong acids)

STABILITY:

Normally stable.

Strong oxidizing agents

INCOMPATIBILITY: (CONDITIONS TO AVOID)

HAZARDOUS POLYMERIZATION:

Not known to occur under normal conditions, oxides of nitrogen and acrid smoke. Glycol ethers have been shown to form explosive peroxides.

HAZARDOUS DECOMPOSITION PRODUCTS:

Normally none; however, incomplete burning may yield carbon monoxide.

#### SECTION VI -- HEALTH HAZARD DATA

PRIMARY ROUTES OF EXPOSURE:

Inhalation, skin and eye contact, skin absorption.

HEALTH HAZARD DATA/SIGNS AND SYMPTOMS OF EXPOSURE:

ACUTE: Skin: Corrosive to living tissue and is absorbed through the skin causing systemic poisoning. Contact with unprotected skin can cause discoloration, irritation, blistering and slow healing chemical burns.

Eyes: Contact with liquid may cause severe chemical burns and produce permanent damage.



Inhalation: May result in severe respiratory irritation; gastrointestinal distress (nausea, vomiting), central nervous system depression (headache, drowsiness, dizziness, confusion) and tingling or numbness of the extremities. Severe exposures may lead to respiratory failure, coma and death.

Ingestion: May produce burning pain in the mouth and stomach, severe abdominal pain with nausea, vomiting, slow respiration and irregular pulse. Symptoms similar to those for inhalation also may occur.

CHRONIC: Exposure to high concentrations may lead to damage to the liver, kidneys and lungs. Contact with skin may cause dermatitis, gastrointestinal disorders and produce symptoms similar to those for inhalation.

#### OTHER POTENTIAL HEALTH HAZARDS:

Dipropylene glycol methyl ether is a mild allergen.

 MEDICAL CONDITIONS

 AGGRAVATED BY

 EXPOSURE:
 Individuals with pre-existing liver, kidney, lung or cardiovascular dysfunction may have increased susceptibility to the effects of exposure. Contact with skin may aggravate pre-existing dermatitis.

CARCINOGENICITY: Naphthalene is an experimental tumorigen. Mutagenic data exists and Naphthalene is included in EPA Genetic Toxicology Program. Oleic acid is an experimental tumorigen. Methylene Chloride and Tetrachloroethylene are listed by IARC and NTP as suspected carcinogens.

#### SECTION VII -- EMERGENCY AND FIRST AID PROCEDURES

EYES:

For direct contact, flush eyes with clean water for 20 minutes lifting upper and lower lids occasionally. Consult physician if irritation persists. If irritation or redness from exposure to vapors or mists develop, move victim away from exposure and into fresh air.



Remove contaminated clothing. Wash skin twice with soap and water. If irritation develops and persists, consult a physician.

*InsESTION:* Aspiration hazard. If conscious, dilute with 4 to 8 ounces of water and seek immediate medical attention. DO NOT induce vomiting.

**INHALATION:** Remove to fresh air immediately. Use oxygen if there is difficulty breathing or artificial respiration if respiration has stopped. Do not leave victim unattended. Seek immediate medical attention if necessary.

#### SECTION VIII -- PRECAUTIONS FOR SAFE USE AND HANDLING

SPILL PROCEDURES:	Ventilate area and avoid breathing vapors. Absorb spill with oil absorbent or soda ash. Catch and collect for recovery as soon as possible. Shovel into closable container for disposal. Wear protective equipment specified below. Contain away from surface waters and sewers.
WASTE DISPOSAL METHODS:	Dispose in accordance with Federal, State and local regulations. Contact Safety-Kleen regarding recycling.
HANDLING PRECAUTIONS:	Keep away from heat, sparks and open flames. Use adequate ventilation. Avoid contact with skin, eyes and clothing. Avoid breathing vapors.
SHIPPING AND STORING PRECAUTIONS:	Empty product containers may contain product residue. Do not pressurize, cut, heat, weld, grind or expose containers to flame or other sources of ignition. Keep container tightly closed when not in use and during transport.
אראב ASONAL HYGIENE:	Use good personal hygiene. Wash thoroughly with soap and water after handling and before eating, drinking or using tobacco products.
### SECTION IX - CONTROL MEASURES

**VENTILATION:** Provide local exhaust or general dilution ventilation, as determined necessary, to maintain concentrations of vapors below applicable exposure limits. **PROTECTIVE GLOVES:** Wear neoprene gloves to prevent skin contact. EYE PROTECTION: Where there is a likelihood of contact with the face and/or eyes, wear a faceshield and chemical goggles. Contact lenses should not be worn, RESPIRATORY **PROTECTION:** Use NIOSH-approved respiratory protective equipment when concentration of vapors exceeds applicable exposure limit. Depending on the airborne concentration, use a respirator or gas mask with appropriate cartridges or canisters (for organic vapors). A self-contained breathing apparatus (SCBA) is required for large spills and emergencies. Selection and use of respiratory protective equipment should be in accordance with OSHA General Industry Standard 29 CFR 1910.134 - Respiratory Protection. OTHER PROTECTIVE EQUIPMENT: A source of clean water should be available in the work area for flushing eyes and skin. Wear solvent-resistant boots, apron or other protective clothing where spills or splashes are possible.

## SECTION X -- OTHER REGULATORY INFORMATION

DOT PROPER SHIPPING NAME:

Compound, Cleaning Liquid

DOT CLASS:

T ID NUMBER:

SARA TITLE III:

Corrosive Liquid

NA1760

Product contains a toxic chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372. Toxic constituents are listed with an asterisk in Section II of this Material Safety Data Sheet.

Product poses the following physical and/or health hazard(s) as defined in 40 CFR 370.3 (Sections 311, 312 of SARA Title III):

> Immediate (Acute) Health Hazard Delayed (Chronic) Health Hazard Fire Hazard Reactivity Hazard

> > REVISED: July 13, 1990

### SECTION XI -- PREPARATION INFORMATION

PREPARED BY:

SK Technical Services

FORM NO. 900-14-057

ORIGINAL ISSUE DATE: December 1, 1989

SUPERSEDES: April 6, 1990

User assumes all risks incident to the use of this product. To the best of our knowledge, the information contained herein is accurate. However, Safety-Kleen assumes no liability whatsoever for the accuracy or completeness of the information contained herein. No representation or warranties, either express or implied, or merchantability, fitness for a particular purpose or of any other nature are made hereunder with respect to information or the product to which information refers. The data contained on this sheet applies to the material as supplied to the user.

# **IMMERSION CLEANER/CARBURETOR AND COLD PARTS CLEANER 609** MATERIAL SAFETY DATA SHEET

0/2

# SECTION I -- PRODUCT INFORMATION

Safety-Kleen Corporation - 777 Big Timber Road - Elgin, IL 60123 For Product/Sales Information Call 708/697-8460

EMERGENCY TELEPHONE	MEDICAL:	TRANSPORTATION:
These numbers are for emergency use only. If you desire non-emergency information about this product, please call the telephone number	800/942-5969 or 312/942-5969 RUSH POISON CONTROL CENTER CHICAGO, ILLINOIS (24 HOURS)	800/424-9300 CHEMTREC
Tited above		

IDENTITY (TRADE NAME):

IMMERSION CLEANER/CARBURETOR AND COLD PARTS CLEANER 609

SK PART NUMBER:

609, 6631, 50

N/A

FAMILY/CHEMICAL NAME:

**PRODUCT USAGE:** 

### REMOVING CARBON RESIDUE FROM PARTS

SECTION II -- HAZARDOUS COMPONENTS

VAME	SYNONYM	<u>%</u>	CAS NO.	OSHA PEL (ppm)	ACGIH TLV (ppm)
Cresylic Acid	Mixed Cresols	11.9	1319-77-3	5 (Sicin)	5 (Sicin)
Petroleum Sulfonate Contains: Hexylene Glycol Diethylene Glycol	Surfactant Blend	7.4	107-41-5 111-46-6	25(C) N/E	25(C) N/E
*Methylene Chloride	Dichloromethane	31.7	75-09-2	500 1000(C)	50
Di-chlorobenzenes: • (o-dichlorobenzene) * (p-dichlorobenzene)	ODCB	10.5 10.5	95-50-1 106-46-7	50(C) 75	50(C) 75
*(m-dichlorobenzene)		10.5	541-73-1	N/E	NÆ
Complex Amines Contains: Propargyl Alcohol *Isopropyl Alcohol	Rust Inhibitor	0.4	107-19-7 67-63-0	1 (Skin) 400	1 (Skin) 400
Triethanolamine	TEA	0.4	102-71-6	SCO STEL	N/E
Water		16.3	7732-18-5	N/E	N/E
• See Section X - Other Regulat N/E = Not Established	tory Information	. ·			

(C) = Ceiling Concentration

# SECTION III -- PHYSICAL DATA

PHYSICAL STATE, APPEARANCE AND ODOR:

Liquid - clear, dark amber, with aromatic odor. Two distinct layers comprise the product; top layer water, lower layer solvent.

**BOILING POINT:** 

102° - 395° F

MELTING POINT:	Not known
EVAPORATION RATE:	1.0 (Water = 1)
PERCENT VOLATILE:	Majority
POR DENSITY:	Same as Water
VAPOR PRESSURE:	Same as Water
SOLUBILITY IN WATER:	Completely miscible in all proportions.
pH:	9-10 in water phase
SPECIFIC GRAVITY:	1.19 (Water = 1.0)
MOLECULAR WEIGHT:	Use molecular weights of individual components.
VOLATILE ORGANIC COMPOUNDS:	750 g/L

# SECTION IV -- FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:	Non-Flammable			
AUTOIGNITION TEMPERATURE:	Not Known			
CONDITIONS OF FLAMMABILITY:	Non-Flammable			
FLAMMABLE LIMITS IN AIR - LOWER:	Non-Flammable UPPER: Non-Flammable			
EXTINGUISHING MEDIA:	None Special			
FIRE FIGHTING PROCEDURES - SPECIAL:	None; product is non-flammable. NFPA 704 Rating 3-2-0			
USUAL FIRE AND EXPLOSION HAZARDS:	•			
Although product is non-flammable, flames, welding arcs or other high te				

Although product is non-flammable, flames, welding arcs or other high temperature sources can cause decomposition. This decomposition can yield corrosive and toxic gases, vapors mists or fumes. Use a self-contained breathing apparatus (SCBA).

HAZARDOUS COMBUSTION	
PRODUCTS:	Although product is non-flammable, flames, welding arcs or other high temperature
	sources can cause decomposition. This decomposition can yield corrosive and toxic
• -	gases, vapors, mists or fumes (e.g. hydrogen chloride, phosgene, carbon monoxide, etc.)

SECTION V REACTIVITY DATA				
STABILITY:	Normally stable.			
INCOMPATIBILITY: (CONDITIONS TO AVOID)	Strong oxidizing agents (e.g. chlorine, peroxides, strong acids)			
HAZARDOUS POLYMERIZATION:	Not known to occur under normal conditions.			
HAZARDOUS DECOMPOSITION PRODUCTS:	Normally none; however, flames and welding arcs can produce corrosive and toxic gases, vapors and fumes (e.g. hydrogen chloride, phosgene, carbon monoxide).			

### SECTION VI -- HEALTH HAZARD DATA

UMARY ROUTES OF EXPOSURE:

Inhalation, skin and eye contact, skin absorption.

#### HEALTH HAZARD DATA/SIGNS AND SYMPTOMS OF EXPOSURE:

ACUTE:

Skin: Corrosive to living tissue and is rapidly absorbed through the skin causing systemic poisoning. Contact with unprotected skin can cause discoloration, irritation, blistering and slow healing chemical burns. Partial anesthetic properties may mask affects.

Eyes: Contact with liquid may cause severe chemical burns and produce permanent damage.

Inhalation: May result in severe respiratory irritation; gastrointestinal distress (nausea, vomiting), central nervous system depression (headache, drowsiness, dizziness, confusion) and tingling or numbress of the extremities. Severe exposures may lead to respiratory failure, coma and death.

*Ingestion*: May produce burning pain in the mouth and stomach, severe abdominal pain with nausea, vomiting, slow respiration and irregular pulse, and dark blue skin discoloration. Symptoms similar to those for inhalation also may occur.

CHRONIC: Exposure to high concentrations may lead to damage to the liver, kidneys and lungs. Contact with skin may cause dermatitis, gastrointestinal disorders and produce symptoms similar to those for inhalation.

#### OTHER POTENTIAL HEALTH HAZARDS:

Metabolism of methylene chloride may elevate carboxyhemoglobin levels.

MEDICAL CONDITION	S
AGGRAVATED BY	Individuals with pre-existing liver, kidney, lung or cardiovascular dysfunction may have increased
EXPOSURE:	susceptibility to the effects of exposure. Contact with skin may aggravate pre-existing dermatitis.
CARCINOGENICITY:	Methylene chloride is listed by NTP and IARC as a suspected carcinogen. P-dichlorobenzene is listed by IARC as a suspected carcinogen.

### SECTION VII -- EMERGENCY AND FIRST AID PROCEDURES

- ES: For direct contact, flush eyes with clean water for 15 minutes lifting upper and lower lids occasionally. Consult physician if irritation persists. If irritation or redness from exposure to vapors or mists develop, move victim away from exposure and into fresh air.
- SKIN: Remove contaminated clothing. Wash skin twice with soap and water. If irritation develops and persists, consult a physician.
- *INGESTION:* Aspiration hazard. If conscious, dilute with 4 to 8 ounces of water and seek immediate medical attention. DO NOT induce vomiting.

**INHALATION:** Remove to fresh air immediately. Use oxygen if there is difficulty breathing or artificial respiration if respiration has stopped. Do not leave victim unattended. Seek immediate medical attention if necessary.

### SECTION VIII -- PRECAUTIONS FOR SAFE USE AND HANDLING

### SPILL PROCEDURES:

25: Ventilate area and avoid breathing vapors. Absorb spill with oil absorbent or soda ash. Catch and collect for recovery as soon as possible. Shovel into closable container for disposal. Wear protective equipment specified below. Contain away from surface waters and sewers.

#### WASTE DISPOSAL METHODS:

Dispose in accordance with Federal, State and local regulations. Contact Safety-Kleen regarding recycling.

HANDLING RECAUTIONS:

Keep away from heat, sparks and open flames. Use adequate ventilation. Avoid contact with skin, eyes and clothing. Avoid breathing vapors.



Empty product containers may contain product residue. Do not pressurize, cut, heat, weld, grind or expose containers to flame or other sources of ignition. Keep container tightly closed when not in use and during transport.

Use good personal hygiene. Wash thoroughly with soap and water after handling and before eating, drinking or using tobacco products.

## SECTION IX - CONTROL MEASURES

**VENTILATION:** Provide local exhaust or general dilution ventilation, as determined necessary, to maintain concentrations of vapors below applicable exposure limits.

#### **PROTECTIVE GLOVES:** Wear Viton gloves to prevent skin contact.

EYE PROTECTION: Where there is a likelihood of contact with the face and/or eyes, wear a faceshield and chemical goggles. Contact lenses should not be worn.

**RESPIRATORY PROTECTION:** 

Use NIOSH-approved respiratory protective equipment when concentration of vapors exceeds applicable exposure limit. Depending on the airborne concentration, use a respirator or gas mask with appropriate cartridges or canisters (for organic vapors). A self-contained breathing apparatus (SCBA) is required for large spills and emergencies. Selection and use of respiratory protective equipment should be in accordance with OSHA General Industry Standard 29 CFR 1910.134 - Respiratory Protection.

OTHER PROTECTIVE EQUIPMENT:

A source of clean water should be available in the work area for flushing eyes and skin. Wear solvent-resistant boots, apron or other protective clothing where spills or splashes are possible.

#### SECTION X -- OTHER REGULATORY INFORMATION

DOT PROPER -SHIPPING NAME:

Compound, Cleaning Liquid

DOT CLASS:

Corrosive Liquid

DOT ID NUMBER:

SARA TITLE III:

NA1760

Product contains a toxic chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372. Toxic constituents are listed with an asterisk in Section II of this Material Safety Data Sheet.

Product poses the following physical and/or health hazard(s) as defined in 40 CFR 370.3 (Sections 311, 312 of SARA Title III):

Immediate (Acute) Health Hazard Delayed (Chronic) Health Hazard

## SECTION XI -- PREPARATION INFORMATION

PREPARED BY:

SK Product Review Committee

FORM NO. 900-14-002

· ORIGINAL ISSUE DATE: July 20, 1989 REVISED: December 1, 1989 SUPERSEDES: July 20, 1989

pher assumes all risks incident to the use of this product. To the best of our knowledge, the information contained herein is accurate. However, Safety-Kleen assumes no liability whatsoever for the accuracy or completeness of the information contained herein. No representations or warranties, rither express or implied, or merchantability, fitness for a particular purpose or of any other nature are made hereunder with respect to information or the product to which information refers. The data contained on this sheet applies to the material as supplied to the user.

# MATERIAL SAFETY DATA SHEET

# SECTION I -- PRODUCT INFORMATION

### Safety-Kleen Corporation - 777 Big Timber Road - Elgin, IL 60123 For Product/Sales Information Call 708/697-8460

EMERGENCY TELEPHONE	MEDICAL:	TRANSPORTATION:	1
These numbers are for emergency use only. If you desire non-emergency information about this product, please call the telephone number listed above.	800/942-5969 or 312/942-5969 RUSH POISON CONTROL CENTER CHICAGO, ILLINOIS (24 HOURS)	800/424-9300 CHEMTREC	
· · · · · · · · · · · · · · · · · · ·			

# IDENTITY (TRADE NAME): SAFETY-KLEEN DRY CLEANING GRADE SOLVENT F 780

SK PART NUMBER:

FAMILY/CHEMICAL NAME:

CHLORINATED/FLUORINATED HYDROCARBON

PRODUCT USAGE: DRY CLEANING SOLVENT

780

# SECTION II - HAZARDOUS COMPONENTS

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· · · ·			CYS	CSHA PEL	ACCER
STANE	<u>STONONOM</u> .	<u><u></u>,</u>	<u>NO.</u>	(הרבה)	( <u></u> )
Trichlorotrillucrochane	Firrocarbon 113	100	76-13-1		1000

\* See Section X - Other Regulatory Information

# SECTION III -- PHYSICAL DATA

	PHYSICAL STATE, APPEARANCE AND ODOR:	Liquid - clear, colorless liquid with slight ethereal odor.
	BOILING POINT:	117.6° F
	MELTING POINT:	Not Applicable
	EVAPORATION RATE:	$0.1 (CCL_{\ddagger} = 1)$
	PERCENT VOLATILE:	100%
	YAPOR DENSITY:	6.5 (Air = 1)
	VAPOR PRESSURE:	334 mm Hg @ 77° F
	SOLUBILITY IN WATER:	0.0255 by weight (77° F)
	pH:	Not Applicable
Ş,	SPECIFIC GRAVITY:	1.57 (Water = 1, @ 77° F)
	MOLECULAR WEIGHT:	137
	VOLATILE ORGANIC COMPOUNDS:	None .

### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:



Individuals with pre-existing lung, skin and cardiovascular system dysfunction may have increased susceptibility to effects of the exposure. Contact with skin may aggravate pre-existing dermatitis.

CARCINOGENICITY: No components are listed by OSHA, NTP or LARC as known or suspected carcinogens.

# SECTION VII -- EMERGENCY AND FIRST AID PROCEDURES

- EYES: Fiush eyes with water for 20 minutes lifting upper and lower lids occasionally. Consult physician if irritation persists. If irritation or redness from exposure to vapors or mists develop, move victim away from exposure and into fresh air.
- SKIN: Remove contaminated clothing. Wash skin twice with scap and water. If irritation persists, consult a physician.
- INGESTION: Aspiration hazard. If conscious, dilute with 4 to 8 cunces of water and seek immediate medical attention. DO NOT induce vomiting.
- INHALATION: Remove to fresh air immediately. Use oxygen if there is difficulty breathing or artificial respiration if breathing has stopped. Do not leave victim unattended. Seek immediate medical attention if accessary.

# SECTION VIII -- PRECAUTIONS FOR SAFE HANDLING AND USE

#### SPILL PROCEDURES:

PROCEDURES:

Isolate area and deny entry. Ventilate area and avoid breathing vapors. Remove residue with inert sortent such as sand, oil dry or other absorbent material. Shovel into closable container for disposal. Wear protective equipment specified below. Contain away from surface waters and sewers.

WASTE DISPOSAL METHODS:

Dispose in accordance with Federal, State and local regulations. Contact Safety-Kleen regarding recycling.

HANDLING PRECAUTIONS:

Do not get into eves, on skin or clothing. Avoid breathing vapors or mists.

SHIPPING AND STORING PRECAUTIONS:

Empty product containers may contain product residue. Do not pressurize, cut, heat, weld, grind or expose containers to flame or other sources of ignition. Keep container tightly closed when not in use and during transport. Do not store above 125° F.

PERSONAL HYGIENE:

Use good personal hygiene. Wash thoroughly with scap and water after handling and before eating, drinking or using tobacco products.

SECTION IX - CONTROL MEASURES

VENTILATION:

Provide local exhaust or general dilution vendlation as determined necessary to maintain concentrations of vapors below applicable exposure limits.



Wear neoprene or nitrile gloves for repeated or prolonged contact.

EYE PROTECTION:

Where there is likelihood of spill or splash, wear chemical goggies or faceshield. Contact lenses should not be worn.

RESPIRATORY PROTECTION:

Use NIOSH-approved respiratory protective equipment when concentration of vapors exceeds applicable exposure limit. Depending on the airbome concentration, use a respirator or gas mask with appropriate cartridges and canisters (chemical cartridge for organic vapors). A selfcontained breathing apparatus (SCBA) is required for large spills and emergencies. Selection and use of respiratory protective equipment should be in accordance with OSHA General Industry Standard 29 CFR 1910.134 - Respiratory Protection.

# OTHER PROTECTIVE EOUIPMENT:

A source of clean water should be available in work area for flushing eyes and skin. Wear rubber boots, atron and other protective clothing as need to protect against contact with skin.

# SECTION X -- OTHER REGULATORY INFORMATION

DOT PROPER SHIPPING NAME:

Cleaning Compound N.O.I.

DOT CLASS:

DOT ID NUMBER:

SARA TITLE III:

None

None

Product contains a toxic chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372. Toxic constituents are listed with an asterisk in Section II of this Material Safety Data Sheet.

Product poses the following physical and/or health hazard(s) as defined in 40 CFR 370.3 (Sections 311, 312 of SARA Title III):

Immediate (Acute) Health Hazard Delayed (Chronic) Health Hazard

# SECTION XI - PREPARATION INFORMATION

PREPARED BY:

SK Product Review Committee

FORM NO. 900-14-021

ORIGINAL ISSUE DATE: July 20, 1989

REVISED: December 1, 1989

SUPERSEDES: July 20, 1989

User assumes all risks incident to the use of this product. To the best of our knowledge, the information contained herein is accurate. However, Safety-Kleen assumes no lisbility whatsoever for the accuracy or completeness of the information contained herein. <u>No representations or promotion rither attaints</u> or implied, or manhantability. Since for a protoclar purpose or of my other patters and between with current to information or the provider tothe provi

# APPENDIX B

# LETTERS TO LOCAL AUTHORITIES





January 13, 1992

### **CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

Tallahassee Fire Department 327 North Adams Tallahassee, FL 32301

RE: Safety-Kleen Corp., Tallahassee, Florida; FLD982133159

Dear Sir:

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Under terms of U.S.E.P.A. Regulation 40 CFR 264.37, Safety-Kleen Corp. must make arrangements to familiarize police and fire departments with the layout of the facility, places where facility personnel would be working, entrances to roads inside the facility, and possible evacuation routes.

A copy of the Contingency Plan and Emergency Procedures is enclosed for your file. A facility layout is attached to show where facility personnel would normally be working, entrances to road inside facilities and possible evacuation routes.

As required by law, Safety-Kleen will need your acknowledgment of receipt of this letter and indications that you have been familiarized with the action necessary in the event of an emergency and that you are willing to provide assistance.

If you have any questions or desire to visit the facility, please contact the branch manager, Mr. Steve Becker (904) 576-9764.

Sincerely,

Victor L. San Agustin, P.E. Regional Environmental Engineer Tampa Region

ksc/pjh

Enclosure(s)

13112.29/TSK10/02/EXHIBIT.IE

777 BIG TIMBER ROAD



January 13, 1992

### CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Tallahassee Memorial Regional Medical Center 1300 Miccosukee Road Tallahassee, FL 32303

RE: Safety-Kleen Corp., Tallahassee, Florida; FLD982133159

Dear Sir:

Under terms of U.S.E.P.A. Regulation 40 CFR 264.37, Safety-Kleen Corp. is required to familiarize local hospitals with the properties of the materials handled at their facilities and the types of injuries or illnesses which could result from fires, explosions, or releases at this facility.

A copy of the Contingency Plan and Emergency Procedures is enclosed for your file. A facility layout is attached to show where facility personnel would normally be working, entrances to road inside facilities and possible evacuation routes.

As required by law, Safety-Kleen will need your acknowledgment of receipt of this letter and indications that you have been familiarized with the action necessary in the event of an emergency and that you are willing to provide assistance.

If you have any questions or desire to visit the facility, please contact the branch manager, Mr. Steve Becker (904) 576-9764.

Sincerely,

Vut J.

Victor L. San Agustin, P.E. Regional Environmental Engineer Tampa Region

ksc/pjh

Enclosure(s)

### 13112.29/TSK10/02/EXHIBIT.IE

# ATTACHMENT I.E.3

# PROCEDURES FOR STRONG HAZARDOUS WASTE



# ATTACHMENT I.E.3 PROCEDURES FOR STORING HAZARDOUS WASTE

### I.E.3.a PROCEDURE FOR SEGREGATING WASTE TYPES

The used immersion cleaner and the dry cleaning wastes are not incompatible with each other, or with other materials handled at this facility, insofar as reactivity is concerned. However, they are the primary source of feed stock for regenerating the clean solvents. Separation of these used solvent and dry cleaning wastes is a standard practice at the Service Center.

All material at the Service Centers is managed in accordance with local fire protection codes and fire department recommendations.

### I.E.3.b WASTE FACILITIES - CONTAINER STORAGE AREAS

The immersion cleaner, dumpster sediments, dry cleaner wastes, paint wastes, Fluid Recovery Service (FRS) wastes, and spent antifreeze are always held in covered containers. Unless a container is leaking, the containerized solvent, except for spent antifreeze, is never transferred to another container. The containers containing the used solvents are returned to the service center and stored in a designated area before shipment to a reclaimer.

The container storage area as shown on Exhibit I.B.3-8 occupies a portion of the building area which has sloped floors, berms, and/or interceptor trenches to form a spill containment system. The system is free of cracks and gaps. Spills are removed by a hand held, portable electric pump (the COMS pump), wet-dry vacuum cleaner, or sorbent materials. The capacities of the containment systems are designed to be greater than ten percent of the total liquid storage capacity in the container storage area.



IE3-1

All containers are transported, moved, and stored carefully in an upright position. The route trucks are equipped with an electric hoist to assist loading/unloading. In the warehouse area, the immersion cleaner, mineral spirits dumpster mud containers, spent antifreeze, paint waste, and FRS wastes are moved with two-wheel hand trucks and stacked by hand, and the dry cleaning wastes containers are stacked by a jib crane and moved by a pallet jack. The immersion cleaner, dry cleaning waste, spent antifreeze, and FRS wastes will be elevated whenever possible on pallets to eliminate the possibility of containers standing in spilled solvent.

The containers are designed and constructed to be compatible with the stored material and to minimize the possibility of breakage and leakage, in accordance with the specifications in Exhibits I.E.3-1 through I.E.3-4, which describe construction specifications of the containers used for storage. Container sizes to be used are listed in Exhibit I.E.3-4b.

The drum storage facility has been designed to handle 6,912 gallons of waste. Spill containment in the drum storage area has a secondary containment capacity of 4,910 gallons. This is significantly greater than 10% of total liquid storage in the area.

### I.E.3.c WASTE FACILITIES-STORAGE TANKS

Spent mineral spirits from parts washers is accumulated in a 15,000-gallon aboveground storage tank via the return and fill station. Containers of spent mineral spirits are poured into the dumpsters (barrel washers) in the return and fill station, and material in the dumpster is pumped into the storage tank for spent solvent. The return and fill station has secondary containment. A 15,000-gallon tank is used to store mineral spirits product. A 15,000-gallon tank is used to store spent ethylene glycol.

The tanks are designed and constructed to be compatible with the materials stored in it. Typical construction and installation standards for the aboveground tanks are shown in



Exhibits I.E.3-5 and I.E.3-6, respectively. All tanks are vented in accordance with NFPA Standards and the tanks are to be equipped with high level alarms. The design and installation of the tank alarm system are shown in Exhibits I.E.3-7 and I.E.3-8.

The aboveground tanks are protected by a three-foot-high concrete retaining dike. Therefore, no run-on would occur and no run-off would be in contact with the wastes stored at the site and no run-off collection and management system is deemed necessary. Equipment used in the operation of the aboveground tanks for used mineral spirits and spent ethylene glycol will be gauges for measuring liquid levels in tanks and automatic high level alarms. A suction pump equipped with the tanker truck is used to withdraw the content from the tank. No other equipment or standby equipment is used in the operation of the aboveground tanks.

One barrel washer is located within the mineral spirits return and fill shelters. The drawings (Exhibits I.E.3-9(a) through I.E.3-9(h)) provide detailed information on the barrel washer.

Used solvent is returned from customers via containers and poured into the barrel washer. The barrel is then placed on roller brushes contained within the barrel washer. The machine is turned on, the barrel rotates on the brush and the outside of the barrel is cleaned. There is also a nozzle that sprays a stream of solvent into the bottom of the barrel to clean the inside of the barrel. The machine is turned off and the barrel is removed. The procedure takes approximately five seconds per barrel. The barrel is then refilled using a pump and nozzle (Exhibit I.E.3-10) similar to a gasoline pump.

The used solvent goes to a sump in the bottom of the barrel washer and is automatically pumped to the used mineral spirits storage tank. There is a basket in the sump that collects sludge. Approximately twice a day, this basket is removed and sludge is removed and placed into a sludge container for recycle.

IE3-3



The barrel washer is a totally enclosed unit. A small amount of mist is generated while operating the unit. This is controlled by closing the lid of the unit.

# I.E.3.d PERSONAL PROTECTIVE EQUIPMENT

All personnel must wear the following when handling hazardous materials:

- a. steel-toed boots
- b. safety glasses
- c. protective gloves
- d. protective aprons

In addition, the following equipment must be readily available:

- a. fire extinguisher
- b. eyewash
- c. first-aid kit
- d. sorbent material
- e. shovel
- f. hand-held pump

# I.E.3.e PROTECTION OF WATER SUPPLIES

All waste handling and storage units are aboveground and have secondary containment. In addition, the container storage area is enclosed to prevent rain water from coming in contact with the containers. Therefore, surface and ground waters will be protected from run-on, run-off, and other releases.



### I.E.3.f IGNITABLE WASTE HANDLING METHODS

The wastes stored at this facility are incompatible with strong oxidizers and reactive metals only. Since none of these are handled at this facility, it is not necessary to address the management of incompatible wastes. It should be noted that the wastes are compatible with each other.

The following is a list of fire prevention and minimization measures:

I. <u>All wastes and products are kept away from ignitable sources</u>--Personnel must confine smoking and open flames to remote areas, separate from any solvent (e.g., the office or locker room). The mineral spirits return and fill station and storage tanks and the container storage area are separate from the office area to minimize the potential for a fire to spread or injury to personnel to occur. In addition, the warehouse is sprinkled to minimize the damage any fire will cause.

### II. Ignitable wastes are handled so that they do not:

- A. <u>become subject to extreme heat or pressure, fire, or explosion or a</u> <u>violent reaction</u>--The mineral spirits and paint wastes are stored in a tank or in containers, none of which are near sources of extreme heat, fire, potential explosion sources or subject to violent reactions. The tanks are vented and the containers kept at room temperature to minimize the potential for pressure build-up.
- B. <u>produce uncontrolled toxic mists, fumes, dusts, or gases in quantities</u> <u>sufficient to threaten human health</u>--The vapor pressure of mineral spirits is low and it and the paint wastes are reactive with strong oxidizers and reactive metals only. Toxic mists, fumes, dusts, or gases will not form in quantities sufficient to threaten human health since strong oxidizers are



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IE3-5

not handled at this facility and the solvent vaporization will be minimal under normal working conditions.

- C. produce uncontrolled fires or gases in quantities sufficient to pose a risk of fire or explosion--See "a" and "b" above.
- D. <u>damage the structural integrity of the Safety-Kleen facility</u>--The mineral spirits and paint wastes will not cause deterioration of the tank, containers, or other structural components of the facility.
- III. <u>Adequate aisle space is maintained</u> to allow the unobstructed movement of personnel, fire protection equipment, and decontamination equipment to any area of the facility operation in an emergency.
- IV. "No Smoking" signs are posted in areas where solvents are handled or stored.
- V. <u>Fire extinguishers must be checked</u> once per week and tested by the fire extinguisher company once per year.



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### SAFETY-KLEEN CORP. SPECIFICATIONS FOR STORAGE CONTAINERS

### Paint Waste Storage Containers

5-gallon 11" diameter X 13-19/32" high X 24 gauge steel tighthead pail, with handle and 2" flange and plug, built to BOT Specification 17E. calible exterior and rust inhibited interior

15-gallons, 14-7/8" diameter x 26-7/8" high x 19 gauge steel closed head drum with 2" bung and 3/4" bung built to DOT Specification 17E, painted exterior

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## SAFETY-KLEEN CORP. SPECIFICATIONS FOR STORAGE CONTAINERS

### Dry Cleaner Waste

- 15 gallons ("Split 30"), 18-1/4" diameter x 15-5/8" outside height x 20/18 gauge steel, tapered, 1 rolling hoop, painted outside and epoxy phenolic lined.
- 30 gallons, 18-1/4" diameter x 30-1/2" outside height x 20/18 gauge steel, tapered, 2 rolling hoops, painted outside and epoxy phenolic lined inside.

Cover for "Split 30" and 30-gallon drums:

1S-1/4" diameter x 20 gauge steel cover, exterior painted and epoxy phenolic lined inside.

Lock ring for "Split 30" and 30-gallon drums:

18-1/4" x 16 gauge galvanized lock ring

 16-gallons, 14.8" diameter x 26.8" outside height x 1/4" high density polyethylene

Cover for polyethylene drum:

14" diameter x 1/4" high density polyethylene

Lock ring for polyethylene drum:

15.62" diameter x 2.62" x 16 gauge steel closing ring with drawlatch, coated with epoxy paint

 16-gallons, 14" diameter x 26-9/16" outside height x 20/19 gauge steel, tapered, 2 rolling hoops, painted outside and epoxy prenolit lined

Cover for 16-gallon steel drum:

14" diameter 13 gauge steel cover painted and fitted with a tubular gasket

Lock ring for 16-gallon steel drum:

14" diameter x 18 gauge gaivanized steel lock ring

### SAFETY-KLEEN CORP. SPECIFICATIONS FOR STORAGE CONTAINERS

### Overpack Drum

25 gallons, 25-7/8" diameter x 38" height (interior dimensions) x 16 gauge steel, 2 rolling hoops, painted exterior and epoxy phenolic coated interior, built to COT Salvage Drum specifications

27-7/8" diameter x 16 gauge steel cover, painted and fitted with a gasket and a 3/4" fitting with a nylon plyg

27-7/8" x 16 gauge/12 gauge closing ring with nut and bolt installed

### SAFETY-KLEEN CORP. SPECIFICATIONS FOR STORAGE CONTAINERS

### Immersion Cleaner Waste

15 gallons, 14" diameter x 25-1/4" inside fill height x 18 gauge steel, 2 rolling hoops, exterior painted, fitted with 4 brackets: built to DOT Specification 53.

14" diameter x 18 gauge steel cover, painted and fitted with a tubular gasket.

14" diameter x 18 gauge galvanized steel lock ring or

14" diameter x 12 gauge steel DOT 58 closing ring with nut and bolt installed

# EXHIBIT I.E.3-4b

# SAFETY-KLEEN CORP. WASTE STREAMS AND CONTAINER SIZES TALLAHASSEE, FLORIDA

Waste Stream	Container Sizes (gallons)	Construction Material of Container
Mineral Spirits	5	Polyethylene
	16	Steel
	30	Steel
Dry Cleaner	5	Steel
specification	13.5	Polyethylene
peremore employed	16	Steel or Polyethylene
	Split 30 (also known as 15- or 20-gallon)	Steel
	30	Steel or Polyethylene
Immersion Cleaner	16	Steel
Paint Waste	5	Steel
	16	Steel
Ethylene Glycol	30	Steel
	55	Steel
Fluid Recovery Service (FRS) Waste	30	Steel or Polyethylene
	55	Steel or Polyethylene
Dumpster Mud/Tank Bottoms	16	Steel
	30	Steel

An 85-gallon steel or polyethylene overpack drum may be used with any of the waste streams listed above.





- GENERAL NOTES
- POVER ADDIEADIT 13 TO 28 YES
- DUTTUT 4 = 10 + (ALARA STATE) 13 = 25 + (NORMAL STATE)
- GREWITING TENE, -40"F TO +140"F
- 10410401 0NUGG-07-015182 25 one XEX. RESISTANCE
- AFT EFFECT: LESS THAN 2 OF SHIFT IN OPERATING POINT FOR UNIT IN EXPLOSION-PROOF BOUSING FROM 5 W FTELD 1 27, 150, CR 450 ad, AT A. DISTANCE OF 5 FT, FFON EXPOSED CLACE OR STOKAL VILLE.
- FAIL-SAFE: SWITCHABLE OR EITHER LISH-LEVEL FAIL-SAFE (LLFS) OK AISH-LEVEL FAIL SAFE (ZLFS).
- SUGSING: ADA 12-WATENFROOF EXFLOSION PROOF FOR CLASS I CROUPS A, B, C, D, AND CLASS II CROUPS L, T, I IV, I VG L.
- SEE INDIVIDUAL SERVICE CENTER SITE PLANS FOR RELATIVE LOCATIONS OF THESE DETAILS.
- CONTRACTOR TO SUPPLY & INSTALL CONDUCT SUPPORTS & SUCCETS AS ADDIAD.
- D. THIS DRAVING CONTAINS INFORMATION PROPRIETARY TO SAFETY-KLEEN COAP. ANY REPRODUCTION, DISCLOSURE OR USE OF THIS DRAWING IS EXPRESSLY PROBLETED BY SAFETT-ELEDI
- 1. ALL TIERS SOUN VITY A SAFETT-ILEEN PAT MURIER VILL SE SUPPLIED SY SAFETT-ILEEN \_\_\_\_\_\_\_\_\_
- 2. IF INDIVIDUAL SERVICE CENTER CONDITIONS ARE NOT COVERED IN DETAILS SHOWN REAL, PLEASE CONTACT TECHNICAL SERVICES AT THE COMPORATE OFFICE FOR ASSISTANCE.
- A 13. CALGULATIONS FOR LENGTH OF PAGE INSTOL OF THIS ARE BET TO ACTIVATE THE ALGAN AT THE 957 YOUNG LEVEL.
- "ALL CHERATON OF UNIT SHALL BE SOLD H ACCORDANCS WITH GREXELSPOOKS RECOMMENDATIONS CALIBRATION SHALL DE COLS AFTER ALL COMPONENTS OF SYSTEM ARE H RAKES." A
  - 15. ALL TOPICS HILL BE GRANCED MACH

A REDREW INDERGROUND INSTALLATION	د ا	يد . ه. ا
2 ON YER & HOR. TANE INSTALLATION.	m	2-2-2
A ADD I FATUSION PROOF SEAL OFF I HOTE	210	1-2-1
A SINHARD PROOF PERTY, NOTE IS	FLE	<u></u>
Safely-Hleen Corp.	( ), 1, 44	•••
HIGH LEVEL ALARM SYSTEM TRAN TO TANK INSTALLATION DETAILS	SMUT	75.5
NONE	· ··	
" 4.22.23 VA troco Civer (MAL INA	1 23	
- 20 - Va 12 + 145 15"; 24" Liss 18"	122	
ADOOD SEAL SAF	1.0	
TOR SERVICE CENTER BRANCH	131	102

WORK THIS DWG. WITH SK. DHGS D-13929 AND D-14218

91 - 219A-4



-	BLEE	<b>DESCRIPTION</b>	BE MAY NO.	REMARKS
1	3/8-	3/8" AUTOMATIC VACUUM BREAKERS MORRISON BROS. FIG. 134-A	5274	
2	2*	2° SCREWED PRESSURE/VACUUM VENT MORRISON BROS. FIG. 548 (2 OZ. PRESSURE - 1 OZ. VACUUM)	5273	
3		TANK GAUGE - NOORMAN BROS. NODEL NO. 7-5	5277	SEE INSTALLATION DETAILS ON SAFETY KLEEN DWG. A10243
$\bigcirc$				
4	3-	3° INTERNAL EMERGENCY VALVE MORRISON BROS. FIG. 272-HO W/212°F FUSIBLE LINK	5267	SEE INSTALLATION DETAILS ON SAFETY KLEEN DWG.C11302
5	3-	3" DUCTILE IRON GATE VALVE W/ROUND FLANGED ENDS - MORRISON BROS. FIG. 234-DI	5276	SEE INSTALLATION DETAILS ON SAFETY KLEEN DWG CII302
6	3"	3° BRONZE CHECK VALVE - MORRISON BROS. FIG. 246-A	5?65	
$\overline{\mathcal{T}}$	3-	3" BRONZE GATE VALVE - MORRISON BROS. FIG. 235-B LOCKING TYPE	5265	
<b>(B</b> )	3-	3" ALUMINUM CANLOCK QUICK COUPLING - MORRISON BROS. MALE ADAPTER PART F W/DUST CAP & CHAIN	5264	COUPLING TO BE INSTALLED SIX (6) II ABOVE & SIX (6) INCHES INSIDE TOP DIKE WALL.
9		NPA MATERIAL IDENTIFICATION PLACARD	2452	DISPLAY IN PLAIN SIGHT ABOVE DIKE WALL
				2

- GENERAL NO
THIS DRAWING SUPERCEDES SAFETY-KLEEN CORP. DRAW
SEE INDIVIDUAL SERVICE CENTER SITE PLANS FOR DI AND ALSO LOCATION AND ARRANGEMENT OF THESE PIPI
ALL PIPING TO BE SCHEDULE 40 GALVANIZED AND BE CONTRACTOR TO SUPPLY ALL BRACKETS, CLAMPS, ETC. EXPOSED THREADS AT JOINTS TO BE PAINTED WITH A PIPING SUPPORT HARDWARE TO BE UNISTRUT BRAND OR
ALL DIRECTION CHANGES IN DIRTY SOLVENT LINES TO ELBONS OR LONG SWEEP $90^\circ$ ELBONS.
THIS INSTALLATION TO BE MADE WHERE NEW TANKS AR ANY LOCATIONS PROME- TO FREEZING.SEE INSTALLATIO
ALL ITEMS WITH SAFETY-KLEEN PART NO. REFERENCES

THIS DRAWING CONTAINS INFORMATION PROPRIETARY TO SAFETY-KLEEN CORP. ANY REPRODUCTION, Disclosure or use of this drawing is expressly prohibited except by safety-kleen or as safety-kleen may agree in mriting.

### otes —

wings C10235 & C10236.

THE DIMENSIONS AND RELATED INFORMATION ING DETAILS.

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E SUMPORTED EVERY EIGHT (8) RUMNING FEET -C. AS REGUIRED FOR SUMPORTING PIPE - ALL N RUST RESISTANT EXTERIOR GRADE PAINT. OR AMPROVED EQUIVALENT.

BE HADE USING A COMBINATION OF 45"

RE 1D BE INSTALLED AT ON DUTAILS ON SAFETY-RLEEN DWG. CIIJOZ

WILL BE SUPPLIED TO CONTRACTOR.

### Exhibit I.E. 3-6

	LOUTED 3" PLIC - ADDED VALVE/CARLOCE	WLJ	3.30-0
A	ADDED ITEM & TO SCHEDULE & DRAWING	WU	1.5.
Ś	ADDED NOTE 6	W.J	10 75 1
$\mathbf{A}$	REVISED DETAIL IN NOTE & SHOWN ON DWG.	WL.J	M-5-9
Δ	ADDED NOTE & TO NOTES & TO BRAWING	w	1 20.1
HO	REVISION DESCRIPTION	87	DATI
	safery-alees corp.		
ļ	USED SOLVENT STORAGE	0 BC.	

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			— ТАВ	LE OF	VARI	ABLE	<b>'X'</b> D	MENSK	> <b>N</b>					
	AB	OVEG		HOR	ZONT	u. cl	EAN 8	SOLVEN	T TA	NK3 (	DR			
		-	·	00170	-	CIEA				NT T	ANKS			and a second second second second second second second second second second second second second second second
	1													GENERAL NO
APACITY (GAL.)	4.	5'	6.	7.	8'	9.	10'	10.6.	11'	12.	13.	14*	15'	ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR REVIEWS ALL LOCAL, STATE & MATIONAL CODES - ANY ALTERATI
1000	20*	26*				•	l							TECHNICAL SERVICES AT CORPORATE OFFICE PRIOR TO ABOVE WILL RELIEVE SAFETY-KLEEN CORP. OF ANY & A
2000	1	]4"				<u> </u>		1			<u> </u>	<u> </u>		(2) WORK THIS DRAWING WITH SAFETY-REED DRAWING D115
3000	<u> </u>	10-	11.			<u> </u>	ļ	[	<u> </u>			<u> </u>		SERVICE CENTER CONDITIONS ARE NOT COVERED HEREIN SERVICES AT THE CORPORATE OFFICE FOR ASSISTANCE.
4000	<b>!</b>	8-	9"	17*			<b>!</b>	<b> </b>	<b> </b>	<b> </b>	<u>  · · ·</u>	<b> </b>	Į	3 WORK THIS DRAWING WITH SAFETY-RLEEN DRAWINGS BEL FOLLOWS:
5000	<b> </b>	<b> </b>	<b> </b>	10"	12-	<u> </u>	<b>!</b>	<b> </b>	<b> </b>	<u> </u>		<b> </b>	<b>!</b>	DI1570 - ALADH SYSTEM ELECTRICAL SPHEMATIC
6000			<u> </u>	8-	10"	ļ		ļ		<b> </b>	<u> </u>	ļ	ļ	DI1539 - ALARM SYSTEM ELECTRICAL SCHEMATIC
7000 8000				6.	6-		]t.							(4) LIQUID-TIGHT COMPRESSION OF FLEXIBLE CONDUIT COU JYPICAL - SEE S-K DHG. DIL533. THESE ARE REQUIR UNITS AFFER INITIAL INSTALLATION.
9000	1	1	1	1	1	1		1	1	1	1	1		TO REPLACE A FLOAT SWITCH, THE CONTRACTOR SHOULD
10000	1	1	1	1	8-	6"	14"	14-		1	1	1	1	LEADS. INIS WILL ALLOW REMOVAL OF MANNAY COVER, ON THE TYPE OF INSTALLATION) IN ORDER TO REMOVE
11000	1		1	1	1		1	1.			1	1	1	LEADS WILL BE PULLED THROUGH TO THE COUPLING AT POINT THAT OLD WIRE LEADS FROM THE COUPLING BACK
12000			1	1	4-	4-	10*	10-			1	1	1	NEW WIRE LEADS - THE OLD WIRES WILL SERVE AS PUL To the box where they will be attached to the ap
13000														5 TESTING OF THE FLOAT SWITCH & SYSTEM IS MANDATOR
14000							6*							DEVICE MAY BE ACCOMPLISHED AS FOLLOWS:
15000		<u> </u>	<u> </u>		<u> </u>	J	8-	6.	4*		1		1	B) BY DRIVING A HAIL OF APPRO
		ABO	VEGRO	סאט	VERTI	CAL C	LEAN	SOLVE	т ти	ANKS				STICK ON STMILAR PROBE AND INSTALLATIONS,
	T		·		DI	AMETER	(FT.)						*******	ABOYEGROUND TABKS A) REACH IN THROUGH MANNAY ON Discretion of the Electric
(REGARDLESS OF CAPACITY)	4'	5'	6.	7.	81	9,	30.	10.6.	<u>11</u> .	12.	В,	14.	15'	6 THIS DRAWING CONTAINS INFORMATION PROPRIETARY TO
	<u> </u>	<u> </u>	<u> </u>	<u> </u>	12-	84.	6*	5.	45"	3"	2°	1-1-	3.	- on or this because is carecised routblied at s
A	BOVE	GROUN	O VE	RTICA	LOR	HORIZ	ONTAI	L USET	8 0L	VENT	TANK	8		
NOTE: THE 'X'	DIMENS	101 SHO	H ON S	-K DRAM	THE PIL	533 FOR	ALL AD	OVEGROUND	D VERTI	CAL DR	HORIZO	ITAL US	D SOLVEN	
TANKS WI	LL BE													· •

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NG DRAMINGS & SCOPE OF WORK TO INSURE COMPLIANCE WITH DMS &/OR ADDITIONS MUST BE RELATED TO & APPROVED BY E/OR DURING INSTALLATION. FAILURE TO COMPLY WITH THE LL RESPONSIBILITIES.

13 FOR TYPICAL INSTALLATION DETAILS - IF INDIVIDUAL OR ON DRAWING DIISSS PLEASE CONTACT TECHNICAL

M FOR ELECTRICAL SCHEMATICS OF VARIOUS SYSTEMS AS

OR THO TANKS

MINGS ARE USED AT CONDUIT CONNECTION TO TANK -ED FOR SERVICING B/OR REPLACEMENT OF FLOAT SWITCH

DISCONNECT THE CONDUCT COUPLING & CUT THE WIRE MODIFIED FILL CAP, COUPLING ADAPTER, ETC. OFFEMDING OLD FLOAT SWITCH & INSTALL NEW SWITCH. THE NEW 20 FT. THIS TIME & UNIT REINSTALLED ON TANK. IT IS AT THIS TO THE CONTROL BOX SNOULD BE TIED TO THE ENDS OF THE L WIRES FOR PULLING THE NEW LEADS THROUGH THE CONDUCT PROPRIATE TERNINALS.

FOLLOWING INSTALLATION. ACTIVATING THE FLOAT SHITCH

COVER ON MANNAY INSTALLATIONS. "RIATE LENGTH CROSSWISE THROUGH THE END OF THE GAUGE REACHING DOWN UNDER FLOAT SMITCH ON RISER FIPE

TOP OF TANKS. DTHER METHODS MAY BE USED AT THE L CONTRACTOR.

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SAFETT-ELEEN CORP. ANY REPRODUCTION, DISCLOSURE OR FETT-KLEEN OR AS SAFETT-ELEEN MAY AGREE IN WRITING.

Exhibit I.E. 3-8



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						DRUM WASHER - ASSEMBLY									
						5	SAFE		KLEEN	CORI	P. '				
						H.T.S.	A.L.I	04040			1.19.1				
14.04		81	OH.	1048 A	DATE	STAN	VARUS		6TU 1000-00						
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י. ד						<b>5</b>	SAFE	ETY-	KLEEN CORP.			








# **ATTACHMENT I.E.4**

# INSPECTION OF WASTE MANAGEMENT FACILITIES



Daily inspection of containment will consist of the following:

- Containment areas are inspected to detect signs of deterioration and failure of the containment system such as cracks, breakage, settling, and spillage.
- Inspection of container placement and stacking such as aisle space, height, and stability of stacks.
- Daily inspection of solvent return receptacle (wet dumpster) consists of the inspection for leaks and excess dumpster mud build-up.

Exhibit I.E.4-4 presents the daily inspection log for the tank system. Daily inspections of tanks and dumpsters will consist of the following:

- Physically examine the tank area to verify that no leaks have occurred since the last inspection.
- Verify that no tanks have been damaged and rusted to the point of near leakage.
- Examine and verify that all tank identification, dates, loading data, hazardous waste labels are attached and current.

Daily inspections of containment will consist of the following:

 Physically examine containment areas to detect signs of deterioration and failure of the containment system such as cracks, breakage, settling, and spillage.



In addition to daily inspections, the tank will be inspected once every five years by a Professional Engineer registered in Florida. A general structural inspection, hydraulic test of the tank, internal inspection, and wall thickness inspection will be made.

This inspection and testing will involve withdrawal of contents, a squeegee cleaning, visual inspection and performance of hydrostatic or pneumatic test per manufacturer's instructions, or other leak detection tests. Frequency and method of future inspection and testing will be determined based upon results of prior evaluations.

Inspection requirements for Subpart BB are included in Part IV.



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# INSPECTION LOG SHEET FOR DAILY INSPECTION OF GATES AND LOCKS

Check all gates and locks for security, sticking, corrosion, lack of warning signs, or uncommon activity.

Name	Date	Time	Status
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	·		

Image: Difference           Image: Difference	ALL THE SELL THE FEATURE AND ALL FEATURE AND ALL SELLET	AND TARREZICT BUILPYENT.
<pre>Internet is a second of the second seco</pre>	ISPECTOR'S NAME/TITLE:	
Provide a properties problem:         Provide a properties problem:         AFTEY AND ECENCY EQUIPMENT         ise Extinguishers:       A* X         If 'N', circle appropriate problem:       average indequate         yavash and Shower:       A X         If 'N', circle appropriate problem:       disconnected mailmentioning valves, insdequate         yavash and Shower:       A X         If 'N', circle appropriate problem:       disconnected mailmentioning valves, insdequate         yavash and Shower:       A X         If 'N', circle appropriate problem:       A X         If 'N', circle appropriate problem:       inadequate inventory, other:         indequate supply of showers, nong, empty druss, worldry watum, other:		
With the set of the s		
Die OF INSPECTION:         AFETY AND EREMENCE EQUIPMENT         iste Excliquishers:       A* N         If 'N', circle appropriate problem: everque inspection, inadequately         charged, inaccessible, other:       A N         If 'N', circle appropriate problem:       Inadequate surply of sortent, towels and/or clay,         inadequate surply of showels, more, empty drums, vec/dry vacuum, ether:       A N         If 'N', circle appropriate problem:       inadequate surply of aprone, glasses, respin other:         SECURITY DEVICES:       A N         If 'N', circle appropriate problem:       Indequate surply of aprone, glasses, respin other:         SECURITY DEVICES:       A N         If 'N', circle appropriate problem:       sticking, correspond, lack of varming signs, fit, ethers         Cates and Locks:       A N         If 'N', circle appropriate problem:       broken ties, correspond, holes, distoration, other:         WISCELLANEOUS EQUIPHENT:       A N         If 'N', circle appropriate problem:       V N         If	E GE INSPECTION (Month/Day/Year):	
AFTY AND EXEMPENT AND EXEMPTINE is Extinguishers: A* M If 'N', circle appropriate problem: overtise inspection, insdequately versish and Shower: A M If 'N', circle appropriate problem: disconnected maifunctioning valves, insdequate pressure, inaccessible, anifunctioning drain leaking, other: 'irst Aid Kin: A M If 'N', circle appropriate problem: insdequate supply of sortent, tovels and/or clay, insdequate supply of showls, sops, empty drums, vec/dry vecum, other: 'irst Aid Kin: A M If 'N', circle appropriate problem: insdequate supply of sortent, tovels and/or clay, insdequate supply of showls, sops, empty drums, vec/dry vecum, other: Second Protection Equipment: A N If 'N', circle appropriate problem: insdequate supply of aprons, glowes, glasses, respine other: Second Protection Equipment: A N If 'N', circle appropriate problem: sticking, corrosion, lack of verming signs, fit, other: Fance: A N If 'N', circle appropriate problem: broken ties, corrosion, holes, discortion, other; WINCHLLWERUS EQUIPMENT: Dry Dumpater: A N If 'N', circle appropriate problem: rest, corrosion, holes, discortion, other; WINCHLLWERUS EQUIPMENT: Dry Dumpater: A N If 'N', circle appropriate problem: rest, corrosion, split sease, discortion, deter; WINCHLLWERUS EQUIPMENT: Dry Dumpater: A N If 'N', circle appropriate problem: rest, corrosion, split sease, discortion, deterioration, excess doris, liquids in unit, other: COMMENTS, COMENTS, DATE AND MATURE OF ANY REFAILS: COMENTS, COMENTS, DATE AND MATURE OF A	INE OF INSPECTION:	
ire Excinquishers:       A* M         If 'M', circle appropriate problem: oversize inspection, indequately         veveah and Shover:       A M         If 'M', circle appropriate problem: disconnected maifunctioning valves, insdequates         pressure, inaccessible, alfanctioning drain leaking, other:         'irst Aid Xi::       A M         If 'M', circle appropriate problem: inadequate inventory, other:         'irst Aid Xi::       A M         If 'M', circle appropriate problem: inadequate supply of sortent, towels and/or clay, inadequate supply of abovels, may, empty of aprons, gloves, glasses, respine other:         'If 'M', circle appropriate problem: inadequate supply of aprons, gloves, glasses, respine other:         'If 'M', circle appropriate problem: inadequate supply of aprons, gloves, glasses, respine other:         'Statikut'H DEVICUS:         Cates and Locks:       A N         If 'N', circle appropriate problem: sticking, corrosion, lack of verning signs, fit, other:         'Ef 'N', circle appropriate problem: broken ties, corrosion, koles, discortion, other:         'Ef 'N', circle appropriate problem: broken ties, corrosion, koles, discortion, other:         'Ef 'N', circle appropriate problem: broken ties, corrosion, koles, discortion, deterioration, excess debris, liquids in unit, other:         'M'SCELLUNEOUS EQUIPHENT:       A N         If 'N', circle appropriate problem: rust, corrosion, split sears, discortion, deterioration, excess debris, liqu	AFETY AND EXERCENCY EQUERMENT	
<pre>If 'N', circle appropriate problem: overdue inspection, insdequately charged, inaccessible, other:</pre>	ire Extinguishers:	ک <b>≝</b> ۲.
yewash and Shower:       A N         If 'N', circle appropriate problem: disconnected malfumentioning valves, inadequate pressure, inadequate support of sortent, indequate supply of sortent, covels and/or clay, inadequate supply of storets, covels and/or clay, inadequate supply of storets, covels and/or clay, inadequate supply of storets, covels and/or clay, inadequate supply of storets, covels and/or clay, inadequate supply of storets, sortent, covels and/or clay, inadequate supply of storets, covels and/or clay, inadequate supply of storets, covels and/or clay, inadequate supply of storets, covels and/or clay, inadequate supply of storets, covels and/or clay, inadequate supply of storets, covels and/or clay, inadequate supply of storets, covels and/or clay, inadequate supply of storets, covels and/or clay, inadequate supply of storets, covels and/or clay, inadequate supply of storets, covels, glasses, respiredner;         If 'N', circle appropriate problem: inadequate supply of syrons, glasses, respiredner;         SECURITY DOVICE:         Gates and Locks:       A N         If 'N', circle appropriate problem: sticking, corrosion, lack of verming signs, fit, other:         If 'N', circle appropriate problem: broken ties, corrosion, holes, discortion, other:         MISCELLUNEOUS EQUIPMENT:         Dry Dempster:       A N         If 'N', circle appropriate problem: rust, corrosion, split seems, discortion, deteriorstion, excess debris, liquids in unit, other:         Oreservations, COMMENTS, DATE AND MATURE OF ANY REFATES:	If 'N', circle appropriate problem: overdue charged, inaccessible, other:	inspection, insdequately
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'irst Aid Kit:       A N         If 'N', circle appropriate problem: inadequate inventory, other:	If 'N', circle appropriate problem: disconne pressure, inaccessible, calfunctioning drain	ected malfumctioning valves, inadequate leaking, other:
If 'N', circle appropriate problem: inadequate inventory, other:	first Aid Kit:	X X
Spill Cleanup Equipment:       A N         If 'N', circle appropriate problem: inadequate supply of sortent, towels and/or clay, inadequate supply of shrvels.       A N         Personal Protection Equipment:       A N         If 'N', circle appropriate problem: inadequate supply of aprons, gloves, glasses, respinother:       A N         If 'N', circle appropriate problem: inadequate supply of aprons, gloves, glasses, respinother:       A N         SECURITY DEVICES:       A N         Gates and Locks:       A N         If 'N', circle appropriate problem: sticking, corrosion, lack of verning signs, fit, other:         Other:       A N         If 'N', circle appropriate problem: broken ties, corrosion, holes, distortion, other:         MISCELLANEOUS EQUIPMENT:         Dry Dumpscar:       A N         If 'N', circle appropriate problem: rust, corrosion, split sears, distortion, deteriorstion, excess debris, liquids in unit, other:         CaseENVATIONS, COMMENTS, DATE AND MATURE OF ANY REPAIRS:	If 'N', circle appropriate problem: inadeque	sie inventory, other:
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If 'N', circle appropriate problem: inadequate supply of aprons, gloves, glasses, respination of the second state o	Personal Protection Equipment:	XX
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# ATTACHMENT I.E.5

# PERSONNEL TRAINING

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# ATTACHMENT I.E.5 PERSONNEL TRAINING

This section of the permit application describes Safety-Kleen's Corporate training program. All position descriptions referenced may not be present at this facility. Training plan outlines, job descriptions, training content, frequency and techniques are described as well as the implementation of the training program.

The purpose of Safety-Kleen's training program is to familiarize employees with environmental regulations, records, and emergency procedures so they can perform their jobs in the safest and most efficient manner possible.

# I.E.5-a DESCRIPTION OF TRAINING PROGRAM

Each employee is trained to operate and maintain the service center safely, and to understand hazards unique to his job assignment. New Branch Managers and new Branch Facility Managers must complete a formal introductory training program before starting their jobs, with annual review and update thereafter. New Sales Representatives must be trained prior to unsupervised customer visits. All other hazardous waste employees must undergo a combination of videotape and on-the-job training within six months of starting.

#### I.E.5-b OUTLINE OF TRAINING PROGRAM

An outline of the training program, given both initially and annually to employees who manage or handle hazardous waste at the Service Center is presented in Exhibit I.E.5-1.

#### I.E.5-c-1 JOB TITLE/JOB DESCRIPTION

Job descriptions for employees who would be expected to manage or handle hazardous wastes, including the Resource Recovery Branch Manager, Branch Facility Manager,



Branch Automotive Manager, Branch Industrial Manager, Branch Secretary (paperwork only), Sales Representatives, and Warehousemen are provided in Exhibits I.E.5-2 through I.E.5-8.

#### I.E.5-c-2 TRAINING CONTENT, FREQUENCY, AND TECHNIQUES

Employee training is accomplished using classroom, videotape, written, and on-the-job methods. The Environment Health and Safety (EHS) Department of Safety-Kleen's Corporate Office prepares a training program for employees and they must provide documentation that the program has been executed. An employee is trained prior to starting or as soon as he or she begins working, (depending on his or her position), and is trained annually thereafter.

The following presents the specific training requirements for new Safety-Kleen employees who will manage or handle hazardous waste.

Training of New Branch Managers: New Branch Managers are trained for several weeks before they begin their new positions. This training is given both on the job and in the classroom. During this training, the new manager reviews all environmental records and learns the recordkeeping requirements. These records include: manifests, personnel records, training records, service center inspection records, and spill reports. At least eight hours of this initial training consists of an introduction to environmental law and a review of the Part B, including the Waste Analysis Plan, Preparedness and Prevention Plan, Contingency Plan, Training Plan, and Closure Plan.

The training culminates in four weeks of training at his new service center, at least one day of which is devoted to environmental training with the Regional Environmental Engineer. Additional time is spent reviewing past environmental compliance at the Branch Manager's service center, the regulations unique to his state are discussed as well.



<u>Training of New Branch Facility Managers</u>: Branch Facility Managers report to Branch Managers and are responsible for administrative operations at branches. New Branch Facility Managers are trained for 12 weeks before they begin their new positions. This training is both on location and in classroom modes. While being trained at the branch at which he or she will be stationed, a new Branch Facility Manager reviews all environmental records and learns the recordkeeping and inspection requirements. These records include: manifests, personnel records, training records, service center inspection records, and spill reports.

Three weeks of training take place at Safety-Kleen's corporate headquarters. This training includes an introduction to environmental law (including the Resource Conservation and Recovery Act), health and safety issues, emergency response and inventory (including waste) reconciliation methods. Additional time is spent reviewing past environmental compliance at the Branch Facility Manager's site, the regulations unique to his or her state are discussed as well. The Branch Facility Manager may also be trained as the designee for performing the service center inspection.

Branch Automotive Managers and Branch Industrial Managers receive training similar to Branch Facility Managers as their job descriptions warrant.

<u>Training of New Branch Secretaries</u>: Branch secretaries are trained in the proper recordkeeping procedures as soon as they begin working for Safety-Kleen. While they are not usually responsible for preparing the documentation, they must check it for accuracy and completeness and then process or file it as required. Additional training is overseen by the Branch Manager and is done within six months of starting. This training is often presented in company-produced videotape presentations on emergency response, shipping documents (including manifests), drum labels, and other safety and environmental compliance issues. In addition, the Contingency Plan must be reviewed with the Branch Manager within the first two weeks of the Secretary starting work.

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<u>Training of New Sales Representatives</u>: New Sales Representatives are trained on the job for two weeks during which they are introduced to manifests, service center inspection records, and training records. A Sales Representative may also be trained as the designee for performing the service center inspection. Additional training is in the form of videotape presentations and a review of the Contingency Plan. The Contingency Plan must be reviewed with the Branch Manager before the Sales Representative formally begins his new position and annually thereafter.

<u>Training of New Warehousemen</u>: A warehouseman is trained to maintain the service center and assist the other branch employees in their tasks. He may be a designee for the service center inspection and must be trained by the Branch Manager as such. Within two weeks of the warehouseman's starting, the Branch Manager must review the Contingency Plan with him, and within six months he must review the items listed in the outline presented in Exhibit I.E.5-1.

<u>Annual Training</u>: On an annual basis, employees are trained using a program prepared and updated annually the EHS Department which contains the topics in Exhibit I.E.5-1. This training also includes updates on environmental regulations, an in-depth review of the Contingency Plan and a review of RCRA inspection criteria. This review is in the form of videotapes and a review and discussion of the storage service center permit/application. In addition, periodic memoranda on changes in environmental regulations are issued by the EHS Department and must be read and discussed by all branch personnel.

#### I.E.5-c-3 TRAINING DIRECTOR

The training is directed by Safety-Kleen's Environment, Health and Safety (EHS) Department which operates out of the Corporate Office in Elgin, Illinois. Each regional environmental engineer who works in this department is responsible for compliance of



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the service centers in a given geographic area of the country. The EHS Department must:

- Provide a training program which addresses the requirements of environmental regulations and corporate policy;
- Notify the proper authorities, oversee remedial actions, and submit a written report to the state after an emergency situation has occurred;
- Assure that environmental permits are submitted and updated as required;
- Manage any environmental compliance issues which exceed the resources available at the service center level; and
- Participate in training new Branch Managers.

Qualifications for individuals that are members of the EHS Department and conduct training at the Service Center are available upon request.

### **I.E.5-c-4 RELEVANCE OF TRAINING TO JOB POSITION**

Each employee is trained to operate and maintain the service center safely and to understand hazards unique to the job assignment. Safety-Kleen's training programs are designed to give employees appropriate instruction regarding the hazardous waste management procedures they will encounter in performing their respective duties. Since the handling of hazardous materials is a large part of the operations of the service center, all employees are given training in environmental regulations, transportation regulations, the Preparedness and Prevention Plan, and Contingency Plan.



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# I.E.5-c-5 TRAINING FOR HAZARDOUS WASTE MANAGEMENT

As described in Section I.E.5-2b, all employees are trained in the aspects of hazardous waste management which are relevant to their position. This includes job-specific hazards and necessary precautions, emergency response, and proper recordkeeping. This training is given initially and updated annually.

#### I.E.5-c-6 TRAINING FOR CONTINGENCY PLAN IMPLEMENTATION

All employees are trained in Contingency Plan implementation, through both initial training and yearly refresher courses, as summarized in Exhibit I.E.5-1. Employees are trained on the contents of the Contingency Plan as well as criteria for implementation.

### I.E.5-c-7 TRAINING FOR EMERGENCY RESPONSE

All employees are trained in emergency response procedures, through both initial training and yearly refresher courses, as summarized in Exhibit I.E.5-1. The emergency training involves spill and fire prevention as well as remedial action procedures. Employees are also trained to recognize when evacuation and outside assistance may be necessary.

#### I.E.5-d IMPLEMENTATION OF TRAINING PROGRAM

New Branch Managers, Branch Facility Managers, and Sales Representatives must complete an introductory training program discussed in Section I.E.5-2 before starting their jobs, with annual review and update thereafter. Branch Secretaries and Warehousemen are given instruction on the Contingency Plan within two weeks of starting work, and are given the full hazardous waste training course, as outlined in Exhibit I.E.5-1, within six months of starting work. Warehousemen involved in direct handling of hazardous waste do not work unsupervised until they have completed the entire initial hazardous waste training course.



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# I.E.5-e PERSONNEL TRAINING RECORD FORMS

Exhibit I.E.5-9 is a sample personnel training record form. This form, or one similar to it, will be used to record training. All training is documented and kept on file at the service center until closure. Additional forms may be used contingent upon the specific issue being addressed. All forms will show the training received, employee name, and the date of training.



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# INTRODUCTORY AND CONTINUING TRAINING TOPICS FOR SERVICE CENTER EMPLOYEES

- Environmental Regulation Update
- Part A Application
- Waste Analysis Plan
- Preparedness and Prevention Plan
- Contingency Plan and Emergency Procedure
- Training
- Closure
- Inspections
- Manifesting
- Spill Simulation and Spill Reports



# JOB DESCRIPTION RESOURCE RECOVERY BRANCH MANAGER

#### **JOB DESCRIPTION:**

The Recource Recovery Branch Manager has overall responsibility for the facility operations and maintenance, and directs sales activities within a certain geographic area defined by the corporate Marketing Department. He is responsible for the proper operations and profitability of the service center.

#### **REPORTS TO:**

Regional Manager of Sales

#### **QUALIFICATION:**

Minimum high school graduate with Safety-Kleen sales experience

#### **PRINCIPAL RESPONSIBILITIES:**

- 1. Plan, direct, and monitor activities of Sales Representatives.
- 2. Training of branch facility managers, sales representatives, and other branch personnel.
- 3. Assist or accompany sales representatives during their sales activities when necessary.
- 4. Tabulate daily sales and inventory figures and report them to the corporate offices.
- 5. Maintain adequate inventory of solvents, allied products, and equipment.
- 6. Carry out corporate policies and standards regarding facilities, equipment operation and maintenance.
- 7. Ensure the regular inspection of the facility and equipment and the implementation of any necessary repairs or remedial actions.
- 8. Represent Safety-Kleen Corp. in local community affairs and public relations activities.
- 9. Coordinate with corporate Technical Services and EHS Departments and implement necessary actions or plans for Regulatory compliance.
- 10. Be able to act as the primary emergency response coordinator.



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# JOB DESCRIPTION BRANCH FACILITY MANAGER

## **JOB DESCRIPTION:**

Assures branch facility compliance with the Federal and State Environmental Protection Agencies (EPA), the Occupational, Safety and Health Administration (OSHA), the Department of Transportation (DOT), the Department of Labor (DOL) and other regulating agencies. Protects Company assets by implementing corporate systems to accurately monitor and track inventory, fleet safety conditions, and accuracy of documents.

# **REPORTS TO:**

Branch Manager

#### **QUALIFICATION:**

Minimum high school graduate with Safety-Kleen route sales experience

#### **PRINCIPAL RESPONSIBILITIES:**

- 1. May function as the Emergency Response Coordinator for the facility.
- 2. Maintains a minimum FMIR score of 90.
- 3. Works with Technical Services and Environmental Department to correct problems in the facility or to enhance the facility to meet new demands.
- 4. Assures branch compliance related to the preparation and completion of hazardous waste paperwork and proper branch procedures for management and shipment of hazardous wastes.
- 5. Performs weekly/daily facility inspections.
- 6. Maintains and updates the Contingency Plan.
- 7. Maintains accurate records, including personnel training files.
- 8. Implements the Hazard Communication Standard ("Right-to-Know").
- 9. Implements a Respirator Protection Program.



## EXHIBIT I.E.5-3 - Continued

# JOB DESCRIPTION BRANCH FACILITY MANAGER

- 10. Conducts Health and Safety Meetings.
- 11. Assures all necessary personnel are DOT certified.
- 12. Assures all vehicles are in compliance.
- 13. Performs weekly/daily fleet inspections.



# JOB DESCRIPTION BRANCH AUTOMOTIVE MANAGER

### **JOB DESCRIPTION:**

Develops and maintains automotive account business by presenting and providing the complete Automotive Fluid Recovery Service to customers in assigned territories. Trains, motivates, and controls the automotive sales staff within the assigned territories.

#### **REPORTS TO:**

Directly to the Resource Recovery Branch manager and indirectly to Regional Automotive Sales Manager. All Automotive and Oil Sales Representatives within assigned territories report directly to the BAM. In branches without a BFM, one or more Branch Secretaries report to the BAM, as assigned by the Resource Recovery Branch Manager.

#### **QUALIFICATION:**

Minimum high school graduate with above average Safety-Kleen route sales experience. Applicant should exhibit leadership abilities and be self-motivated, and pass Company testing.

#### **PRINCIPAL RESPONSIBILITIES:**

- 1. Markets and sells the total Automotive Fluid Recovery Service.
- 2. Signs automotive accounts to the Safety-Kleen Service Contract and Oil agreements where applicable.
- 3. Ensures that customers have the right kind of equipment which is properly labeled, and on the appropriate service interval, by completing machine condition reports.
- 4. Ensures that the Company's ethical standards are maintained.
- 5. Reviews weekly and period sales production summaries.
- 6. Ensures the timely completion of services.
- 7. Reviews and acts on accounts receivable standards.
- 8. Assures proper completion and administration of hazardous waste paperwork.



#### **EXHIBIT I.E.5-4 - Continued**

# JOB DESCRIPTION BRANCH AUTOMOTIVE MANAGER

- 9. Assures proper management, preparation, and shipment of hazardous waste (including packaging, placarding, transportation, and storage procedures).
- 10. Assures DOT compliance.
- 11. Trains personnel following the Corporate Training 10-Day Action Plan.
- 12. Conducts sales meetings.
- 13. Oversees career development by conducting selling skills training meetings (in conjunction with ASM).
- 14. Conducts health and safety meetings.
- 15. Develops team contests or rewards for set period objectives.
- 16. Develops rewards for achieved objectives.
- 17. Holds monthly goal setting sessions with assigned personnel.
- 18. Conducts quarterly performance reviews with assigned personnel.
- 19. Controls all personnel within the assigned territories by daily/weekly communication in regards to branch standards and goals.



# JOB DESCRIPTION BRANCH INDUSTRIAL MANAGER

# **JOB DESCRIPTION:**

Develops and maintains industrial account business by presenting and providing the complete Industrial Fluid Recovery Service to customers in assigned territories. Trains, motivates, and controls the industrial sales staff within the assigned territories.

### **REPORTS TO:**

Directly to the Resource Recovery Branch Manager and indirectly to Regional Industrial Sales Manager. All Industrial Sales Representatives within assigned territories report directly to the BIM. In branches without a BFM, one or more Branch Secretaries report to the BIM, as assigned by the Resource Recovery Branch Manager.

#### **QUALIFICATION:**

Minimum high school graduate with above average Safety-Kleen route sales experience. Applicant should exhibit leadership abilities, be self-motivated, and pass Company testing. Good reading and letter writing skills are also required.

#### **PRINCIPAL RESPONSIBILITIES:**

- 1. Ensures that customers have the right kind of equipment which is properly labeled, and on the appropriate service interval, by completing machine condition reports.
- 2. Ensures that the Company's ethical standards are maintained.
- 3. Performs the required amount of cold calls, sample processing, and machine placements.
- 4. Reviews weekly and period sales production summaries.
- 5. Ensures the timely completion of services.
- 6. Reviews and acts on accounts receivable standards.
- 7. Assures proper completion and administration of hazardous waste paperwork.



#### **EXHIBIT I.E.5-5 - Continued**

# JOB DESCRIPTION BRANCH INDUSTRIAL MANAGER

- 8. Assures proper management, preparation, and shipment of hazardous waste (including packaging, placarding, transportation, and storage procedures).
- 9. Assures DOT compliance.
- 10. Trains personnel following the Corporate Training 10-Day Action Plan.
- 11. Conducts sales meetings.
- 12. Oversees career development by conducting selling skills training meetings (in conjunction with ISM).
- 13. Conducts health and safety meetings.
- 14. Develops team contests or rewards for set period objectives.
- 15. Develops rewards for achieved objectives.
- 16. Holds monthly goal setting sessions with assigned personnel.
- 17. Conducts quarterly performance reviews with assigned personnel.
- 18. Controls all personnel within the assigned territories by daily/weekly communication in regards to branch standards and goals.



# JOB DESCRIPTION BRANCH SECRETARY

#### **JOB DESCRIPTION:**

Performs duties to assist the branch manager, sales representatives, and customers with billing, scheduling, and recordkeeping. Performs secretarial duties at the branch.

### **REPORTS TO:**

Branch Manager

#### **QUALIFICATION:**

Attended high school

# **PRINCIPAL RESPONSIBILITIES:**

- 1. Maintain records in an orderly manner.
- 2. Assist sales representatives in scheduling services.
- 3. Ensure that all hazardous waste manifests are complete, and manage distribution and filing of copies.
- 4. Maintain Personnel Training Record files.
- 5. Maintain Facility Inspection Records.
- 6. Answer customer inquiries.
- 7. Manage customer billing.
- 8. Perform other related duties as assigned.



# JOB DESCRIPTION SALES REPRESENTATIVE

# **JOB DESCRIPTION:**

The Sales Representative is charged with the responsibility of generating new business and servicing established accounts within a certain defined geographic area.

# **REPORTS TO:**

Branch Industrial Manager or Branch Automotive Manager

### **QUALIFICATION:**

Minimum high school graduate

### **PRINCIPAL RESPONSIBILITIES:**

- 1. Maintain his route truck and replenish his products on the truck before beginning his route sales.
- 2. Contact potential customers for the purpose of selling Safety-Kleen services and allied products.
- 3. Exchange used solvents with fresh solvent and replenish the inventory of Safety-Kleen's products for existing customers.
- 4. Make minor repairs of Safety-Kleen's parts washer equipment or lease new equipment to the customer.
- 5. Prepare the necessary paperwork for each service, and bill or credit the customer, as necessary.
- 6. At the end of each day, return the truck to the branch for cleaning and maintenance, and summarize the day's activities so the Branch Manager can tabulate the daily figures and forward them to the corporate office.



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# JOB DESCRIPTION WAREHOUSE PERSONNEL

#### **JOB DESCRIPTION:**

Perform duties to assist the sales representatives in loading and unloading the trucks. Perform janitorial duties at the warehouse.

# **REPORTS TO:**

Branch Manager

# **QUALIFICATIONS:**

Attended high school

#### **PRINCIPAL RESPONSIBILITIES:**

- 1. Maintain warehouse in clean and orderly manner.
- 2. Assist sales representatives in loading trucks and replacing solvent.
- 3. Refurbish drums as needed.
- 4. Park or move trucks as needed.
- 5. Stock inventory.
- 6. Replenish trucks with inventory.
- 7. Perform other related duties as assigned.



EXHIBIT I.E.5-9	<b>‡ 1560</b>
ENVIRONMENT, HEALTH, & SAFE	ETY TRAINING
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Branch Name : Bran	nch No. :
Employee Name :	Employee Number :
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Position / Title :	Termination Date :
** CORE HAZARDOUS MATERIAL (Emergency Response Training must be completed unsupervised position. Employees must be comp listed below within six (6) months of starting	S TRAINING ** before an employee works in an letely trained in all items and annually thereafter.)
TRAINING COMPLETED:	MGR. INIT.
DATE	
EHS VIDEO PART I - HAZ COM - Safety T	<u>raining</u>
EHS VIDEO PART II - HAZ COM - Underst	anding MSDSs
EHS VIDEO PART III - Preventing Injur	ries & Illnesses
EHS VIDEO PART IV - Hazards Associate	ed w/ Mat'ls Handling

EES_	V LDEO	PART	<u>v -</u>	<u>Cnemi</u>	<u>stry o</u>	<u>) Şaiet</u>	<u>v - </u>	leen	Produc	ts_

 EHS VIDEO	<u>PART VI -</u>	Hazardous	Materials_	Regulations

<u></u>	<u>ehs</u>	VIDEO	PART	<u>VII -</u>	- 7	Waste	<u>Analvsis</u>	P	an	· · · · · · · · · · · · · · · · · · ·	 . <u> </u>
	EHS	VIDEO	PART	VIII	_	Prep.	, Prvn.,	£	Contingency	Plans	

Day Four - TEN DAY TRAINING - HAZ MAT/DOT/MANEST VID QUIZ

<u>Completion of New Employee Orientation Program</u>

Initial Contingency Plan Training (incl. Part B review)

Respirator Fit Testing & Training

\* CERTIFICATION by the employee that training has been received obligates the mployee to discharge his/her duties in accordance with the training provided. Failure to comply with the requirements established during the training program may result in civil or criminal penalties against the employee. \*\*

12/31/91 Employee's Signature:

	EXHIBIT I.E	.5-9		
	ENVIRONMENT . HEALTH	. & SAFETY TRAT	- 1: NTNG -	560
-	TRAINING SUM	MARY SHEET II		
Branch Name	:	Branch No. 7:		
Employee Name :		Employee	Number :	
TRAINING COMPLETED:	•			HG
Date				
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#### 13112.29/TSK10/02/PARTBCOV.PGS/PJH/1/122091

# **ATTACHMENT I.F.1**

# FINANCIAL RESPONSIBILITY AND CLOSURE

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# ATTACHMENT I.F.1 FINANCIAL RESPONSIBILITY AND CLOSURE

### I.F.1.a CLOSURE INTRODUCTION

The Safety-Kleen Corp. has constructed each service center with the intent that each will be a long-term facility for the distribution of Safety-Kleen products. No onsite disposal activity occurs at any plant and hence there is no disposal capacity to be exhausted that will necessitate closure of a facility. Based on current business and facility conditions, this facility is expected to remain in operation until the year of 2025.

In the event that some presently unforeseen circumstance(s) would result in the discontinuance of operations and permanent closure or sale of the facility, the following closure plan is designed to identify the steps necessary to completely close the facility at any point during its intended life, and should be used for tanks, drum storage area, and equipment.

It is intended that all closures will be complete and final with removal of waste and decontamination of the facility and associated equipment, in order to eliminate need for maintenance after closure and chance of escape of hazardous waste constituents into the environment.

Procedures described in this closure plan are also applicable to cleaning up of spills and repairing/decontamination of facility or equipment.

An anticipated closure schedule can be seen in Exhibit I.F.1-1. An anticipated maximum waste inventory for the drum storage portion of the facility is presented in the following section.



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# I.F.1.b FACILITY DATA

- 1. Waste Management Facility Descriptions and Maximum Inventory
  - A. Aboveground Storage Tank: A 15,000-gallon steel tank for used mineral spirits storage and a 15,000-gallon steel tank for spent ethylene glycol.
  - B. Drum Storage Area: 29' x 33' with sloped floor and collection sump.The total volume stored is 6,912 gallons (432 16-gallon drums).
  - C. Solvent Return/Fill Shelter, one 45' x 44', with three solvent return receptacles (wet dumpster) and associated appurtenances.

### I.F.1.c CLOSURE PROCEDURE

- 1. Drum Storage Areas
  - A. The drum storage area contains drums of used immersion cleaner, mineral spirits dumpster mud, dry cleaning wastes, spent antifreeze, paint wastes, and FRS wastes.
  - B. At closure all drums will be removed and transported to the recycle center with proper packaging, labeling, and manifesting where the contents in the drums will be reclaimed and the drums will be cleaned for reuse.
  - C. The concrete floor and spill containment areas will be cleaned with detergent solution and the rinsate will be analyzed for mineral spirits, volatile organic compounds, lead, and cadmium using SW-846 methods to determine the effectiveness of decontamination. The area will continue to be washed and rinsed until levels are below maximum contaminant levels (MCLs), or if MCLs are not available, practical quantitation limits (PQLs) as specified in Appendix IX of 40 CFR264.



- D. If the wash water or other wastes generated in the closure process are determined to be hazardous, they will be properly disposed of as a hazardous waste; otherwise the material will be disposed of as an industrial waste. It should be noted that wash water and rinsate will not be allowed to drain to the waterway.
- E. The equipment used to clean this area includes mops, pails, scrub brushes, a wet/dry vacuum, and drums. The mops, pails, and scrub brushes will be drummed and disposed of as hazardous waste. The wet/dry vacuum hose will be washed with a detergent solution to decontaminate it. The drums will be used to store the wastewater.
- 2. Solvent Return/Fill Shelter Area
  - A. This area is used to return the used mineral spirits to the storage tank.
  - B. Closure of the solvent return receptacles (wet dumpster) will be made prior to the cleaning and removal of the storage tank.
  - C. At closure, the sludge in the dumpsters ("dumpster mud") will be cleaned out and drummed, labeled, and manifested for proper disposal at permitted facilities.
  - D. The dumpsters and the dock area will be cleaned with detergent solution and the rinsate analyzed for mineral spirits, volatile organic compounds, lead, and cadmium to determine the effectiveness of the decontamination. The area will continue to be washed and rinsed until levels are below MCLs, or PQLs if MCLs are not available.



- E. The rinsing fluids will be discharged through the appurtenant piping system into the storage tank, which will be subjected to a separate closure procedure as described Attachment II.C.12(a).
- F. The cleansed dumpster and dock structure will be reused by Safety-Kleen, or scrapped.
- G. The cleanup equipment and solutions disposal is the same as that listed earlier.
- 3. Aboveground Tanks and Associated Piping
  - A. Outline: To safely clean and decommission aboveground storage tanks:
    - 1. Expose doorways or cut openings to provide access to each tank.
    - 2. Remove remaining material from tanks and return the materials to the Recycle Center for reclamation.
    - 3. Rinse, scrape, and squeegee tank interiors.
    - 4. Disconnect and cap all appurtenant piping.
    - 5. Disconnect and cap all appurtenant pumping equipment.
    - 6. Remove tanks and appurtenant equipment for final disposition.
    - Transport and dispose of all other waste material generated during the project.



- B. Phase I--Open the Tank
  - 1. Access to aboveground tanks is obtained by removing manways.
  - 2. Prior to opening the tanks, the personnel should have full face respiratory protection and protective clothing. Once the tanks have been opened, they will be provided with positive ventilation. The tanks will then be inspected to determine the approximate quantity and physical conditions of the remaining material.
- C. Phase II--Removing Waste and Cleaning Tank
  - 1. Before removing the waste from the tank, all piping and appurtenant equipment will be flushed first with clean mineral spirits followed by a detergent solution.
  - The method to remove the waste material from the tanks will depend on the physical properties and quantities of that material.
     Prior to any person entering the tank, an effort will be made to remove as much liquid and sludge as possible.
  - 3. Subsequent to vacuuming the majority of the material from the tank, it may be necessary to use a high pressure wash system using a clean solvent and detergent solution to rinse residual material from the walls and bottom of the tanks. The evacuated material and the rinse solution will be returned to the recycle center for reclamation. The quantity of wash fluid used will be kept to a minimum in order to limit the amount of unnecessary material. The final rinsate will be analyzed for mineral spirits, volatile



organic compounds, lead, and cadmium, using SW-846 to determine the effectiveness of decontamination. The tank will continue to be washed and rinsed until levels are below MCLs, or PQLs if MCLs are not available. Rinsate will be removed using a vacuum tanker truck and will be disposed of as hazardous waste.

- 4. Storage tanks are considered confined spaces, i.e., spaces open or closed having a limited means of egress in which poisonous gases or flammable vapors might accumulate or an oxygen deficiency might occur.
- 5. Confined space entry requires special operating procedures:
  - a. Tanks are to be washed, neutralized and/or purged (where flammable atmosphere is present) prior to being entered.
  - b. Supply valves must be closed and "tagged" and bleeder valves left open, or supply piping should be disconnected.
  - c. Pumps or motors normally activated by automatic controls shall be operated manually to be sure they have been disconnected. Instrument power switches should be tagged "OFF."
  - d. On tanks were flammable vapors may be present, all sources of ignition must be removed.
  - e. All tanks must be tested for flammable vapors, toxic gases, or oxygen deficiency in that order, as applicable. The results of such tests should be displayed on the job site.



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- 1. In all tank entering situations, an Oxygen Deficiency Test shall be performed prior to tank entry.
- Under circumstances where "hot work" (welding, burning, grinding, etc.) is to be performed in or on the vessel, a test for combustible gases shall be taken. This is referred to as a "flash test."
- 3. In most circumstances, flash tests and oxygen deficiency tests will be performed by the supervisor of the area in which the work is being performed.
- 4. Under any conditions where a possibility (no matter how remote) of toxic vapors being present in the tank to be entered exists, the supervisor will arrange to have the air tested.
- f. There must be a set of wristlets or a rescue harness and sufficient rope at the job site to effect a rescue. Any other rescue equipment considered necessary must also be on the job site.
- g. Workers should wear a rescue harness if entering a tank with a large enough opening to easily effect a rescue. In tanks with small openings, only wristlets may be used. However, in cases where there are agitator shafts, drums, or other hazards in which the man's life-line would be entangled and the supervisor in charge feels that wearing the life-line may entrap a man and



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increase the hazard, the wearing of a harness or wristlets may be eliminated.

- h. A constant source of fresh air must be provided to ensure a complete change of air every few minutes. In cases of <u>short-term entry</u> for inspection or removal of objects, an air mask is recommended. In cases of <u>long-term entry</u> (generally for repair) the use of an air mover should be considered.
- i. When a ladder is required to enter a tank, the ladder must be secured and not removed while anyone is in the vessel. In cases where a rigid ladder could become an obstacle, a chain ladder may be used.
- j. Adequate illumination must be provided.
  - 1. A flashlight or other battery-operated light must also be available to provide illumination for safety exit in the event of an electrical power failure.
  - 2. Explosion-proof lighting must be used in any tank used to store flammable liquids.
- k. All electrical equipment to be used inside the tank must be in good repair and grounded.
- 1. Others working in the immediate area shall be informed of the work being done and they shall inform the watcher or



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supervisor immediately of any unusual occurrence which may make it necessary to evacuate the tank.

- 6. The "buddy" (standby observer) system:
  - a. Men working inside a confined space must be under the constant observation of a fully-instructed standby observer.
  - b. Before anyone enters the tank, the standby observer will be instructed by the person in charge of the entry that:
    - 1. An entry authorization must be obtained from the person in charge by anyone entering the tank.
    - 2. A rescue harness or wristlets must be on the job.
    - 3. The standby observer must know the location of the nearest telephone (with emergency numbers posted); safety eyewash/shower; fire extinguisher; and oxygen inhalator.
    - 4. For all "hot work" inside a tank, the standby observer must be instructed how to shut down welding/burning equipment.
    - As long as personnel are inside the vessel, the standby observer must remain in continuous contact with the worker. <u>HE IS NOT TO LEAVE THE JOB SITE</u> <u>EXCEPT TO REPORT AN EMERGENCY.</u>



- 6. UNDER NO CIRCUMSTANCES SHOULD THE STANDBY OBSERVER ENTER THE VESSEL. If the worker(s) in the tank becomes ill or injured, the watcher is to put in effect the emergency plan described in the attached Standard Operating Procedure.
- 7. The standby observer still **DOES NOT ENTER THE TANK** until help is available.
- 8. After being instructed in his responsibilities, the standby observer will sign an instruction form indicating his understanding.
- 7. Welding and burning within a tank:
  - A. All welding and burning equipment must be provided with a shutoff device under the control of the standby observer; and the standby observer must know how to shut off the equipment if it becomes necessary.
  - B. Welding and burning equipment will only be taken into a tank immediately prior to its use and must be removed from the tank immediately after the job is finished.
  - C. For all "hot work" inside a tank, a properly executed flame permit, if needed, must be displayed at the job site.
  - D. Standard welding and burning safety precautions will always be followed.



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#### D. Phase III--Remove Tank

- 1. Disconnect and cap all appurtenant piping.
- 2. Disconnect and decontaminate all appurtenant pumping equipment.
- 3. The vessels shall be removed and reused by Safety-Kleen or cut up and sold as scrap.
- 4. The surface soil beneath the fill pipes and beneath each tank will be sampled and analyzed for volatile organic compounds, mineral spirits, lead, and cadmium.
- 5. The secondary containment system will be disassembled. The construction materials will be tested with TCLP (pertinent constituents only). If the construction materials are classified as non-hazardous via TCLP, then they will be disposed of as a solid waste in a sanitary landfill. In the event the construction materials are identified as hazardous via TCLP, then the construction materials will be disposed of as a hazardous waste in accordance with RCRA regulations.
- Contaminated soil, if it exists, shall be removed and properly disposed of.
  An additional work plan to determine the extent of contamination and remediation procedures will be submitted in this case.
- E. Phase IV--Backfilling and Regrading
  - 1. Backfill any excavation with previously excavated material with proper compaction.



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- 2. Add additional backfill with proper compaction if necessary. The material must be of clean materials and easily compacted in place.
- 3. Regrade the site to proper topography.
- 4. Remove and dispose of nonusable debris.

#### I.F.1.d FACILITY CLOSURE SCHEDULE AND CERTIFICATION

- 1. Safety-Kleen may amend the closure plan at any time during the active life of the facility. The active life of the facility is that period during which wastes are periodically received. Safety-Kleen shall amend the plan any time changes in operating plans or facility design affect the closure plan or whenever a change occurs in the expected year of closure of the facility. The plan must be amended within 60 days of the changes.
- 2. Safety-Kleen shall notify the State authority at least 180 days prior to the date closure is expected to begin, except in cases where the facility's permit is terminated or if the facility is otherwise ordered by judicial decree or compliance order to cease receiving wastes or to close. The date when Safety-Kleen "expects to begin closure" should be within 90 days after the date on which Safety-Kleen expects to receive the final volume of wastes.
- 3. Within 90 days of receiving the final volume of hazardous wastes, or 90 days after approval of the closure plan, if that is later, Safety-Kleen shall remove from the site all hazardous wastes in accordance with the approved closure plan. The Regional Administrator may approve a longer period if Safety-Kleen demonstrates that:



The activities required to comply with this paragraph will, of necessity, take longer than 90 days to complete; or

The following requirements are met:

- ► The facility has the capacity to receive additional wastes;
- There is a reasonable likelihood that a person other than Safety-Kleen will recommence operation of the site;
- Closure of the facility would be incompatible with continued operation of the site; and
- Safety-Kleen has taken and will continue to take all steps to prevent threats to human health and the environment.
- 4. Safety-Kleen shall complete closure activities in accordance with the approved closure plan and within 180 days after receiving the final volume of wastes or 180 days after approval of the closure plan, whichever is later.
- 5. When closure is completed, all facility equipment and structures shall have been properly disposed of, or decontaminated by removing all hazardous waste and residues.
- 6. When closure is completed, Safety-Kleen shall submit to the certification by an independent registered professional engineer that the facility has been closed in accordance with the specifications in the approved closure plan.



#### I.F.1.e CLOSURE COST ESTIMATE

#### TALLAHASSEE, FLORIDA SERVICE CENTER CLOSURE COST ESTIMATE

1. <u>TANK CLOSURE</u> - Open, remove contents of, clean, remove, and dispose of two 15,000-gallon aboveground storage tanks

Phase I - Remove Contents and Clean

- a. Ship contents to a reclaimer
  - Crew:

	TOTAL PHASE I	\$16,744.62
f.	Analysis of 2 rinsate samples	<u>\$ 400.00</u>
e.	Transportation of wastewater (1,250 miles x \$1.75/mile)	\$ 2,187.50
d.	Disposal and transportation of wash water (8,000 gal. @ \$0.12/gal.)	\$ 920.00
c.	Use of high pressure water for 2 days	\$ 800.00
	2 laborers (\$17.00/hr. & \$3.00/hr. hazard pay) x 24 hrs.	\$ 960.00
	1 foreman @ \$18.30/hr. x 24 hrs.	\$ 439.20
	Crew:	
b.	Squeegie clean tanks	
	Reclamation cost (\$0.30/gal.)	\$9,000.00
	6 trucks x 80 miles x 1.75/mile	\$ 840.00
	Tank size = $2 (15,000$ -gallon tanks $\div$ 7,500 gal/truck) = 6 trucks	
	4 trucks - \$375.00 lump sum/truck	\$ 1,500.00
	4 truck drivers @ \$17.56/hr. x 8 hrs.	\$ 561.92



Ph	Phase II - Remove and Dispose of Tanks			
a.	Disconnect and remove appurtenant equipment			
	Crew:			
	1 foreman @ \$18.30	)/hr x 8 hrs.	\$	146.00
	4 laborers @ \$17.00	)/hr x 8 hrs.	\$	544.00
b.	Torch tanks			
	Crew:			
	1 foreman @ \$18.30	)/hr. x 8 hrs.	\$	146.40
	2 laborers @ \$17.00	)/hr. x 8 hrs.	\$	272.00
c.	Remove tanks			
	Crew:			
	1 foreman	\$18.30/hr. x 2 hrs.	\$	36.60
	8 laborers	\$16.80/hr. x 2 hrs.	\$	268.80
	1 backhoe	\$28.97/hr. x 4 hrs.	\$	115.88
	1 oiler	\$25.47/hr. x 4 hrs.	\$	101.88
	1 truck driver	\$17.56/hr. x 4 hrs.	\$	70.24
	Equipment	\$200.00 lump sum x 2	<u>\$</u>	400.00

ТОТАL PHASE II \$ 2,101.80



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Phase	III - Backfilling, Regra	ding, Soil Testing	
a. Tes	sts for soil contamination	on (1 per tank)	
	2 samples x \$640.0	00/each	\$ 1,280.00
b. Re	grading		
Cre	ew:		
	1 front-end loader Equipment	\$27.38/hr x 2 hrs. \$2.00/c.y. x 10 c.y.	\$    54.76 \$ <u>    40.00</u>
		TOTAL PHASE III	\$ 1,374.76
Summa	ary of Closure Costs fo	or 2 20,000-Gallon Tanks	
	Phase I		\$ 16,744.62 \$ 2 101 80
	Phase II		ລ 2.101.00

TOTAL

Phase III

\$20,221.18

<u>\$ 1,374.76</u>



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2.	<u>CI</u> to of	<u>OSURE OF DRUM STORAGE AREA</u> - Remove and return drums a reclaimer, clean the drum storage area, and dispose wash water generated	5	
	a.	3 truck drivers @ \$17.56/hr. x 8 hrs.	\$	421.44
		3 trucks @ \$750.00 lump sum	\$	750.00
		Hauling cost - 180 miles x \$1.75/mile	\$	312.00
	b.	Clean drum storage area		
		Crew:		
		1 foreman @ \$18.30/hr. x 10 hrs.	\$	183.00
		1 laborer (\$17.00/hr. & \$3.00/hr. hazard pay) x 10 hrs.	\$	200.00
	c.	Dispose of wash water - 700 gal. x \$0.12/gal.	\$	84.00
	d.	Dispose of used solvents - 432 drums x \$30.00/drum	\$12	,960.00
	e.	Testing for contamination - 2 samples x \$640.00/each	<u>\$ 1</u>	,280.00
		TOTAL DRUM CLOSURE COST	\$16	.190.44



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3.	<u>CI</u> dis rer	<u>OSURE OF DUMPSTER AND DOCK AREA</u> - Remove, packag pose of sludge; clean the dumpster and dock area; nove dumpster and dock structure for reuse	e, and	1
	a.	1 truck - \$250.00 lump sum	\$	250.00
		Hauling cost - 30 miles x \$1.75/mile	\$	52.50
		1 truck driver @ \$17.56/hr. x 8 hrs.	\$	140.48
	,	Crew:		
		1 foreman @ \$18.30/hr. x 4 hrs.	\$	73.20
		1 laborer (\$17.00/hr. & \$3.00/hr. hazard pay) x 4 hrs.	\$	80.00
	b.	Clean dumpster and dock area		
	:	Crew:		
		1 foreman @ \$18.30/hr. x 16 hrs.	\$	292.80
		1 laborer (\$17.00/hr. & \$3.00/hr. hazard pay) x 16 hrs.	\$	320.00
		Use of high pressure water for one day	\$	400.00
	c.	Disposal of wash water - 1,000 gal. x \$0.12/gal.	\$	120.00
	d.	Dispose of dumpster mud - 21 55-gal. drums x \$300/drum	\$ 6	5,300.00
	e.	Testing for contamination - 3 samples x \$75.00/each	\$	225.00
	f.	Torch, disassemble, and remove dumpster and dock		
		Crew:		
		1 foreman @ \$18.30/hr. x 16 hrs. 2 laborers @ \$17.00/hr. x 16 hrs. Equipment @ \$5.20/hr. x 8 hrs. 1 truck driver @ \$17.56/hr. x 2 hrs.	\$ \$ \$ \$	292.80 578.00 41.60 35.12

TOTAL DOCK CLOSURE COSTS \$ 9,201.50



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#### 13112.29/TSK10/02/CLOSCOS/KSC/PJH/3/122091

-	TOTAL	\$47,113.12
	Professional Engineer Certification	<u>\$ 1,500.00</u>
	Dock and Dumpster Area	\$ 9,201.50
	Drum Storage Area	\$16,190.44
	Two 15,000-Gallon Tanks	\$20,221.18
6.	TOTAL CLOSURE COSTS	
5.	PROFESSIONAL ENGINEER CERTIFICATION	\$ 1,500.00

NOTE: These estimates are based on third-party costs.



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### Exhibit I.F.1-1 Typical Closure Schedule Safety-Kleen Corp. Facility Tallahassee, Florida

					Days			
	Closure Activity	0	30	60	90	120	150	180
1.	End operation facility; commence closure							
2.	Removal/disposal of final waste inventory.							
3.	Decontaminate drum storage areas and dispose of wash water.							
4.	Decontaminate storage tanks, piping and appurtenant equipment and dispose of wash water.							
5.	Remove tanks, appurtenant piping and equipment and contaminated materials; backfill excavation, if necessary.					ſ		
6.	Dismantle, decontaminate and scrap or sell storage tanks, appurtenant equipment and piping.							
7.	Compile closure certificate and notify regulatory agency of closure completion.							
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#### 13112.29/TSK10/02/PARTBCOV.PGS/PJH/1/122091

#### I.F.2

#### FINANCIAL ASSURANCE FOR CLOSURE



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#### WILLIS CORROON



Willis Corroon Corporation of

135 South LaSalle St

Chicago, IL 60603 Telephone 312-621-47

Fax 312-372-0385

Telex 910-2214199

Cable ALEXANCO

Illinois

Suite 1800

January 6, 1992

Ms. Terri J. Chasteen Environmental Specialist Florida Department of Environmental Regulation Twin Towers Office Bldg. 2600 Blair Stone Road Tallahassee, Florida 32399-2400

Re: Safety-Kleen Corp. Hazardous Waste Transporter Certificate

Dear Terri:

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In accordance with your letter of November 18, 1991 addressed to Melissa Hlebasko of Safety-Kleen Corp., enclosed are the following:

- 1. Completed Hazardous Waste Transporter Certificate of Liability Insurance with attached listing of locations.
- 2. Hazardous Waste Transporter Status Sheets for each location.
- 3. Status Report dated December 30, 1991 prepared by Victor San Augustin.

Should you have any questions or require additional information, please let me know.

Sincerely,

Joyce Henrickson 312/621-4965

encl

#### STATE OF FLORIDA

HALARDOUS WASTE TRANSPORTER CERTIFICATE OF LIABILITY INSURANCE National Union Fire Insurance Company [Name of Insurer] (the "Insurer"), of \_\_\_\_\_Pittsburgh, Pennsylvania [Address of Insurer] hereby certifies that it has issued liability insurance covering bodily injury and property damage including environmental restoration for sudden accidental occurrences to Safety-Kleen Corp. [Name of Insured] (the "Insured"), of 777 Big Timber Rd., Elgin, IL 60123 (Address of Insured) in connection with the insured's obligation to demonstrate financial responsibility under Florida Administrative Code Rule 17-730.170. The coverage applies at: EPA/DER I.D. No. lane Adress

(See Attached List - Florida)

(If coverage is for multiple facilities, identify each facility insured.)

This insurance is <u>primary</u> and the company shall not be liable for amounts in excess of  $\underbrace{2.000,000}_{\text{costs.}}$  for each accident, exclusive of legal defense costs. The coverage is provided under policy number RMCA1428019, issued on  $\underbrace{10/1/91}_{\text{[Date]}}$ . The effective date of said policy is  $\underbrace{10/1/91}_{\text{[Date]}}$ .

This insurance is <u>excess</u> and the company shall not be liable for amounts in excess of §\_\_\_\_\_\_ for each accident in excess of the underlying limit of §\_\_\_\_\_\_ for each accident, exclusive of legal defense costs. The coverage is provided under policy number \_\_\_\_\_\_, issued on \_\_\_\_\_\_. The effective date of said policy is [Date]

[Date]

1.

- 2. The Insurer further certifies the following with respect to the insurance described in Paragraph 1:
  - (a) Bankruptcy or insolvency of the insured shall not relieve the Insurer of its obligations under the policy.

DER FORM 17-730.900(5)(a) EFFECTIVE 10/1/84 Transporter Certificate of Liability Insurance Page 1 of 2/

PAGE . 884

- (b) The Insurer is liable for the payment of amounts within any deductible applicable to the policy, with a right of reimbursement by the insured for any such payment made by the Insurer.
- (c) Whenever requested by the Secretary (or designee) of the Florida Department of Environmental Regulation (FDER), the Insurer agrees to furnish to the Department a signed duplicate original of the policy and all endorsements.
- (d) Cancellation of the insurance, whether by the Insurer or the insured and any other termination of the insurance (e.g., expiration, non-renewal), will be effective only upon written notice and only after the expiration of thirty-five (35) days after a copy of such written notice is received by the Secretary of the FDER as evidenced by certified mail return receipt.
- (e) The Insurer shall not be liable for the payment of any judgement or judgements against the Insured for claims resulting from accidents which occur after the termination of the insurance described herein, but such termination shall not affect the liability of the Insurer for the payment of any such judgement or judgements resulting from accidents which occur during the time the policy is in effect.

I hereby certify that the Insurer is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more States including Florida.

enned

[Signature of Authorized Representative of Insurer

Bernard M. Dunne

[Type name]

[Social Security Number]

Vice President

[Title]

Authorized Representative of

National Union Fire Insurance Company

[Name of Insurer]

500 W. Madison St. Chicago, IL 60606

[Address of Representative]

DER FORM 17-730.900(5)(a) EFFECTIVE 10/1/84 Transporter Certificate of Liability Insurance Page 2 of 2

#### STATE OF FLORIDA

EPA/DER I.D. NO.	NAME	ADDRESS
FLD 09787983	Safety-Kleen Corp.	505 Plumosa D <del>r</del> . Altamonte Springs, FL 37201
FLD 984167791	Safety-Kleen Corp.	Lot 46B Quantum Industrial Park Boynton Beach, FL
FLD 980847214	Safety-Kleen Corp.	161 Industrial Loop South Orange Park, FL 32073
FLD 980840086	Safety-Kleen Corp.	7875 NW 54th Street Miami, FL 33166
FLD 984171694	Safety-Kleen Corp.	E. of NW 89th Ave. & NW 96th St. Medley, FL
FLD 000776716	Safety-Kleen Corp.	19200 Peachland Blvd. Port Charlotte, FL 33949
FLD 982133159	Safety-Kleen Corp.	Entrepot Blvd. Airport Ind. Park Tallahassee, FL 32303
FLD 980847271	Safety-Kleen Corp.	5809 24th Avenue South Tampa, FL 33619
FLD 984171165	Safety-Kleen Corp.	Lot 10 Northstar Business Park Sanford, FL 32771

### saisty-kiesa corp

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December 30, 1991			
STATUS REPORT:	Per Victor San Augustin, Regional Engineer		
FLD 000 776 757	Delray Beach, FL This facility is no longer operational and is undergoing closure. All hazardous waste transportation is operated out of the Boynton Beach facility. Liability insurance for hazardous waste transportation is no longer needed.		
FLD 049 557 408 ILD 051 060 408	Tampa, FL Elgin, IL These two facilities are no longer operational. Liability insurance for hazardous waste transportation is not needed.		
FLD 984 171 165	Sanford, FL This site is not yet built. Hazardous waste will be transported from out of this facility once it is allowed to operate. It is projected that Sanford will commence operations in the later part of next year. Until this happens, hazardous waste will be transported out of the Altamonte Springs branch.		
FLD 982 133 159	Tallahassee, FL (3082 W. Tharpe St. [Rear] 32303) This site is not operational. All hazardous waste transportation is operated out of the Entrepot Boulevard,		

This site is not operational. All hazardous waste transportation is operated out of the Entrepot Boulevard Tallahassee facility. Liability insurance for hazardous waste transportation is no longer needed.

#### FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

DEC 17 '91 15:13

HALARDOUS WASTE TRANSPORTER STATUS SHEET

Transporter Name:	SAFETY-KLEEN CORP.	
Mailing Address:	777 BIG TIMBER ROAD	
	ELGIN, ILLINOIS 60123	
Contact Person:	STEVE BECKER	
Title:	BRANCH MANAGER	
Telephone number:	(904) 576-9764	
Facility Address:_	4426 ENTREPOT BLVD.	
	TALLAHASSEE, FLORIDA 32310	
Facility EPA ID:_	FLD 982133159	
	***************************************	
Insurance Company:		
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Contact Person:		
Telephone number:		
Policy Number:		
Expiration Date:		
Joyce Henrickson Willis Corroon Corporation of Illinois Date: 1/6/92		
Signature: <u>Augu</u> Annuchan		
HWT STATUS FORM RE	(/ 2V. 0 (OCT 91)	

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#### FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

HAZARDOUS WASTE TRANSPORTER STATUS SERET

Transporter Name:	SAFETY-KLEEN CORP.		
Mailing Address:_	777 BIG TIMBER ROAD		
_	ELGIN, ILLINOIS 60123		
Contact Person:	RUSS GIAMBRONE		
Title:_	BRANCH MANAGER		
Telephone number:_	(904) 264-2607		
Facility Address:	161 INDUSTRIAL LOOP SOUTH		
· · · · · · · · · · · · · · · · · · ·	ORANGE PARK, FLORIDA 32073		
- Facility EPA ID:	FLD 980847214		
***************************************			
Insurance Company	•		
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VG(1933)			
Contact Person:			
Telephone number:			
Policy Number:			
Expiration Date:			
Completed by: Willis Corroon Corporation of Illinois Date: 1/6/92			
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Signature:	1 1 Marveban		
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#### FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

DEC 17 '91 15:13

HARARDOUS WASTE TRANSPORTER STATUS SHEET

Transporter Name:	SAFETY-KLEEN CORP.	
Mailing Address:	777 BIG TIMBER ROAD	
	ELGIN, ILLINOIS 60123	
:		
Contact Person:	FRANK TAYLOR	
Title:_	BRANCH MANAGER	
Telephone number:_	(813) 626-1203	
Facility Address:_	5809 24th AVENUE SOUTH	
:	TAMPA, FLORIDA 33619	
_		
Facility EPA ID:_	FLD 980847271	
	***************************************	
Insurance Company:		
Address:		
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Contact Person:		
Telephone number:		
Policy Number:		
Expiration Date:		
Joyce Henrickson Completed by: Willis Corroon Corporation of Illinois Date: 1/6/92 (Please print or type)		
Signature: Layce Henrickson		
HWT STATUS FORM REV. 0 (OCT 91)		

#### FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

DEC 17 '91 15:13

HAZARDOUS WASTE TRANSPORTER STATUS SHEET

Transporter Name:	SAFETY-KLEEN CORP.
Mailing Address:	777 BIG TIMBER ROAD
	ELGIN, ILLINOIS 60123
Contact Person:	PAUL JOHNSON
Title:	BRANCH MANAGER
Telephone number:	(407) 830-6906
Facility Address:	505 PLUMOSA DRIVE
<u>،</u>	ALTAMONTE SPRINGS, FLORIDA 32701
_	
- Facility EPA ID:	FLD 097837983
Insurance Company:	
Address:	
Contact Borton	
Terephone number:	
POLICY NUMBER:	
Expiration Date:	
Joy Completed by: <u>Wil</u> (Plea	ce Henrickson lis Corroon Corporation of Illinois Date: 1/6/92
Signature:	syce Menrichson
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#### FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

#### HARARDOUS WASTE TRANSPORTER STATUS SHEET

Transporter Name:	SAFETY-KLEEN CORP.
Mailing Address:_	777 BIG TIMBER ROAD
_	ELGIN, ILLINOIS 60123
Contact Person:_	PAUL JOHNSON
Title:_	BRANCH MANAGER
Telephone number:_	(407) 830-6906
Facility Address:	LOT 10
<b>،</b>	NORTHSTAR BUSINESS PARK
_	SAMFORD, FLORIDA 32771
Facility EPA ID:_	FLD 984171165
Address	
Contact Person	
Telephone number	;
Policy Number	
Expiration Date	۱ <u></u>
Joy Completed by: Wi (Ple) Signature:	yce Henrickson llis Corroon Corporation of Illinois Date: 1/6/92 Ase print or type)

FLORIDA D	EPARTMENT OF ENVIRONMENTAL REGULATION
HAZARD	DUS WASTE TRANSPORTER STATUS SHEET
ansporter Name:	SAFETY-KLEEN CORP.
ailing Address:_	777 BIG TIMBER ROAD
~	ELGIN, ILLINOIS 60123
Contact Person:_	DON MURPHY
Title:_	BRANCH MANAGER
elephone number:_	(813) 629-4711
acility Address:_	19200 PEACHLAND BLVD.
4 <b></b>	PORT CHARLOTTE, FLORIDA 33949
- Facility EPA ID:_	FLD 000776716
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#### FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

DEC 17 '91 15:13

HAZARDOUS WASTE TRANSPORTER STATUS SHEET

Transporter Name:	SAFETY-KLEEN CORP.
Mailing Address:	777 BIG TIMBER ROAD
_	ELGIN, ILLINOIS 60123
Contact Person:	TOM SANDS
- Title:	BRANCH MANAGER
Telephone number:_	(407) 736-1339
Facility Address:	LOT 46B
	QUANTUM INDUSTRIAL PARK
	BOYNTON BEACH, FLORIDA 33426
Facility EPA ID:	FLD 984167791
***************************************	***************************************
Insurance Company:	
Address:	
Contact Person:	
Telephons number:	
Policy Number:	
Expiration Date:	
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Signature:	Layce Nemuckson
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#### FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

HAZARDOUS WASTE TRANSPORTER STATUS SHEET

Transporter Name:	SAFETY-KLEEN CORP.
Mailing Address:	777 BIG TIMBER ROAD
· · · · · · · · · · · · · · · · · · ·	ELGIN, ILLINOIS 60123
Contact Person:_	JORGE CARVAJAL
Title:	BRANCH MANAGER
Telephone number:	(305) 591-9409
Facility Address:	7875 NW 54TH STREET
· · · · · · · · · · · · · · · · · · ·	MIAMI, FLORIDA 33166
-	
Facility EPA ID:_	FLD 980840086
	*
Insurance Company:	
Address:	
Contact Person:	
Telephone number:	
Policy Number:	
Expiration Date:	· · · · · · · · · · · · · · · · · · ·
Joy Completed by: Wil	ce Henrickson lis Corroon Corporation of Illinois Date: 1/6/92
(Plea	ise print or type)
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#### FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

HARARDOUS WASTE TRANSPORTER STATUS SHEET

Transporter Name:	SAFETY-KLEEN CORP.
Mailing Address:_	777 BIG TIMBER ROAD
	ELGIN, ILLINOIS 60123
-	
Contact Person:	JORGE CARVAJAL
Title:	BRANCH MANAGER
Telephone number:	(305) 591-9409
Facility Address:	EAST OF NW 89TH AVE., AND NW 96TH STREET
	MEDLEY, FLORIDA 33166
-	
	FLD 984171694
Facility EPA 1D:_	
Insurance Company:	
Address:	
Contact Person:	* <u></u>
Telephone number:	
Policy Number:	
Expiration Date:	
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#### 13112.29/TSK10/02/PARTBCOV.PGS/PJH/1/122091

#### PART II

#### **CONTAINERS**

The Group

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All containers are transported, moved, and stored carefully in an upright position. In the warehouse area, the immersion cleaner, mineral spirits dumpster mud drums, spent antifreeze, and FRS wastes are moved with two-wheel hand trucks and stacked by hand, and the dry cleaning waste containers are stacked by a jib crane and moved by a pallet jack. The immersion cleaner, dry cleaning waste, spent antifreeze, FRS, and paint wastes will be elevated on pallets whenever possible to eliminate the possibility of containers standing in spilled solvent.

The containers are designed and constructed to be compatible with the stored material and to minimize the possibility of breakage and leakage, in accordance with DOT Shipping Container Specification Number 5B. Exhibits I.E.3-1 to I.E.3-4 describe the detailed construction specifications of the various containers. The container sizes to be utilized are identified in Exhibit I.E.3-4b.

The container storage area for immersion cleaner, mineral spirits dumpster mud, dry cleaning waste, and spent antifreeze, FRS, and paint wastes has adequate secondary containment capacity (4,910 gallons) for handling 6,912 gallons.

#### II.B.2 WASTE COMPATIBILITY

The used immersion cleaner, dry cleaning wastes, spent antifreeze, FRS, and paint wastes are not incompatible with each other, or with other materials handled at this facility, insofar as reactivity is concerned. However, they are the primary source of feed stock for regenerating the clean solvents. Separation of these used solvent and dry cleaning wastes is a standard practice at the Service Center.

All material at the Service Centers is managed in accordance with local fire protection codes and fire department recommendations.

Container storage configurations are shown on Exhibit I.D.3-8.



Revision 0 - 01/13/92

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#### PART III

#### TANK STORAGE



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#### III.A.1 MATERIAL COMPATIBILITY

The facility consists of three aboveground steel tanks (Exhibit III.A.1-1). Used mineral spirits contained in returned containers from the customers are transferred via the wet dumpster into a 15,000-gallon tank until bulk shipment to the recycle center. A 15,000-gallon tank is used to store mineral spirits product. An additional 15,000-gallon tank has been added to store spent ethylene glycol.

Mineral spirits (petroleum naphtha) and ethylene glycol are compatible with the mild steel tank structure; in fact, mineral spirits are often used as a light hydrocarbon coating to prevent rusting of metal parts. As with all petroleum storage vessels, water will accumulate over time due to condensation. The mineral spirits have a specific gravity less than water and the water will accumulate in the bottom of the tank. Ethylene glycol and water are soluble in all proportions and no separate water plume will form in this tank. There is the potential for corrosion of the tank at the product/water interface.

#### III.A.2 TREATMENT PROCESSES

There are no treatment processes at this facility.

#### III.B.1 TANK DESIGN AND OPERATION PROCEDURES

The tanks will be designed and constructed to be compatible with the materials stored in them. Typical construction and installation standards for the aboveground tanks are shown in Exhibits I.E.3-5 and I.E.3-6. All tanks will be vented in accordance with National Fire Protection Association (NFPA) standards, and the tanks will be equipped with high-level alarms. The design and installation of the tank alarm system is shown in Exhibit I.E.3-7 and I.E.3-8. The tank seams will be lapped with full fillet welds. The weld is done with an E70 electrode and can withstand a 4-psi air pressure test (which is performed by the manufacturer) in accordance with Underwriters Laboratories standards. All tanks will be new and unused.



All tanks will be aboveground, underlain by a concrete slab, surrounded by a concrete dike and covered by a roof. Therefore, no surface run-on or precipitation would be in contact with the wastes stored in the tank farm and no run-off collection and management system will be deemed necessary. The exact dimensions and containment capacity of the tank farm are presented in the design and installation assessment report. The dike will be sealed with a chemical resistant coating (Sika-Gard 62 or equivalent). Level gauges (Exhibits I.E.3-7 and I.E.3-8) will be used to measure liquid levels in tanks and float switch-activated automatic high level alarms (which consist of a strobe light and siren) will signal the tank's being 95 percent full. This alarm will allow an operator more than two minutes to stop operations and avoid overfilling the tank. In addition, the gauges of the tank must be read before filling and before and during the filling of a tanker truck (the available volume of which must be noted prior to emptying the tank) to prevent overfilling of the truck. A suction pump equipped with the tanker truck will be used to withdraw used mineral spirits from the tank. No other equipment or standby equipment will be used in the operation of the aboveground tanks. The secondary containment under the tanks and return/fill station must be cleaned within 24 hours of a spill.

Spent mineral spirits from parts washers will be accumulated in the 15,000-gallon aboveground storage tank by transfer through the return and fill station. Containers of spent solvent will be poured into the dumpsters (barrel washers) in the return and fill station, and material in the dumpster will be pumped into the storage tank for spent solvent. The return and fill station will have secondary containment.

The barrel washers will be located within the mineral spirits return and fill shelters. The drawings Exhibits I.E.9(a) through I.E.9(h) provide detailed information on the barrel washers.

Used solvent will be returned from customers via containers and poured into the barrel washers. The barrel will then be placed on roller brushes contained within the barrel



washer. As the machine is turned on, the barrel will rotate on the brush and the outside of the barrel will be cleaned. There will also be a nozzle that sprays a stream of solvent into the bottom of the barrel to clean the inside of the barrel. The machine will be turned off and the barrel removed. The procedure will take approximately five seconds per barrel. The barrel will then be refilled using a pump and nozzle (Exhibit I.E.3-10) similar to a gasoline pump.

The used solvent will go to a sump in the bottom of the barrel washer and will be automatically pumped to the used mineral spirits storage tank. There is a basket in the sump that collects sludge. Approximately twice a day, this basket will be removed and sludge will be removed and placed into a sludge container for recycle.

The barrel washer will be a totally enclosed unit. A small amount of mist will be generated while operating the unit. This will be controlled by closing the lid of the unit.

Material which collects in the tank dike and return/fill station can be removed using a "wet/dry" vacuum, sorbents, or mop.

No smoking signs will be posted on the entrances to the tank farm and return/fill station.

#### III.B.2 INSPECTION PROCEDURES

See Section I.E.4.

#### III.B.3 CLOSURE PLAN

A Closure Plan for the entire facility is presented in Section I.F.



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## 13112.29/TSK10/02/PARTBCOV.PGS/PJH/1/122091

## PART IV

## SUBPART BB

Revision 0 - 01/13/92

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#### FEDERAL EXPRESS

August 1, 1991 91 MH-227

Mr. James H. Scarbrough, P.E., Chief RCRA and Federal Facilities Branch Waste Management Division - U.S. EPA/ Region IV 345 Courtland Street NE Atlanta, GA 30365

Subject: RCRA Air Emissions Standards Tallahassee, FL Service Center (3-079-02)

Dear Mr Scarbrough:

This letter has been prepared to forward information as required under 40 CFR 270.24 and 270.25 for the above referenced facility.

Safety-Kleen's Tallahassee facility does not have process vents to which subpart AA of part 264 applies, so section 270.24 is not applicable.

The following information is required under section 270.25:

#### 270.25(a)

- 1. Equipment is associated with the 15,000 gallon used mineral spirits tank and the proposed 15,000 gallon used antifreeze tank.
- 2. A site plan identifying the hazardous waste management units at the facility is enclosed. Also enclosed are complete equipment inventory forms listing each piece of regulated equipment.
- 3. Types of equipment include pumps, flanges and valves.
- 4. The hazardous waste streams are spent mineral spirits and spent antifreeze which can be considered to contain 100 % organics. The spent antifreeze, however, can contain up to 1/3 water.
- 5 The hazardous waste state of mineral spirits and antifreeze is liquid.

6. The equipment is considered to be heavy liquid service (mineral spirits vapor pressure is 2 mm Hg or 0.01 kPa). Compliance with the standard (264.1058) will be achieved through daily facility inspections and, if required, leak detection monitoring and repair. A copy of the daily inspection record and leak detection and repair record for equipment is enclosed.

Sections 270.25(b), (c), and (e) are not applicable to Safety-Kleen's Tallahassee Facility.

270.25(d)

Safety-Kleen maintains in the facility, an operating record. this record provides a place by which the required information is recorded under 264.1064. The enclosed forms and plans contain the necessary information.

Please note, the ethylene glycol tank has not been constructed. Since the design of the tanks and piping configurations generally conform to a standard configuration, a proposed piping isometric is in the process of being prepared. This drawing and associated information will be forwarded immediately upon completion.

Thank you for your patience in this matter. I am available on extension 2228 if you have any questions or require further information.

Sincerely,

lisse Kulmh

Melissa Hlebasko Environmental Permit Writer

cc: S. Zazalli, EPA Region VI Branch Manager (3-079-02) J. Hartline F. Stockbarger C. Norton B. Kellenberger, FDER Part B File Chron. File



					PAGE /
		PUMP L	_IST	DATE BRANCH # PREPARER' SIGNATURE	JULY 31, 1991 3-079-02 s Mithlan
	PUMP NUMBER	PUMP DESCRIPTION		HAZARDOUS WASTE MANAGEMENT UNIT	LOCATION
	2	2" RECIRCULATINI-		PLUCICARE EQUIPAN	Refer to site plan and piping isometric drawings
	E	USED SOLVENT		· · · · ·	
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				· · · · · · · · · · · · · · · · · · ·	

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		•	VALVE LIST	DATE BRANCH & PREPAREF SIGNATUF	TULY 31, 1991 3-097-02 RE M-Halm
VALVE SIZE	INDI∨IDUAL ∨AL∨E NUMBER	VALVE TYPE	HAZARDOUS WASTE MANAGEMENT UNIT		LOCATION
2 ''	. /	BALL	ANCILLARY EQUIPMENT (BARREL WI ANCILLARY EQUIPMENT RETURN T FIL	ASHER R	efer to site plan and iping isometric drawings
11/2"	3	BALL	<i>' ' ' ' ' ' ' ' ' '</i>		
11/2"	4	BALL	11		11
211	5	GATE	11		()
2"	6	GATE	,/		11
2"	9	CHECK	1/		) (
3 ''	12	GATE	SPENT MINERAL SPIRITS TANK		1(
3''	13	CHER	· · · · · · · · · · · · · · · · · · ·		//
3 "	15	CHECR	11		l(
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			FLANGE LIST	PAGE / TE <u>TOLY 31, 1991 -</u> ANCH # <u>3 · 07 7 - 0,2</u> EPARER'S <u>M 446</u>
FLANGE SIZE	INDIVIDUAL FLANGE NUMBER	FLANGE TYPE	HAZARDOUS WASTE MANAGEMENT UNIT	LOCATION
 3"	/_	CAMLAK	SAENT MINECAL SPIRITS TANK	Refer to site plan www.
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#### EQUIPMENT INVENTORY

TO BE FILLED OUT AT THE BRANCH AND KEPT IN THE OPERATING RECORD (FILE 1070) WITH THE SITE PLAN AND PUMP AND VALVE LIST

Listed on the attached pump list and valve list is all equipment at the facility which is subject to the requirements of 40 CFR 264 and 265, Subpart BB. The equipment is also identified on the attached site plan.

The hazardous waste influent to and effluent from the hazardous waste management unit(s) is spent mineral spirits (D001, D004-D011, D018, D019, D021-D030 and D032-D043). Tanks are used for storage of spent mineral spirits which is usually 100% by weight organic. The vapor pressure of mineral spirits at 68° F is 0.27 kPa (equivalent to 2 mm Hg - see MSDS and the attached EPA guidance document page). The waste stream has a vapor pressure equal or lower than that of the clean mineral spirits due to contamination during use with oil, grease and sediment and it is in a liquid state at the equipment, so all equipment is in contact with materials defined as heavy liquid under the cited regulations.

Equipment associated with the waste antifreeze tank(s) is also in heavy liquid service. Ethylene glycol has a vapor pressure at 68<sup>OF</sup> of .08 mm Hg or 0.01 kPa and is usually 100% organic.

Compliance with the standard (264.1058) will be achieved through daily facility inspections, and if required, leak detection monitoring and repair. The facility inspection record has been updated to include a detailed daily equipment inspection. Records of equipment monitoring and repair are maintained on a separate form in the operating record.

EOUIPM	ENT T.D.#	BRANCH #	
DESCRI	PTION		
		DATE	INSPECTOR'S SIGNATURE
HOW WA LEAK D	S POTENTIAL OR ACTUAL ETECTED?	······	
DESCRI ACTUAL	BE THE POTENTIAL OR LEAK:		1 • •
INSTRU FIVE D	MENT MONITORING WITHIN	 ł	
(1.)	RESULTS		
REPAIR	ATTEMPT		<u> </u>
(2.)	RESULTS		
REPAIR	ATTEMPT		
(3)	METHOD		
DATE C (must	F SUCCESSFUL REPAIR be completed w/in 15 METHOD RESULTS	days)	
FOLLOW	UP MONTHLY MONITORING	FOR VALVES	
(5.)	RESULTS	···.	<b>19<u>-1-1</u>-1</b> -1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1
(6.)	RESULTS	<u></u>	
MONITO	DRING SUMMARY		
		(REFERENCE NUM (1) (2) (3)	BER - SEE ABOV (4) (5)

ATTACH ANY DOCUMENTATION PREPARED BY THE CONSULTANT

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INSPECTION LOG SHEET FOR: Daily Inspection List of EQUIPMENT

\_\_\_\_

INSPECTOR'S NAME/TITLE:

INSPECTOR'S SIGNATURE:

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<u></u>			м	ON	τυ	ES	W	ED	ТН	URS	F	RI
DATE: TIME:	(M/D/Y)											
Pump,	Valve or	Flange	Number	•						. •		
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28		* * * * * * * * * * * * * * * * * * * *		<b>A A A A A A A A A A A A A A A A A A A </b>	N N N N N N N N N N N N N N N N N N N	<b>AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA</b>	~~~~~	<b>AAAAAAAAAAAAAAAAAAAAAAAAAAAAAA</b>		<b>AAAAAAAAAAAAAAAAAAAAAAAAAAAAA</b>	
-	30 31 32 33 34 35		А А А А А	N N N N N	A A A A A	N N N N N	A A A A A A	N N N N N	A A A A A	N N N N N	A A A A A A A	N N N N N

If "N", enter pump, valve or flange #\_\_\_\_\_ and circle appropriate problem: potential leak, actual leak, sticking, wear, does not operate smoothly, other:

For all leaks and potential leaks, the Leak Detection and Repair Record <u>must</u> be completed.

A = ACCEPTABLE

N = NOT ACCEPTABLE

United States Environmental Protection Agency

Ak

Office of Air Quality Planning and Standards Research Triangle Park NC 27711 EPA-450/3-89-021 July 1990

SEPA

# Hazardous Waste **TSDF** - Technical **Guidance Document** for RCRA Air Emission **Standards for Process** Vents and Equipment Leaks

REPRODUCED BY

U.S. DEPARTMENT OF COMMERCE NATIONAL TECHNICAL INFORMATION SERVICE SPRINGFIELD, VA 22161

	VP @ 20°C, k	kPa (mma Hg)	Most appropriate analytical method
Halogenated Solvents Methylene chloride 1,1,1-Trichloroethane Trichloroethylene Perchloroethylene	45.2 2.3 7.8 1.7	(340) (17) (59) (13)	- EPA Method 8240 EPA Method 8240 EPA Method 8240 EPA Method 8240
Methyl ethyl ketone	9.4	(70.6)	EPA Method 8240
Methyl isobutyl ketone	2.1	(15)	EPA Method 8240
Toluene	5.1	(38)	EPA Method 8240
Acetone	24.6	(185)	EPA Method 8240
Xylene(s)	1.3	(9.5)	EPA Method 8240
Mineral spirits	0.27	(2.0)	ASTM E 260
Alcohols Isopropyl alcohol Methanol Ethanol	4.1 12.7 5.9	(31) (96) (44)	ASTM E 260 ASTM E 260 ASTM E 260

TABLE 6-3. VAPOR PRESSURES OF COMMENT SOLVENTS

VP = vapor pressure.

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6-13

## VOC Air-Emissions Calculations

		1,1,1-							
	Hethylene	Trichloro	Trichloro	Perchloro	Mineral				
	Chloride	ethane	ethylene	ethylene	Spirits	Acetone	Toluene	Methanol	Ethanol
Atmos. pressure (mm Hg):	760.0	760.0	760.0	760.0	760.0	760.0	760.0	760.0	760.0
Unit weight of air (lbs):	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Ambient temperature (of):	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0
Vapor press. VOC (mm Hg):	311.5	101.9	59.0	12.7	1.28	177.21	21.80	93.74	42.27
Holecular weight of VOC:	84.9	133.4	131.4	165.8	150.0	58.08		32.04	46.07
	•••••		•••••	:,					
(1) Partial pressure air =	448.5	658.1	701.0	747.3	758.7	582.8	738.2	666.3	717.7
(2) Hole fraction of air =	0.590	0.866	0.922	0.983	0.998	0.767	0.971	0.877	0.944
(3) Pound-moles of air =	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034
(4) Pound-moles, total =	0.058	0.040	0.037	0.035	0.035	0.045	0.036	0.039	0.037
(5) Pound-moles of VOC =	0.024	0.005	0.003	0.001	0.000	0.010	0.001	0.005	0.002
(6) Pounds of VOC =	2.03	0.71	0.38	0.10	0.01	0.61	0.00	0.16	0.09
					• •		1		
(7) VOC CONC. PPN (VOL.) =	409,922	134,050	77,609	16,743	• 1,688	233,176	28,678	123,347	55,622
(8) VOC CONC. PPH (WGT.) =	670,455	415,916	276,010	88,717	8,668	378,495	0	134,537	85,561



6440 Hillcroft, Suite 200 P.O. Box 740038, Houston, Texas 77274, Tel. 713/772-0876, Fax: 713/981-7713

91-219

#### TANK SYSTEM CERTIFICATION

I have supervised the design and installation assessments dated November 21, 1991, of the used antifreeze storage tank system at the Safety-Kleen Corp. facility in Tallahassee, Florida. The EPA ID Number for this facility is: FLD982133159.

With regard to this duty, I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all related attachments and that, based on my observations and my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

> Wendell R. Vines Registered Professional Engineer Florida No. 37464 TERA, Inc. P. O. Box 740038 Houston, Texas 77274

Signed: Date:



6440 Hillcroft, Suite 200 P.O. Box 740038, Houston, Texas 77274, Tel. 713/772-0876, Fax: 713/981-7713

> November 21, 1991 91-219

SAFETY-KLEEN CORPORATION 777 Big Timber Road Elgin, Illinois 60123

Attention: Ms. Melissa Hlebasko

Subject: Design and Installation Assessments Used Antifreeze Storage Tank System Tallahassee, Florida

Dear Melissa:

Submitted here is our design and installation assessments report for the used antifreeze storage tank system at your Tallahassee facility. The main report body summarizes assessment results in a format corresponding to the rules being addressed. Appendices are used for presenting detailed information.

We have enjoyed working with you on this interesting project, and look forward to another opportunity to be of service to Safety-Kleen. Please contact us at 713/772-0876 if you have any questions.

Very truly yours,

TERA, Inc.

udul MI.

Wendell R. Vines, P.E. President

WRV/lf

Enclosures: Eleven (11) Copies

DESIGN AND INSTALLATION ASSESSMENTS USED ANTIFREEZE STORAGE TANK SYSTEM TALLAHASSEE, FLORIDA

\* \* \*

For

SAFETY-KLEEN CORP. Elgin, Illinois

\* \* \*

Ву

TERA, Inc. Houston, Texas

November 1991

91-219

– TERA, INC. –

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6

This report documents the design and installation assessments for the used antifreeze storage tank system at the Safety-Kleen facility in Tallahassee, Florida. The assessments described here are written to address the requirements of 40 CFR 264.192 and 40 CFR 264.193, and Florida DER Regulation 17-30.180.

#### SYSTEM DESCRIPTION

Used antifreeze liquids will be received from offsite generators in tank trucks. The hose from the truck is connected to a tanker hookup located in the secondary containment of the tank farm enclosure. The truck pump transfers the used antifreeze via aboveground piping into an aboveground steel storage tank of 15,000-gallon capacity. Accumulated used antifreeze will be evacuated periodically from this tank via a tank truck pump through the aboveground piping to the tank truck for transport to an offsite recycling center. Sludge and solids that accumulate in the tank will be removed periodically through a manway for offsite disposal. All of the ancillary equipment for this system is located in the tank containment area.

For the purpose of this assessment, the used antifreeze storage system has been defined to include the storage tank, the aboveground piping, the ancillary equipment, and the secondary containment system for these components.

The 15,000-gallon storage tank for the used antifreeze is a horizontal tank with integral saddle supports. The tank is located inside a steel-reinforced concrete containment area which is coated for impermeability. The used antifreeze storage tank is vented to the atmosphere. Tank liquid level is to be monitored daily by reading a level indicator. The tank is also equipped with a high level alarm to provide

#### SYSTEM DESCRIPTION (Continued)

a warning to service center personnel that the tank is approximately 95% full. Emergency venting is to be provided by a 24-inch loose-bolt manway on top of the tank.

Documents further describing the used antifreeze storage system are attached at Appendix A.

A regional topographical map for Tallahassee, Florida, and a site plan for the facility are shown on Plates 1 and 2. A Flood Map is shown on Plate 3. A schematic drawing of the used antifreeze storage tank system is shown on Plate 4.

#### CONSIDERATIONS OF DESIGN ASSESSMENT

1. <u>Design Standards</u> (40 CFR 264.192(a) and 40 CFR 264.193))

Design standards and materials of construction were determined from construction drawings for the system. Information made available for this purpose is listed in Appendix A.

This tank system design has been reviewed for compliance with the following applicable codes:

- Underwriters' Laboratory, UL 142, Standard for Steel Aboveground Tanks for Flammable and Combustible Liquids, 6th Ed. (tank)
- American Concrete Institute, ACI 318-89, Building Code Requirements for Reinforced Concrete (containment)
- American Society of Civil Engineers, ASCE 7-88, Minimum Design Loads for Buildings and Other Structures, (Formerly ANSI A58.1) (tank environmental response analyses).

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1. <u>Design Standards</u> (40 CFR 264.192(a) and 40 CFR 264.193)) (Continued)

Calculations, discussions and checklists which evaluate compliance with these codes for primary considerations are given in Appendix B. The design review shows that:

- the design substantially conforms to the standards referenced above;
- the design standards are appropriate for this application.

Descriptions of the concrete coating and caulking materials and application procedures used by Safety-Kleen for the tank secondary containment are referenced in Appendix A. This information indicates that the materials should be satisfactory for the intended service, provided recommended procedures were followed by the applicator.

The conclusion upon review of the documents is that the design of the used antifreeze storage tank system is appropriate for the intended service. The structural system, support, and seams appear to be adequately designed.

2. <u>Hazardous Characteristics of the Waste</u> (40 CFR 264.192(a)(2) and 40 CFR 264.193))

The waste material to be collected and stored by this system will be antifreeze liquids which consist primarily of ethylene glycol and water picked up in various automotive service centers. The material is a single-phase liquid at ambient temperatures. Documentation describing the waste material is included in Appendix C.

2. <u>Hazardous Characteristics of the Waste</u> (40 CFR 264.192(a)(2) and 40 CFR 264.193)) (Continued)

The primary hazardous characteristic of the waste is toxicity by characteristic leaching procedure standards (D004-D011, D018, D019, D021-D030, D032-D043), EPA Hazard Code E.

3. <u>Corrosion Protection</u> (40 CFR 264.192(a)(3))

The steel tank, protected with a paint coating on its exterior, is inside an enclosure. All associated piping is also painted and inside the enclosure.

System components are not provided with internal corrosion protection.

A literature search by TERA for test data which confirms compatibility of the waste antifreeze and water mixture with the carbon steel elements of this tank storage system has not been fruitful. However, due to the usual presence of rust inhibitors in manufactured antifreeze and the world-wide use of antifreeze mixed with water as a coolant for internal combustion engines, there is ample reason to believe that the used antifreeze stored in this tank system is not corrosive to steel alloys.

Safety-Kleen states that they have been intensively investigating all aspects of the marketing, handling, and storage of used antifreeze for the past three years. The company reportedly has conducted extensive chemical analyses of the various compositions of used antifreeze expected to be stored in this system and has evaluated the compatibility of used antifreeze with the usual materials of construction normally employed for a hazardous

3. <u>Corrosion Protection</u> (40 CFR 264.192(a)(3)) (Continued)

waste storage system at their service centers. Safety-Kleen has determined that used antifreeze is compatible with those materials without the need for special liners or other protection against internal corrosion. A letter from Safety-Kleen is included in Appendix C.

External metal components of this tank system are not in long-term contact with soil or water. Therefore, the tank system will not require cathodic protection.

It is therefore concluded that the used antifreeze waste materials are sufficiently compatible with the system materials of construction to not require additional corrosion protection.

#### 4. <u>Effects of Vehicular Traffic</u> (40 CFR 264.192(a)(4))

No underground components are used in this system, and no adverse effects from vehicular traffic under normal conditions have been identified.

5. <u>Foundation Design</u> (40 CFR 264.192(a)(5))

The foundation support for the used antifreeze storage tank is provided by a reinforced concrete slab. As shown in the calculations included in Appendix B, the foundation design for the new tank components appears to be sufficient to maintain a full liquid load. The branch site is in a zone of low seismic activity (Zone 0 from ASCE 7-88). The tank will not require special anchorage for earthquakes or for wind loads. See Appendix B for calculations.

#### 6. <u>Tank Installation Assessment</u> (40 CFR 264.192)

#### A. Installation Inspection

After installation and prior to being placed in service, the new tank system was inspected by TERA for defects and compliance with the design documentation. No discrepancies were identified between design documentation and observed features of the tank system. No indications were found of any weld breaks, punctures, scrapes of protective coatings, corrosion, structural cracks. damage or inadequate construction or installation. The tank and piping wall thicknesses were also verified by ultrasonic thickness measurements. Documentation of the inspections performed is included in Appendix D of this report.

#### B. <u>Tightness Testing</u>

The new tank system components were tested for tightness prior to being placed in service. Tightness testing consisted of pneumatic leak testing of the tank and system piping. Documentation of the testing performed is included in Appendix D. There was reportedly no evidence of leakage from any of the system components during final tightness testing.

#### SECONDARY CONTAINMENT ASSESSMENT

The following paragraphs give a detailed comparison of containment system features to current requirements. This evaluation considers only the used antifreeze tank system. For brevity, "secondary containment" as used here means features that meet the requirements of 40 CFR 264.193.

1. <u>Required Date</u> (40 CFR 264.193(a)(3))

Since this system is new, secondary containment is required prior to placing the tank system in service. As discussed in subsequent paragraphs, secondary containment has been provided.

2. <u>Materials Compatibility</u> (40 CFR 264.193(c)(1))

The waste material collected and stored by the system is to be a used antifreeze liquid which consists primarily of ethylene glycol and water received from various automotive service operations. The primary hazardous characteristic of the waste is toxicity. As noted earlier, this material is compatible with and not corrosive to the system materials of construction (primarily concrete, polyurethane caulking, epoxy coating and carbon steel).

3. <u>Strength</u> (40 CFR 264.193(c)(1))

The most critical strength requirement for the floor slab of the tank containment structure is to be its service as foundation support for the used antifreeze tank when full (used antifreeze has a higher specific gravity than either clean or used solvent). Loading from the tank is higher than any expected hydrostatic pressure. As shown in the calculations in Appendix B, the strength of the floor slab appears to be adequate.

#### <u>SECONDARY CONTAINMENT ASSESSMENT</u> (Continued)

3. <u>Strength</u> (40 CFR 264.193(c)(1)) (Continued)

The most critical strength requirement for the concrete containment walls is from hydrostatic pressure with the containment full of ethylene glycol. As shown in Appendix B, the strength of the containment walls appears to be adequate.

The pressure containment capacity of the piping and other ancillary equipment items was reviewed and found to be adequate for the intended service.

4. <u>Foundation</u> (40 CFR 264.193(c)(2))

The foundation for the secondary containment vault, tanks and their contents is the soil subgrade and aggregate subbase described in Appendix A. A check of the subgrade bearing pressure shows maximum loads on the subgrade to be less than specified bearing capacity (see Appendix B).

5. <u>Leak Detection</u> (40 CFR 264.193(c)(3))

All components of this system are aboveground and are directly accessible for visual inspection.

6. <u>Liquid Removal</u> (40 CFR 264.193(c)(4))

The tank containment system is sloped to drain to a sump at the end of the containment structure. Liquid removal is accomplished by hand pumps or vacuum trucks.

#### SECONDARY CONTAINMENT ASSESSMENT (Continued)

#### 7. <u>Device Requirements for Vault</u> (40 CFR 264.193(e)(2))

As shown by the calculations in Appendix B, containment for the tanks will have a design volume sufficient to hold 100 percent of the used antifreeze tank capacity. Since the system is inside an enclosure, additional containment for rainfall is not required; however, calculations in Appendix B show adequate volume without the enclosure to also hold a 25-year, 24-hour rainfall. Therefore, containment capacity for the storage tank system is considered sufficient.

Chemically-resistant waterstops were formed where necessary at joints in the concrete walls by the application of Sika Flex-la joint sealant, described by concrete construction details and manufacturer's literature in Appendix A. There are a few hair line cracks in the walls that will require repair.

The tank concrete containment structure for the tanks has been coated with Sikagard 62, epoxy coating. As show in the manufacturer's literature in Appendix A, this material is expected to be impermeable to and compatible with the waste antifreeze being stored. There are pinholes in the coating material exposing bare concrete that require repair.

#### SECONDARY CONTAINMENT ASSESSMENT (Continued)

#### 8. Ancillary Equipment (40 CFR 264.193(f)(1))

The piping for the used antifreeze system is aboveground. All ancillary equipment including piping are located within the containment structure. The pressure containment capacity, support, and protection of ancillary equipment appears to be designed satisfactorily.

#### CONCLUSIONS OF ASSESSMENTS

Based on the information presented above and included in this report, the used antifreeze storage system at the Safety-Kleen facility in Tallahassee, Florida, appears to have been adequately designed to have sufficient structural strength and to be sufficiently compatible with the wastes being stored to not leak, collapse, rupture, or fail in their intended service. No evidence of damage, defects or improper installation was found in the primary containment components, and tightness test records show no indications of leakage. A secondary containment system is provided that appears to meet the requirements of 40 CFR 264.193, except that hair line cracks and pinholes in the secondary containment walls should be repaired before the system is put into service.

## **ILLUSTRATIONS**

– TERA, INC. –

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## **ILLUSTRATIONS**

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Site Plan	2
Flood Insurance Rate Map	3
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## APPENDIX A

Design Documentation

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#### APPENDIX A

#### Design Documentation

The information is this Appendix was provided by Safety-Kleen to TERA for purposes of this design assessment as being representative of in-place details. The inspection was limited to externally visible features and showed general conformance to these drawings. Where non-accessible details were needed in the assessment, such as reinforcement of concrete, they were assumed to be as shown here.

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Drwg. No. C11302	A-8
Caulking & Coating Literature	A-9


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CENTER BRANCH





GENERAL NOTES

- 1. POVER REQUEREMENT 13 TO 28 YDC
- 2. CUTTUT 4 10 = (ALARM STATE) 13 25 = (NORMAL STATE)
- 3. OPENATING TEMP. -40\*F TO +140\*F
- SELELD-TO-CROUND LOADING: 25 one XIN. RESISTANCE
- RFI EFFECT: LESS THAN 2 PF SHIFT IN OPERATING POINT FOR UNIT IN EXPLOSION-PROOF BOUSING FROM 5 Y FIELD & 27, 150, CR 450 HL, AT A. DISTANCE OF 5 FT. FROM ELPOSED CABLE OR SIGNAL WIRE.
- FAIL-SAFE: SWITCHABLE OR EITHER LOW-LEVEL FAIL-SAFE (LLFS) OR EIGH-LEVEL FAIL SAFE (ELFS).
- BOUSING: REMA 12-WATENPROOF EXPLOSION PROOF FOR CLASS I GROUPS A, B, C, D, AND CLASS II GROUPS E, F, C DW, 1 OK 2.
- SEE INDIVIDUAL SERVICE CENTER SITE PLANS FOR RELATIVE LOCATIONS OF THESE DETAILS.
- CONTRACTOR TO SUPPLY & INSTALL CONDUCT SUPPORTS & BRACKETS AS REQUIRED.
- THIS DRAVING CONTAINS INFORMATION PROPRIETARY TO SAFETY-KLEEN CORP. ANY REPRODUCTION, DISCLOSURE OR USE OF THIS DRAVING IS EXPRESSLY PROBLEMED BY
- 11. ALL ITENS SHOWN WITH A SAFETY-KLEEN PART MURBER VILL BE SUPPLIED BY SAFETY-KLEEN \_CORP. (e.g. 5-K----)
- 12. IF INDIVIDUAL SERVICE CENTER CONDITIONS ARE NOT COVERED BY DETAILS SHOWN HERE. PLEASE CONTACT TECHNICAL SERVICES AT THE CORPORATE OFFICE FOR ASSISTANCE.
- A 13. CALCULATIONS FOR LENGTH OF PROSE INSIDE OF TANK ARE BET TO ACTIVATE THE NAME. AT THE 95% VOWING LEVEL.
- A TALL CALERATION OF ULIT SHALL BE TOLE IN ACCORDANCE WITH OPEXALDROOKS RECOMMEDIATIONE, CALERATION SHALL DE DOLE AFER ALL COMPONENTE OF SYSTEM ARE IN RUACE. A
  - 15. ALL TALKS SHALL BE GROUNDED PHOR

91-219 A-4

A ACTED DETAILS & CHANGED CONDIT D	يد مدر ا ده
UN YER & HOR. TANK INSTALLATION	C Ima 17-22
ASD EXPLOSION PROP SEAL OPS HOTE	26 2 3.1
A CITAHUES PROSE PEPTY NOTE 13	248 (11-13-1)
🥰 satelų kleen corp.	
TTT BO THERE HOAD & BLORE BLOOK BUT23	PHONE 21 21 847 44 11
HIGH LEVEL ALARM SYSTEM TH TO TANK INSTALLATION DETA	ANSMITTER
- 6.11.53 . mm CHALT & MAL INA	23 757
PN 16" O WAS 18"; 24" was 18"	22
- 201 - 10 0 Was 18"; 24" was 18"	

# Only Varec's Figure 2500 Series Gauges Offer All These Features As Standard Equipment



## Standard General Features

- "A" Frame mounting of gauge moroves accuracy.
- Rugged, circular, stainless-steel encased foam glass float.
- "Harness-hitch" guickly connects float ... tape and neg'ator motor may be attached to the r drums without use of tools.
- All metals and materials exposed to product are corrosion resistant; internal components are estner aluminum or stainless-steel.

Varec offers a complete line of accessory devices including electric limit switches; automat 2 temperature bulb selection switches; liquid-level pneumatic transmitters; electronic analog liquid-level transmitters and pulse Code digital liquid-level transmitters.

Simplified design with fewer parts provides guick, simple access all parts.

Varec supplies a complete package except for interconnecting tape piping.



Counter compartment can be independently oil-filled.



Removable counter cover.

Improved VISADIAL readout provides precise at-a-glance digital readings to 1/16 inch, utilizing conventional scale. Minimizes the possibility of parallax.

Constant force neg'ator motor powered for sure, dependable operation.



Positive operation checker tests gauge operation.



Self-adjusting tape keeper.



Top mounting tape outlet standard on universal gauge head.



Tape sprocket sheave.



Master gland in gauge head improves bearing load and sealing characteristics.



Gauge head, as well as counter compartments, can be independently oil-filled.



Tape outlet is provided as standard for ground level or top mounting.



Removable back cover.



Accessory devices are easily mounted on the back of the gauge head.



Drain plugs provided.

Teflon bearings as standard.



## OPERATING DESCRIPTION

Varec's Fig. No. 2500 Model B Series Gauge is designed to measure liquid level in all types of low pressure cone roof, floating roof and underground tanks. It is available for pressure ranges to 50 psig on tanks to 60 feet<sup>1</sup> in height. The gauge combines simple, proven operation with important design innovations to make low pressure gauging easy and accurate at low cost.

The gauge is float-actuated and measures changes in liquid level as a function of float travel. The float acts upon a counter-balanced, non-graduated, perforated tape which moves a dial-counter. The gauge's new large, circular 316 stainless steel, jacketed float is non-sinkable, using an improved foam-glass material that is corrosion-resistant.

The Varec gauge is gas-tight and **powered by** a neg'ator motor that maintains constant tension from initial to entire deflection. **Dial and counter reading** eliminates possibility of error inherent in reading old-type devices using a graduated tape. The counter assembly is independent of the main gauge head housing. This permits independent adjustment of counter assembly without the need of entering the main housing. A unique operation checker provides positive testing of gauge operation.

Fig. No. 2500 Model B Series Gauge mounts either at the bottom of the tank as a conventional ground reader, with piping coming in from the top of the gauge head, or at the top of the tank with piping coming in from the bottom ... without requiring modification or attitude change of the gauge.

An "A"-Frame bracket firmly supports the gauge head apart from the tank in conventional "at grade" mounting as a ground reader. This eliminates the possibility of measurement error due to vertical shift and permits "front reading" or "side reading" positioning. The gauge head is also available as a separate unit, and can be used to replace older type tank gauges utilizing graduated tapes.

A new built-in design feature provides for the independent oil filling of the head and counter compartment assembly for applications where continuous lubrication for protection from corrosive elements is desired.

Quality materials and Varec workmanship ensure the unit's long-life and trouble-free operation. The gauge is designed for use in petroleum, petro-chemical, chemical, edible products and other process industries.

#### STANDARD MATERIALS OF CONSTRUCTION

Component	Material
<sup>2</sup> Head-Housing and Sheaves	Aluminum
<sup>2</sup> Elbow-Housings	Aluminum
Tape (Perforations on 1" Centers)	316 Stainless Steel
Support Brackets	Steel
Top and Bottom Anchors	Steel
Guide Wire	316 Stainless Steel
<sup>3</sup> Float	316 Stainless Steel
	Encased foam glass



- Special neglator spring motor available for tank heights up to 96 feet.
- <sup>2</sup> Other materials such as past from, steel and stainless steel available.
- <sup>3</sup> Hollow shell, weided type floats available for various applications.



# Sikagard®62

High-Build Protective Coating

## **Technical Data**



Description:	Sikagard 62 is a 2-component, solvent-free, high-solids, moisture-insensitive epoxy resin. It produces a high-build, protective, dampproofing, and waterproofing vapor-barrier system. Sikagard 62 conforms to ASTM C-881, Type I and IV, Grade 2, epoxy resin.				
Where To Use:	Use as a high-build, corrosion-resistant, protective coating, or as a seamless flooring system on dry and can't-dry substrates.				
Advantages:	<ul> <li>Protects dry and can't-dry substrates.</li> <li>Exceptional tensile strength.</li> <li>Good chemical resistance for long-term protection.</li> <li>Convenient B:A = 1:1 mixing ratio.</li> <li>Easy, paint-like viscosity.</li> <li>Durable, smooth finish permits wipe-off graffiti-removal.</li> <li>Available in 3 standard colors; gray, red, and tan. Special color matches available upon request.</li> <li>Excellent bonding to all common structural substrates.</li> <li>Super abrasion resistance for long-term wear.</li> <li>Sikagard 62, Gray, after cure, is approved for contact with potable water.</li> <li>All colors are USDA-approved for use in food plants.</li> </ul>				
Coverage:	225-400 sq ft/gal (4-7 mils)				
Packaging:	4-gal units; 1-qt units, 12/case.				

Typical Data for Sikao	pical Data for Sikagard 62:		91-219 A-10	
(Material and curing	conditions @ 73F and 50%	R.H.)		
Shelf Life:	2 years in original, unopened containers.			
Storage Conditions:	Store dry at 40-95F. Condition material to 65-85F before using.			
Color:	Gray, red, tan.			
Mixing Ratio:	Component 'A' : Compone	ent 'B' = 1:1 by volume.		
Viscosity:	Approx 2,700 cps.			
Pot Life:	Approx 35 min.			
Application Life:	20-25 minutes.			
Tack-Free Time:	Approx 4 hr.	· · · · · · · · · · · · · · · · · · ·		
Open Time:	Light foot traffic - 5-7 hr. Rubber-wheel traffic - 8-10 hr.			
Immersion and chemical exposure:	3 days			
Tensile Properties (AS	TM D-638):			
14 day Tensile Stru Elongation	ength at Break	6,400 psi 2.7 %		
Ahrasion (Taher Ahrad	pr).			
7 day Weight los: (H-22 whee	s, 1,000 cycles I, 1,000-gm weight)	0.61 gm		
Abrasion Resistance ( <i>I</i>	ASTM D-968):			
14 day Abrasion C	oefficient	51 liters/mil		
Adhesion (ASTM D-33	159):	· ·		
I day Adhesion Cla	assification	4A		
Water Absorption (AS 7 day Total Water (2-hour boil	<b>IM D-570):</b> Absorption )	0.9%		

	<ul> <li>Minimum substrate temperature for application 50F.</li> <li>Do not apply over wet, glistening surface.</li> <li>Material is a vapor barrier after cure.</li> <li>Do not apply to surfaces where vapor can condense and freeze.</li> <li>Do not encapsulate saturated concrete in areas of freezing and thawing.</li> <li>Do not apply to porous surfaces exhibiting moisture-vapor transmission du Consult Technical Service.</li> <li>Minimum age of concrete prior to application is 21-28 days, depending on c conditions.</li> <li>Do not apply to exterior substrate on-gradeepoxy resin coatings will we upon exposure to sunlight.</li> <li>For spray applications only, thin with Sika Epoxy Thinner at 5% by volur when required.</li> </ul>					
Caution:	<b>Component 'A'-Irritant</b> - Contains epoxy resins. Prolonge Avoid eye contact. <b>Component 'B'-Corrosive</b> - Contains amines. Contact w eye contact. Product is a strong sensitizer. Use of safety g recommended. Remove contaminated clothing. A ventilation. Use of a NIOSH/MSA organic vapor	ed contact with skin may cause irritation. with skin may cause severe burns. Avoid oggles and chemical-resistant gloves void breathing vapors. Use adequate respirator recommended.				
First Aid:	In case of skin contact, wash thoroughly with so immediately with plenty of water for at least 15 minu respiratory problems, remove person to fresh air.	ap and water. For eye contact, flush ites; contact physician immediately. For Wash clothing before re-use.				
Clean Up:	<b>Clean Up:</b> Ventilate area. Confine spill. Collect with absorbent material, flush area with water. Dispos in accordance with current, applicable local, state, and federal regulations. Uncured material can be removed with approved solvent. Cured material can only be removed mechanical solutions.					
	KEEP CONTAINER TIGHTLY CLOSED Not for internal consumption Consult material safety data shee	KEEP OUT OF REACH OF CHILDREN For Industrial USE only T for More Information				
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91-219 A-11

#### **Chemical Resistance:**

Specimen: Two coats- 10 mils Cured 10 days Substrate: asbestos cement

CHEMICAL	TEST	STORAGE TIME AND EVALUATION				
CHEMICAL	IEMP.	1 Day	1 Month	2 Months	6 Months	12 Months
Water	75F 100F	A	A	A	A A	A
	140F	A	A	A	A.D	A.D
Sodium Chloride Solution	75F	A	A	A	A	A
(Saturated)	100F	A	A	<u>A</u>	A	A
Sodium Hydroxide 30%	75F	А	A	A	A	A
Cement Water (Saturated)	75F	А	A	A	A	A
Detergent Solution (5% Ajax)	75F 140F	A A	AA	A A	A A.D	A A.D
Hydrochloric Acid 10%	75F	A	A	A	A	A
Sulfuric Acid 10%	75F	A	A	А	в	в
Oxalic Acid 10%	75F	А	A,D	A,D	A.D	A.D
Citric Acid 10%	75F	А	A,D	A,D	A.D	A,D
Fuel Oil (Home Heating)	75F	А	А	A	A	A.D
Gasoline (Unleaded)	75F	А	A	A	A	A,D
Iso-Octane	75F	А	A	A	A	A.D
Toluol	75F	А	A	A	A	A.D
Silage	75F	A	A	A,D	A.D	B.D
Synthetic Silage	75F	А	A	B.D	B.D	B.D
Liquid Manure	75F	A	A	A	A	A,D
Ethyl Alcohol	75F	А	С			_

A: Resistant in permanent contact B: Temporary resistance C: Destroyed D: Discolored

## How To Use

Surface Preparation:	Surface must be clean and sound. It may be dry or damp, but free of standing water. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles, and disintegrated materials. Preparation Work: Concrete - Sandblast or use other approved mechanical means. Steel - Sandblast to white-metal finish.
Mixing:	Pre-mix each component. Proportion equal parts by volume of Component 'A' and Component 'B' into a clean mixing container. Mix with a low-speed (400-600-rpm) drill and Sika paddle for 3 minutes, until uniform in color. Mix only that quantity that can be used within its application life.
Application:	Apply coating using high-quality rollers or brushes, or spray. Two coats are recommended. Apply second coat as soon as the first coat is tack-free and the traffic of application will not damage the first coat. The second coat, however, <b>must</b> be applied within 48 hours since a longer delay will require additional surface preparation. For slip-resistance, add approximately ½ lb/gal of Sikagard 62 Granules to the mixed material and apply as first coat. Saturate roller or brush with material and apply first to a disposable cardboard or other surface to distribute the granules evenly on the equipment. <b>Do not</b> spray with Sikagard 62 Granules in the coating. When spraying, use the following or similar equipment: Binks Model #18 Air Atomized Spray Gun (#68 fluid nozzle, #68 PB air nozzle, #68 fluid needle, #83-5661, 2-gal pressure fluid tank). For Sikagard 62 Flooring System information consult your Technical Data Sheet or call Technical Service.

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# Sikaflex<sup>®</sup>-1a

Elastomeric sealant/adhesive

Technical Data



Description:	Sikaflex-1a is a premium-grade, high-performance, moisture-cured, 1-component. polyurethane-base, non-sag elastomeric sealant.					
Where to Use:	<ul> <li>Designed for all types of joints where maximum depth of sealant will not exceed ½ in.</li> <li>Excellent for small joints and filletswindows, door frames, reglets, flashing, and many construction adhesive applications.</li> <li>Suitable for vertical and horizontal joints; readily placeable at 40F.</li> <li>Has many applications as an elastic adhesive between materials with dissimilar coefficients of expansion.</li> </ul>					
Advantages:	<ul> <li>Easy, low-cost, ready to use.</li> <li>Eliminates time, effort, and equipment for mixing, filling cartridges, pre-heating or thawing, and cleaning of equipment.</li> <li>High elasticity - cures to a tough, durable, flexible consistency with exceptional cut- and tear-resistance.</li> <li>Excellent adhesion - bonds to most construction materialswithout primer in most cases.</li> <li>Long life.</li> <li>Excellent resistance to aging, weathering.</li> <li>Proven in tough climates around the world.</li> <li>USDA-approved: chemically acceptable to the U.S. Department of Agriculture for use in meat and poultry processing area.</li> <li>Odorless, non-staining</li> <li>Paintable with water-, oil-, and rubber-base paints.</li> <li>Jet fuel resistant.</li> <li>Meets Federal Specification TT-S-00230C, Type II, Class A.</li> <li>Meets ASTM C-920, Type S, Grade NS, Class 25.</li> <li>Meets Canadian Standard 19-GP-16A, Type II.</li> <li>EPA-approved for potable-water contact.</li> <li>Urethane-based, suggested by EPA for radon reduction.</li> </ul>					
Coverage:	10.3-fl-oz cartridge seals 12.4 lineal ft of ½- x ¼-in. joint. 20-fl-oz uni-pac sausage seals 24 lineal ft of ½- x ¼-in. joint.					
Packaging:	Disposable 10.3-fl-oz, moisture-proof composite cartridges, 24/case, and uni-pac sausages. 20-fl-oz, 20/carton; Available on special order 1.8- and 4.5-gal pails, 50-gal drums, and 10.3-fl-oz uni-pac sausages.					

Colors:	White, colonial white, aluminum gray, limestone, black, dark bronze, capitol tan. Special architectural colors on request.
Shelf Life: 10.3-fl-c 10.3- an 1.8-gal 4.5-gal 50-gal dr	z cartridges12 monthsd 20-fl-oz uni-pac sausages12 monthspails4 monthspails4 monthsums4 months
Storage Conditions:	Store at 40-95F. Condition material to 65-85F before using.
Application Temperature:	40 to 100F. Sealant should be installed when joint is at mid-range of its anticipated movement.
Service Range:	-40 to 167F
Curing Rate:	Tack-free Time6 to 8 hours (TT-S-00230C)Tack-free to touch3 hoursFinal cure5 to 8 days
Recovery	>90%
Shore A Hardness (AS 21 day	「M D-2240): 40± 5
Tensile Properties (AS 21 day	TM D-412):Tensile Stress140 psiElongation at Break700%Modulus of Elasticity25%40 psi50%60 psi100%80 psi
Lap-Shear Strength (A 21 day	STM D-1002), modified, glass substrate50F120 psi73F125 psi122F125 psi
Adhesion in Peel (TT-S Substrate Aluminum Glass Concrete	-00230C): Peel Strength Adhesion Loss 25 lb 10% 20 lb 5% 20 lb 0%
Weathering Resistance:	Excellent
Ozone Resistance:	Exceptional
Chemical Resistance:	Good resistance to water, diluted acids, and diluted alkalines. Consult Technical Service for specific data.
Radon Reduction:	Approximately 97% reduction in radon. Independent laboratory evaluation. Actual results available upon request, consult Technical Service.

Caution: FHSLA Toxicity Test (16 CFR 1500) Primary skin irritant Eye irritant Acute oral toxicity Acute inhalation Acute dermal toxicity	FI C: S E N N N N N N	HSLA Toxicity ategory kin irritant ye irritant on-toxic orally ot toxic by inhalation lot toxic dermally			
Combustible:	Keep away from open flames and high he adequate ventilation.	eat. Contains xylene; avoid breathing vapors. Use with			
Irritant:	Avoid skin and eye contact. Use of NIC goggles, and chemical-resistant gloves shoes.	OSH/MSA approved organic vapor respirator, safety recommended. Remove contaminated clothing and			
First Aid:	In case of skin contact, wash thoroughly with soap and water. For eye contact, flush immediately with plenty of water for at least 15 minutes; contact physician. Wash clothing before re-use. Discard contaminated shoes.				
Clean Up:	Uncured material can be removed with approved solvent. Cured material can only be removed mechanically. For spillage, collect, absorb, and dispose of in accordance with applicable local, state, and federal regulations.				
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Sika and Sikaflex are registe

297 Drawer ;

March, 1990



## How To Use

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Surface Preparation:	Clean all surfaces. Joint walls must be sound, clean, dry, frost-free, and free of oil and grease. Curing compound residues and any other foreign matter must be thoroughly removed. Install bond breaker tape or backer rod to prevent bond at base of joint. Priming is not usually necessary. Most substrates only require priming if testing indicates a need or where sealant will be subjected to water submersion after cure. Consult Sikaflex Primer Technical Data Sheet or Technical Service for additional information on priming.				
Priming:					
Application:	Recommended application temperatures: 40-100F. For cold weather application, store units at approximately 70F; remove just prior to using. For best performance, Sikaflex-1a should be gunned into joint when joint slot is at mid-point of its designed expansion and contraction. Place nozzle of gun into bottom of the joint and fill entire joint. Keep the nozzle in the sealant, continue on with a steady flow of sealant preceding the nozzle to avoid air entrapment. Avoid overlapping of sealant to eliminate entrapment of air. Tool as required. For use in horizontal joints in traffic areas, the absolute minimum depth of the sealant is ½ in. and closed cell backer rod is recommended over open cell to offer greater support.				
Limitations:	<ul> <li>Allow 1-week cure at standard conditions when using Sikaflex-1a in total water-immersion situations.</li> <li>Avoid exposure to high levels of chlorine.</li> <li>Maximum depth of sealant must not exceed ½ in.; minimum depth is ¼ in.</li> <li>Maximum expansion and contraction should not exceed 25% of average joint width.</li> <li>Do not cure in the presence of curing silicone sealants.</li> <li>Avoid contact with alcohol, and other solvent cleaners, during cure.</li> <li>Do not apply when moisture-vapor-transmission condition exists, from the substrate, as this can cause bubbling within the sealant.</li> <li>Use opened cartridges and uni-pac sausages the same day.</li> <li>When applying sealant, avoid air-entrapment.</li> <li>Since system is moisture-cured, permit sufficient exposure to air.</li> <li>White color tends to yellow slightly when exposed to ultra-violet rays.</li> <li>The ultimate performance of Sikaflex-1a depends on good joint design and proper application with joint surfaces properly prepared.</li> <li>Minimum depth of sealant in horizontal joints subject to traffic is ½ in.</li> </ul>				

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APPENDIX B Design Review Documentation

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<u>Page No.</u>

#### APPENDIX B

#### Design Review Documentation

#### TABLE OF CONTENTS

#### <u>Title</u>

#### B- 1 B- 2 B- 5 Winds Loads B- 6 B- 7 B- 8 B- 9 B-10 NFPA 30 - Piping, Valves and Fittings Compliance Checklist . . B-11

91-219 B-1

Gravity Loads, 15k Tan S-K, Tallahassee, FL By: BMW Date: 11/8/91	k	TERA, Ir	nc.	Job No.: File: Sheet:	91-219 Foundation 1 of 4
Ref.: 1. S-K Dwg. No 2. Tank Farm P	. D10570, 1 lan, This 1	Rev. 7, Report	9/12/83		
Tank Self-Weight: D	:= 12 ft	, t1	:= 0.250	in, hl :=	4.0 ft
W	:= 490 pc	f, L	:= 18 ft	:	
Head Weight, Wh (two heads)	$\begin{array}{c} \pi & 2 t \\ \vdots = - D \cdot - \\ 4 & 1 \end{array}$	1 -∙w∙2 2	>	Wh = 2309.072	l lb
Shell Weight, Ws	$:= \pi \cdot D \cdot L \cdot$	t1 w 12	>	Ws = 6927.212	2 lb
Weight of Saddles,	(3 ea.):				
Base Plates,	Bp := $\frac{8}{12}$	$\cdot 12 \cdot \frac{0.5}{12}$	3·w	> Bp = 49	90 lb
Saddle Plates,	Sp := 1.	15.8. <del>1</del> 1 12	3·w	> Sp = 483	3.875 lb
Side Plates,	sp := <sup>8</sup> 12	$h1 \cdot \frac{t1}{12}$	5·w	> sp = 163	3.333 lb
W := Wh + Ws	; + Bp + Sp	+ sp	>	W = 10373	.491 lb
Misc. Fittings & App	ortnces @ 1	0%, Ms	:= 0.1·W	Ms = 1037	.349 lb
Tot. Tank Weight,	Wt := W +	Ms	>	Wt = 11410	.84 lb
Weight Of Contents:	SG	:= 1.07		Γ:= 62	.4 pcf
	V	:= 1500	) gal.,	v := 7.481	gal/cu.ft.
WC	$:= \frac{V}{V} \cdot \Gamma \cdot SG$		->	Wc = 133875.1	5 lb
Total Weight, Tank	And Conten	ts,	Wtc := '	Wt + Wc	
	Wtc = 14	5285.99	lb		

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91-219 B-2 Support Strength, 15k Tank Job No.: 91-219 TERA, Inc. S-K, Tallahassee, FL File: Foundation By: BMW Date: 11/8/91 Sheet: 2 of 4 Ref.: 3. S-K Dwg. No. D11322, Rev. K, 7/27/89 4. ACI 318-89 5. Portland Cement Association Bulletin No. IS029.02P NOTE: Tank is in an enlosed containment area, therefore wind loads are not considered. 7/12 Check Strength Of Slab To Distribute Load: Fd1  $Fdl := 1.4 \cdot (Wt + Wc)$ Factored Dead Load, 8º -las /ATA Fdl = 203400.386lb/ft 8"+2(8") Bearing On Concrete: (3 base plates 8" wide by 12' long) 8 Bearing Area, Ab :=  $3 \cdot - 12$ Ab = 24---> sq.ft. 12 Fdl Bearing Stress, fb = 58.854fb := -------> psi Ab·144 For fc := 3000 psi, and Ø := 0.7 fba := \$\vec{p} \cdot 0.85 \cdot fc \qquad ---> fba = 1785 psi (ref. 4)fba > fb ----> ok

- TERA, INC. -

91-219 B-3



- TERA, INC. ---

91-219 B-4

Support Strength, 15k Ta S-K, Tallahassee, FL By: BMW Date: 11/8/91	ank	TERA, Inc.	Job No.: File: Sheet:	91-219 Foundation 4 of 4
Check Subgrade Bearing:				
Calculate Total Weight H	Resting (	On Soil:		
Wtanks := 224278.8	lb	(weight of other	tanks & con	tents)
Wvault := 192300	lb	(weight of conta	inment vault	)
Wt = 11410.84	lb	(weight of waste	E.G. tank)	
Wc = 133875.15	lb	(weight of waste	E.G.)	
Wb := 2000	lb	(estimated weigh	t of the cove	er)
Ag := 60.3333 25		(gross outside a	rea of vault	)
Ag = 1508.333	sq.ft.			

Studies Conducted (See Ref. 5) Indicate That The Loads Listed Above Will Be Spread Over The Full Area Of The Containment Vault With Only Minor, Localized Bending In The Containment Slab. Based On This, Approximate Subgrade Bearing Is Taken To Be:

Fac :=  $\frac{W \text{tanks} + W \text{vault} + W \text{t} + W \text{c} + W \text{b}}{Ag}$  ----> Fac = 373.833 psf

According To Ref. 2, The Allowable Subgrade Bearing Pressure,

Fal := 2500 psf

Fal > Fac ----> ok

SUBJECT: WING	10405		JOB NO.:
TRULALASSES	FL. EG TANK	🖬 TERA, Inc	FILE: <u>CALCULARON</u>
BY: UK	DATE:		SHEET: OF:
	REE	ASCE 7-33	
FC	R PURPOSE OF	THIS CALCULATIO	I DNUY, BUSORE SHELTER.
DU	ER TANK FARM	1. BY DESER	VATION, WIND LOAD ONS
$\leq$ /	DE OF THNK	CONTROLS (V:	S WIND ON TANK END)
	V= 95	mbh, conserv	atively (Fig. 1)
	I = 1.0	5 5	(Table 5, (at. 1)
	$K_2 = 0.9$	°0	(Table 6, Exp 6.
	$\rho = \rho$	DOZEL & CTV	$)^{2}$ (Fa 3)
	$\int \vec{e} = 0$	00256 (0.9) (10	(23.0)
	= 2	0.38 bsf	
	$G_{1} = I_{1}$	32	(Table 8 Exb.C)
		9	(Table 12 1/0.1 R 1)
	C <sub>4</sub> = 0.	, 0	( ab e e, n b+1, kough)
Fur	$F_{w} = g_{z} G_{h} C_{f}$	$A_{f}$	(T3ble 4)
	= (20,38)(	(1,32)(0,8)(12'7(	(18`)
A	= 2,066	# (Note: Th	HIS IS VERY CONSERVATIVE
FR-W T		IN VIEW	OF PROXIMITY OF OTHER TANK
	Assume RESIS	TING RESSURE	UNDER SUPPORTS IS LINEAR
	E'MA = 0: Fw	$\times (D_{2} + 6") = (1)$	E R-W × 2/3 D)(3 SADDLES)
	2066	= (6,5') = F	(8')(3) = 13429  A-1b
		R-W	# 1
		$F_{R-W} = 560$	per Soddle
	Maximum bea	iring pressure a	tue to wind
	fb-w =	2FR-W/DW	
	=	2(560)/(12')(8	3"/12)
	æ	140 psf ~	Ipsi (so negligible.)
	CHECK STABILITY	, TANK EMPTY	$(W_{1} = 11, 4.10^{\pm})$
	EMA: 11,410 #,	, x 12'/2 = 68,46	0 ft-16 < 13,429
	· • • •	: An	ICHORAGE NOT REQ'O

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Form TRA-1.02 (8/83)

91-219

B-6 91-219 Seismic Analysis, 15k Tank Job No.: File: Calculation S-K, Tallahassee, FL TERA, Inc. 1 of 1 Sheet: By: BMW Date: 11/8/91 Ref.: 1. ASCE 7-88, Sec. 9, Zone 0 2. Gravity Loads Base Shear: Z := 0.125 (ref. 1) 12'-0" ¢ I := 1.0(ref. 1) K := 2.0(ref. 1) CS := 0.14 (ref. 1)  $V := Z \cdot I \cdot K \cdot CS \cdot Wtc$  (ref. 1) Wtc = 145285.99(ref. 2) h := 12.5 ft, D = 12 ft V = 5085.01lb

Overturning Moment:

Mo := 
$$V \cdot \begin{bmatrix} h \\ -2 \end{bmatrix}$$
 ---> Mo = 31781.31 ft-lb

Righting Moment of Tank:

$$Mr := Wtc \cdot \begin{bmatrix} D \\ -2 \end{bmatrix} \qquad Mr = 871715.941$$
ft-lb

Mr > Mo ----> Ok

Lateral Displacement:

Coefficient Of Friction Necessary For Displacement To Occur,

$$f := \frac{V}{Wtc}$$
 ---->  $f = 0.035$   $f < 0.29$  Ok

NO ANCHORAGE REQUIRED FOR SEISMIC LOAD CONDITIONS

91-219

B-7 91-219 Containment Wall Strength Job No.: S-K, Tallahassee, FL TERA, Inc. File: Calculation By: BMW Date: 11/8/91 Sheet: 1 of 1 Ref.: 1. Containment Inspection Record, This Report 2. ACI 318-89 13"1 11=4 # 5 Bars 86° O.C. Hariz. # 4 Bars @ 12" O.C. Yert. h := 3.0 ft (ref. 1) 3,07,8 Hydrostatic Pressure Gradiant (HC)  $P := \begin{bmatrix} 2 \\ 0.5 \cdot SG \cdot h \end{bmatrix} \cdot \Gamma$ - 4 h/3=/2" P = 300.456 lb/ft, unfactored  $Pf := 1.4 \cdot P$  (ref. 2) 117.44.51 Pf = 420.638 lb/ft, factored Ø := 0.9 (ref. 2) As := 0.2 sq.in. Ac := 8.12 sq.in. fy := 60000 psi b := 12 in. As ρ1 := d2 := 4 in. fc := 3000 psi Ac As  $---> \rho = 0.004$   $\rho = 0.002$  ok p := -b∙ d2  $Mu := \cancel{0.59} \cdot \cancel{p} \cdot \cancel{fy} d_2 \cdot \left[1 - \frac{0.59}{fc} \cdot \cancel{p} \cdot \cancel{fy}\right]$ ---> Mu = 41076 in-lb/ft 12 · h Mh := Pf - -Mh = 5047.661 in-lb/ft ----> 3 Mu > Mh----> Ok Mu Safety Factor, SF := -------> SF = 8.138 Mh

91-219

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These Calculations Are Made Even More Conservative By The Assumption That The Containment Area Is Full Of Ethylene Glycol, Not Water.

SUBJECT: <u>Containment Volume</u> 5-14 Tallatassee El. <b>TEDA</b> ING. <u>91-219</u>
BY: <u>T.F. T.</u> DATE: <u>11/19/91</u> <b>IENA, INC.</b> PILE: <u></u> OF: SHEET:OF:
Ref: 1, Containment Inspection Record, This Report $L = 59.0 \text{ St}  W = 25.0 \text{ ft}  A = 59 \times 25 = 1475 \text{ ft}^2$ $H = 3.0 \text{ ft Min} \therefore V = 1475 \times 3 = 41425 \text{ ft}^2$ $H = 3.0 \text{ ft Min} \therefore V = 1475 \times 3 = 41425 \text{ ft}^2$ $\frac{1255}{5000 \text{ GAI}} = -2005.1 \text{ ft}^2$ $\frac{1255}{500} = 176 \text{ Gross Vol}$ $H = 01 \times 44.25 = -44.3 \text{ ft}^2$
Displacement of Two Horiz Tanks $V_{Dis} = \frac{R^2 A \cos \frac{d}{R} - \left[ \frac{d}{R} \cdot \frac{\sqrt{R^2 - d^2}}{444} \right]}{\frac{144}{R}} \text{ per tenk}$ $R = 72''  i = 30''  d = 42''$ $Gsplaced Vol. = 2V_{Dis} \cdot 18 = 673.7  5t^3  -$
Net Volume Remaining = 1701.9 fi
Without the enclosure there is Available volume for sain of 1701.95t
Allowable RAIN is $\frac{1101.7}{1475} = 1.15 \text{ St} = 13.8 \text{ incluss}$
25 YEAR 24 he RAINFALL FOR TALLAHASSEE IS 28 Minutes
5. Dike Volume is Adequate even if the present enclosure leaks or is destroyed

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B-9
SUBJECT: TANK Venting JOB NO .: 91-219
BY: <u>T.F.T.</u> DATE: <u>11/6/91</u> BY: <u>T.F.T.</u> DATE: <u>11/6/91</u> BY: <u>DATE</u> : <u>11/6/91</u> BY: <u>CAICUTATION</u> SHEET: <u>II/6/91</u>
Ref: 1 George Tonk Doming No CRECO15
2. MORRISON BROS. CA. 1989 Ed. Venting Guide Fer
Aboveground Storage TANKS
3. UL 142 - 6th Ed., Sept. 14, 1987. Standard For
Steel Above ground TANKS FOR FLAMMADLE And
Combustible Liquids.
TANK CAPACITY: 15,000 GAllons
TANK SIZE: 12'\$ X 18'L
Wetted AREA = 678 ft2 - TAble B-1 Ref-2
Venting Capacity = 420,080 St the Table 10-1 Ret-2
Normal Vent min 2.5" Table 10-2 Ref-3
Vent Combination - Res-2 (or Approved Equivalent)
3" Fig 548-BozP - 38,800
8" Fig 244-1602P - 465,000
503, 800 St3/hR
Loose Bolt MANWAY Used as the emergency vent
must be 16" min. And the cover must be
Able to be lifted 1.5" Min Sec 10.6, Page 12 Ref-3
The combination of the 3" Normal Vent And
Loose Bolt 24" MANWAY meets the Above
Requirements.
(Since the used Antifreeze liquid is not flammable
or combustible, the listed emergency vent requirements
do not Apply.)

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 91-219

91-219 B-10

# USED ANTIFREEZE <u>PIPING SYSTEM REVIEW</u>

Safety-Kleen used antifreeze may be a hazardous waste (under characteristic leaching procedure standards) but it is not a flammable or combustible liquid as defined by NFPA 30 "Flammable and Combustible Liquids Code". Although not by definition required, NFPA 30 is an appropriate guideline or standard for the design of piping systems which handle hazardous liquids.

NFPA 30 generally requires that pipe, valves, fittings, and other pressure-containing components meet the material, pressure, and temperature limitations of ANSI B31.3 "Chemical Plant and Petroleum Refinery Piping" or ANSI B31.4 "Liquid Petroleum Transportation Piping This system operates outdoors under ambient temperature Systems". conditions. This falls within the ANSI materials specification range of -20 to 200°F. The normal operating pressure for the system piping will be the pressure required to overcome friction and lift the liquid to the top The system piping components will therefore normally of the tanks. operate at less than 30 psi. If the system pump was turned on in a blocked condition (i.e., with all discharge valves closed) the system components between the pump and the discharge valves would experience a pressure limited by the pump discharge relief valve. Pumps used for loading or unloading these tanks must have a relief valve set for no more than 200 psi.

Components rated for ANSI 125 or 150 lb (or better) class service should be suitable for use in this service. The normal system operating pressure is well within the allowable pressure-temperature ratings for both those classes. The 200 psi to which some components might occasionally be exposed is also within the allowable ambient temperature pressure range for ANSI 150 lb. class and is less than the allowable hydrostatic test pressure for ANSI 125 lb. class components.

In summary, compliance with the items on the "TERA Piping, Valve, and Fitting NFPA 30 Checklist" indicates compliance with the requirements of the NFPA 30 system piping. - TERA,INC.

#### PIPING, VALVES, AND FITTINGS

#### NFPA 30-1990 Compliance Checklist

#### for Safety-Kleen Corp. Aboveground Tank Systems

Branch Location: <u>Tallahassee</u>, <u>Florida</u> Review By: <u>TFT</u> Date: <u>11/1/91</u>

- <u>N/A</u> 1. Pumps to be ITT Marlow 20EVP-A, 30 EV-A, or 1-1/2 HR49EC series pumps.
- YES 2. Steel piping meets ASTM A53, A106, A120, or A135 specifications.
- YES 3. Wall thickness of threaded pipe meets ANSI B16.10 specifications for Schedule 80 for sizes 1-1/2" and smaller and Schedule 40 for sizes 2" and larger. Wall thickness of welded pipe of all sizes meets Schedule 40 requirements as a minimum.
- <u>N/A</u> 4. Dumpster hose assembly to be S-K Part No. 5237 (per Safety-Kleen drawing D10452).
- YES 5. Valves Morrison Brothers (S-K standard items) or meet ANSI 125 or 150 lb. class requirements.
- YES 6. Flanges and fittings meet ANSI B16 125 lb. (for cast iron and non-ferrous materials) or 150 lb. class (for steel and malleable iron) requirements.
- YES 7. Valves and piping components of low melting point or non-ductile materials (i.e., brass, bronze, aluminum, plastic, rubber, and cast iron) located within containment areas meeting 40 CFR 264.193 requirements.
- YES 8. Tank connections below the liquid level through which liquid can normally flow provided with an internal emergency shut-off valve (with fusible link) and a manual valve close to the tank.
- YES 9. Tank connections below the liquid level through which liquid does not normally flow provided with a liquid-tight plug or blind.
- <u>N/A</u> 10. Used solvent tank fill line drop-tube provided with vacuum breaker in line external to tank and/or hole in top of drop-tube inside of tank to prevent siphoning of liquid from tank.

#### PIPING, VALVES, AND FITTINGS

#### NFPA 30-1990 Compliance Checklist

#### for Safety-Kleen Corp. Aboveground Tank Systems

#### (Continued)

Branch Location: <u>Tallahassee, Florida</u> Review By: <u>TFT</u> Date: <u>11/1/91</u>

Tank fill and emptying connections (i.e., tank truck connections) are:

YES 11. outside of buildings in a location free of ignition sources;

YES 12. not less than five feet from any building opening;

- YES 13. furnished with provisions for liquid-tight closure when not in use (i.e., valve and hose connection cap);
- YES 14. properly identified (i.e., marked clean and used);
- N/A 15. provided with check valves. (Not required for Antifreeze)
- YES 16. Prior to being placed in service all piping will be hydrostatically tested at 115 psig or pneumatically tested at 85 psig for a minimum of 20 minutes. Pneumatic tests shall include a preliminary check at not more than 25 psig. All piping joints and components shall be examined for leakage during the test.
- YES 17. Exceptions to the above items corrected to comply with NFPA 30 and/or ANSI B31.3 specifications.

Safety-Kleen piping, valves and fittings in compliance with this checklist will meet the requirements of NFPA 30 - 1990, as well as Article 79 of the Uniform Fire Code, 1991 Edition. These components should be checked with other local fire code requirements, which may be more stringent. It should be noted that the used antifreeze liquid in this is not flammable or combustible.

91-219

APPENDIX C Description of Waste

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#### APPENDIX C

#### Description of Waste

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Composition of Waste			•	•				•	•	•	•	C-2
Compatibility Letter from	Safety-Kleen		•	•		•	•	•		•	•	C-3

#### CHARACTERISTICS OF WASTE

The used antifreeze is collected from customers in 3,500-gallon tanker trucks and transferred from the tanker truck to the used antifreeze tank in the tank farm of the center. Periodically, trucks are dispatched from recycling centers to evacuate the tank.

Used antifreeze is considered to be toxic according to characteristic leaching procedure standards (D004-D011, D018, D019, D021-D030 and D032-D043). A typical composition, and chemical physical analysis is attached.

A letter from Safety-Kleen addressing compatibility of used antifreeze with system components is attached.

## Antifreeze Wastes

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91-219 C-2

		Parameter <i>Rog. Limi</i> t	pH <2 or >10	SG	FP < 100	۸s 5	1)a 100	Cd 1	Cr 5	Pb 5	110 0.2	So 1	۸ <u>ں</u> 5
TAU	SITE		<u>.</u>						******	·····			······································
W	$\overline{n}$		7.5	1,04	> 200	< 0.05	< 0.3	< 0.05	< 0.05	0.3	< 0.01	< 0.05	< 0.05
W	<i>l:1</i> ,		8	1.13	> 200	< 0.05	0.3	< 0.05	< 0.05	< 0.1	< 0.01	< 0.05	< 0.05
W	WL		8.5	1.05	> 200	< 0.05	< 0.3	< 0.05	< 0.05	0.2	< 0.01	< 0.05	< 0.05

### Physical Properties and TCLP Metals Analysis, ppm

### TCLP Semi Volatlles Analysis, ppm

	Paramotor	crosol -	2.4-DNT	Cl6-bonz	Cl6-13-but	Cl6-oth	ntrobonz	Cl5-phonol	pyiklino	2.4.5-TCP	2.4.6-1CP	
	Neg. Limit	200	0.13	0.13	0.5	3	2	100	5	400	2	
LAU SI	i E						*					
W D	U	< 0.04	< 0.04	< 0.01	< 0.04	< 0.04	< 0.04	< 0.2	< 0.2	< 0.04	< 0.01	
W E	<i>l.</i>	0.2	< 0.07	< 0.07	< 0.07	< 0.07	< 0.07	< 0.35	< 0.35	< 0.07	< 0.07	
W W	4.	< 0,05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.25	< 0.25	< 0.05	< 0.05	

	ICLI? Volatilos Analysis, ppm											
	Paramotor	bonzono	CCI4	Cibonz	сінсіз	1.4-DCIB	1.2-DCA	1.1-DCE	мек	PCE	TCE	VChlorida
	Nog. Limit	0.5	0.5	100	6	· 7.5	0.5	0.7	200	0.7	0.5	0.2
TAD :	SHE							s				
-iv	nu –	< 0.10	< 0,10	< 0,10	< 0,10	< 0,10	< 0,10	< 0,10	< 2.0	0,13	0.97	< 0.20
W	11.	0.32	< 0,10	< 0.10	< 0,10	< 0.10	< 0.10	< 0,10	< 2.0	0.12	< 0,10	< 0,20
W	W.	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	· < 0.10	< 0.10	< 2.0	0.51	< 0.10	< 0.10

#### SAFETY-KLEEN CORPORATION

FAX TRANSMITTAL SHEET

DATE: April 4, 1991

FROM: PAUL DITTMAR SAFETY-KLEEN CORP. TECHNICAL CENTER P.O. BOX 92050 ELK GROVE VILLAGE, IL 60009-2050 PHONE: (312)694-2700 FAX: (312)694-2733

TO: BOB SPEAK

LOCATION: TERA CORP.

FAX NO.: (713)981-7713

NUMBER OF PAGES, INCLUDING TRANSMITTAL SHEET: 1

SUBJECT: MATERIAL OF CONSTRUCTION FOR WASTE OIL AND SPENT ANTIFREEZE

According to Breslube's Vice President of Engineering, Glenn Casbourne. carbon steel is used now for waste oil tanks. For the record, he confirms that carbon steel is the material of choice for both waste oil and spent antifreeze.

Regards,

Paul Dittmar, Manager of Process and Product Development

cc: Glenn Casbourne

file: MC91047

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91-219

APPENDIX D Inspection Records

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91-219

#### APPENDIX D

#### Inspection Records

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91-219 D-2

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## <u>TERA, Inc.</u>

### NEW TANK INSPECTION RECORD

					Sheet: 1 of 1
CLIENT:	Safety-	Kleen Corp			Job No.: 91-219
PLANT LOCATI	ION: Tallaha	ussee, Flori	lda		Date: 11/1/91
TYPE INSPECT	CION: Interic	or/Exterior			By: TFT
ITEM NO.:	C	CODE: UL 14	+2		YEAR BUILT: 1990
SERVICE:	Used Antifree	ze Storage			
CAPACITY:	15,000 gal	TANK/DRU	JM TYPE:	Horizontal	integral saddles
DIAMETER:	12 ft.	LENGTH	I: 18	ft.	
	END HEAD	WALL	FL	<u>JOR J</u>	ACKET
MATERIALS:	All Mil	d Steel	N	/A	N/A
END HEAD CON	VDITION:		Satisfac	tory	
WALL CONDITI	LON:		Satisfac	tory	
FLOOR CONDIT	CION:		N/A		
JACKET CONDI	LTION:		N/A		
SUPPORT TYPE	3:		Three in	tegral sadd	les
FOUNDATION 7	TYPE/CONDITION	I:	Reinforc	ed concrete	/satisfactory
INTERNAL STR	RUCTURE CONDIT	CION:	Satisfac	tory	
WELDED/FLANC	GED JOINT CONT	DITION:	Satisfac	tory	
NOZZLE COND	ITION:		3" norma	l vent - sa	tisfactory
LINING/COAT	ING CONDITION:		Exterior	paint - sa	tisfactory
INSULATION (	CONDITION:		N/A		
SIGNS OF CRA	ACKS:		None		
SIGNS OF PUR	NCTURES :		None		
SIGNS OF COA	ATING DAMAGE:		None		
SIGNS OF CRA	ACKS OR MATERI	AL DAMAGE:	None		
SIGNS OF COR	RROSION:		None		
SIGNS OF OTH	HER STRUCTURAL	DAMAGE OR	PROBLEMS	: None	
TIGHTNESS TI	EST? None	TYPE:		R	ESULTS:
OPERATING CO	ONDITIONS: MA	X TEMP: A	nb. MA	X PRESS: A	.tm VAC: N/A
REFERENCE IN	NSPECTION RECO	ORDS: Harmon	n Process	Piping Co.	Tank and piping
		docume	entation	included in	the Appendix.
COMMENTS:	The tank is	new and has	s been in	stalled wit	th no internal or
	external dama	age visible	by inspe	ction.	

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	TERA, Inc.	91-2 D <sup>.</sup>
NEW	CONTAINMENT INSPECTION RECORD	
		Sheet: 1 of
CLIENT: Safet	y-Kleen Corp.	Job No.: 91-21
PLANT LOCATION: Talla	nassee, Florida	Date: 11/1/9
TYPE:	Vault	By: TI
LEAK DETECTION TYPE:	Visual	YEAR BUILT: 199
SERVICE: Used Antifr	eeze Storage	
CAPACITY: 33,100 gal.	LARGEST TANK CAPACITY	: 15,000 gallo
	ROOF/TOP HD. WALL/SHELL	FLOOR/BOT. HI
CONSTRUCTION MATLS:	Canvas Cover RC	RC
INTERIOR COATING/LININ	G OF CONTAINMENT: Sikagard-62	
EXTERIOR COATING/LINING	OF PRIMARY COMPONENT: None	
JOINT TREATMENTS:	Sikaflex-1A	
ROOF/TOP HEAD CONDITION	: Canvas - satisfactory	
WALL/SHELL CONDITION:	Satisfactory	
FLOOR/BOTTOM HEAD CONDI	TION: Satisfactory	
SUPPORT TYPE:	Slab on grade	
FOUNDATION CONDITION:	Satisfactory	
INTERNAL STRUCTURE COND	ITION: * Some cracks in the wall	s - do not exter
	to base but need repair	
JOINT CONDITION:	Satisfactory	
LINING/COATING CONDITIO	N: * Satisfactory on base -	pinholes on wall
LIQUID REMOVAL METHOD:	Sump - hand pump or truck	: pump
SIGNS OF CRACKS:	Minor in walls that do no	t extend to base
SIGNS OF PUNCTURES:	Some pinholes in walls	
SIGNS OF COATING DAMAGE	: Some pinholes in walls	
SIGNS OF CRACKS OR MATE	RIAL DAMAGE: Some pinholes in wa	lls
SIGNS OF CORROSION:	None	
SIGNS OF OTHER STRUCTUR	AL DAMAGE OR PROBLEMS: None	
OPERATING CONDITIONS:	MAX TEMP: Amb. MAX PRESS:	Atm. VAC: N
REFERENCE INSPECTION RE	CORDS: None	

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## HARMON PROCESS PIPING CO.

18 CONTESSA COURT WILLIAMSVILLE, NEW YORK 14221

TO: Tom Troller Tera

FROM: Art Jakubczak

DATE: November 18, 1991

SUBJECT: Tank Test Results in Tallahassee, FL

We sealed a new 15,000 gallon horizontal tank and pressurized the tank to 4.0 psi. We recorded the time and soaped all plugged openings, joints, and around the man hole covers and their bolts. The tank did not lose any more than 0.2 psi in 30 minutes, which is according to Safety Kleen specifications.

Signature of certifier: <u>(((+ Maker Comack</u>

Test done 2 9/1/9/ Jack Knivec to Tom Froller

# HARMON PROCESS PIPING CO.

18 CONTESSA COURT WILLIAMSVILLE, NEW YORK 14221

91-219 D-5

TO: Tom Troller Tera

FROM: Art Jakubozak

DATE: November 18, 1991

SUBJECT: Pipe Test Results in Tallahassee, FL

We capped off a 3" line and pressurized the line to 85 psi. The time was recorded and leaks were checked for with scap water. It held for 45 minutes with no loss of air. Safety Kleen specifications call for no more than 4.0 psi lost in 45 minutes. The line passed the test according to Safety Kleen specs.

Signature of certifier:

ad jakerbrack

Jest done # 9/1/91 Jack Hriver to Tom Troller



TALLAHASSEE BRANCH FACILITY



TANK FARM ENCLOSURE



D-6b

HIGH LEVEL ALARM; NORMAL 3" VENT





TERA, INC

LOAD/UNLOAD

TRUCK HOOK-UP LOCKED GATE VALVE AND EASY CONNECT

EMERGENCY SHUT-OFF AND GATE VALVE 91-219 D-6c





- TERA, INC. -

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91-219 D-6e

INTERNAL TANK WELDS

LIQUID LEVEL GAUGE

