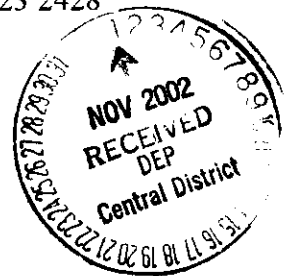




October 30, 2002

Certified Mail # 7001 2510 0004 6923 2428

Mrs. Lu Burson
Department of Environmental Protection
Central District
3319 Maguire Boulevard, Suite 232
Orlando, FL 32803-3767



RE: Corrective Actions to FLDEP Central District's Violations OWL-HW/E-C-00-0029

Dear Mrs. Burson,

In response to our telephone conversation on October 28, 2002, I am providing documentation of the corrective actions Safety-Kleen has completed to assist customers on Government Compounds in choosing a correct generator status. The first action item Safety-Kleen (Sanford) completed was in the form of additional RCRA training. A mandatory class was held on March 11, 2002, discussing generator status on military bases, large companies, which have several different waste generation locations and other government compounds will include waste generated by contractor under their EPA Identification Number.

A copy of the Safety-Kleen annual RCRA training course has been provided for your review. In efforts to strengthen our training material to ensure employee knowledge to assist our customers with choosing the correct generator status, we have included a section on Government Compounds. You will find the added material in Section 4 "Generator Status Determination and Requirements". In addition to modifying the Annual RCRA Training, Safety-Kleen (Sanford) has updated Regulator Guidance Number 9-0009 to include guidance for contractors generating waste on Government Compounds. Regulator Guidance Number 9-0009 is titled General Hazardous Materials Shipping Requirements, the added material is located under Section 5.0. Furthermore, Safety-Kleen's office staff has been briefed on ensuring all waste being received at Patrick Airforce Base/NASA will require a manifest. Departure from procedure will require prior approval from the Environmental Health and Safety Manager.

Through annual training and constant quality control from facility administration, Safety-Kleen service reps will be knowledgeable and capable of assisting S-K customers choose correct generator status. However, Safety-Kleen can only provide limited assistance because only the customer is knowledgeable of the amount and types of waste streams being generating, which makes them ultimately responsible for identifying their status.





I am confident the corrective measures Safety-Kleen has put forth will eliminate the opportunity for contractors, on government projects, to dispose waste under their CESQG status. Thank you for your help and assistance to resolve this matter. If there is any further information or actions Safety-Kleen can perform to better assist your department, please do not hesitate to call me. I can be reached at (813) 340-0976.

Sincerely,

Matt Hedrick
Environmental, Health and Safety Manager

- cc. Jim Childress (Safety-Kleen, Corp)
- Cindy Bruce (Safety-Kleen – Sanford, FL)
- Chip Duffy (Safety-Kleen, Corp. General Council)



SAFETY-KLEEN

TRAINING ATTENDANCE / CERTIFICATION SHEET

Course Code: GENERATOR Status

ETTS Class Number: _____

Course Name: 40 CFR 261.5

Location: Sanford Branch

Date: 3/11/02 thru 3/11/02

City, State: Sanford, FL

Time: 7:00 to 8:00

Duration: 1 (total hours)

	PRINTED NAME	SIGNATURE	SOCIAL SECURITY # or SOCIAL INSURANCE #	FACILITY NAME
1.	JEFF LOWE	<i>Jeff Lowe</i>	594 48 0190	3-130-D1 Sanford
2.	RON KEMPERT	<i>Ron Kempert</i>	378-80-7702	" 4
3.	ROB BARKER	<i>Rob Barker</i>	068-56-9301	" "
4.	JOSE R. GARCIA	<i>J. R. Garcia</i>	594-27-8390	" " "
5.	JUAN GABARRA	<i>Juan Gabarra</i>	338-68-5587	" "
6.	LARRY SANDSTROM	<i>Larry Sandstrom</i>	468-60-3024	" "
7.	MIKE GREGG	<i>Mike Gregg</i>	2399	3-130-01
8.	ROLANDO ROSEAN	<i>Rolando Rosean</i>	581-53-2470	" "
9.	ALVIN GILLIES	<i>Alvin Gillies</i>	58930 1251	SANFORD "
10.	DAVID R. VERNARD	<i>David R. Vernard</i>	597-12-1837	Sanford
11.	KARL BROWN	<i>Karl Brown</i>	046-74-7310	" "
12.	DAVID SCHOUERMAN	<i>David Schouerman</i>	080-623-559	" "
13.	RICHARD RESTO	<i>Richard Resto</i>	066-76-3529	Sanford.
14.	RANDY FELGENSEN	<i>Randy Felgensen</i>	371-62-0499	SANFORD
15.	TOM SCHWAN	<i>Tom Schwan</i>	403-08-8684	" "
16.	MIKE BROWN	<i>Mike Brown</i>	213-58-9874	" "
17.	RANDY MAYNOR	<i>Randy Maynor</i>	595-05-9618	" "
18.	DWAYNE LEE	<i>Dwayne Lee</i>	18254774	SANFORD
19.	KEITH MARCILLE	<i>Keith Marcille</i>	41587 1009	3-130-01 Sanford 875
20.				

The above listed employees have demonstrated satisfactory performance and comprehension of the course named above. Please note the specific verbiage required for the certificates in the space below:

Trainers: Matt Hedrick
(Please Print)

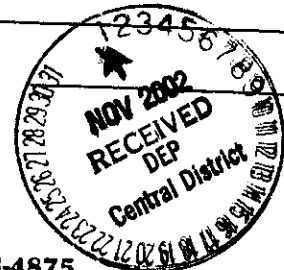
Trainers Signature: *Matt Hedrick*

(Please Print)

Trainer(s) Facility: _____

Page 1 of 1

Training Department
1301 Gervais St., Suite 300, Columbia, SC 29201
Phone Number (803) 933-4858 Fax Number (803) 933-4875



Safety-Kleen Corp.
Transportation
Policies and Procedures

REGULATORY GUIDANCE NUMBER 9-0002
GENERAL HAZARDOUS MATERIALS SHIPPING REQUIREMENTS

1.0 Are hazardous materials transporters consider to be "offerors" of hazardous materials?

The answer depends on the functions performed by the transporter. The term "offeror" includes, but is not limited to, the following: the selection of the packaging for a regulated hazardous material, the physical transfer of hazardous materials to transporters, the classification of hazardous materials, the preparation of shipping papers, the review of shipping papers to verify compliance with the hazardous materials regulations, the certification of shipping papers, the placement of labels or markings on packages, and the placarding of transport vehicles. If the transporter performs any of these functions, it is considered to be an offeror.

2.0 What are the four components of the DOT basic shipping description?

The DOT basic shipping description consists of four components: proper shipping name, hazard class, UN/NA identification number, and packing group number. These components are in the Hazardous Materials Table (49 CFR 172.101). For example, the proper shipping name is listed in Column 2, the hazard class is listed in Column 3, the UN/NA identification number is listed in Column 4, and the packing group number is listed in Column 5. Shippers must show the four components in this order when completing Section 11 of the hazardous waste manifest. Of course, gases (Class 2), and radioactive materials (Class 7), do not have packing groups.

3.0 How does a shipper determine the packages authorized for transporting a hazardous material?

Determining the proper shipping name is critical since the packages authorized for transportation are based on this component of the DOT basic shipping description. For instance, look up "Acetone" in Column 2 of the Hazardous Materials Table and go to Column 8. You will see that the non-bulk and bulk packages authorized for transporting acetone are in 49 CFR 173.202 and 173.242, respectively. Shippers must use the packages listed in these references.

4.0 Suppose a generator ships a waste stream with lead and mercury as the major constituents. The DOT basic shipping description shown in Section 11 of the hazardous waste manifest is "Hazardous waste, liquid, n.o.s., 9.00, NA 3077, PG 3." Identify any errors and explain how the hazard labels, special provisions, and authorized packages are determined.

Refer to 49 CFR 172.203 (k)(2). It states that "if a hazardous materials is a mixture or solution of two or more hazardous materials, the technical names of at least two components most predominately contributing to the hazards of the mixture or solution must be entered on the shipping papers as required by paragraph (k) of this section." 49 CFR 171.8 defines a technical name as a "...recognized chemical name or microbiological name currently used in scientific and technical handbooks, journals, and texts." For this waste stream, the technical names are "lead" and "mercury."

Refer to 49 CFR 172.203 (k)(4)(i). If the proper shipping name is "Hazardous waste, liquid *or* solid, n.o.s." and the hazard class is 9, the inclusion of the technical name is not required, provided the EPA hazardous waste number is included on the hazardous waste manifest in association with the basic shipping description or provided the material is described in accordance with 49 CFR 172.203 (c). Also refer to 49 CFR 173.12 (d) for exceptions when describing lab packs.

49 CFR 172.202 (a)(2) requires that the hazard class or division number in Column 3 of the Hazardous Materials Table be shown after the proper shipping Name. Go to Column 2 of the Hazardous Materials Table and look up "Hazardous waste, liquid, n.o.s." Then go to Column 3. The number "9" is the correct hazard class.

The UN/NA identification number is in Column 4 of the Hazardous Materials Table. It is based on the proper shipping name shown in Column 2. Look up "Hazardous waste, liquid, n.o.s." and go to Column 4. The correct identification number is "NA 3082."

The packing group number is in Column 5 of the Hazardous Materials Table. It must be shown in Roman numeral form. Usage of the prefix "PG" is optional. There is only one packing group number for "Hazardous waste, liquid, n.o.s.". It is "PG III."

The non-bulk and bulk packages authorized for transportation are based on the proper shipping name. Look up "Hazardous waste, liquid, n.o.s." in the Hazardous Materials Table. Go to Column 8. You will see that the non-bulk and bulk packages authorized for this proper shipping name are in 49 CFR 173.203 and 173.241, respectively.

The hazard labels in Column 6 of the Hazardous Materials Table are based on the proper shipping name. "Hazardous waste, liquid, n.o.s." requires the Class 9 hazard label.

The special provisions in Column 7 of the Hazardous Materials Table are based on the proper shipping name. No special provisions are shown for "Hazardous waste, liquid, n.o.s."

The correct DOT basic shipping description is as follows:

Hazardous waste, liquid, n.o.s., 9, NA 3082, III (Lead, Mercury)

or

Hazardous waste, liquid, n.o.s., (Lead, Mercury), 9, NA 3082, III

Again, the proper shipping name is the most important component of the DOT basic shipping description, simply because the UN/NA identification number, hazard labels, special provisions, and authorized packages are based on this component.

5.0 What is the Generator Status of a Contractor Working on a Government Compound?

Government Compounds (e.g. Military Bases) can use multiple contractors to carry out their respective operations. As "facilities" all hazardous waste generated as a result of base operations counts towards their monthly generation rates. As a result, each base generates greater than 1,000 kilograms of hazardous waste each calendar month. Therefore, a hazardous waste manifest is required for off-site transportation of hazardous waste from each of these facilities or contractors.

Approved By:

S-K Sanford
S-K Sanford, FL General Manager

Date:

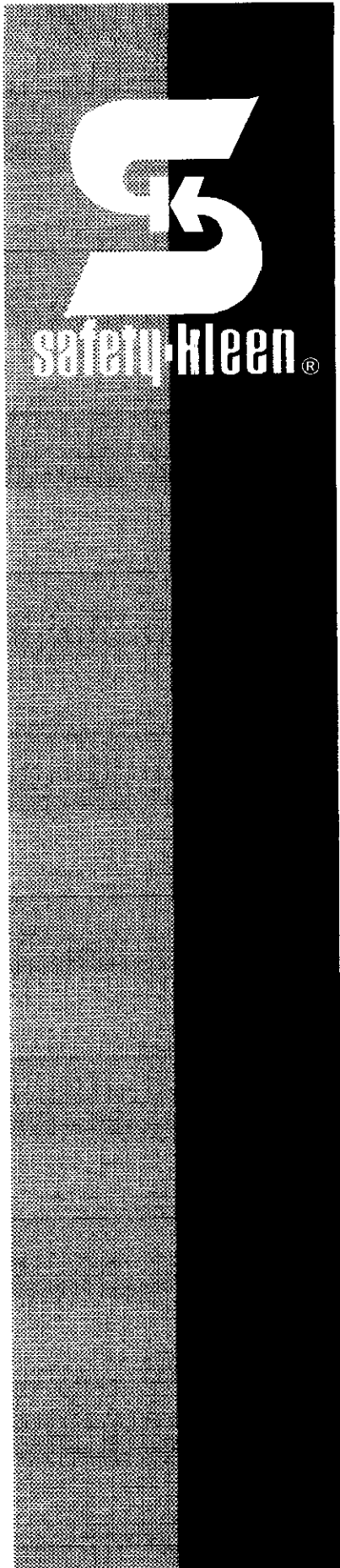
10-29-02

Matt Heak
FL Environmental, Health & Safety Manager

Date:

10-29-02

Revision Date: October 29, 2002



**US EPA Regulations:
Annual RCRA Update
ET140 - BSSD
10/2002
*Participant Guide***



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Finalized 09-07-2001

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Part 1. You and the Customer

The first part of this training manual deals with the hazardous waste regulations that apply to you, the Safety-Kleen representative and that you should be aware of, when providing services to a customer. There are additional requirements that apply to generators, and to treatment, storage and disposal facilities, which are not discussed.

1. Introduction

What should you be concerned about when you arrive at a customer's business to provide waste management services? Unfortunately, that question does not have a single set of answers. What is required of you, the customer, and Safety-Kleen can vary depending upon what the waste material is, how much the customer produces each month, and how the waste is managed, recycled, or disposed of.

In this training manual, we will first discuss identification of solid and hazardous wastes. As you can imagine, the level of regulation between a non-hazardous and a hazardous waste can be significant. Next, we will look at how the amount of hazardous waste produced affects a customer's regulatory burden. Finally, we will discuss Safety-Kleen's requirements for transporting and managing hazardous waste.

Before we get too involved with the various requirements for managing hazardous waste, let's look at some background information. Why are we concerned about hazardous waste, who enforces the laws governing hazardous waste, and what is generally required of people managing hazardous waste?

What is a Hazardous Waste?

A material that is classified as a hazardous waste has two qualities. First, it is no longer useful in its present condition, and it must be either recycled or disposed of. This makes it a solid waste. Second, it displays the quality of being hazardous. If these wastes are managed or disposed of improperly, they could harm public health and the environment. How EPA determines a waste to be hazardous is discussed later.

Who Regulates Hazardous Waste?

Hazardous waste is regulated by several federal agencies, including:

Environmental Protection Agency (EPA)

Occupational Safety and Health Administration (OSHA)

Department of Transportation (DOT)

EPA regulates the management of hazardous waste, OSHA regulates employee health and safety, and DOT regulates the transportation of hazardous waste.

Other agencies may become involved during an emergency such as a spill response. The U.S. Coast Guard's (USCG) National Response Center (NRC) responds to spills of hazardous materials in navigable waters. However, the primary responsibility for the regulation of hazardous waste is with EPA, OSHA and DOT.

Each agency has rules and regulations that are contained in the **Code of Federal Regulations (CFR)**. Each CFR utilizes a numbering system that identifies the appropriate federal agency. EPA regulations are contained in 40 CFR, OSHA regulations are contained in 29 CFR, and DOT regulations are contained in 49 CFR.

Conflicting Regulatory Requirements

Sometimes there may be apparent conflicts between the requirements of one government regulatory program and another. Regulation of empty containers is a case-in-point. Even though a container may meet EPA's definition of empty, it may still be regulated by DOT. DOT has more stringent requirements for shipping empty containers than EPA. Until a container meets the DOT definition of empty, it still must wear all shipping markings and labels as if it were full when it is offered for transportation.

Reference 49 CFR 173.29

Environmental Protection Agency

EPA is the federal authority that regulates hazardous waste. EPA enforces, by regulation, the environmental laws that Congress passes. These regulations are enforced as law. Through an arrangement with EPA, states are allowed to enforce their regulations as federal law. These states' requirements may actually be more stringent than federal standards.

EPA administers nine comprehensive environmental protection programs. One of these programs is the Resource Conservation and Recovery Act (RCRA). RCRA is the program that regulates hazardous waste

Resource Conservation and Recovery Act – 1976, 1984 (RCRA)

RCRA is the federal law that deals with generating, handling, recycling, storing, and disposing of hazardous and non-hazardous wastes. RCRA also is concerned with used oil, oil filters, antifreeze, solvents, rags, and other common waste products handled during daily industrial operations.

Under RCRA, the “**generator**” or “**producer**” of a waste is responsible for determining the waste’s hazardous nature and for its storage, transportation and disposal. In addition, a generator’s employees must follow certain rules for the proper handling of hazardous wastes. These rules are the **regulations** that govern hazardous waste management throughout the U.S.

RCRA follows the management of hazardous waste from the point of generation to the point of disposal. Documentation of the movement, treatment, storage and disposal of hazardous waste is known as the “**cradle-to-grave**” tracking system.

RCRA regulations are the foundation of services offered by Safety-Kleen. The focus of this regulatory training program is on those parts of the regulation that apply to Safety-Kleen operations. RCRA significantly impacts Safety-Kleen branches and most customer locations. It is important that you become familiar with RCRA requirements.

Who Has To Comply with RCRA Regulations?

- Generators that produce a solid or hazardous waste
- Transporters who remove waste from the generator’s site
- Treatment, Storage and Disposal Facilities (TSDFs)

Safety-Kleen, at one time or another, will generate, transport, store, and treat hazardous waste.

General Requirements for All Generators

All generators of hazardous waste are required to:

- Determine if their solid waste streams are hazardous
- Determine their generator status
- Dispose of their hazardous waste at a permitted facility

Exercise 1.

1. What are the two qualities that makes a material a hazardous waste?
2. What are the three federal agencies that regulate hazardous waste?
3. What is the federal law that deals with generating, handling, recycling, storing, and disposing of hazardous and non-hazardous wastes?
4. Who has to comply with hazardous waste regulations?
5. The documentation of the movement of hazardous waste from the point of generation to the point of disposal is known as what?
6. What requirements apply to all generators of hazardous waste?

2. How to Identify a Hazardous Waste

Correctly identifying a hazardous waste is the sole responsibility of the generator. **However, handling an improperly identified waste can have severe consequences for you, Safety-Kleen, and the customer.**

When you pick up a customer's waste, its hazardous waste characterization will already have been determined. Wastes from Safety-Kleen parts washers, or other wastes that are routinely handled by Safety-Kleen, have been evaluated and have the hazardous identification discussed below. Before accepting as non-hazardous, certain wastes such as 150 parts washer solvent, or aqueous brake cleaner, Safety-Kleen may require the material to be analytically tested.

Wastes picked up as part of the Fluid Recovery Services program have to be evaluated individually by your sales manager. He will have sampled the waste and made a hazardous identification based on laboratory analysis and the customer's knowledge of the process producing the waste.

Proper identification of hazardous waste requires an understanding of how RCRA regulations are implemented. The following criteria are considered when identifying a hazardous waste.

Solid Waste

Under RCRA, a hazardous waste must first be a solid waste. Basically a **solid waste** is any material that is no longer fit for use in its present condition such as used cleaning solvent. Such a material is classified as discarded.

Don't be confused. By definition, a solid waste can be a **solid, liquid, or gas**.

Reference 40 CFR 261.2

Wastes Excluded from RCRA

It is important to understand that, for regulatory purposes, not all discarded items are solid wastes, and not all-solid wastes will be classified as hazardous wastes.

Materials that are not solid wastes include, among others, sewage and other wastes treated at a municipal wastewater treatment facility and discharges to a river or stream regulated under the Clean Water Act.

Solid wastes that are not hazardous wastes include, among others, household wastes, laboratory samples and wood scraps treated with arsenic.

Reference 40 CFR 261.4(a) & (b)

Hazardous Waste

Under RCRA, EPA specifies which solid wastes are hazardous wastes. A solid waste is hazardous if it meets any of the following criteria:

- It exhibits any of the characteristics of a hazardous waste;
- It appears on the lists of hazardous wastes;
- It is a mixture containing a listed hazardous waste and a non-hazardous solid waste;
- It is a waste from the treatment, storage, or disposal of a listed hazardous waste.

Wastes are defined as hazardous by EPA if they exhibit one of four characteristics (characteristic waste) or if they are specifically named on one of four lists of hazardous wastes (listed waste). Each type of RCRA hazardous waste is given a unique **hazardous waste code number** using the letters D, F, K, P, or U and three digits (i.e., D001, F005, P039).

Reference 40 CFR 261.3

Characteristic Hazardous Wastes

EPA has determined that there are four characteristics of a waste that could make it hazardous. The four hazardous characteristics are:

- Ignitability
- Corrosivity
- Reactivity
- Toxicity

Reference 40 CFR 261 Subpart C

Characteristic of Ignitability (D001)

Ignitable wastes are those that might cause a fire. There are four types of D001 hazardous waste streams:

- **liquids having a flash point below 140°F (such as spent 105 solvent, acetone, and paint thinner);**
- **solids that may cause fire through friction, absorption of moisture, or spontaneous chemical changes (such as paint booth filters, or wipe rags);**
- **certain ignitable compressed gases (such as propane); or**
- **oxidizers (such as bleach, stump remover, or pool chlorine tablets).**

An oxidizer is a substance that can release oxygen, which will intensify a fire.

Flash Point

All liquids give off fumes. The higher the temperature the more fumes there are that are given off. If a combustible liquid gives off enough fumes at a certain temperature such that a flame or spark causes it to ignite, then that temperature is its flash point.

Characteristic of Corrosivity (D002)

EPA's definition of corrosivity applies to liquids only and includes the following:

- **aqueous solutions with a pH of less than or equal to 2 or greater than or equal to 12.5; or**
- **liquids that corrode steel faster than .250 inch per-year.**

Examples of D002 hazardous wastes include acids, such as hydrochloric acid, sulfuric acid, and caustics, such as sodium hydroxide.

pH Scale

The pH scale was developed to give a numerical value to the strength of acids and bases. The scale applies to aqueous (dissolved in water) solutions only. pH is actually a measurement of the relative amount of hydrogen ions in the solution. The scale ranges from 1 to 14. Pure water is considered neutral and has a pH of 7, while acids are below 7 and bases are above 7. Each full increment up or down the scale is a tenfold change in the amount of hydrogen ions.

Warning: When acids and bases mix, they can produce a great deal of heat that might produce a violent reaction. This reaction can rupture a container or injure those near by.

Aqueous Solution

An aqueous solution is a mixture containing water. For the purpose of **corrosivity**, EPA requires there to be **20% water**.

Reference SW-846, 3rd edition, test method 9040

For the purpose of **ignitability**, though water is not required to be present, EPA requires there to be **50% water** for a solution to be classified as aqueous.

Reference OSWER Directive 9443.02(85): February 26, 1985

Characteristic of Reactivity (D003)

D003 hazardous waste streams are those that might cause an explosion or release toxic gases. Examples of D003 hazardous wastes include explosives, flares, potassium cyanide, pure sodium metal, and other violently reactive chemicals. Lithium batteries are often considered reactive because lithium can explode when exposed to water.

Safety-Kleen does not handle D003 wastes on a routine basis.

Toxicity Characteristic (D004 – D043)

EPA has determined that when certain wastes are disposed of in a landfill, they could harm drinking water supplies. These chemicals are hazardous because of their toxicity.

Toxicity is the ability of a substance to damage living tissues or cause death.

EPA has developed a test that mimics what happens when a waste is placed in a landfill. This test is called the **Toxicity Characteristic Leaching Procedure (TCLP)**. If a waste is analyzed for a chemical using the TCLP, and its results give a higher level than what is on the TCLP list for that chemical, then that waste is hazardous and has the associated waste code number.

Toxicity Characteristic List

The table below contains the list of the TCLP characteristic hazardous chemicals and their regulatory levels.

Toxicity Characteristic List

Toxicity Characteristic Wastes Table 1 (Listed by Waste Code)		
Waste Code	Contaminant	Regulatory Level (mg/L)
D004	Arsenic	5.0
D005	Barium	100.0
D006	Cadmium	1.0
D007	Chromium	5.0
D008	Lead	5.0
D009	Mercury	0.2
D010	Selenium	1.0
D011	Silver	5.0
D012	Endrin	0.02
D013	Lindane	0.4
D014	Methoxychlor	10.0
D015	Toxaphene	0.5
D016	2,4-D	10.0
D017	2,4,5-TP (Silvex)	1.0
D018	Benzene	0.5
D019	Carbon tetrachloride	0.5
D020	Chlordane	0.03
D021	Chlorobenzene	100.0
D022	Chloroform	6.0
D023	o-Cresol	200.0
D024	m-Cresol	200.0
D025	p-Cresol	200.0

Toxicity Characteristic Wastes Table 1 (Listed by Waste Code)		
Waste Code	Contaminant	Regulatory Level (mg/L)
D026	Cresol	200.0
D027	1,4-Dichlorobenzene	7.5
D028	1,2-Dichloroethane	0.5
D029	1,1-Dichloroethylene	0.7
D030	2,4-Dinitrotoluene	0.13
D031	Heptachlor (and its epoxide)	0.008
D032	Hexachlorobenzene	0.13
D033	Hexachlorobutadiene	0.5
D034	Hexachloroethane	3.0
D035	Methyl Ethyl Ketone	200.0
D036	Nitrobenzene	2.0
D037	Pentachlorophenol	100.0
D038	Pyridine	5.0
D039	Tetrachloroethylene	0.7
D040	Trichloroethylene	0.5
D041	2,4,5-Trichlorophenol	400.0
D042	2,4,6-Trichlorophenol	2.0
D043	Vinyl Chloride	0.2

Listed Hazardous Wastes

EPA has determined that certain processes produce wastes, which, because of their characteristics are hazardous. Wastes from these processes do not need to be sampled and analyzed before being determined to be hazardous. EPA has placed the wastes from these processes on four lists. These **Lists of Hazardous Wastes** are explained below.

Reference 40 CFR 261 Subpart D

F Listed Hazardous Wastes – Non Specific Sources

F listed wastes are generic wastes commonly produced by manufacturing and industrial processes. This list includes spent solvents, wastewater treatment sludge from electroplating, and reclamation residue. F listed wastes are assigned EPA waste code numbers F001 through F039.

K Listed Hazardous Wastes – Specific Sources

K listed wastes are from specifically identified industrial processes, such as wood preserving, petroleum refining or chemical manufacturing. K listed wastes include EPA waste code numbers K001 through K161.

P Listed Hazardous Wastes – Acutely Hazardous Wastes

P listed wastes are from discarded commercial chemical products, off specification materials, container residues and spill residues that are extremely hazardous. Essentially, these are raw materials, which, for some reason are thrown away without first being used. These acutely hazardous wastes are subject to the small quantity exclusion limit of only 2.2 pounds per month. (Ref. Conditionally Exempted Small Quantity Generator) Acutely hazardous wastes have EPA waste code numbers P001 through P205.

U Listed Hazardous Wastes

U listed wastes are from discarded commercial chemical products, off specification materials, container residues and spill residues. These are raw materials, which are thrown away without first being used. These hazardous wastes have EPA waste code numbers U001 through U411.

Acute versus Chronic Hazards

An **acute** hazard is the potential for immediately harmful effects to occur. An acutely hazardous chemical usually causes a harmful reaction within 24 hours of exposure. Some examples are alcohol, hydrogen cyanide, phosgene, and nerve gas.

A **chronic** hazard does not cause immediate harm, but its effects might be delayed for days, months, or years. Often, chronically hazardous chemicals may accumulate in the body, and build up their harmful effects over time. Some examples are asbestos, DDT, mercury, and formaldehyde.

Multiple Waste Code Numbers

A single waste stream can be assigned multiple waste code numbers. It is quite common for Safety-Kleen to handle wastes having both characteristic and listed waste code numbers. It is the generator's responsibility to identify **all** applicable EPA waste code numbers.

F001-F005 Spent Solvents

The most common types of hazardous wastes encountered by Safety-Kleen are **spent solvents**. A "solvent" is a chemical, such as a cleaner, that is used to dissolve other substances. A "spent solvent" is a solvent that has been used and is unfit for further use. Spent solvent wastes are listed in numbered groups F001 through F005. Examples are:

F001 Spent Halogenated Solvents Used in Degreasing Listed for Toxicity

Tetrachloroethylene	Trichloroethylene
Methylene Chloride	1,1,1-Trichloroethane
Carbon Tetrachloride	Chlorinated Fluorocarbons

F003 Spent Non-Halogenated Solvents Listed For Ignitability Only

Xylene	Acetone
Ethyl Acetate	Ethyl Benzene
Ethyl Ether	Methyl Isobutyl Ketone
N-Butyl Alcohol	Cyclohexanone
Methanol	

F005 Spent Non-Halogenated Solvents Listed For Ignitability and Toxicity

Toluene	Methyl Ethyl Ketone
Carbon Disulfide	Isobutanol
Pyridine	Benzene
2-Ethoxyethanol	2-Nitropropane

Halogenated means that the chemical contains chlorine, fluorine, bromine, or iodine.

Exercise 2.

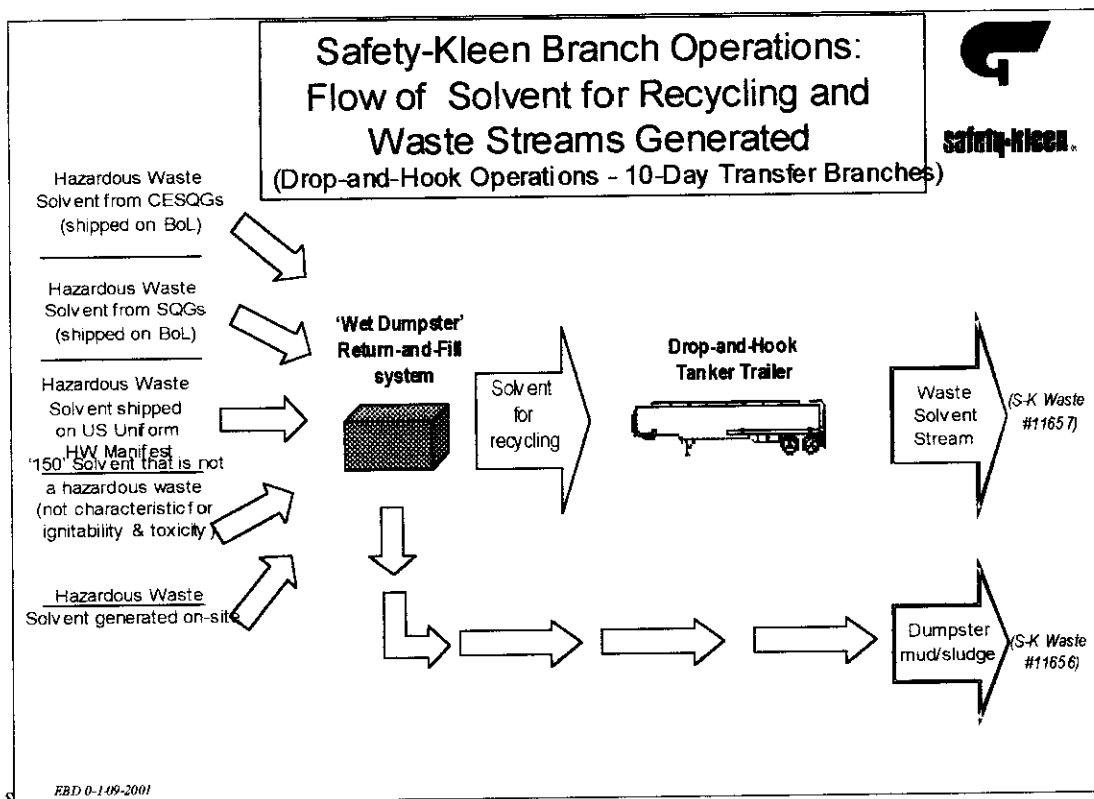
1. Who has the sole responsibility for the correct identification of hazardous waste?
2. A material that is no longer fit for use in its present condition and is discarded is known as what?
3. Can household waste be solid waste, and/or hazardous waste?
4. Liquids with a flash point below what temperature are ignitable?
5. The TCLP mimics disposal of wastes where?
6. Discarded commercial chemical products might have a waste code beginning with either of what two letters?

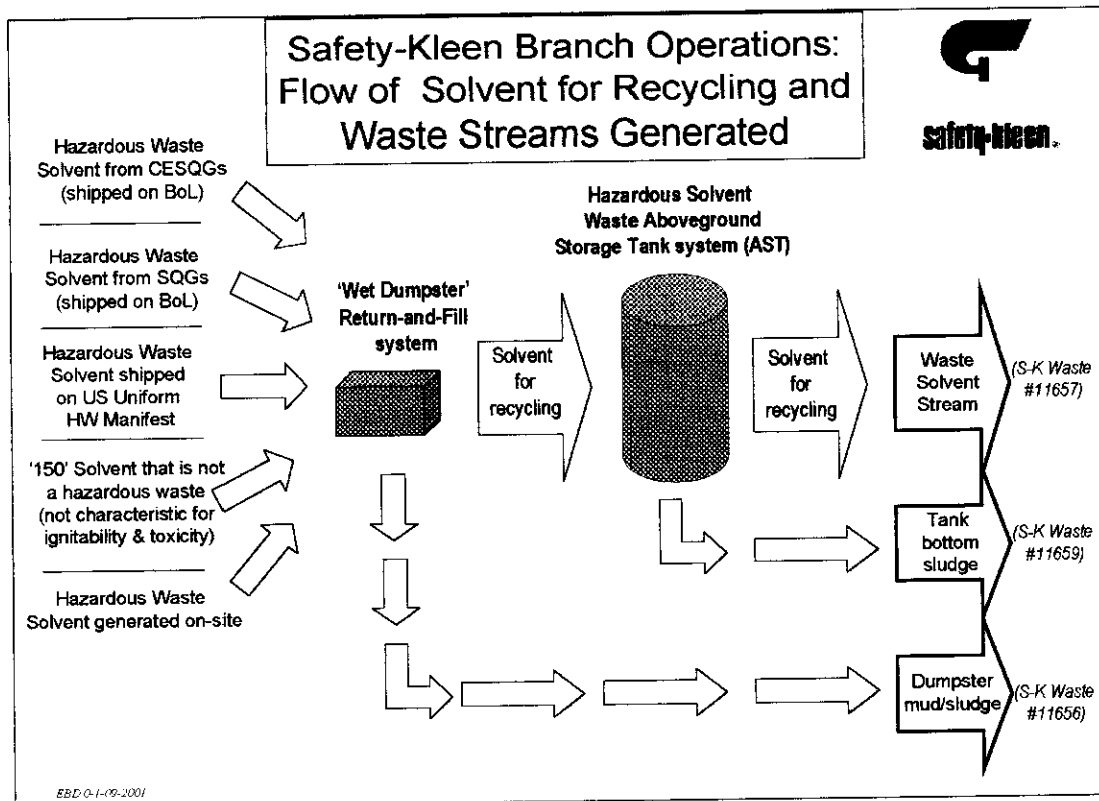
3. Safety-Kleen Customer Service Wastes

The Safety-Kleen Process

Safety-Kleen provides solvent distribution, collection, and reclamation services for automobile repair, industrial maintenance, and dry cleaning service companies. Safety-Kleen operates a "closed loop" waste recovery service for parts cleaning machines used at customers' facilities. When the cleaning fluids become dirty and are no longer effective, Safety-Kleen replaces them with clean, recycled fluids. The dirty fluids are returned to Safety-Kleen where they are recycled. The customer can then reuse the recycled fluids. Approximately two-thirds of the cleaning fluids provided as product by Safety-Kleen have been used before and were recycled.

Core wastes from branch operation





RCRA requires every generator of solid waste to determine if that waste is a hazardous waste. Below are descriptions of Safety-Kleen services and the hazardous wastes they produce.

Reference 40 CFR 262.11

Parts Washer Service Wastes

Spent Mineral Spirits Solvent

There are two primary types of spent parts washer solvent, "Safety-Kleen 105 Solvent" and "Safety-Kleen Premium Solvent," also known as "Safety-Kleen 150 Solvent." Clean "105 Solvent" is so named because it has a flash point of 105°F or higher. Premium solvent has a flash point of 148°F or higher. Chemically, the clean, unspent solvent consists primarily of petroleum hydrocarbon fractions with a boiling point range between 310°F and 400°F. Impurities, such as light aromatic hydrocarbons (LAHC) and chlorinated hydrocarbons, usually constitute less than one percent of the total volume. Mineral spirits makes up at least 95 percent of the total volume of the 105 Solvent and Premium Solvent.

Used parts washer solvent (105 Solvent, and Premium Solvent) is primarily mineral spirits, water, solids, oil, and grease from customer operations. In most cases, there is no water with the used solvent; however, at times, the water may be as much as 50 percent. Unless contaminated

with other hazardous wastes, the used Premium Solvent is usually not a hazardous waste. Nevertheless, unless a generator's hazardous waste determination indicates otherwise, Premium Solvent is presumed to be hazardous for the RCRA toxicity characteristic (i.e., it would fail a TCLP test). Essentially, the solvent portion of the used parts washer is the same as the clean solvent.

Immersion Cleaner

Immersion cleaner and Carburetor and Cold Parts Cleaner #699 is a solvent blend containing up to a maximum of one percent total chlorinated solvents. Used immersion cleaner may contain oils, greases, and solids from various degreasing operations used by Safety-Kleen's customers

Dry Cleaner Service Wastes

The most common solvent used in dry cleaning is tetrachloroethylene (also called perchloroethylene, or "Perc"). Waste generated from dry cleaning operations contain various concentrations of this solvent, and would be listed hazardous waste number F001. Dry cleaning facility wastes include the following:

Powder Residue

At some dry cleaning facilities, a mixture of powdered materials is used to filter the dry cleaning solvent. Other dry cleaner facilities use a filter cartridge. The powder filter medium usually contains diatomaceous earth and carbon. Waste filter medium contains lint, soil, oil, grease and between 40 percent and 50 percent by weight of tetrachloroethylene.

Still Bottoms

After the dry cleaning solvent has been filtered, it is recycled within the dry cleaning machinery by distillation. Distillation cleans the solvent by removing soil, oils, and grease. The soil, oils and grease form a residue called still bottoms. The still bottoms contain between 20 percent and 30 percent tetrachloroethylene.

Paint Wastes

Paint wastes consist of various lacquer thinners and paints. Paint waste is collected in containers at the customer's place of business. The containers are then palletized and stored in the container

storage area of the branch's warehouse. These wastes could be ignitable, have one or more TCLP toxic characteristics, or be listed as F003, or F005 hazardous wastes.

Antifreeze Wastes

Spent antifreeze (ethylene glycol) is collected from automobile service stations in carboys or other containers. The Safety-Kleen representative pumps the antifreeze from the carboy into a tanker truck or into containers. If the spent antifreeze is deemed to be hazardous, then it is stored in the branch container storage area prior to shipment to a reclamation facility.

Fluid Recovery Services (FRS)

Safety-Kleen's service centers have a Fluid Recovery Services (FRS) program. FRS is a program that deals with wastes that are similar to those generated by the use of Safety-Kleen products. These wastes may or may not have been generated from products originally obtained from Safety-Kleen. FRS wastes are collected by the service center as 10-day transfer wastes and then processed by the reclamation centers.

Examples of FRS wastes include:

- Spent hydrocarbon distillates, such as waste fuel oil, petroleum, and naphtha.
- Lubricating oils, hydraulic oils, and machine oils.
- Halogenated solvents such as 1,1,1-trichloroethane, tetrachloroethylene, freon, and trichloroethane.
- Photographic and x-ray developing related wastes.
- Paint and lacquer thinner wastes.
- Other hazardous and non-hazardous halogenated and non-halogenated wastes.

The Safety-Kleen sales manager conducts a hazardous waste identification on each FRS waste. FRS wastes handled by Safety-Kleen can be classified as characteristic wastes (D-waste codes), listed wastes from non-specific sources (F-waste codes), listed wastes from specific sources (K-wastes), commercial chemical products, manufacturing intermediates, or off-specification chemical commercial products (P and U-waste codes).

Solvent Based Fuels

Some solvent wastes are not economically recyclable. These are solvents of little value such as methanol, solvents for which the user's specifications can not be met using reclaimed product, or they are mixtures of solvents which cannot be efficiently separated because overlapping or close boiling ranges makes recovery impossible. However, when properly blended and processed, these solvents can be of beneficial use as a source of energy. Safety-Kleen recycling centers are equipped to process non-recoverable solvent mixtures with still bottoms from solvent recovery to produce valuable solvent based fuels.

Exercise 3.

1. What portion of Safety-Kleen's cleaning fluids products have been used before and are recycled?
2. Which of Safety-Kleen's two parts washer solvents would generate an ignitable hazardous waste?
3. Dry cleaner service waste has what listed EPA waste code number?
4. Paint wastes might have which two listed EPA waste code numbers?
5. Photographic and X-ray developing wastes would be managed under what Safety-Kleen program?
6. What is a use for waste solvents that are of little economic value, but which are a source of energy?

4. Generator Status Determination and Requirements

Once a generator determines that its solid waste is hazardous, its regulatory status must be determined. Hazardous waste generators are divided into three categories according to how much waste is generated in a calendar month. The amount of regulatory requirements increases with the amount of hazardous waste generated. The table below lists the generator categories and associated accumulation time and amount limits.

Government compounds (e.g. Military Bases) can use multiple contractors to carry out their respective operations. As "facilities" all hazardous waste generated as a result of base operations counts towards their monthly generation rates. As a result, each base generates greater than 1,000 kilograms of hazardous waste each calendar month.

Classes of Hazardous Waste Generators

Generator Status	Maximum Generation Rate	Maximum Accumulation Time	On-Site Quantity Limit
Conditionally Exempt Small Quantity Generator	< 220 lbs/month	No time limit	<2,200 lbs at any one time
Small Quantity Generator	<2,200 lbs/month but > 220 lbs/month	180 days (270 days if TSDF > 200 miles away)	<13,200 lbs at any one time
Large Quantity Generator	> 2,200 lbs/month	90 days	None

Conditionally Exempt Small Quantity Generator Requirements

CESQG status applies to generators that:

- Generate no more than 220 pounds (or approximately 25 gallons) of hazardous waste in one calendar month.

CESQGs must:

- Never accumulate more than 2,200 pounds of hazardous waste on site.
- Never accumulate more than 2.2 pounds of acutely hazardous waste on site.

Reference 40 CFR 261.5

Small Quantity Generator Requirements

SQGs status applies to generators that:

- Generate between 220 pounds and 2,200 pounds of hazardous waste per calendar month.
- Generate less than 2.2 pounds of acutely hazardous waste per calendar month.

SQGs must:

- Obtain an EPA identification number prior to shipping hazardous waste off-site.
- Use a hazardous waste manifest when shipping waste off site. Retain copies of all signed manifests for at least three years from the transport date.
- Retain waste analysis records for at least three years from the date of shipment.
- Attach a Land Disposal Restriction (LDR) notification form to the hazardous waste manifest for the first shipment. Retain copies of LDR documents for at least three years from the transport date.
- Never accumulate more than 13,200 pounds of hazardous waste on-site.
- Store wastes on-site for no longer than 180 days.
- Inspect the container storage area weekly and/or inspect tanks daily and document the inspections.
- Post emergency information next to the telephone in the hazardous waste storage area.

Reference 40 CFR 262.34(d)

Large Quantity Generator Requirements

LQG status applies to generators that:

- Produce more than 2,200 pounds of hazardous waste (approximately 300 gallons) per month.

LQGs must:

- Comply with all SQG regulations,
- Store hazardous waste on site for no longer than 90 days.
- Maintain a written contingency plan.
- Submit a biennial report summarizing the types and quantities of hazardous wastes, disposal methods, waste minimization efforts and results.
- Provide employee training.

Reference 40 CFR 262

NOTE: These requirements are based on the EPA regulations and may vary by state.

EPA Identification Number

Generators of greater than 220 pounds of hazardous waste in a month must obtain an EPA identification number. This is a unique number used by EPA to monitor the generation, transportation, storage, and disposal of hazardous wastes. It is specific to the generator's site, and a generator can not legally transport, store, or dispose of hazardous wastes without one. Transporters of hazardous waste and treatment, storage, and disposal facilities must also obtain an EPA identification number.

The EPA identification number is always 12 characters in length. It almost always begins with three letters, followed by nine digits. The letters indicate the state where the generator is located. For example, the EPA transporter identification number issued to Safety-Kleen Systems, Inc. is SCR000075150. The numbers help EPA track the waste from "cradle to grave" and to determine responsibility for cleanup should the need arise.

Reference 40 CFR 262.12.

Exercise 4.

1. Conditionally exempt small quantity generators can produce a maximum of how much hazardous waste in one month?
2. Does a conditionally exempt small quantity generator have to obtain an EPA identification number?
3. Both a conditionally exempt small quantity generator and a small quantity generator must not generate more than how much acutely hazardous waste in one month.
4. Does a small quantity hazardous waste generator need to obtain an EPA identification number?

-
5. Is there a limit on how much hazardous waste a large quantity generator can produce in one month?
 6. Which generator status must provide employee training?
 7. What do the first two letters of an EPA identification number indicate?
 8. Aside from generators, who else must obtain an EPA identification number?

5. Safety-Kleen Waste Acceptance Requirements

Safety-Kleen Waste Analysis Procedures

Every facility that receives hazardous waste from off-site must have a **Waste Analysis Plan**. Each Safety-Kleen branch has its own Waste Analysis Plan. The plan covers the wastes handled by the branch. It specifies the procedures the branch will follow to evaluate shipments of hazardous waste in order to verify that the waste corresponds to the manifest description. The waste analysis plan ensures that the branch will not accept any waste for which it is not permitted or which it lacks the ability to manage. Wastes that do not meet the **quality control** requirements are rejected.

Spent solvents are the majority of the wastes managed by Safety-Kleen. These spent solvents are also the primary feed stocks used to produce Safety-Kleen solvent products. Therefore, proper quality control of the spent solvents is necessary to ensure that reclamation proceeds in the safest and most efficient manner possible. The Waste Analysis Plan is a crucial part of this **quality control process** and ensures that Safety-Kleen handles only specific types of wastes.

Reference 40 CFR 264.13

Quality Control Procedures

Safety-Kleen controls the use and management of its solvents by:

- Limiting the types of solvents to those that are compatible with one another and their containers.
- Determining if customer's use of Safety-Kleen equipment is appropriate.
- Training customers in the proper use of equipment.
- Training employees to inspect spent solvent to determine its acceptability.
- Documenting whether collected waste meets Safety-Kleen's acceptance criteria.
- Marking each container with the customer's name, address, and EPA identification number (if required). This information remains on containerized waste until it is accepted at the reclamation facility.
- Keeping a record of each incoming and outgoing shipment in the branch's operating log.
- Demonstrating that the waste streams do not change over time by sampling and analyzing a representative portion on an ongoing annual basis.
- Routine analysis of the wastes received at the recycling centers.

Rejected Waste Criteria

If a waste is rejected at the time of service based on volume or consistency discrepancies, the customer will be given a choice as to whether he will dispose of the waste himself or will require Safety-Kleen's assistance. If the customer requests Safety-Kleen's assistance, a sample will be collected using a Coliwasas® sampling device. The sample will be analyzed for flash point, volatile organic compounds, and other parameters to adequately characterize the waste (i.e., halogenated organic solvents, polychlorinated biphenyls (PCBs), flash point, etc.)

If the waste is acceptable for Safety-Kleen, it will be labeled, manifested, and transported appropriately. The waste will then be managed as any other waste.

The following is a discussion of the criteria for accepting or rejecting wastes.

Parts Washer Service Waste

Spent parts washer solvent is inspected for quantity, odor, and appearance.

Quantity of used solvent in drum. Is there more than there should be?

Safety-Kleen parts washer solvent is supplied to customers in 5-, 16-, and 30-gallon containers. When delivered to the customer, these containers hold 5, 10, and 19 gallons of fresh product. If no extra material has been added to the containers, then at the time

the waste is picked up, there should be no more than 5, 10, or 19 gallons of waste in the containers. If the volume of waste in a given container exceeds the original amount, the Safety-Kleen service representative will sample the waste for laboratory analysis as described above, or the waste will be rejected.

Odor of liquid in drum – Do Not Sniff!

The Safety-Kleen service representative should note any unusual odors from the waste solvent. Health and Safety concerns preclude intentionally smelling or sniffing solvent, but any obvious unusual odors should be noted.

Appearance of liquid in the drum. Does it look normal?

Spent parts washer solvent is inspected for its color. Unused Parts Cleaner 105 is dyed green, and unused 150 Solvent is an amber color. As the solvent is used, the color changes. The color of the spent solvent depends on its use by the customer. For example, solvent used at automotive shops typically turns a brown or black color, while solvent used by silk screen printers will turn to the color of the inks being used (red, blue, pink, green, etc.). If the color of the spent solvent is not correct for the use specified by the customer, the waste will be rejected and the procedures listed above for rejected waste will be followed.

Immersion Cleaner

Spent immersion cleaner is inspected for volume, physical state, and color.

Quantity of used immersion cleaner. Is there more than there should be?

Clean immersion cleaner is delivered to the customer in containers holding six gallons of solvent. When picked up from the customer, if no additional material has been added to the container, there should be no more than six gallons. If the volume of waste in a container exceeds the original amount, the waste will be rejected and the procedures listed above for rejected waste will be followed.

Appearance of used immersion cleaner. Does it look normal?

Unused immersion cleaner is amber color. Spent immersion cleaner turns brown in color. The more it is used, the darker brown it becomes, until it is almost black. Spent immersion cleaner should appear amber, brown, or black. If the color of the spent

solvent is not correct, the waste will be rejected and the procedures listed above for rejected waste will be followed.

Dry Cleaner Waste

Dry cleaner waste consists of spent filter cartridges, powder residue, and still bottoms.

Spent Filter Cartridges

The service representative should be familiar with the appearance of filter cartridges. Spent filter cartridges are placed in either a 15-gallon ("split 30") container, which holds three cartridges or a 16-gallon container, which holds either one jumbo, filter cartridge or two smaller filter cartridges. The containers may also contain approximately one inch of liquid. The liquid should be clear or have a light brownish tint. If the amount of the liquid is greater than approximately one inch or if the liquid is a color other than light brown, the waste will be rejected and the procedures listed above for rejected waste will be followed.

Powder Residue

Powder residue is inspected for consistency and color. Consistency is how firm or liquid a material is. Powder residue waste should not contain more than one inch of free liquid. The waste should be slightly wet, with the consistency of a paste. Its color should appear grayish-black. If the powder residue is too liquid, or does not appear grayish-black, the waste will be rejected and the procedures listed above for rejected waste will be followed.

Still Bottoms

Dry cleaner still bottoms are inspected for consistency and color. The waste should have a highly viscous, tar-like consistency. If the consistency of the waste is too liquid, the service representative will sample the waste as described above, or will reject the waste.

Still bottom waste is also inspected for color. The waste should appear dark brown or black. If the waste is a different color, the waste will be rejected and the procedures listed above for rejected waste will be followed.

Lacquer Thinner Waste, Paint Waste, and Antifreeze Collection

Lacquer Thinner Waste

Lacquer thinner waste is inspected for volume. The solvent is provided to customers in pails containing five gallons of lacquer thinner. The paint-gun cleaner is a closed system with two collection pails. There should never be more than a total of 7.5 gallons of solvent waste in the two collection pails. If the volume of the spent lacquer thinner is more than 7.5 gallons, the waste will be rejected and the procedures listed above for rejected waste will be followed.

Paint Waste

Paint waste is inspected for consistency and water content. The waste should contain no more than 30 percent solids and be a free flowing liquid. More than 10 inches of water will cause the waste to be rejected.

Antifreeze Waste

Spent Antifreeze is visually inspected prior to being pumped into a Safety-Kleen container or tanker truck. Spent antifreeze is typically yellowish green to blue in color with traces of orange, red, or black and discoloration due to rust residue. A slight sheen may be present on the surface due to oils or other petroleum products. Brownish to black sediments from engine rust and dirt may collect in the carboy. If the spent antifreeze appears unacceptable, the Safety-Kleen service representative may collect a sample for analysis or request that the customer sample and analyze the waste.

Fluid Recovery Services (FRS)

Safety-Kleen service representatives should not open containers of hazardous waste that are collected as part of the FRS program. These wastes have been evaluated for acceptability by the sales manager and will be inspected for acceptance at their final destination.

Exercise 5.

1. The procedures used to evaluate the acceptability of waste shipments are contained in what plan?

2. Should you ever intentionally “sniff” any waste material?

-
3. If there is too much used parts washer solvent to be picked up, what should you do?

 4. Unused immersion cleaner is what color?

 5. How much lacquer thinner waste should there be?

6. Transportation Requirements

DOT has adopted requirements for the transportation of hazardous waste. These requirements are contained in 49 CFR Subpart C. This section of the manual deals with the EPA requirements for shipping hazardous waste. More detailed information in regards to manifesting, labeling, marking and placarding is covered in the Hazardous Materials Transportation Skills training module.

Uniform Hazardous Waste Manifest System

Under RCRA, hazardous waste is regulated from the point of generation to its ultimate disposal. Even though the waste may be in another party's possession, the generator is always responsible for it. Hence, the term "**cradle-to-grave**" is used to describe the overall responsibility assigned to the generator under RCRA.

The manifest is a shipping document that specifically tracks hazardous waste. This document must comply with EPA and DOT regulations. Every hazardous waste shipment, except shipments from CESQGs, must be accompanied by a manifest. Under RCRA, it is the generator's responsibility to prepare the hazardous waste manifest accurately. Safety-Kleen provides pre-printed manifests as a service to its customers.

Reference 40 CFR 262 Subpart B.

The manifest must include:

- Generator name, address, telephone number, and EPA ID number
- Transporter name and EPA ID number
- Designated facility name, address and EPA ID number
- Official DOT description and quantity of waste being sent for disposal
- Emergency response contact number
- Generator certification statement (signature and date)
- Transporter acceptance signature and date
- Designated facility acceptance signature and date

Waste Minimization Certification

EPA requires all large quantity generators to develop and implement a waste minimization plan. The generator certifies on the manifest that they have a waste minimization plan in place. The goal of this plan is for all generators to reduce generated wastes each year.

Land Ban Notification/Certification Forms

Each type of hazardous waste has a particular management method specified in RCRA. These regulations are known as the **Land Disposal Restrictions** ("LDR). When hazardous wastes are shipped for the first time for treatment, storage, or disposal, the generator must sign a certification, and/or notification statement. It must include the following wording contained on the LDR:

"I am familiar with the waste through analysis and testing or through knowledge of the waste to support this notification...(that the waste is being managed in accordance with U.S. EPA regulations)."

Remember to note document reference numbers for pre-prints and manifests on the Land Disposal Restriction (LDR) Notification/Certification form, and to ensure that each copy is signed.

Safety-Kleen requires the certification form be completed for each shipment, not just the first.

Reference 40 CFR 268.

Labeling, Marking and Placarding

Except for containers in satellite accumulation areas, generators must clearly mark the accumulation start date on each container of hazardous waste.

Reference 40 CFR 262.34(a)(2)

Generators must clearly label each container with the words "Hazardous Waste."

Reference 40 CFR 262.34(a)(3)

Following EPA and DOT requirements, all containers of waste being transported must have labels and markings securely attached. This information helps identify and track waste from generation to disposal.

Reference 40 CFR 262.31, 40 CFR 262.32, and 40 CFR 262-33.

Prior to shipping a container of less than 110 gallons, a generator must mark that container with the following:

HAZARDOUS WASTE—Federal Law Prohibits Improper Disposal. If found, contact the nearest police or public safety authority or the U.S. Environmental Protection Agency.

Generators Name and Address _____
Manifest Document Number _____

Affixing a hazardous waste shipping label to each container accomplishes the marking requirements and provides a place to indicate the accumulation start date.

HAZARDOUS WASTE	
FEDERAL LAW PROHIBITS IMPROPER DISPOSAL IF FOUND, CONTACT THE NEAREST POLICE, OR PUBLIC SAFETY AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY	
PROPER U.S. DOT DESCRIPTION	
GENERATOR INFORMATION: NAME ADDRESS CITY _____ STATE _____ ZIP _____	
EPA ID NO. _____	EPA MANIFEST DOCUMENT NO. _____ EPA WASTE NO. _____
ACCUMULATION START DATE _____	STATE MANIFEST DOCUMENT NO. _____

HANDLE WITH CARE!
CONTAINS HAZARDOUS OR TOXIC WASTES

Compliance with the Manifest

After you have determined the acceptability of the customer's waste for shipment, you should make certain of the following:

- The number of containers picked up agrees with the manifest.
- The descriptions of the waste on the manifest are correct.
- The names and addresses of the transporters and the TSDF are correct.
- The generator signs and dates the manifest.
- You sign and date the manifest.

The generator will keep one copy of the manifest. You should deliver the waste shipment to the branch along with the other copies of the manifest. When the wastes arrive at the final destination, the TSDF, the manifest will be signed and a copy will be sent to the generator. The generator has a specific amount of time to receive his returned copy of the manifest, or he must contact the transporter and TSDF in order to find his shipment.

Reference 40 CFR 263.20

Transfer Facility

If the branch receives a waste shipment as the final shipping destination, a Safety-Kleen representative will sign and date the manifest as the TSDF. A completed copy of the manifest will then be sent to the generator.

However, the branch may receive a waste shipment and store it for less than 10 days. During this 10-day period, the branch acts as a **transfer facility**. The shipment will then be transported under the original manifest to the next destination. When the waste arrives at the next transporter (if not Safety-Kleen) or the TSDF, a signed copy of the manifest will be presented to the Safety-Kleen representative.

Reference 263.12

Related Transportation Issues

Shipping Papers

Hazardous materials may be shipped on several different types of shipping papers. Generally, hazardous wastes are shipped using US Uniform Hazardous Waste Manifests (USUHW). Some states modify USUHWs for their own state. Hazardous materials that are not hazardous wastes are shipped on a bill of lading, such as the Safety-Kleen Pre-Prints or blue non-hazardous waste "manifests" (which are *not* actually manifests under EPA's RCRA regulations). You should contact your environmental manager for specific shipping paper requirements.

Government compounds (e.g. Military Bases) can use multiple contractors to carry out their respective operations. As "facilities" all hazardous waste generated as a result of base operations counts towards their monthly generation rates. As a result, each base generates greater than 1,000 kilograms of hazardous waste each calendar month. Therefore, a hazardous waste manifest is required for off-site transportation of hazardous waste from each of these facilities or contractors.

Hazardous Material	Paper	Type
Unused product (e.g., IC, 105 solvent)	Pre-Print	Bill of Lading
Hazardous waste (e.g., waste 105 solvent)	Hazardous Waste Manifest	US Uniform Hazardous Waste Manifest
Hazardous waste from CESQG Customer	Pre-Print and/or Blue non-hazardous manifest	Bill of Lading (may use normal manifest)
'Reclaimed' hazardous waste from SQG Customer - 105, 150, and Immersion Cleaner only	Pre-Print and/or Blue non-hazardous manifest	Bill of Lading (may use normal manifest)
Non-hazardous waste (industrial)	Usually blue non-hazardous manifest (may be Pre-Print)	Bill of Lading
Non-hazardous waste (automotive)	Usually Pre-Print (may be blue non- hazardous manifest)	Bill of Lading

Shipping Descriptions (SHIP)

All DOT hazardous materials descriptions must include the following information:

- Shipping Name
- Hazard Class

-
- Identification Number (or *Product Identification Number*)
 - Packing Group

Think **SHIP**.

You should contact your branch's environmental manager for specific shipping paper requirements.

Materials Management Practices

Container Storage

Safety-Kleen personnel package petroleum products, used oil, hazardous wastes, hazardous substances, and other hazardous materials in accordance with applicable DOT Hazardous Materials Regulations (HMR), Federal Motor Carrier Safety Regulations (FMSCR), and United Nations Performance Oriented Packaging Standards (UN POPS). Safety-Kleen personnel then store these containers in the warehouse, the flammable storage buildings, or onboard vehicles in preparation for shipment. Site personnel inspect these containers on a schedule specified in the branch's permit or as required by applicable regulations.

Loading and Offloading Practices

Safety-Kleen personnel conduct loading and off-loading at paved areas adjacent to warehouse or storage buildings. Safety-Kleen personnel visually observe transfer operations to ensure that no loading spills or leaks occur. If accidental spillage or leakage occurs, branch personnel will implement the contingency plan using pre-stocked, on-site spill response equipment.

Exercise 6.

1. What is the name of the document used to ship hazardous waste?

2. Who has the responsibility of accurately preparing the manifest?

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3. Who must have signed a completed manifest?

 4. What date must be on a container of hazardous waste?

 5. A transfer facility may keep a shipment of hazardous waste for how long?

 6. What does SHIP stand for?

 7. Besides EPA, what other federal agency regulates the transportation of hazardous waste?

 8. Who may ship hazardous waste without a manifest?

Part 2. Branch Activities

The second part of this training manual provides an overview of certain requirements at Safety-Kleen Branches that have permits for the treatment and storage of hazardous waste. There are additional site specific requirements contained in those permits that are not discussed here.

7. Branch Requirements

RCRA Training

RCRA requires generators and treatment, storage and disposal facilities to train their employees in the proper handling, packaging and transportation of that waste. Hazardous waste workers must be able to perform routine waste management duties and to respond as needed in an emergency. Generators and TSDFs are required to conduct initial training in a classroom or on-the-job and to provide annual refreshers.

Reference 40 CFR 264.16

Safety-Kleen Training

Safety-Kleen personnel are instructed in the following:

- Safe material handling;
- Good housekeeping practices;
- Applicable pollution control laws, rules and regulations; and,
- Operation and maintenance of equipment to prevent contamination of surface water and soil.

Waste Analysis Plan

Safety-Kleen is permitted to manage only specifically identified hazardous wastes at each branch location or recycling center. Safety-Kleen must ensure that it only receives and manages the wastes identified in its permit. Before Safety-Kleen accepts a waste for treatment or storage, it must obtain a detailed chemical and physical analysis of that waste. The analysis is to provide enough information so that the waste can be properly identified and managed.

Except for 10-day transfer shipments, when a customer's hazardous waste arrives at the branch for treatment or storage, it is inspected, and if necessary analyzed, to determine if it corresponds to the initial detailed chemical and physical analysis. The waste is also checked to determine if it corresponds in type and amount to the waste described on the accompanying manifest. If there are any discrepancies, the generator must be contacted in order to reconcile the problem.

Each branch has a waste analysis plan for the wastes that it receives. The plan specifies the methods for collecting a sample and the laboratory analysis to be performed. The plan also describes the procedures the branch uses to inspect each shipment of hazardous waste. The plan must indicate the criteria for determining if the waste corresponds to the initial analysis and to the accompanying manifest.

Analysis is conducted at the recycle centers to safeguard the reclamation process and to ensure product quality and as required by permit and waste analysis plan. Each waste stream of each load is sampled and analyzed as it is received from the branches. Additionally, TCLP analyses for all compounds, except pesticides, is conducted every five years on all characteristic hazardous waste streams (example; used parts washer solvent and 699 IC).

Manifests and Operating Record

Each shipment of hazardous waste that arrives at a branch for treatment or storage is accompanied by a manifest. The manifest describes the types and amounts of wastes in that load. The branch is required to inspect each load and make sure that the waste corresponds to the manifest. If there are any discrepancies, the generator must be contacted in order to reconcile the problem.

Except for 10-day transfer shipments, when the branch accepts a waste for treatment or storage, the manifest is terminated. That is, the branch signs the manifest as the TSD, and provides a copy to the transporter if not a Safety-Kleen transporter. The Branch must also send a copy of the completed manifest back to the generator. The shipment is then noted in the Branch's operating record with a reference back to the accompanying manifest and generator, and the date received.

The operating record keeps track of the movement of hazardous waste at the Branch. The Branch must record in the operating record each time hazardous waste is received, moved, treated, or shipped out. The location of the hazardous waste at the Branch site must be noted. The operating record must also record the manifest number for each shipment of hazardous waste received, or shipped out. The manifest and operating record are crucial for maintaining the cradle-to-grave tracking system.

Branch Wastes

Tank Bottom Sediments

Used solvent may contain from two percent to ten percent, by volume, sediments from parts washer tank bottoms. Tank bottom sediments settle out from used parts washer solvent and accumulate in branch storage tanks. The bottom sediments contain solids, oils, greases, and water from customers' operations, with a small amount of mineral spirits. These sediments are periodically removed from the tanks and shipped to Safety-Kleen's reclamation facility. Analyses have shown that the sediment is often ignitable, and contains some TCLP toxicity characteristics. Consequently, Safety-Kleen manages tank bottom sediment as hazardous waste.

Dumpster Sediment

Sediment is accumulated in wet dumpsters from emptying containers of used parts washer solvent. The solvent is then transferred from the dumpsters to above ground storage tanks. Filters from parts washers, which utilize Premium Solvent, may also be placed in the dumpsters. Dumpster sediment is similar to used parts washer solvent tank bottom sediment, but contains small bits of metal and less parts washer solvent. Sediment in the dumpsters is removed on a frequent basis. The waste is containerized and shipped to Safety-Kleen's recycle facility. Because the sediment is normally ignitability and contains some TCLP toxicity characteristics, it is managed as a hazardous waste.

Empty Hazardous Waste Containers

EPA's RCRA hazardous waste regulations specify when a **hazardous waste container** is to be considered **empty**. RCRA further divides the definitions of "empty container" into those that apply to hazardous waste containers and those that apply to acute hazardous waste containers.

Reference 40 CFR 261.7

Refer to DOT regulations (49CFR 173.29) for the shipment of empty containers.

Containers would also include tanks as long as they are portable.

Reference 40 CFR 260.10

Hazardous Waste Containers

In order for a container to be considered empty under RCRA, as much of its contents as is possible must be removed, and no more than one inch of residue can remain in the bottom. The one-inch of residue criteria may be replaced by three percent of the weight of the contents if the

container is less than or equal to 110 gallons. If the container is more than 110 gallons, the weight limit is only 0.3 percent.

Acutely Hazardous Waste Containers and Tanks

For a container of acutely hazardous waste (P listed wastes) to be considered empty, it must be thoroughly cleaned using one of the following methods:

- The container has been triple rinsed using a solvent capable of removing all of the residue, or
- If the container had an inner liner that protected it from the contents, the liner can be removed and the container will be considered empty

Emergency Equipment

The Safety-Kleen branch maintains the following emergency response equipment. Branch personnel will check the emergency supplies weekly, or as indicated on appropriate permits, plans, or inspection schedules. See the site plans, permits, and the Safety-Kleen online **S-K Environmental Policies and Procedures** (Lotus Notes), online **S-K Transportation Policies and Procedures** (Lotus Notes), and online **S-K Health and Safety Manual** for additional information on hazard assessments, PPE use, and related information.

Reference 40 CFR 264.32

Equipment	Comment
Gloves	Personnel handling solvent will use rubber or plastisol gloves.
Safety-Glasses or Face Shield	Personnel loading or unloading solvent will wear safety glasses, face mask, and half or full-face air-purifying respirator with organic vapor cartridges, unless otherwise indicated by a safety hazard analysis.
Plastic Aprons	Employees may wear plastic aprons to prevent contamination of clothing and skin.
Eye Wash Stand	Several eyewash stands are located throughout the branch. They are checked weekly.
Showers	A shower is located in the locker room, and is checked periodically.
Ventilation	Enclosed areas that may collect dangerous vapor concentrations are ventilated by fans or other safe means. If the potential vapors are from flammable liquids, personnel will use explosion proof fans, natural ventilation, or other safe means.
Fire Extinguisher	Two 10-pound Type ABC fire extinguishers are located at each solvent transfer location. The branch manager will ensure that these extinguishers are full and tagged with the most recent inspection date. Type ABC extinguishers (e.g., multipurpose dry chemical) may be used on wood, paper, cloth, flammable liquid, or electrical fires.

Absorbent Material	The facility will maintain an adequate supply of absorbent material to handle small spills located in the loading and unloading area and the warehouse.
Decontamination	Employees will use soap and water to decontaminate equipment.

Secondary Containment

The warehouse, storage buildings, return and fill station, used oil storage tanks and solvent storage tanks normally have secondary containment. Secondary containment protects against the potential for product or waste releases and prevents those releases from affecting surface water or ground water. Site personnel routinely remove potential contaminants from the secondary containment to prevent non-sudden releases.

Inspections

Container Storage Area Inspections

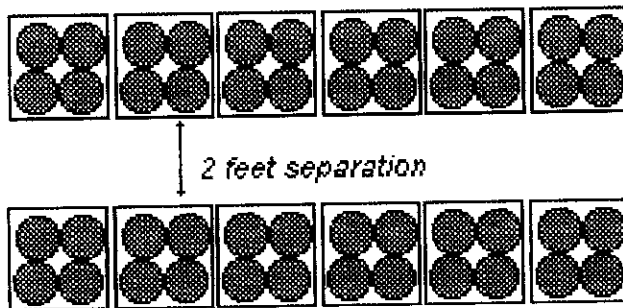
A hazardous waste storage area is a clearly designated area designed for the storage of hazardous waste. Branches must inspect container storage areas daily for leaking drums, aisle space, markings, and labels. The requirements that must be fulfilled with respect to hazardous waste storage areas include:

- Storage areas must be inspected at least weekly, looking for leaking containers and for deterioration of containers and the containment system caused by corrosion or other factors.
- Adequate aisle space to allow for the unobstructed movement of personnel and emergency response equipment.
- The contents of a container holding hazardous waste that is not in good condition or that begins to leak, must be transferred to a container that is in good condition.
- The hazardous waste storage area must be clearly labeled and secured against unauthorized entry.
- The surface of the hazardous waste storage area must be impervious (concrete or black top) without cracks or gaps.
- Flammables must not be stored within 50 feet of a property line.
- "NO SMOKING" signs must be clearly visible.
- There should be a communication device at or near the hazardous waste storage area.
- The words "**Hazardous Waste**" and the **Accumulation Start Date** must be visible on every container. The accumulation start date is the date when the first drop of hazardous waste was placed inside the container.
- A container holding hazardous waste must not be opened, handled, or stored in a manner that may rupture it or cause it to leak.

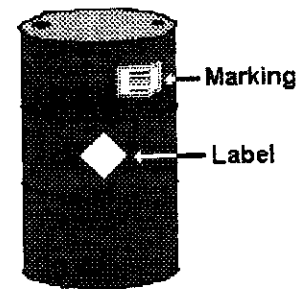
- A container holding hazardous waste must remain closed during storage, except when it is necessary to add or remove waste.
- A storage container holding a hazardous waste that is incompatible with any waste or other materials stored nearby in other containers, piles, open tanks, or surface impoundment must be separated from the other materials or protected from them by means of a dike, berm, wall, or other device.
- Results of the inspections must be maintained in an inspection log.

Reference 40 CFR 264.17, 40 CFR 264 Subpart D and Subpart I.

Aisle Spacing

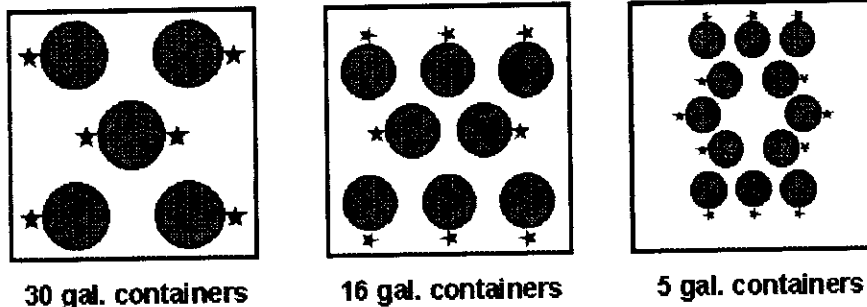


Marks & Labels



DCI Labels vs. EPA markings

Label and Marking Placement



- Stars indicate where to place labels and markings
- For 30 gallon drums, label middle drum on either side

Reference 40 CFR 264.35, 40 CFR 264.174

Tank System Inspections

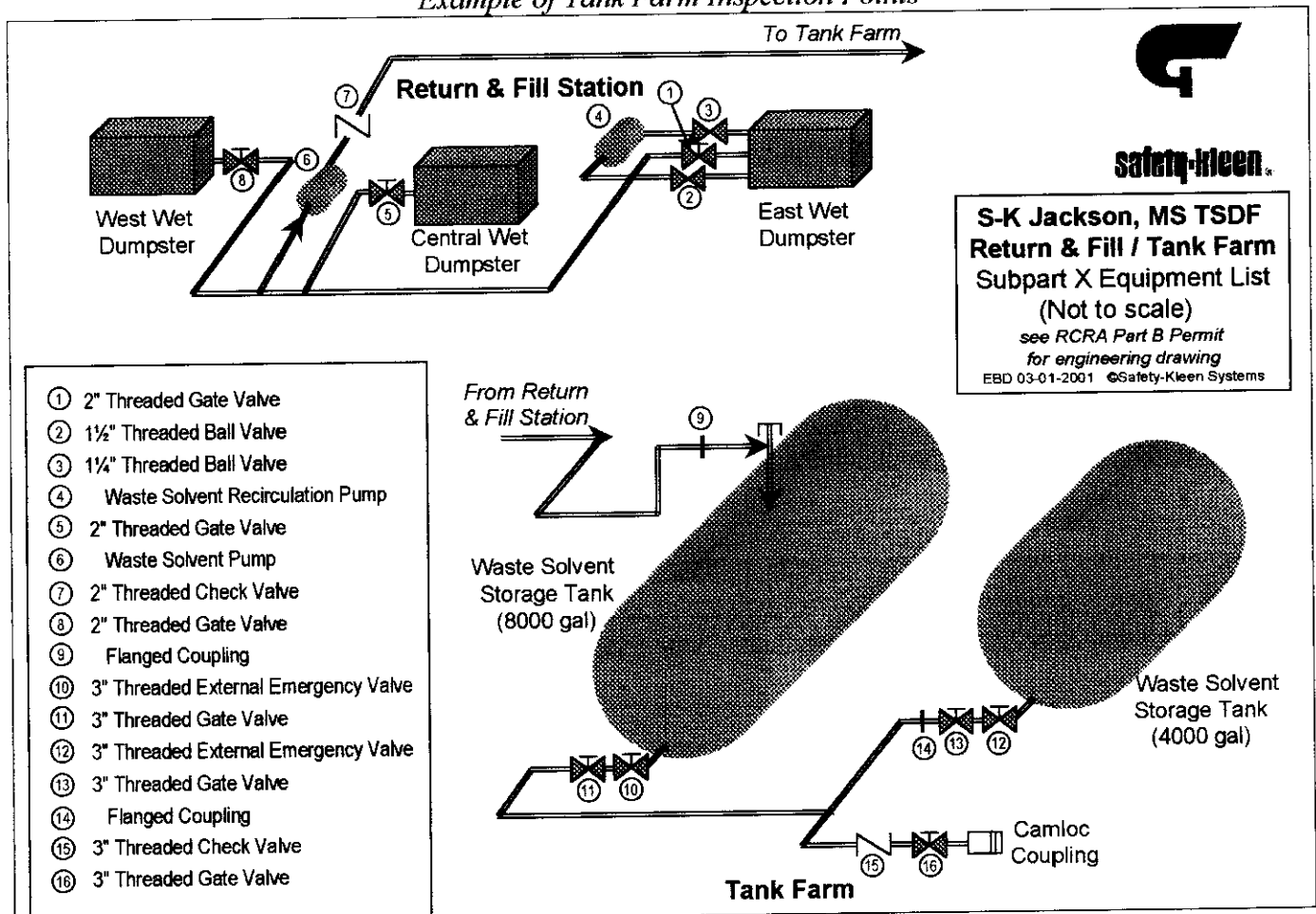
Branches with aboveground, and underground, storage tanks or tank farms must check them every day to ensure that they are properly operational and do not have leaks.

Reference 40 CFR 264.195

Leak Detection and Repair

Personnel must check tank system flanges, fittings, valves, couplings, and pumps for leaks. Any leaks found must be corrected immediately, or the system must be shut down and/or emptied until repairs are made.

Example of Tank Farm Inspection Points

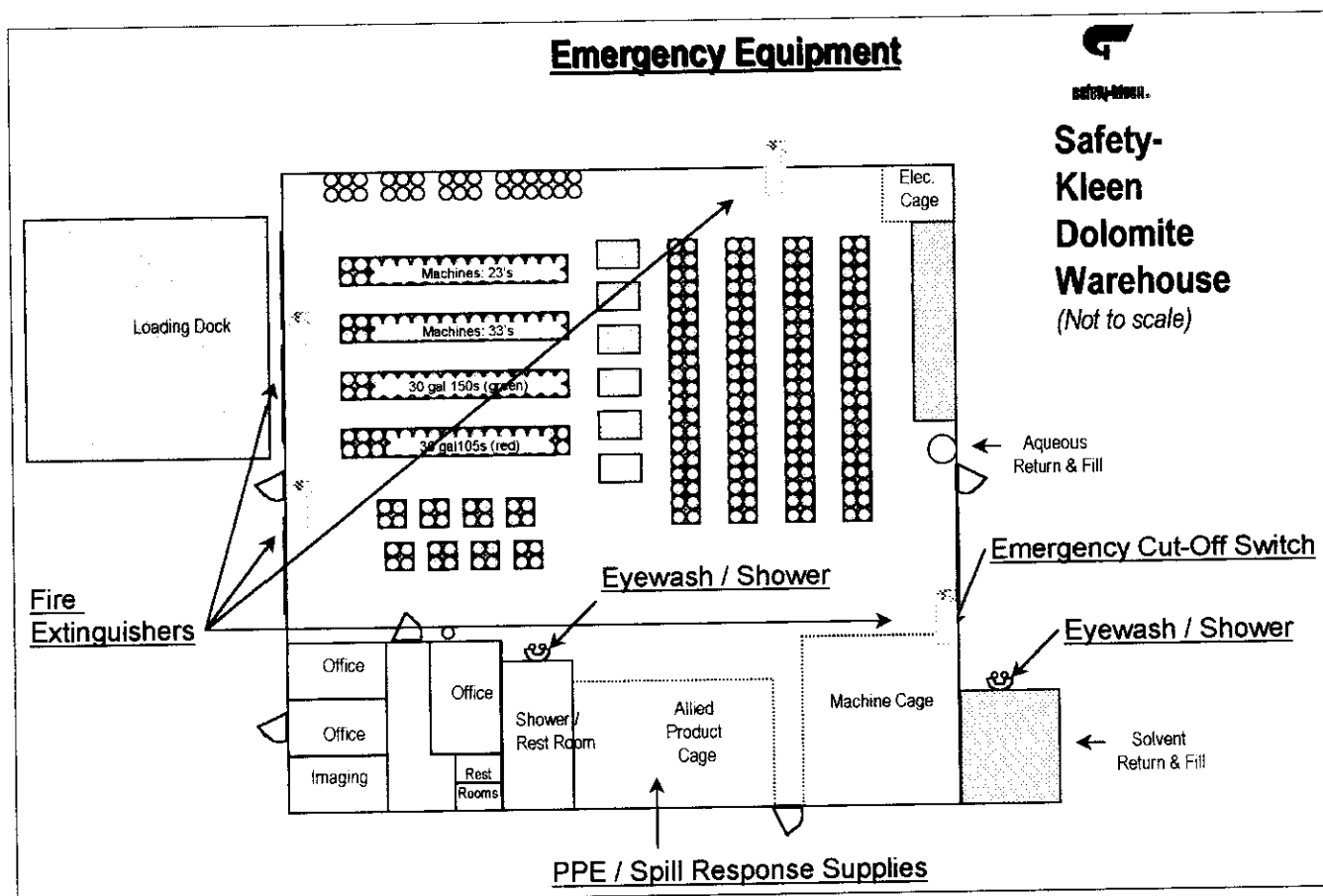


Safety and Emergency Equipment

Branch personnel must regularly inspect safety and emergency equipment. In the event of an emergency, the branch must restock emergency equipment and notify their appropriate state agency before resuming operations.

Reference 40 CFR 264.32

Example of Branch Emergency Equipment Diagram



Exercise 7.

1. Who are required to provide training for their employees in the proper handling, packaging and transportation of hazardous waste?

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2. What are two wastes generated by the branch from the management of customers' hazardous wastes?
 3. If a container has two inches of solid residue stuck in the bottom, is it empty?
 4. What protects against the potential for product or waste releases and prevents those releases from affecting surface water and ground water?
 5. How often is the branch storage area inspected looking for leaking drums, aisle space, markings and labels?
 6. What does "adequate aisle space" allow for?
 7. What must be done to the contents of a container that begins to leak?
 8. What must be done if a tank is found to be leaking?

8. Contingency Plan

The branch's contingency plan describes the actions to be taken by each employee in the event of a spill, fire, or other emergency. It includes the information necessary to address emergency situations efficiently and in such a manner as to prevent or minimize hazards to human health or the environment due to fire, explosion or any other release of hazardous materials to the air, soil, surface water, or ground water. The emergency coordinator must activate the contingency plan immediately whenever there is a release of hazardous material, which could threaten human health or the environment, implementing the procedures contained in this plan.

Reference 40 CFR 264 Subpart D

Availability and Revision of the Contingency Plan

The contingency plan and all revisions to the plan are kept at the branch and regularly updated throughout the operating life of the branch. Copies of this document are provided to local authorities that may be called upon to provide emergency services. In addition, this plan and all revisions to the plan are made readily available to employees working at the Branch.

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

- The branch permit is modified to allow new process wastes to be stored or treated, or applicable regulations are revised;
- The list or location of emergency equipment changes;
- The local Safety-Kleen branch changes design, construction, operation maintenance, or other circumstances in a way that:
 - Increases the potential for fires, explosions, or releases of hazardous constituents; or
 - Changes the response necessary in an emergency;
- The names, address, or phone numbers of the emergency coordinator or alternate changes;
- The plan fails when implemented in an emergency.

Emergency Coordinator

The emergency coordinator or the alternate is responsible for implementing the contingency plan during an emergency. All employees, however, must be familiar with the procedures in their plan and are responsible for proper implementation of the plan should the emergency coordinator or the alternate be unavailable.

The emergency coordinator and the alternate must be familiar with all aspects of this contingency plan, the operations and activities at the branch, the location and characteristics of materials handled, the location of all records within the branch and the branch layout. In

addition, these coordinators have the authority to commit the resources necessary to carry out the contingency plan. The emergency coordinator, and the alternate, are adequately trained to respond in the event of an emergency. Their home address and telephone numbers, as well as the office telephone number, are listed in the **Emergency Contact List**. At least one employee will be at the branch or on call to respond to an emergency situation.

Emergency Coordinator Responsibilities

Whenever there is an imminent or actual emergency situation, the emergency coordinator (or the alternate when the emergency coordinator is not available) must immediately:

- Activate the branch's internal communication system
- Notify the Safety-Kleen 24-hr emergency number (3E Company) at (800) 468-1760
- Notify appropriate state and local agencies (3E Company may assist notification)
- Identify, as best possible, the character, source, amount, and extent of any hazards
- Identify, as best possible, the safety hazards posed to the public and responders
- Take measures to ensure that fires, explosions, and releases do not occur, recur or spread.

Hazard Characterization

Whenever there is a release, fire or explosion, the emergency coordinator or the alternate must immediately identify the character, exact source, amount, and extent of any contamination. They must utilize their knowledge of the materials being handled at the Branch, review Branch records, and if necessary, outside laboratories may be contacted to perform chemical analysis.

Concurrently, the emergency coordinator or the alternate, must assess possible hazards to human health or the environment that may result from the release, fire, or explosion. This assessment must consider both direct and indirect effects of the release, fire or explosion (e.g., the effects of any toxic, irritating, or asphyxiating gases that may be generated, or the effects of any hazardous runoff).

To characterize potential hazards and contamination, the coordinator may identify hazard communication labels and markings, observe physical characteristics, or review facility records. The Emergency Coordinator and responding personnel also have access to the **North American Emergency Response Guide** and assistance from Safety-Kleen's 3E Company.

Containing the Emergency

During an emergency, the emergency coordinator or the alternate must take all measures necessary to ensure that fire, explosions and releases do not occur, recur or spread to other

hazardous wastes at the facility. These measures must include, where applicable, stopping processes and operations, collecting and containing released waste, and removing or isolating containers.

Emergency Coordinator Remedial Action Responsibilities

If the environment has been contaminated or there is a potential for contamination as a result of a fire, explosion, or spill, the emergency coordinator or the alternate must contact the Safety-Kleen 24 hour notification number **(3E Company, (800) 468-1760)** to report the incident. Waste, contaminated soil, or surface water, recovered from the incident, must be properly managed and treated, stored, or disposed of as soon as is possible. The emergency coordinator or the alternate must ensure that, in the affected area(s) of the branch:

- Substances incompatible with the release are not brought on-site until cleanup is completed;
- Personnel take all appropriate steps to limit groundwater contamination or non-sudden releases;
- Branch personnel re-stock all used emergency equipment listed in the contingency plan, and clean, decontaminate, and otherwise ensure that it is fit for use before operations are resumed;
- The emergency coordinator notifies the local state environmental agency contact that emergency equipment has been re-stocked or is otherwise operational prior to resuming branch operations.

Emergency Coordinator Reporting Responsibilities

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

- If the assessment indicates that evacuation of local areas may be advisable, the coordinator must immediately notify appropriate authorities.
- The coordinator must immediately notify the Safety-Kleen contact using the 24-hour notification number **(3E Company, (800) 468-1760)**. 3E Company will report the incident to the state environmental or emergency management agency.

When reporting, the emergency coordinator or the alternate will provide

- Name and telephone number;
- Name and address of branch;
- Time and type of incident (e.g., release, fire);
- Name and quantity of material(s) involved, to the extent known;

- The extent of injuries, if any; and
- The possible hazards to human health, or the environment outside the branch.

Safety-Kleen will notify the state environmental agency and other appropriate state and local authorities that the facility is in compliance prior to resuming operations in the affected area(s) of the facility.

Employee Roles and Accountability

See **Employee Emergency Duties** below for employee roles during evacuations and other emergencies. For normal branch operations, Safety-Kleen does not authorize **stay-behind personnel** for fires or other emergencies. At the rally-point the designated person will conduct a headcount.

Position	Duties
Branch Manager	<ul style="list-style-type: none"> • Act as Emergency Coordinator.
Primary Emergency Coordinator	<ul style="list-style-type: none"> • Activate the Branch's internal communication system • Notify the Safety-Kleen 24-hr emergency number, (800) 468-1760 • Notify appropriate state and local agencies, as needed • Identify the character, source, amount, and extent of any hazards • Identify the safety hazards posed to the public and to responders • Take measures to ensure that fires, explosions, and releases do not occur, recur or spread
Alternate Emergency Coordinator	<ul style="list-style-type: none"> • Supervise evacuation • Act as emergency coordinator when needed
Sales Representative	<ul style="list-style-type: none"> • Stop; do not rush in • Evaluate situation for worker, public, and environmental safety • Provide emergency first aid as needed • Notify the branch emergency coordinator and / or Safety-Kleen's 24-hr emergency number, (800) 468-1760 • If needed, isolate public from area (see NAERG for distances) • If safe to act, Isolate, retain, contain, or slow the flow of solvent, waste oil, immersion cleaner, or spent antifreeze • Assist as needed; respond accordingly and appropriately
Branch Secretary	<ul style="list-style-type: none"> • Determine the extent of the situation • Notify the branch emergency coordinator • When directed, activate internal evacuation alert • If evacuated, conduct a head-count at branch rally-point • Identify any non-Safety-Kleen personnel on-site during evacuation
Warehouseman	<ul style="list-style-type: none"> • Identify what is involved • Determine the extent of the situation • Notify the branch emergency coordinator • Shut off electricity, if possible • Using a hands-off approach, attempt to safely contain the site • Evacuate the area if any risk exists • Assist as necessary

Chain of Command

Based on the emergency response procedures described, the chain of command during an emergency is as follows:

- The person who discovers or causes the spill ("first responder") takes appropriate steps and reports to the branch emergency coordinator or the alternate;
- The emergency coordinator or alternate directs the response and contacts the Safety-Kleen 24 hour notification number (**3E Company, (800) 468-1760**), who contacts the state environmental agency and emergency response contractor, if required;
- The emergency coordinator or alternate relinquishes command to the senior-most responding official ("incident commander," such as a battalion fire chief); and
- The senior-most responding official (incident commander) follows the local and state incident command system in the event that more senior personnel are assigned (e.g., state Emergency Management Agency official or EPA On-Scene Coordinator).

Government Agencies and Local Authorities

Agency or Authority	Rationale
Police Department	Notify if there is an imminent to human health.
Fire Department	Notify if there is a fire, uncontrolled spill, or other imminent danger.
Hospital	Notify if there are any injuries.
State environmental agency	Report releases and fires.
National Response Center	Release exceeds Reportable Quantity (RQ) or enters any navigable waterways.
Remediation Contractor	Call to assist with remedial action after a release.

Safety-Kleen has made arrangements to familiarize the police department, fire department and local emergency response contractor with the layout of the Branch, the properties of hazardous materials handled and associated hazards, locations where Branch personnel normally work, entrances to and roads inside the Branch, and possible evacuation routes. Safety-Kleen has also made arrangements to familiarize the local hospital with the types of injuries and illnesses that could result from fires, explosions, or releases at the branch.

Reference 40 CFR 264.37, and 40 CFR 265.37.

Exercise 8.

1. What describes the actions to be taken by each employee in the event of a spill, fire or other emergency?
2. Who is responsible for implementing the contingency plan during an emergency?
3. Where can you find the home addresses and phone numbers of the emergency coordinator and the alternate?
4. What are some resources that the emergency coordinator may refer to when making a hazard characterization?
5. To whom must a person discovering a spill report?

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6. Safety-Kleen has made arrangements to familiarize the police department, fire department and local emergency response contractors with what?

9. Emergency Response Procedures

Response actions to be taken in specific emergency situations are described in the sections that follow. The situation must be assessed for the following possible hazards to the environment and human health, air contaminants, surface or ground water contamination, soil contamination, respiratory, or skin irritants.

Reference 40 CFR 264.56, and 40 CFR 265.56.

Spills

Incidental Spillage and Non-Sudden Releases

Branch personnel should evaluate small events to see if they can be handled safely as incidental spillage. Branch personnel should also take steps to prevent non-sudden releases or groundwater contamination, including:

- Ensuring that containers are closed;
- Cleaning outside surfaces of container;
- Disposing of contaminated PPE and absorbents; and
- Emptying secondary containment daily, as needed.

Minor Spills

If a spill should occur while handling spent solvent and it is contained in the secondary containment, remedial action should not be necessary. Should the spill occur outside the containment, other actions must be taken depending on whether the spill occurs on a paved or unpaved area.

- **Paved area:** Absorb the spill with absorbent sheets or loose absorbent; drum and send to recycle center. If water is present, contain all liquids present.

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- **Unpaved area:** Absorb the spill with absorbent sheets or loose absorbent. The **absorbents and potentially contaminated soil** should be drummed and sent to the recycle center. Examine soil for wetness or discoloration when evaluating whether or not soil should be treated as contaminated.

If a spill occurs while moving or delivering drums outside of the warehouse, the response actions described for paved or unpaved areas above must be followed. Secondary containment in the warehouse will prevent spills inside the warehouse from contaminating the outside environment. If solvent is spilled in a non-explosion rated area or is flowing in such, ensure that all sources of ignition (e.g., thermostats or light switches) are left in the same position (either on or off) as at the time of the spill.

Then, follow the instructions of the appropriate Materials Safety Data Sheet (available onsite or from 3E Company, (800) 451-8346). The responding worker will enter the area wearing rubber gloves, an apron, safety glasses (or full face respirator), and an air-purifying respirator with organic vapor cartridges. The responder will collect the spilled residue using a hand pump and/or sorbent, drum it, and return it to storage. Manifests, bills of lading, makings, labels, inspection records and operating log sheets may be useful when determining the identity of released material.

The emergency coordinator may determine that a cleanup is complete when the workers have decontaminated themselves and cleaned contaminated emergency equipment with brushes or water (aqueous-based releases) or clean solvent (organic-based releases). Equipment that cannot be decontaminated should be disposed of. All minor spills must be reported via the Safety-Kleen 24 hour notification number (**3E Company, (800) 468-1760**), and 3E Company will contact the state environmental or emergency management agency if required. The emergency coordinator will ensure that all required notifications are made.

Major Spills

Any spill that can not be completely remedied as a minor spill (described above) is a major spill. A major spill is usually the result of a vehicular accident, tank overfill, equipment failure or a fire. Spilled material that escapes collection can contaminate soil, surface water, ground water, sanitary sewer systems, and storm sewer systems. The emergency coordinator must assess the situation and must determine the potential hazards such as air contamination, surface or ground water contamination, soil contamination, and respiratory or skin irritants. Emergency response to this type of spill will be as follows:

- Don appropriate personal protective equipment;
- Assist any injured people;
- Stop the flow of solvent, if possible;
- Retain, contain or slow of the solvent if it can not be stopped;

-
- If material escapes your containment efforts, immediately call the local Fire and Police Departments, and report to the emergency coordinator; and
 - Immediately recover the spilled solvent to reduce property and environmental damages. Start recovery operations immediately.

The emergency coordinator or the alternate shall report any incident as soon as is possible to the Safety-Kleen 24 hour notification number **(3E Company, (800) 468-1760)**. As advised by the 3E Company or the Safety-Kleen Regulatory Compliance Manager, the emergency coordinator or the alternate may call an emergency cleanup response contractor. When the spill exceeds reportable limits, the 3E Company will report the incident to the National Response Center ((800) 424-8802) and the state environmental or emergency management agency. The emergency coordinator will ensure that required notifications are made.

Stopping Continuous Releases

Spills must be controlled and remedied to the fullest extent possible by Safety-Kleen personnel, even when assistance is required to totally contain the situation. **Personnel must not take health or safety risks.** If there is any doubt as to whether a particular action is safe, that action must be avoided.

Responders must stop the source of a release by turning off pumps, closing valves, securing containers, or taking other appropriate actions. If the flow cannot be stopped, responders should contain the spill by constructing a berm or directing the spillage to a safer area. Berms can be constructed by shoveling dirt or absorbent material around the free liquid to hold it in place. Areas to direct the spillage to are those where it will do the least amount of damage such as the secondary containment area in the warehouse or the tanker loading/unloading area.

Collecting Free Liquid

Responders can collect free liquid from the ground or affected surface water using a spark-proof hand pump and absorbent clay or absorbent towels, socks, mats, or pads. Responders must drum free liquids or add the liquid to a container of good integrity. Responders must clean the affected area and decontaminate it. If it is a paved or metal surface, this can be done using a detergent solution.

Response Safety

Branch emergencies involving the Fluid Recovery Service (FRS) or other non-solvent / non-cleaner waste may involve uncharacterized hazards. In responding to an uncharacterized emergency, personnel must ensure that they:

- Use the buddy system;
- Ensure that backup personnel are available;

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- Ensure that appropriate decontamination is available;
 - Ensure that first aid or other medical resources are available;
 - Ensure that responders wear appropriate respiratory protection and PPE;
 - For normal Branch solvents and cleaners, responders wear rubber gloves and apron;
 - For normal Branch solvents and cleaners, responders wear APRs with organic vapor cartridges; and
 - For other materials, such as FRS liquids, responders wear self-contained breathing apparatus unless the airborne hazards have been monitored and characterized.

Incident Alerts

Branch managers or emergency coordinators must report every spill of **more than one cup of material** using an **Incident Alert Report**. Branch Managers normally file Incident Alert Reports electronically, but may file manually using the procedure found in the **Safety-Kleen Health and Safety Manual**. Branch managers or emergency coordinators must also review the incident with branch personnel to prevent similar spills from occurring in the future.

Fire Control

One of the two major Safety-Kleen solvents has a flash point of 105° F (40-41° C). This means that it presents a fire hazard. **Good housekeeping is the primary means of mitigating fire hazards.** If a fire occurs, personnel must act quickly to put out the fire before it spreads. If it cannot be extinguished immediately, evacuate the Branch and call the fire and police departments. Safety-Kleen's policy is that S-K employees are not designated fire fighters and are not expected to use fire extinguishers unless trained. Any fire which cannot be brought under control immediately or which has the potential to become uncontrollable warrants evacuation.

Fire fighting

Vapors of "105" parts washer solvent exposed to a spark or open flame can flash at temperatures over 105° F (40-41° C). Responders should use Class B (combustible liquid) extinguishers for small fires. Firefighters can use foam, such as Aqueous Film-Forming Foam (AFFF), for large parts washer solvent fires. If foam is not available, sweeping the fire with water fog can cool it; firefighters should direct the water spray to push the flames into a confined area, if possible. The flame should not be extinguished until the flow of the solvent has been stopped. Then attention should be directed immediately on extinguishing the flame.

Safety-Kleen Branch personnel and local authorities must be aware of the proper response, should a fire affect areas where these wastes are stored.

- Isolate the hazard area and deny entry to unauthorized personnel;
- Stay upwind and keep out of low areas;

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- Ventilate closed spaces before entering them;
 - Wear positive pressure breathing apparatus and protective clothing;
 - Evacuate a 600-foot radius area around the fire, and
 - Use foam, water fog, or water spray to extinguish a fire in the drum storage area.

Re-Entry During and After a Major Fire

Fires may destabilize structures and create other hazardous conditions at the facility. For example, drums and tanks exposed to high heat may rupture due to Boiling Liquid Expanding Vapor Explosions (BLEVEs). BLEVEs may be lethal to an extended radius (up to 70' (20m) for a drum). Therefore, after a major fire, the site must not be re-entered until the Fire Department and Safety-Kleen's insurance company have determined that entry is safe.

Post-Fire Actions

Actions must be taken to ensure that fires, explosions, or releases do not occur or reoccur. These include removing the source of the problem, repairing, or remediating the source of the problem, cooling areas subject to fires and explosions, and replacing Branch equipment.

Combustion By-Products

- Parts washer solvent, paint wastes, spent antifreeze and immersion cleaner can generate **carbon monoxide** and other poisonous gases when exposed to heat. Therefore, it is important to wear positive pressure breathing apparatus and full protective clothing in the affected area.
- **Dry Cleaning wastes** containing perchloroethylene (tetrachloroethylene) are not flammable, but can produce **phosgene gas** and **hydrochloric acid** at very high temperatures (about 1,200° F (650° C)).
- Vapors of **immersion cleaner** exposed to a spark or open flame can flash-ignite at temperatures over 150 ° F (65° C). Decomposition and combustion products may be toxic. An immersion cleaner fire can be best extinguished with foam carbon dioxide, dry chemical or water spray.

Evacuation Plan

Reference 40 CFR 264.52 (f)

Evacuation Notification

The **warehouse alarm** or **telephone paging system** will be used to signal an emergency evacuation. The emergency coordinator or the alternate will determine when an evacuation is warranted. The emergency coordinator must notify the Fire Department at the time of evacuation either from a safe on-site building or from a neighboring facility.

Evacuation Routes and Accountability

Safety-Kleen employees are trained to be aware of all potential escape routes. Clearly marked exits exist in the warehouse and office areas, and Safety-Kleen personnel keep exits clear of material and debris. When an uncontrolled release, fire or explosion has occurred, all personnel are to be evacuated from the area and assemble at the designated **rally-point** to ensure that all personnel are accounted for and out of the hazardous area.

Safe Distances and Site Security

For hazardous material and hazardous waste spills, use the distances found in the **North American Emergency Response Guidebook** for initial planning. Look up the hazardous material by four-digit UN or NA product identification number (in the yellow pages) or by alphabetical proper shipping name (in the blue pages), and then use the response guide number (orange pages) indicated. The hazardous material will be highlighted in the yellow or blue pages if it is a Poison by Inhalation Hazard (PIH). If the material name is highlighted, use the Table of Initial Isolation and Protective Action Distances (TIIPAD, the green pages) to look up the **isolation** distance radius and **protective action** downwind distance.

Evacuate site personnel to the indicated distances and maintain **site security** to keep the general public outside of hazard areas. If these distances require evacuation beyond the designated **rally point**, the emergency coordinator will establish a new rally point for evacuation.

Exercise 9.

1. What distinguishes a minor spill from a major spill?
2. When must the National Response Center be notified?

3. What must you do if you have doubts as to the safety of any particular action?

4. After a fire, when may you re-enter the site?