Department of Environmental Protection

Lawton Chiles
Governor

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

Virginia B Wetherell
Secretary

April 9, 1998

Mr Andrew C Vogt
P O Box 384
Port Richey, Florida 34673

Subject Request for Disposal of Leachate Evaporator Solids from the Pasco County Waste-to-Energy Plant in the Gulf of Mexico

Dear Mr Vogt

This letter is in response to your March 20, 1998 letter to the Florida Department of Environmental Protection (DEP) regarding disposal of the leachate evaporator solids from the Pasco County Waste-to-Energy facility beyond twelve miles from Florida's shore (9 nautical miles) in the Gulf of Mexico The DEP does *not* have jurisdiction over activities which take place beyond the twelve mile threshold I am forwarding a copy of this letter and your March 20, 1998 letter to Mr Joe Bachelor of the Army Corps of Engineers, as they have jurisdiction in the Gulf of Mexico beyond 12 miles

If you have further questions, please contact the Solid Waste Section in the Tampa office at 813/744-6100

Very truly yours,

Richard D Garrity, Ph D
Director of District Management
Southwest District

cc Senator Jack Latvala
Senator Virginia Brown-Waite
Douglas Bramlett, Pasco County Assistant County Administrator
Joe Bachelor, Army Corps of Engineers, P.O Box 19247, Tampa, FL 33686
William Kutash, Waste Program Administrator, FDEP

RDG/aa

SOLID WASTE MANAGEMENT CITIZENS ADVISORY COMMITTEE

Andrew C.Vogt
P.O.384
Port Richey
Florida 34673
(813)842-2424
March 20 1998

DEPARTMENT OF
ENVIRONMENTAL PROTECTION

OFFICE OF THE SECRETARY

Ms.Virginia Wetherell
Secretary,FL.D.E.P.
3900 Commonwealth Blvd.
Fl.32399

Dear Ms.Wetherell;

As per our inquiry dated Jan.23 1998 we have received your response dated March 6 1998. The two propositions we put forth were,To Witt;

1. "If this matter does not fall within the purview of Fl.D.E.P. we would appreciate a response so stating."

2. "However if this matter is within the purview of Fl.D.E.P. we would appreciate the reference source and any additional information you would care to share with us."

To further clarify our inquiry,we are exploring the possibility of disposing of the dehydrated end product from our leachate facility into the Gulf Of Mexico beyond the twelve mile limit. It is our though that such action does not fall within the purview of Fl.D.E.P. and thus the reason for our inquiry.

Yours truly

Andrew C.Vogt

Andrew C.Vogt
Chairman

cc;Florida State Senator
Jack Latvala

Florida State Senator
Virginia Brown-Waite

Douglas Bramlett
Assistant County Administrator
Utilities Services.

RECEIVED
MAR 26 1998
D E P

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
SOUTHWEST DISTRICT

CONVERSATION RECORD

Date 4/7/98
Time 5:20
Subject Gulf - dumping request territorial waters
Permit No
County Pasco
M Joe Batchelor
Telephone No 840-2908
Representing Army Corps of Engineers
[ ] Phoned Me [X] Was Called [ ] Scheduled Meeting [ ] Unscheduled Meeting
Other Individuals Involved in Conversation/Meeting

Summary of Conversation/Meeting
Referred to Joe by Rose Poyner

US EPA covers 12 miles out - dumping - Corps has jurisdiction - Joe recommended that we send the letter to him to address:

PO Box 19247
Tampa, FL 33686

(continue on another sheet, if necessary)

Signature A Amram
Title PGI

PA-01
1/96
pap

Chemical Analysis Report

Event Name (ID) SW-DIST-1998-02-13-02

RECEIVED
APR 01 1998
DEP

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
CompQAP# 870688G

Event Description **WEST PASCO LEACHATE TREATMENT FACILITY**
Request ID **RQ-1998-02-09-44**
Customer **SW-DIST**
Project ID **OTHER-WSM**

Job TLH-1998-02-13-52	Group Nutrients
Job TLH-1998-02-13-53	Group Priority Organic Pollutants
Job TLH-1998-02-13-54	Group Metals

Send Reports to
FL Dept of Environmental Protection
3804 Coconut Palm Drive
Tampa, FL 33619
Attn Kent Edwards

For additional information please contact
Timothy W Fitzpatrick
Yuh-Hsu Pan, Ph D
Julio Arrecis, Ph D
Liang-Tsair Lin, Ph D
Suncom 277-2571 Phone (850) 487-2571

Certified By _____ Date 3-30-98

Report Printed Date Mar 30, 1998

Abbreviations and data remark codes

A - Value reported is the mean of two or more determinations
B - Results based on colony counts outside the acceptable range
I - Value reported is less than the minimum quantitation limit, and greater than or equal to the minimum detection limit
J - Estimated value
K - Actual value is known to be less than value given
L - Actual value is known to be greater than value given
N - Presumptive evidence of presence of material
O - Sampled, but analysis lost or not performed
Q - Sample held beyond normal holding time
T - Value reported is less than the criterion of detection
U - Material was analyzed for but not detected, The value reported is the minimum detection limit
V - Analyte was detected in both sample and method blank
Z - Colonies were too numerous to count (TNTC)

Sample Location WEST PASCO S1
Field ID S1-24298
Collection Date/Time 2/11/1998 2 45 PM
Matrix *WAS-SOLID*

Lab ID	Storet Code	Component	Result	Code	Units
307450					
Test Chloride, extractable, in solid matrices (EPA 300 0 mod)					
Comments: Spike recovery data unavailable Result reported as mg/Kg wet weight					
		Chloride	2 8E+05	J	mg/kg
Test Ammonia, extractable, in solid matrices as mg N/Kg (EPA 350 1 Mod)					
Comments: Spike recovery data unavailable Result reported as mg/Kg wet weight					
		Ammonia-N	32	J	mg/kg
Test pH measurement for solid matrices (EPA 150 1)					
*** Analysis exceeds holding time ***					
Comments: Sample expired prior to receipt					
		pH	8 78	Q	Units
Test Sulfate, extractable, in solid matrices (EPA 300 0 mod)					
Comments: Result reported as mg/Kg wet weight					
		Sulfate	1800	A	mg/kg
Test Sulfide in solid matrices (EPA 376 2 mod)					
*** Analysis exceeds holding time ***					
Comments: Precision data unavailable Result reported as mg/Kg wet weight Method is a non-approved in house method Sample expired prior to analysis					
	00745	Sulfide	0 71	U	mg/kg
307451					
Test Volatile organic pollutants in acid preserved water matrices by GC/MS (EPA 8260)					
Comments: Accuracy for 1,2-dichloropropane and 1,1,2,2-tetrachloroethane is outside routine statistical limits					
		Benzene	3 1	U	ug/kg
		Bromodichloromethane	3 1	U	ug/kg
		Bromoform	3 1	U	ug/kg
		Bromomethane	3 1	U	ug/kg
		Carbon tetrachloride	3 1	U	ug/kg
		Chlorobenzene	3 1	U	ug/kg
		Chloroethane	3 1	U	ug/kg
		2-Chloroethylvinyl ether	3 1	U	ug/kg
		Chloroform	3 1	U	ug/kg
		Chloromethane	4 4	U	ug/kg
		Dibromochloromethane	3 1	U	ug/kg
		1,2-Dichlorobenzene	3 1	U	ug/kg
		1,3-Dichlorobenzene	3 1	U	ug/kg
		1,4-Dichlorobenzene	3 1	U	ug/kg
		1,1-Dichloroethane	3 1	U	ug/kg

1,2-Dichloroethane	3 1	U	ug/kg
1,1-Dichloroethene	3 1	U	ug/kg
trans-1,2-Dichloroethene	3 1	U	ug/kg
1,2-Dichloropropane	3 1	U	ug/kg
cis-1,3-Dichloropropene	3 1	U	ug/kg
trans-1,3-Dichloropropene	3 1	U	ug/kg
Ethylbenzene	3 1	U	ug/kg
Methylene chloride	3 1	U	ug/kg
1,1,2,2-Tetrachloroethane	3 1	U	ug/kg
Tetrachloroethene	6 2	U	ug/kg
Toluene	3 2	I	ug/kg
1,1,1-Trichloroethane	3 1	U	ug/kg
1,1,2-Trichloroethane	3 1	U	ug/kg
Trichloroethene	3 1	U	ug/kg
Trichlorofluoromethane	3 1	U	ug/kg
Vinyl chloride	3 1	U	ug/kg
Xylenes (total)	3 2	U	ug/kg

307452

Test Mercury in waste samples using cold vapor AA spectroscopy (EPA 245 5)

Mercury	0 0050	U	mg/kg

Test Metals, total recoverable, in waste samples using ICP emission spectroscopy (EPA 6010 mod)

Arsenic	7	U	mg/kg
Barium	56 9	A	mg/kg
Beryllium	0 08	U	mg/kg
Cadmium	0 8	U	mg/kg
Chromium	2	U	mg/kg
Copper	1	U	mg/kg
Lead	4	U	mg/kg
Nickel	1	U	mg/kg
Selenium	17	U	mg/kg
Silver	0 7	U	mg/kg
Sodium	1 15E+05	A	mg/kg
Zinc	8 2	U	mg/kg

Quality Control Report

Job ID TLH-1998-02-13-52

Test	Analyte	LFB %Recovery	MS %Recovery	Precision %RPD	Precision %RSD
S-CL-IC					
	Chloride			0 618	
S-NH3					
	Ammonia-N			0 435	
S-PH					
	pH			0 251	
S-SO4-IC					
	Sulfate		83 0	9 85	
S-SULFIDE					
	Sulfide		26 9* 40 2*		

Job ID TLH-1998-02-13-53

Test	Analyte	LFB %Recovery	MS %Recovery	Precision %RPD	Precision %RSD
WAS-VOC-MS					

Job ID TLH-1998-02-13-54

Test	Analyte	LFB %Recovery	MS %Recovery	Precision %RPD	Precision %RSD
WASTE-HG-H					
	Mercury	102 103	95 2 96 5	1 34 0 546	
WASTE-ICP					
	Arsenic		103 105	2 28	
	Barium		95 2 97 6	0 128	
	Beryllium		93 4 94 0	0 708	
	Cadmium		100 101	0 287	
	Chromium		96 1 96 7	0 699	
	Copper		108 108	0 319	
	Lead		93 9 96 3	2 49	
	Nickel		93 7 95 2	1 57	
	Selenium		108 108	0 232	
	Silver		91 9 92 1	0 218	
	Sodium		86 4	0 0474	
	Zinc		94 6 96 2	1 61	

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

CHAIN OF CUSTODY RECORD

Page ___ of ___

PROJECT NAME	SUBMITTING AGENCY NAME	SUBMITTING AGENCY CODE
West Pasco - salt	FDEP - SW District	

SAMPLER SIGNATURE(S): Allison Amram

RQ #: RQ-1998-02-09-44

MODULE #: 4017

STATION/ LOCATION/ NUMBER	DATE M/D/Y	TIME ####	COMP/ GRAB	VOCs	Total sulfur, sulfate, sulfide	Chlorides, ammonia	pH	metals: As, Ba, Be, Cd, Cr, Pb, Na, Ag, Cu, Ni, Zn, Se, Hg				Field ID #
S1	2/11/98	14:45	grab	1	1	1	1					24298

Note: sample is a solid waste - salt from a leachate evaporator

Sealed and Relinquished by	Date/ Time	Method of Dispatch	Opened and Accepted by	Date/ Time
Allison Amram	2/1/98 17:00	hand delivered to cooler	Jason Lowenstein	2/12/98 1530
Jason Lowenstein	2/12/98 1550	Fed Ex	AB-Shaik	2-13-98 3:30

REMARKS

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
Central Laboratory Sample Submittal Form

PMAS NO.: _____ *SAMPLE LAB ID:* _____ (LAB USE ONLY)

Requestor: _____

Project ID: West Pasco RQ- 1998-02-09-44

Sample Location: S1 Collection Date: 2/11/98

Field ID: 24298 Collection Time: 14:45

Storet Station Number: —

NPDES Number: — Time Composite (Begin): — Time (End): —

WATER		BLANK	SOIL/SEDIMENT	TISSUE		CHEM WASTE
___SURFACE (FRESH)	___INFLUENT	___TRIP BLANK	___SOIL	___FISH	___BLOOD	___CHEM WASTE
___SURFACE (SALT)	___EFFLUENT	___FIELD BLANK	___FRESH SED.	___PLANT	___HAIR	X WAS-SOLID (salt)
___GROUND	___FIELD DUP	___EQUIP BLANK	___MARINE SED	___SHELLFISH	___OTHER	
___DRINKING			___SLUDGE	___T-ANIMAL		

Field Parameters Measure By: _____

Signature: _____

Sample By: Allison Amram

Signature: Allison Amram

Field Report Prepared By: Allison Amram

Signature: Allison Amram

FIELD PARAMETERS:

DEPTH	(FEET)	/
CHLORINE, TOTAL RESIDUAL-50060(MG/L)		/
DISSOLVED OXYGEN (PROBE) 00299(MG/L)		/
PH-00400	(STND UNITS)	/
SPECIFIC CONDUCTANCE -00094 (UMHO/CM)		/
TEMPERATURE -00010	(C)	/

ANALYSES	BOTTLE TYPE	# BOTTLES	PRESERVATIVE
VOC	6oz-glass	1	ice
Total sulfur sulfide sulfate	8oz glass	1	ice
Chloride ammonia pH	8oz-glass	1	ice
metals (As, Ba, Be, Cd, Cr, Pb, Na, Ag, Cu, Ni, Zn, Se, Hg (if possible)	8oz-glass	1	ice

SEND FINAL REPORT TO: Kent Edwards - SWD

Jason & Kent-

Here is the request for the leachate evaporator solids sampling tomorrow. I'd like to add some inorganics that may be a problem for disposal, but I don't know if we do these analyses on a solid waste:

total sulfur, sulfate, sulfide

Ammonia

If we do these, please let me know what kind of sample container/preservative to use for them.

Also, do I need a separate jar for mercury analysis?

Thanks, as always, for your help. You'll really be missed, Jason, but I'm happy that you've found your next challenge-- make them treat you well!!!!!!

Allison

gloves
spoon
extra jar
~~Sharpie~~
ice

CHEMISTRY LABORATORY ASSISTANCE REQUEST

REQUESTED BY / EXT.: Allison Amram / ext. 336
ALTERNATIVE CONTACT: Kim Ford / ext. 382
DATE OF REQUEST: 2/10/98 MODULE #: 4077

PRIORITY: EMERGENCY URGENT **ROUTINE**/ASAP

NAME OF FACILITY/PROJECT: West Pasco Leachate Treatment Facility
COUNTY: Pasco DATE OF ACTIVITY: 2/11/98

BACKGROUND INFORMATION (TO HELP EVALUATE THE REQUESTED WORK):

The West Pasco waste-to-energy plant generates a leachate that is high in chlorides, sulfur compounds and sometimes in metals. As treatment, the plant has evaporated the leachate and landfilled the solids. Analyses of the solids indicate that it is not a hazardous waste, but there are problems associated with it's disposal in the landfill (namely, that it makes the leachate to salty to treat easily). We have seen one set of analyses from the system, and would like to confirm it by sampling it and having FDEP's lab analyze the sample. Their sampling detected VOCs at low concentrations (acetone, 2-butanone, toluence and xylenes in low ug/kg range), but also did not detect many metals.

Previous inorganics detected (mg/kg): Chloride 480,000; Total sulfur 20,000; sulfate 60,000; sulfide <50; ammonia 90; sodium 99,000. pH was 9.2.

SPECIFIC WORK REQUESTED (INCLUDE PARAMETERS, NUMBER OF SAMPLES, MATRIX, SAMPLING KIT NEEDS,...):

Will collect one solid sample of the salt residue; I have prepared the sample kit:

1 8oz glass jar - metals (As, Ba, Be, Cd, Cr, Pb, Na, Ag, Cu, Ni, Zn, Se, Hg)

1 8oz glass jar - chlorides, ammonia, pH

1 8oz glass jar - total sulfur, sulfate, sulfide

1 6oz glass jar - VOCs

one stainless spoon for collection, gloves

(INSERT LINES WHERE NEEDED)
----------FOR CHEMISTRY U

COMMENTS:

2-11-98

W. Pasco

Sample solids (salt) from leachate treatment plant (evaporator)

Pasco Co - Ray + Ron
DEP - Kim Ford, Allison Amram

Decided to sample salt from yesterday's salt bag. Ray got onto truck w/ ba, used black plastic gloves + APR (air-purifying respirator), tyvek. Collected sample w/ stainless steel spoon into glass tray. I collected salt from the tray into the sample jars.

sample label.

Client FDEP - SWD 2/11/98
Site: W. Pasco 14:45
Sample #: S1 coll. by. AA

Samples preserved on ice

Ray told me they add H_2S for pH control, other sulfur compounds for other uses. (will pick up MSDS for additives to plant after samples collected).

Samples signed into cooler @ DEP ~ 17:00
Decanned glass pan + spoon Jason Lancaster will ship samples tomorrow.

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
Central Laboratory Sample Submittal Form

PMAS NO.: _____ *SAMPLE LAB ID:* _____
(LAB USE ONLY)

Requestor: _____

Project ID: West Pasco RQ-_____

Sample Location: S1 Collection Date: 2/11/98

Field ID _____ Collection Time 14:45

Storet Station Number: —

NPDES Number: _____ Time Composite (Begin): — Time (End): —

WATER		BLANK	SOIL/SEDIMENT	TISSUE		CHEM WASTE
___SURFACE (FRESH)	___INFLUENT	___TRIP BLANK	___SOIL	___FISH	___BLOOD	___CHEM WASTE
___SURFACE (SALT)	___EFFLUENT	___FIELD BLANK	___FRESH SED	___PLANT	___HAIR	X WAS-SOLID
___GROUND	___FIELD DUP	___EQUIP BLANK	___MARINE SED	___SHELLFISH	___OTHER	(silt)
___DRINKING			___SLUDGE	___T-ANIMAL		

Field Parameters Measure By: _____ FIELD PARAMETERS:

Signature: _____ DEPTH (FEET) _____

CHLORINE, TOTAL RESIDUAL-50060(MG/L) _____

Sample By: Allison Amram DISSOLVED OXYGEN (PROBE) 00299(MG/L) _____

Signature: Allison Amram PH-00400 (STND UNITS) _____

Field Report Prepared By: Allison Amram SPECIFIC CONDUCTANCE -00094 (UMHO/CM) _____

Signature: Allison Amram TEMPERATURE -00010 (C) _____

ANALYSES	BOTTLE TYPE	# BOTTLES	PRESERVATIVE
VOC	6oz-glass	1	ice
Total sulfur sulfide sulfate	8oz glass	1	ice
Chloride ammonia pH	8oz-glass	1	ice
metals	~~8oz~~-glass	1	ice

(As, Ba, Be, Cd, Cr, Pb, Na, Ag, Cu, Ni, Zn, Se, Hg (if possible)

SEND FINAL REPORT TO: Kent Edwards - SWD

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

CHAIN OF CUSTODY RECORD

Page ___ of ___

PROJECT NAME	SUBMITTING AGENCY NAME	SUBMITTING AGENCY CODE
West Pasco - salt	FDEP - SW District	

SAMPLER SIGNATURE(S)

RQ #	MODULE #

STATION/ LOCATION/ NUMBER	DATE M/D/Y	TIME #####	COMP/ GRAB	VOCs	Total sulfur, sulfate, sulfide	Chlorides, ammonia	pH	metals: As, Ba, Be, Cd, Cr, Pb, Na, Ag, Cu, Ni, Zn, Se, Hg	Field ID #
S1	2/11/98	14:45	grab	1	1	1	1		

Note: sample is a solid waste - salt from a leachate evaporator

Sealed and Relinquished by	Date/ Time	Method of Dispatch	Opened and Accepted by	Date/ Time
Sealed and Relinquished by	Date/ Time	Method of Dispatch	Opened and Accepted by	Date/ Time
Sealed and Relinquished by	Date/ Time	Method of Dispatch	Opened and Accepted by	Date/ Time

REMARKS

* Metals, Volatiles, Acid B/N Extr., Pesticides, PCB s, Nutrients, Wet Chem, Toxicity, Algal Assay, Chlorophyll etc

Section 1. - - - - - - - - - Chemical Identification - - - - - - - - - -

CATALOG #: 222313
NAME: CALCIUM CHLORIDE, TECH. ANHYDROUS

D.E.P.
FEB 11 1998
SOUTHWEST TAMPA

Bob RB
Kim

"Add, tives to leachate treatm plant

Section 2. - - - - - Composition/Information on Ingredients - - - - -

CAS #: 10043-52-4
MF: CACL2
EC NO: 233-140-8
SYNONYMS
CALPLUS * CALTAC * DOWFLAKE * LIQUIDOW * PELADOW * SNOMELT * SUPERFLAKE ANHYDROUS *

Section 3. - - - - - - - - - - Hazards Identification - - - - - - - - -

LABEL PRECAUTIONARY STATEMENTS
HARMFUL
HARMFUL IF SWALLOWED.
IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.
IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE.
WEAR SUITABLE PROTECTIVE CLOTHING.
HYGROSCOPIC
KEEP TIGHTLY CLOSED.
HANDLE AND STORE UNDER ARGON.

Section 4. - - - - - - - - - - First-Aid Measures - - - - - - - - - - -

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES OR SKIN WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES.
IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.
IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS. CALL A PHYSICIAN.
WASH CONTAMINATED CLOTHING BEFORE REUSE.

Section 5. - - - - - - - - - Fire Fighting Measures - - - - - - - - - -

EXTINGUISHING MEDIA
NONCOMBUSTIBLE.
USE EXTINGUISHING MEDIA APPROPRIATE TO SURROUNDING FIRE CONDITIONS.
SPECIAL FIREFIGHTING PROCEDURES
WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES.
UNUSUAL FIRE AND EXPLOSIONS HAZARDS
EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

Section 6. - - - - - - - - Accidental Release Measures - - - - - - - - -

WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY RUBBER GLOVES.
SWEEP UP, PLACE IN A BAG AND HOLD FOR WASTE DISPOSAL.

AVOID RAISING DUST.
VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.

Section 7. - - - - - - - - - - Handling and Storage - - - - - - - - - -

REFER TO SECTION 8.

Section 8. - - - - - - Exposure Controls/Personal Protection - - - - - -

WEAR APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATOR, CHEMICAL-RESISTANT GLOVES, SAFETY GOGGLES, OTHER PROTECTIVE CLOTHING.
SAFETY SHOWER AND EYE BATH.
MECHANICAL EXHAUST REQUIRED.
DO NOT BREATHE DUST.
AVOID CONTACT WITH EYES, SKIN AND CLOTHING.
AVOID PROLONGED OR REPEATED EXPOSURE.
WASH THOROUGHLY AFTER HANDLING.
HARMFUL SOLID.
IRRITANT.
KEEP TIGHTLY CLOSED.
STORE IN A COOL DRY PLACE.

Section 9. - - - - - - - Physical and Chemical Properties - - - - - - -

APPEARANCE AND ODOR
  WHITE POWDER (NOT GRANULES)
PHYSICAL PROPERTIES
  MELTING POINT: 782 C
  VAPOR PRESSURE: 0.01MM 20 C
  SPECIFIC GRAVITY: 2.150

Section 10. - - - - - - - - -Stability and Reactivity - - - - - - - - -

STABILITY
  STABLE.
INCOMPATIBILITIES
  STRONG ACIDS
  WATER
  ZINC
  METHYL VINYL ETHER
  CALCIUM CHLORIDE IS ATTACKED BY BROMINE TRIFLUORIDE.
  REACTS VIOLENTLY WITH:
  BORON OXIDES.
  CALCIUM OXIDE
HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS
  TOXIC FUMES OF:
  HYDROGEN CHLORIDE GAS
HAZARDOUS POLYMERIZATION
  WILL NOT OCCUR.

Section 11. - - - - - - - - - Toxicogical Information - - - - - - - -

ACUTE EFFECTS
  HARMFUL IF SWALLOWED.
  MAY BE HARMFUL IF INHALED.
  MAY BE HARMFUL IF ABSORBED THROUGH THE SKIN.
  CAUSES EYE AND SKIN IRRITATION.

MATERIAL IS IRRITATING TO MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT.
TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.

RTECS #: EV9800000
CALCIUM CHLORIDE
TOXICITY DATA

ORL-RAT LD50:1 GM/KG	CNJMAQ 12,216,48
IPR-RAT LD50:264 MG/KG	OYYAA2 14,963,77
SCU-RAT LD50:2630 MG/KG	OYYAA2 14,963,77
IMS-RAT LD50:25 MG/KG	EMSUA8 4,223,46
ORL-MUS LD50:1940 MG/KG	OYYAA2 14,963,77
IPR-MUS LD50:210 MG/KG	GTPZAB 34(5),51,90
SCU-MUS LD50:823 MG/KG	OYYAA2 14,963,77
IVN-MUS LD50:42 MG/KG	TXAPA9 22,150,72

TARGET ORGAN DATA
BEHAVIORAL (SOMNOLENCE)
BEHAVIORAL (CONVULSIONS OR EFFECT ON SEIZURE THRESHOLD)
BEHAVIORAL (CHANGE IN MOTOR ACTIVITY)
SKIN AND APPENDAGES (AFTER SYSTEMIC EXPOSURE: DERMATITIS, OTHER)
NUTRITIONAL AND GROSS METABOLIC (CHANGES IN: CA)
ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES (RTECS) DATA IS PRESENTED HERE. SEE ACTUAL ENTRY IN RTECS FOR COMPLETE INFORMATION.

Section 12. - - - - - - - - - Ecological Information - - - - - - - - - -

DATA NOT YET AVAILABLE.

Section 13. - - - - - - - - - Disposal Considerations - - - - - - - - -

DISSOLVE OR MIX THE MATERIAL WITH A COMBUSTIBLE SOLVENT AND BURN IN A CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND SCRUBBER.
OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS.

Section 14. - - - - - - - - - - Transport Information - - - - - - - - -

CONTACT ALDRICH CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

Section 15. - - - - - - - - - Regulatory Information - - - - - - - - - -

EUROPEAN INFORMATION
EC INDEX NO: 017-013-00-2
R:36
IRRITATING TO EYES.
S:22
DO NOT BREATHE DUST.
S:24
AVOID CONTACT WITH SKIN.
REVIEWS, STANDARDS, AND REGULATIONS
OEL=MAK
EPA FIFRA 1988 PESTICIDE SUBJECT TO REGISTRATION OR RE-REGISTRATION
FEREAC 54,7740,89
NOHS 1974: HZD 15720; NIS 87; TNF 7996; NOS 79; TNE 110691
NOES 1983: HZD 15720; NIS 116; TNF 15168; NOS 113; TNE 354620; TFE 117433
EPA GENETOX PROGRAM 1988, NEGATIVE: CELL TRANSFORM.-SA7/SHE
EPA TSCA SECTION 8(B) CHEMICAL INVENTORY
EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, APRIL 1995

Section 16. - - - - - - - - - - Other Information - - - - - - - - - - -

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FEB 11 1998
SOUTHWEST
TAMPA

Section 1. - - - - - - - - - Chemical Identification - - - - - - - - - -

CATALOG #: 21099
NAME: CALCIUM CHLORIDE DIHYDRATE

Section 2. - - - - - Composition/Information on Ingredients - - - - - -

CAS #· 10035-04-8
MF: CACL2.2H2O
SYNONYMS
CALCIUM DICHLORIDE DIHYDRATE * CAL PLUS * REPLENISHER (CALCIUM) *

Section 3. - - - - - - - - - - Hazards Identification - - - - - - - - -

LABEL PRECAUTIONARY STATEMENTS
HARMFUL
HARMFUL IF SWALLOWED.
IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.
IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE.
WEAR SUITABLE PROTECTIVE CLOTHING.

Section 4. - - - - - - - - - - First-Aid Measures - - - - - - - - - -

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES.
IN CASE OF CONTACT, IMMEDIATELY WASH SKIN WITH SOAP AND COPIOUS AMOUNTS OF WATER.
IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.
IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS.
CALL A PHYSICIAN.
WASH CONTAMINATED CLOTHING BEFORE REUSE.

Section 5. - - - - - - - - - Fire Fighting Measures - - - - - - - - - -

EXTINGUISHING MEDIA
NONCOMBUSTIBLE.
USE EXTINGUISHING MEDIA APPROPRIATE TO SURROUNDING FIRE CONDITIONS.
SPECIAL FIREFIGHTING PROCEDURES
WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES.
UNUSUAL FIRE AND EXPLOSIONS HAZARDS
EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

Section 6. - - - - - - - - Accidental Release Measures - - - - - - - - -

WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY RUBBER GLOVES.
SWEEP UP, PLACE IN A BAG AND HOLD FOR WASTE DISPOSAL.
AVOID RAISING DUST.
VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.

Section 7. - - - - - - - - - - Handling and Storage - - - - - - - - - -

REFER TO SECTION 8.
ADDITIONAL INFORMATION
CALCIUM CHLORIDE IS ATTACKED BY BROMINE TRIFLUORIDE.

Section 8. - - - - - - Exposure Controls/Personal Protection - - - - - -

WEAR APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATOR, CHEMICAL-RESISTANT GLOVES, SAFETY GOGGLES, OTHER PROTECTIVE CLOTHING.
SAFETY SHOWER AND EYE BATH.
MECHANICAL EXHAUST REQUIRED.
DO NOT BREATHE DUST.
AVOID CONTACT WITH EYES, SKIN AND CLOTHING.
AVOID PROLONGED OR REPEATED EXPOSURE.
WASH THOROUGHLY AFTER HANDLING.
IRRITANT.
HARMFUL SOLID.
KEEP TIGHTLY CLOSED.
HYGROSCOPIC
STORE IN A COOL DRY PLACE.

Section 9. - - - - - - - Physical and Chemical Properties - - - - - - -

APPEARANCE AND ODOR
WHITE POWDER
PHYSICAL PROPERTIES
VAPOR PRESSURE: 0.01MM 20 C
SPECIFIC GRAVITY: 0.835

Section 10. - - - - - - - - -Stability and Reactivity - - - - - - - - -

INCOMPATIBILITIES
STRONG ACIDS
HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS
HYDROGEN CHLORIDE GAS

Section 11. - - - - - - - - - Toxicogical Information - - - - - - - -

ACUTE EFFECTS
HARMFUL IF SWALLOWED.
MAY BE HARMFUL IF INHALED.
MAY BE HARMFUL IF ABSORBED THROUGH THE SKIN.
CAUSES EYE AND SKIN IRRITATION.
MATERIAL IS IRRITATING TO MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT.
TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.
RTECS #: EV9810000
CALCIUM CHLORIDE, DIHYDRATE
TOXICITY DATA
IPR-MUS LD50:20500 MG/KG CYLPDN 4,110,83
ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES (RTECS) DATA IS PRESENTED HERE. SEE ACTUAL ENTRY IN RTECS FOR COMPLETE INFORMATION.

Section 12. - - - - - - - - - Ecological Information - - - - - - - - - -

DATA NOT YET AVAILABLE.

Section 13. - - - - - - - - - Disposal Considerations - - - - - - - - -

FOR SMALL QUANTITIES: CAUTIOUSLY ADD TO A LARGE STIRRED EXCESS OF WATER. ADJUST THE PH TO NEUTRAL, SEPARATE ANY INSOLUBLE SOLIDS OR LIQUIDS AND PACKAGE THEM FOR HAZARDOUS-WASTE DISPOSAL. FLUSH THE AQUEOUS SOLUTION DOWN THE DRAIN WITH PLENTY OF WATER. THE HYDROLYSIS AND NEUTRALIZATION REACTIONS MAY GENERATE HEAT AND FUMES WHICH CAN BE CONTROLLED BY THE RATE OF ADDITION.
OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS.

Section 14. - - - - - - - - - - Transport Information - - - - - - - - -

CONTACT FLUKA CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

Section 15. - - - - - - - - - Regulatory Information - - - - - - - - - -

EUROPEAN INFORMATION
CAUTION: SUBSTANCE NOT YET FULLY TESTED.
R:22
HARMFUL IF SWALLOWED.
R:36/37/38
IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.
S:26
IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE.
S.36
WEAR SUITABLE PROTECTIVE CLOTHING.
REVIEWS, STANDARDS, AND REGULATIONS
OEL=MAK
NOES 1983: HZD X3586; NIS 12; TNF 1290; NOS 23; TNE 19024; TFE 10290

Section 16. - - - - - - - - - - Other Information - - - - - - - - - - -

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Section 1. - - - - - - - - - Chemical Identification - - - - - - - - - -

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CATALOG #: 71378
NAME: SODIUM CHLORIDE*

Section 2. - - - - - Composition/Information on Ingredients - - - - - -

CAS #: 7647-14-5
MF: CLNA
EC NO: 231-598-3

SYNONYMS

COMMON SALT * DENDRITIS * EXTRA FINE 200 SALT * EXTRA FINE 325 SALT * HALITE * H.G. BLENDING * NATRIUMCHLORID (GERMAN) * PUREX * ROCK SALT * SALINE * SALT * SEA SALT * STERLING * TABLE SALT * TOP FLAKE * USP SODIUM CHLORIDE * WHITE CRYSTAL *

Section 3. - - - - - - - - - - Hazards Identification - - - - - - - - -

LABEL PRECAUTIONARY STATEMENTS

IRRITANT
IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.
IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE.
WEAR SUITABLE PROTECTIVE CLOTHING.
HYGROSCOPIC
KEEP TIGHTLY CLOSED.

Section 4. - - - - - - - - - - First-Aid Measures - - - - - - - - - -

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES.
IN CASE OF CONTACT, IMMEDIATELY WASH SKIN WITH SOAP AND COPIOUS AMOUNTS OF WATER.
IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.
IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS. CALL A PHYSICIAN.

Section 5. - - - - - - - - - Fire Fighting Measures - - - - - - - - - -

EXTINGUISHING MEDIA

NONCOMBUSTIBLE.
USE EXTINGUISHING MEDIA APPROPRIATE TO SURROUNDING FIRE CONDITIONS.

SPECIAL FIREFIGHTING PROCEDURES

FOR FIRES INVOLVING THIS MATERIAL, DO NOT ENTER ANY ENCLOSED OR CONFINED FIRE SPACE WITHOUT PROPER PROTECTIVE EQUIPMENT. THIS MAY INCLUDE SELF-CONTAINED BREATHING APPARATUS TO PROTECT AGAINST THE HAZARDOUS EFFECTS OF THE NORMAL PRODUCTS OF COMBUSTION OR OXYGEN DEFICIENCY.

Section 6. - - - - - - - - Accidental Release Measures - - - - - - - - -

WEAR RESPIRATOR, CHEMICAL SAFETY GOGGLES, RUBBER BOOTS AND HEAVY RUBBER GLOVES.

SWEEP UP, PLACE IN A BAG AND HOLD FOR WASTE DISPOSAL.
AVOID RAISING DUST.
VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.

Section 7. - - - - - - - - - - Handling and Storage - - - - - - - - - -

REFER TO SECTION 8.
ADDITIONAL INFORMATION
REACTS VIOLENTLY WITH BROMINE TRIFLUORIDE AND LITHIUM.

Section 8. - - - - - - Exposure Controls/Personal Protection - - - - - -

CHEMICAL SAFETY GOGGLES.
USE PROTECTIVE CLOTHING, GLOVES AND MASK.
SAFETY SHOWER AND EYE BATH.
MECHANICAL EXHAUST REQUIRED.
DO NOT BREATHE DUST.
DO NOT GET IN EYES, ON SKIN, ON CLOTHING.
WASH THOROUGHLY AFTER HANDLING.
IRRITANT.
KEEP TIGHTLY CLOSED.
HYGROSCOPIC
STORE IN A COOL DRY PLACE.

Section 9. - - - - - - - Physical and Chemical Properties - - - - - - -

APPEARANCE AND ODOR
WHITE CRYSTALLINE POWDER
PHYSICAL PROPERTIES
MELTING POINT: 801 C
VAPOR PRESSURE: 1MM 865 C
SPECIFIC GRAVITY: 2.165

Section 10. - - - - - - - - -Stability and Reactivity - - - - - - - - -

INCOMPATIBILITIES
STRONG OXIDIZING AGENTS
STRONG ACIDS
HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS
NATURE OF DECOMPOSITION PRODUCTS NOT KNOWN.

Section 11. - - - - - - - - - Toxicogical Information - - - - - - - -

ACUTE EFFECTS
MAY BE HARMFUL BY INHALATION, INGESTION, OR SKIN ABSORPTION.
CAUSES EYE IRRITATION.
CAUSES SKIN IRRITATION.
MATERIAL IS IRRITATING TO MUCOUS MEMBRANES AND UPPER
RESPIRATORY TRACT.
RTECS #: VZ4725000
SODIUM CHLORIDE
IRRITATION DATA

SKN-RBT 50 MG/24H MLD	BIOFX* 20-3/71
SKN-RBT 500 MG/24H MLD	28ZPAK -,7,72
EYE-RBT 100 MG MLD	BIOFX* 20-3/71
EYE-RBT 100 MG/24H MOD	28ZPAK -,7,72
EYE-RBT 10 MG MOD	TXAPA9 55,501,80

TOXICITY DATA

ORL-RAT LD50:3 GM/KG	TXAPA9 20,57,71
IHL-RAT LC50:>42 GM/M3/1H	BIOFX* 20-3/71
ORL-MUS LD50:4 GM/KG	FRPPAO 27,19,72
IPR-MUS LD50:6614 MG/KG	COREAF 256,1043,63
SCU-MUS LD50:3 GM/KG	ARZNAD 7,445,57
IVN-MUS LD50:645 MG/KG	ARZNAD 7,445,57
ICV-MUS LD50:131 MG/KG	TYKNAQ 27,131,80
SKN-RBT LD50:>10 GM/KG	BIOFX* 20-3/71

TARGET ORGAN DATA
BEHAVIORAL (SOMNOLENCE)
BEHAVIORAL (CONVULSIONS OR EFFECT ON SEIZURE THRESHOLD)
BEHAVIORAL (MUSCLE CONTRACTION OR SPASTICITY)
CARDIAC (OTHER CHANGES)
ENDOCRINE (ESTROGENIC)
MATERNAL EFFECTS (OVARIES, FALLOPIAN TUBES)
MATERNAL EFFECTS (OTHER EFFECTS ON FEMALE)
EFFECTS ON FERTILITY (PRE-IMPLANTATION MORTALITY)
EFFECTS ON FERTILITY (POST-IMPLANTATION MORTALITY)
EFFECTS ON FERTILITY (ABORTION)
EFFECTS ON EMBRYO OR FETUS (FETOTOXICITY)
EFFECTS ON EMBRYO OR FETUS (FETAL DEATH)
SPECIFIC DEVELOPMENTAL ABNORMALITIES (MUSCULOSKELETAL SYSTEM)
ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES (RTECS) DATA IS PRESENTED HERE. SEE ACTUAL ENTRY IN RTECS FOR COMPLETE INFORMATION.

Section 12. - - - - - - - - - Ecological Information - - - - - - - - - -

DATA NOT YET AVAILABLE.

Section 13. - - - - - - - - - Disposal Considerations - - - - - - - - -

FOR SMALL QUANTITIES: CAUTIOUSLY ADD TO A LARGE STIRRED EXCESS OF WATER. ADJUST THE PH TO NEUTRAL, SEPARATE ANY INSOLUBLE SOLIDS OR LIQUIDS AND PACKAGE THEM FOR HAZARDOUS-WASTE DISPOSAL. FLUSH THE AQUEOUS SOLUTION DOWN THE DRAIN WITH PLENTY OF WATER. THE HYDROLYSIS AND NEUTRALIZATION REACTIONS MAY GENERATE HEAT AND FUMES WHICH CAN BE CONTROLLED BY THE RATE OF ADDITION.
OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS.

Section 14. - - - - - - - - - - Transport Information - - - - - - - - -

CONTACT FLUKA CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

Section 15. - - - - - - - - - Regulatory Information - - - - - - - - - -

EUROPEAN INFORMATION
CAUTION: SUBSTANCE NOT YET FULLY TESTED.
R:36/37/38
IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.
S:26
IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE.
S:36
WEAR SUITABLE PROTECTIVE CLOTHING.
REVIEWS, STANDARDS, AND REGULATIONS
OEL=MAK
EPA FIFRA 1988 PESTICIDE SUBJECT TO REGISTRATION OR RE-REGISTRATION

FEREAC 54,7740,89
NOHS 1974: HZD 68880; NIS 265; TNF 63391; NOS 163; TNE 630453
NOES 1983: HZD E0256; NIS 1; TNF 403; NOS 5; TNE 4029; TFE 2015
NOES 1983: HZD 68880; NIS 336; TNF 69628; NOS 211; TNE 1743954; TFE 817249
EPA GENETOX PROGRAM 1988, NEGATIVE: IN VITRO CYTOGENETICS-NONHUMAN; SPERM MORPHOLOGY-MOUSE
EPA GENETOX PROGRAM 1988, INCONCLUSIVE: MAMMALIAN MICRONUCLEUS
EPA TSCA SECTION 8(B) CHEMICAL INVENTORY
EPA TSCA SECTION 8(D) UNPUBLISHED HEALTH/SAFETY STUDIES
EPA TSCA SECTION 8(E) RISK NOTIFICATION, 8EHQ-0892-9201
EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, APRIL 1995

Section 16. - - - - - - - - - - Other Information - - - - - - - - - - - -

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Allied Custom Gypsum

P O BOX 336 • LINDSAY OKLAHOMA 73052 • (405) 756 9565

MATERIAL SAFETY DATA SHEET

SECTION I

MANUFACTURER: Allied Custom Gypsum, Inc.
P.O. Box 69
Lindsay, OK 73052

PRODUCT CLASS: Calcium Sulfate (Gypsum)
CHEMICAL FORMULA. CaSO 2H O
CAS Registry No. 10101-41-4

TRADE NAME: Terra Alba
MANUFACTURER'S CODE IDENTIFICATI
FCC 114836

SECTION II - CHEMICAL - TYPICAL

Assay (Purity)	99.0%
Flouride	0.15 ppm
Loss on Drying	19.5%
Arsenic	<0.03 ppm
Heavy Metals (as lead)	<1.0 ppm
Selenium	4.4 ppm

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SECTION III - PHYSICAL DATA

Boiling Point: N/A
Evaporation Rate: N/A
Specific Gravity: 2.32
Fineness: 95% passing #325 Sieve

Vapor Density: N/A
Percent Volatile By Volume: N/A
PH: 7.0 - 7.5

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flash Point: N/A
LEL: N/A
Extinguishing Media: This product is non-flammable.
Unusual Fire And Explosion Hazards: N/A

SECTION V - HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE:
Calcium Sulfate is considered a nuisance particulate. High exposure to dust or fume may produce irritation of eyes and respiratory system.

EMERGENCY AND FIRST AID PROCEDURES:
Eye Contact: Wash eyes with copious amounts of water for 15 minutes. Seek medical advice, if irritation persists.
Skin Contact: Wash with water. If irritation occurs, contact physican.

This product is not subject to reporting procedures as outlined under Title III the Superfind Amendments and Reauthorization Act (SARA) Section 313 as noted in Section 311 Subsection (e).

SECTION VI - REACTIVITY DATA

Stability: Stable
Hazardous Polymerization: Will not occur
Conditions To Avoid: None
Materials To Avoid: None
Hazardous Decomposition Products: None

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
Remove by dry-sweeping or vacuum.
Do not wash down drains - may plug drains.

WASTE DISPOSAL METHOD: For disposal of this material as a waste, act in accordance with all applicable Federal, state, and local waste management regulations.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: Use NIOSH-approved particulate respirator as appropriate for nuisance dust.

PROTECTIVE GLOVES: Not required, may be desirable under certain working conditions.

EYE PROTECTION: Safety glasses or goggles, as needed.

OTHER PROTECTIVE EQUIPMENT: None

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Dew point conditions or other conditions causing presence of moisture will harden gypsum during storage.

OTHER PRECAUTIONS: N/A

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Material Safety Data Sheet (VERSENE ACID POWDER)
Dow Chemical Company **Emergency Phone: 517-636-4400**
Midland, MI 48674

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FEB 11 1998
TAMPA

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FEB 11 1998
TAMPA

1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

24-HOUR EMERGENCY PHONE NUMBER: 517-636-4400

Product: VERSENE (R) ACID CHELATING AGENT

Product Code: 90758

Effective Date: 05/15/96 Date Printed: 01/20/97 MSD: 000630

The Dow Chemical Company, Midland, MI 48674

Customer Information Center: 800-258-2436

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ethylenediaminetetraacetic acid	CAS# 000060-00-4	99%
Water	CAS# 007732-18-5	1%

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

****
* White solid. Odorless. No significant immediate hazards for *
* emergency response are known. *
****

POTENTIAL HEALTH EFFECTS (See Section 11 for toxicological data.)

EYE: May cause moderate eye irritation. May cause slight corneal injury.

SKIN: Prolonged exposure may cause skin irritation. Repeated exposure may cause skin burns. May cause more severe response if confined to skin or if skin is abraded (scratched or cut). A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts. Not classified as corrosive according to DOT.

INGESTION: Single dose oral toxicity is considered to be low. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; swallowing larger amounts may cause injury.

INHALATION: Vapors are unlikely due to physical properties. Single exposure to dust is not likely to be hazardous.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: No significant toxi-

(Continued on Page 2)
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Product: VERSENE (R) ACID CHELATING AGENT
Product Code: 90758

Effective Date: 05/15/96 Date Printed: 01/20/97 MSD: 000630

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3. HAZARDS IDENTIFICATION (CONTINUED)

cologic effects were observed in laboratory animals fed the sodium salt of EDTA.

CANCER INFORMATION: The trisodium salt of EDTA did not cause cancer in laboratory animals.

TERATOLOGY (BIRTH DEFECTS): EDTA and its sodium salts have been reported to cause birth defects in laboratory animals only at exaggerated doses that were toxic to the mother. These effects are likely associated with zinc deficiency due to chelation. Birth defects are unlikely. Exposures having no effect on the mother should have no effect on the fetus.

REPRODUCTIVE EFFECTS: Limited data in laboratory animals suggest that the material does not affect reproduction.

4. FIRST AID

EYE: Irrigate with flowing water immediately and continuously for 15 minutes. Consult medical personnel.

SKIN: Wash off in flowing water or shower.

INGESTION: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

INHALATION: Remove to fresh air if effects occur. Consult a physician.

NOTE TO PHYSICIAN: There is no acceptable evidence that chelation therapy with EDTA is effective in the treatment of atherosclerosis, and the adverse effects of this drug can be lethal, Medical Letter, 23:p51 (1981). If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES
FLASH POINT: Flash point data not required for a solid.

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(Continued on Page 3)
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Product: VERSENE (R) ACID CHELATING AGENT
Product Code: 90758

Effective Date: 05/15/96 Date Printed: 01/20/97 MSD: 000630

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TAMPA

5. FIRE FIGHTING MEASURES (CONTINUED)

METHOD USED: Not determined.

FLAMMABILITY LIMITS
LFL: Not determined.
UFL: Not determined.

HAZARDOUS COMBUSTION PRODUCTS: During a fire, smoke may contain the original material in addition to unidentified toxic and/or irritating compounds. Hazardous combustion products may include and are not limited to: nitrogen oxides, ammonia.

OTHER FLAMMABILITY INFORMATION: Mechanical handling can cause formation of dusts. To reduce the potential for dust explosion, do not permit dust to accumulate.

EXTINGUISHING MEDIA: Water, carbon dioxide, dry chemical.

FIRE FIGHTING INSTRUCTIONS: Keep people away. Isolate fire area and deny unnecessary entry. Contain fire water run-off if possible. Fire water run-off, if not contained may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this MSDS. Cool surroundings with water to localize fire zones. Hand held carbon dioxide or dry chemical extinguishers may be used for small fires. Soak throughly with water to cool and prevent re-ignition.

PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

6. ACCIDENTAL RELEASE MEASURES (See Section 15 for Regulatory Information)

PROTECT PEOPLE: Isolate area.

PROTECT THE ENVIRONMENT: Prevent wash water entering natural waterways or public water supplies.

(Continued on Page 4)
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MATERIAL SAFETY DATA SHEET Page: 4

Product: VERSENE (R) ACID CHELATING AGENT
Product Code: 90758

Effective Date: 05/15/96 Date Printed: 01/20/97 MSD: 000630

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6. ACCIDENTAL RELEASE MEASURES (See Section 15 for Regulatory (CONTINUED

CLEANUP: For large spills: sweep up. Spills should be cleaned up immediately using care to minimize generation of airborne dust.

7. HANDLING AND STORAGE

HANDLING: Good housekeeping and controlling of dusts are necessary for safe handling of product.

STORAGE: Minimize sources of ignition, such as static buildup, heat, spark, or flame.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Good general ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for some operations.

PERSONAL PROTECTIVE EQUIPMENT
EYE/FACE PROTECTION: Use chemical goggles.

SKIN PROTECTION: When prolonged or frequently repeated contact could occur, use protective clothing impervious to this material. Selection of specific items such as faceshield, gloves, boots, apron, or full-body suit will depend on operation. If hands are cut or scratched, use gloves impervious to this material even for brief exposures.

RESPIRATORY PROTECTION: In dusty atmospheres, use an approved dust respirator.

EXPOSURE GUIDELINES: None established.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: White solid.
ODOR: Odorless.
VAPOR PRESSURE: <0.01 mmHg
VAPOR DENSITY: Not applicable.
BOILING POINT: Not applicable

D.E.P.
FEB 11 1998
TAMPA

(Continued on Page 5)
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MATERIAL SAFETY DATA SHEET Page: 5

Product: VERSENE (R) ACID CHELATING AGENT
Product Code: 90758

Effective Date: 05/15/96 Date Printed: 01/20/97 MSD: 000630

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9. PHYSICAL AND CHEMICAL PROPERTIES (CONTINUED)

SOLUBILITY IN WATER: 25C <0.03g/100g
SPECIFIC GRAVITY: Bulk density 54 lbs/cu ft

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal storage and use conditions.

CONDITIONS TO AVOID: None known.

INCOMPATIBILITY WITH OTHER MATERIALS: Avoid contact with oxidizing materials. Avoid contact with metals such as carbon steel.

HAZARDOUS DECOMPOSITION PRODUCTS: Hazardous decomposition products may include and are not limited to ammonia and nitrogen oxides.

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION (See Section 3 for Potential Health Effects. For detailed toxicological data, write or call the address or non-emergency number shown in Section 1)

SKIN: The dermal LD50 has not been determined.

INGESTION: The oral LD50 for rats is > 3980 mg/kg.

MUTAGENICITY: Most data indicate that EDTA and its salts are not mutagenic. Minimal effects reported are likely due to trace metal deficiencies resulting from chelation by EDTA.

12. ECOLOGICAL INFORMATION (For detailed Ecological data, write or call the address or non-emergency number shown in Section 1)

ENVIRONMENTAL FATE
MOVEMENT & PARTITIONING: Bioconcentration potential is low (BCF less than 100 or Log Pow less than 3). Bioconcentration factor (BCF) in fish is 1.0. Log octanol/water partition coefficient (log Pow) is estimated using the Pomona-MedChem Structural fragment method to be -5.005.

D.E.P.
FEB 11 1998
SOUTHWEST
TAMPA

(Continued on Page 6)
(R) Indicates a Trademark of The Dow Chemical Company

Product: VERSENE (R) ACID CHELATING AGENT
Product Code: 90758

Effective Date: 05/15/96 Date Printed: 01/20/97 MSD: 000630

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12. ECOLOGICAL INFORMATION (For detailed Ecological data, write or call

DEGRADATION & PERSISTENCE: Material is inherently biodegradable. Reaches more than 20% biodegradation in OECD test(s) for inherent biodegradability. Chemical or physical degradation is expected in the environment. Degradation is expected in the soil environment. Theoretical oxygen demand (ThOD) is calculated to be 1.37 p/p.

ECOTOXICITY: Material is slightly toxic to aquatic organisms on an acute basis (LC50 between 10 and 100 mg/L in most sensitive species). (in very soft water)
Acute LC50 for bluegill (Lepomis macrochirus) is 159 mg/L in medium hard water.
Acute LC50 for bluegill (Lepomis macrochirus) is 41 mg/L in very soft water.
Acute LC50 for bluegill (Lepomis macrochirus) is 532 mg/L in very hard water.
Acute LC50 for fathead minnow (Pimephales promelas) is 59.8 to greater than 200 mg/L.

13. DISPOSAL CONSIDERATIONS (See Section 15 for Regulatory Information)

DISPOSAL: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal methods must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. THE DOW CHEMICAL COMPANY HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION 2 (Composition/Information On Ingredients).

FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: recycler, reclaimer, incinerator.

As a service to its customers, Dow can provide lists of companies which recycle, reprocess or manage chemicals or plastics, and companies that manage used drums. Telephone Dow's Customer Information Center at 800-258-2436 or 517-832-1556

(Continued on Page 7)
(R) Indicates a Trademark of The Dow Chemical Company

Product: VERSENE (R) ACID CHELATING AGENT
Product Code: 90758

Effective Date: 05/15/96 Date Printed: 01/20/97 MSD: 000630

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13. DISPOSAL CONSIDERATIONS (See Section 15 for Regulatory Information)

for further details.

14. TRANSPORT INFORMATION

DEPARTMENT OF TRANSPORTATION (D.O.T.): For DOT regulatory information, if required, consult transportation regulations, product shipping papers or contact your Dow representative.

CANADIAN TDG INFORMATION:
For TDG regulatory information, if required, consult transportation regulations, product shipping papers, or your Dow representative.

15. REGULATORY INFORMATION (Not meant to be all-inclusive--selected regulations represented)

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations. See other sections for health and safety information.

U.S. REGULATIONS
==========

SARA 313 INFORMATION: To the best of our knowledge, this product contains no chemical subject to SARA Title III Section 313 supplier notification requirements.

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

(Continued on Page 8)
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REGULATORY INFORMATION:(CONTINUED)

Not to have met any hazard category

TOXIC SUBSTANCES CONTROL ACT (TSCA):

All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

STATE RIGHT-TO-KNOW: The following product components are cited on certain state lists as mentioned. Non-listed components may be shown in the composition section of the MSDS.

CHEMICAL NAME	CAS NUMBER	LIST
ETHYLENEDIAMINE TETRAACETIC ACID	000060-00-4	NJ3 PA3 PA1

NJ3=New Jersey Workplace Hazardous Substance (present at greater than or equal to 1.0%).
PA1=Pennsylvania Hazardous Substance (present at greater than or equal to 1.0%).
PA3=Pennsylvania Environmental Hazardous Substance (present at greater than or equal to 1.0%).

OSHA HAZARD COMMUNICATION STANDARD:

This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

CANADIAN REGULATIONS

WHMIS INFORMATION: The Canadian Workplace Hazardous Materials

(Continued on Page 9)
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Product: VERSENE (R) ACID CHELATING AGENT
Product Code: 90758

Effective Date: 05/15/96 Date Printed: 01/20/97 MSD: 000630

REGULATORY INFORMATION:(CONTINUED)

Information System (WHMIS) Classification for this product is:

D2B - eye or skin irritant
Refer elsewhere in the MSDS for specific warnings and safe handling information. Refer to the employer's workplace education program.

- - - - -

CPR STATEMENT: This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

- - - - -

HAZARDOUS PRODUCTS ACT INFORMATION: This product contains the following ingredients which are Controlled Products and/or on the Ingredient Disclosure List (Canadian HPA section 13 and 14):

COMPONENTS:	CAS #	AMOUNT(%w/w)
Ethylenediaminetetraacetic acid	CAS# 000060-00-4	99%

16. OTHER INFORMATION

MSDS STATUS: Revised to 16-section format, revised all sections.

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The Information Herein Is Given In Good Faith, But No Warranty, Express Or Implied, Is Made. Consult The Dow Chemical Company For Further Information.

Material Safety Data Sheet (VERSENE 100)
Dow Chemical Company
Midland, MI 48674

Emergency Phone: (517) 636-4400

D.E.P.
FEB 11 1998
SOUTHWEST DISTRICT
TAMPA

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MATERIAL SAFETY DATA SHEET

(APPROVED BY THE U S DEPARTMENT OF LABOR AS essentially similar ' to form OSHA 20)

DOW *

Information on this form is furnished solely for the purpose of compliance with the Occupational Safety and Health Act of 1970 and shall not be used for any other purpose Use or dissemination of all or any part of this information for any other purpose may result in a violation of law or constitute grounds for legal action

FORM No 174-276-73

● Section 1 – NAME & PRODUCT

Manufacturer s Name	City State and Zip Code	Emergency Phone No 24 h
DOW CHEMICAL U S A	Midland, Michigan 48640	517 - 636-4400

Date this form written	Prepared by (Signature)
May 30, 1973	

Trade Name: DIS-M069 VERSENE® Acid

Synonyms: Ethylenediaminetetraacetic acid, EDTA

● Section 2 – INGREDIENTS

	%	TLV (Units)
EDTA	99	

D.E.P.
FEB 11 1998

● Section 3 – PHYSICAL DATA

BOILING POINT (°F)	Decomposes	SOLUBILITY IN WATER	Slight
VAPOR PRESSURE (mm Hg at 20°C)	Very low	SPECIFIC GRAVITY (H_2O 1)	Unknown
VAPOR DENSITY (air 1)	Unknown	% VOLATILE BY VOLUME	Not applicable

APPEARANCE White, solid

● Section 4 – FIRE AND EXPLOSION HAZARD DATA

Flash Point (and method used)	Flammable Limits (STP in air)	
°F Unknown	LFL Unknown	UFL Unknown

EXTINGUISHING MEDIA: ☒ Water Fog ☒ Foam ☒ Alcohol Foam ☒ CO_2 ☒ Dry Chemical ☐ Other

Special Fire Fighting Protection Equipment and Hazards

Self-contained breathing apparatus in closed areas Dust explosion hazard.

● Section 5 – REACTIVITY DATA

STABILITY (Normal Conditions)				Conditions to avoid
X	STABLE		UNSTABLE	

INCOMPATIBILITY

Materials to avoid

☐ Water ☐ Acid ☐ Base ☐ Corrosive ☒ Oxidizing Material

Other ☐ Avoid contact with aluminum, copper, nickel

Hazardous Decomposition Products

Carbon dioxide, carbon monoxide, amines

HAZARDOUS POLYMERIZATION			Conditions to avoid
		MAY OCCUR	
	X	WILL NOT OCCUR	

● Section 6 – SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled

Sweep up and wash floor with water Use proper protective equipment.

Disposal Method

Salvage or bury in approved landfill or incinerate. Consult with local authorities. Dilute to meet local regulations before dischar to receiving waters

(FRONT)

*Trademark of The Dow Chemical Company

Material Safety Data Sheet

The Dow Chemical Company
Midland Michigan 48674
Emergency 517 · 636-4400

1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

24-Hour Emergency Phone Number: 517-636-4400

Product: VERSENE (R) 100 CHELATING AGENT

Product Code: 90684

Effective Date: 03/14/95 Date Printed: 08/23/95 MSD: 000568

The Dow Chemical Company, Midland, MI 48674

Customer Information Center: 800-258-2436

2. COMPOSITION/INFORMATION ON INGREDIENTS

Tetrasodium salt of ethylenediaminetetraacetic acid	CAS# 000064-02-8	37%
Disodium ethylenediaminediacetate	CAS# 038011-25-5	1%
Trisodium ethylenediaminetriacetate	CAS# 019019-43-3	1%
Trisodium nitrilotriacetate	CAS# 005064-31-3	1%
Sodium hydroxide	CAS# 001310-73-2	1%
Sodium glycolate	CAS# 002836-32-0	3%
Water	CAS# 007732-18-5	56%

(active ingredients calculated as tetrasodium ethylenediaminetetraacetate - 39%)

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

****
* Light yellow liquid. Very slight amine odor. Causes eye burns. *
* Causes skin burns. *
* *
****

POTENTIAL HEALTH EFFECTS (See Section 11 for toxicological data.)

EYE: May cause severe irritation with corneal injury which may

(Continued on page 2)

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DOW CHEMICAL U.S.A
Midland, Michigan 48640

Section 7 – HEALTH HAZARD DATA

tion

/ single dose oral toxicity, LD_{50} (rat) greater than 4000 mg/kg.

Eye Contact

Transient irritation, nor corneal injury likely.

Skin Contact

Minor irritation.

Skin Absorption

Not a problem – considered low in toxicity by this route.

Inhalation

TLV None suggested.

Effects of Overexposure

Dust may be irritating to upper respiratory tract.

IRST AID PROCEDURE			
EYE Flush with flowing water at least 15 minutes	EYES and SKIN: Flush with plenty of water – if ill effects occur, get medical help. INHALATION. Not likely a problem. INGESTION: Not likely a problem. If large amounts are swallowed, induce vomiting and get medical help. No specific antidote known	Never give fluids or induce vomiting if patient is unconscious or having convulsions

ection 8 – SPECIAL PROTECTION INFORMATION

ation

Sufficient to minimize dust in work room air.

Respiratory Protection (Specify type)

None likely to be needed. If dusts are present, use an appropriate dust respirator.

Protective Clothing

Clean, body-covering clothing.

EYE PROTECTION							
	☐	Not normally necessary	☐	Safety glasses without side shields	☒	Safety glasses with side shields	☐ Chemical workers goggles
	☐	Gas tight goggles or equivalent	☒	Other	Wash facilities and eye fountain near work area.		

Section 9 – SPECIAL PRECAUTIONS OR OTHER COMMENTS

Precautions to be taken in handling and storing

Practice reasonable caution to avoid skin and eye contact. Avoid breathing dusts if generated.

Produces hydrogen gas in presence of aluminum

NOTICE The information herein is given in good faith but no warranty, express or implied, is made

result in permanent impairment of vision, even blindness. Mists may cause eye irritation.

SKIN: Prolonged or repeated exposure may cause skin irritation, even a burn. May cause more severe response if confined to skin or skin is abraded (scratched or cut). Mists may irritate skin. Not classified as corrosive according to DOT. A single prolonged skin exposure is not likely to result in the material being absorbed through skin in harmful amounts.

INGESTION: Single dose oral toxicity is low. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; swallowing larger amounts may cause injury. Ingestion may cause gastrointestinal irritation or ulceration. Ingestion may cause burns of the mouth and throat.

INHALATION: Single exposure to vapors is not expected to pose a hazard; vapors are primarily water. Mists may cause irritation of upper respiratory tract.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: No significant toxicologic effects were observed in laboratory animals fed the sodium salt of EDTA.

CHRONIC EFFECTS:

CANCER INFORMATION: This mixture contains a very small amount of the trisodium salt of nitrilotriacetic acid (trisodium NTA, CAS=005064-31-3) which is listed as a potential carcinogen for hazard communication purposes under OSHA Standard 20 CFR 1910.1200. Components listed by IARC and NTP: trisodium nitrilotriacetate. Although large dietary doses of NTA have caused urinary tumors in laboratory animals, there is little likelihood that NTA could cancer in humans, especially at subtoxic doses. The trisodium salt of EDTA did not cause cancer in laboratory animals.

TERATOLOGY (BIRTH DEFECTS): Birth defects are unlikely. EDTA and its sodium salts have been reported to cause birth defects in laboratory animals only at exaggerated doses that were toxic to the mother. These effects are likely associated with zinc deficiency due to chelation. Exposures having no effect on the mother should have no effect on the fetus.

(Continued on page 3)
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REPRODUCTIVE EFFECTS: Limited data in laboratory animals suggests that the material does not affect reproduction.

MUTAGENICITY (EFFECTS ON GENETIC MATERIAL): Most data indicate that EDTA and its salts are not mutagenic. Minimal effects reported are likely due to trace metal deficiencies resulting from chelation by EDTA.

4. FIRST AID

EYES: Immediate and continuous irrigation with flowing water for at least 30 minutes is imperative. Prompt medical consultation is essential.

SKIN: Wash off in flowing water or shower.

INGESTION: Do not induce vomiting. Give large amounts of water or milk if available and transport to medical facility.

INHALATION: Remove to fresh air if effects occur. Consult a physician.

NOTE TO PHYSICIAN: Eye irrigation may be necessary for an extended period of time to remove as much caustic as possible. Duration of irrigation and treatment is at the discretion of medical personnel. May cause tissue destruction leading to stricture. If lavage is performed, suggest endotracheal and/or esophagoscopic control. If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES
FLASH POINT: None
METHOD USED: PMCC
AUTOIGNITION TEMPERATURE: Not applicable.

FLAMMABLE LIMITS
LFL: Not applicable

(Continued on page 4)
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UFL: Not applicable

HAZARDOUS COMBUSTION PRODUCTS: Hazardous combustion by products may include and are not limited to: carbon dioxide, carbon monoxide, ammonia and nitrogen oxides. Unidentified organic compounds may be formed during combustion.

EXTINGUISHING MEDIA: Water fog, carbon dioxide, dry chemical. For large scale fires, direct water stream may cause violent frothing, but fine water spray may help control situation.

FIRE FIGHTING INSTRUCTIONS: Contain fire water run-off if possible. Fire water run-off if not contained may cause environmental damage. When using water spray, boil over may occur when the product temperatures reaches the boiling point of water (tank type senarios, not spills).

PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS: Wear positive-pressure, self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots, and gloves).

6. ACCIDENTAL RELEASE MEASURES (See Section 15 for Regulatory Information)

PROTECT PEOPLE: Keep people away. Isolate fire area and deny unnecessary entry.

PROTECT THE ENVIRONMENT: Prevent wash water entering natural waterways or public water supplies.

CLEANUP: Soak up with absorbent material and scoop into drums. Flush residue with plenty of water. Wash area with soap and water.

7. HANDLING AND STORAGE

HANDLING: For more Storage and Handling information refer to bulletin 113-1290-394 AMS.

STORAGE: Do not store in aluminum, carbon steel, copper, copper alloys, zinc or nickel containers. Store between 0 and 120F.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

(Continued on page 5)
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ENGINEERING CONTROLS: Good general ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for some operations.

PERSONAL PROTECTIVE EQUIPMENT

EYE/FACE PROTECTION: Use chemical goggles. Eye wash fountain should be located in immediate work area.

SKIN PROTECTION: Wear clean, long-sleeved, body-covering clothing. Use gloves impervious to this material. When prolonged or frequently repeated contact could occur, use protective clothing impervious to this material. Selection of specific items such as faceshield, gloves, boots, apron, or full-body suit will depend on operation. If hands are cut or scratched, use gloves impervious to this material even for brief exposures.

RESPIRATORY PROTECTION: In misty atmospheres, use an approved mist respirator.

EXPOSURE GUIDELINE(S): Sodium hydroxide: ACGIH TLV and OSHA PEL are 2 mg/m3 Ceiling. PELs are in accord with those recommended by OSHA, as in the 1989 revision of PELs. Major component(s) of this material do not have exposure guidelines.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE/PHYSICAL STATE: Light straw colored liquid.
ODOR: Very slight amine.
VAPOR PRESSURE: Same as water
VAPOR DENSITY: Same as water
BOILING POINT: 223F, 106C
SOLUBILITY IN WATER/MISCIBILITY: Completely miscible
SPECIFIC GRAVITY: 1.31 @ 25/25C
FREEZING POINT: -24F, -31C

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal storage and use conditions.

(Continued on page 6)
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CONDITIONS TO AVOID: None known.

INCOMPATIBILITY WITH OTHER MATERIALS: Oxidizing materials; hydrogen is formed in the presence of aluminum.

HAZARDOUS DECOMPOSITION PRODUCTS: Refer to Section 5 for Hazardous Combustion Products.

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION (See Section 3 for Potential Health Effects. For detailed toxicological data, write or call the address or non-emergency number shown in Section 1)

SKIN: The LD50 for skin absorption in rabbits is >5000 mg/kg.

INGESTION: The oral LD50 for male rats is 3030 mg/kg.

12. ECOLOGICAL INFORMATION (For detailed Ecological data, write or call the address or non-emergency number shown in Section 1)

ENVIRONMENTAL FATE

MOVEMENT & PARTITIONING: No bioconcentration is expected because of the relatively high water solubility.

DEGRADATION & TRANSFORMATION: Biodegradation under aerobic static laboratory conditions is below detectable limits (i.e. BOD less than 2.5% of theoretical) in 20 days. Chemical or physical degradation is expected in the environment. Degradation is expected in the soil environment. Theoretical oxygen demand (ThOD) is calculated to be 1.31 p/p.

ECOTOXICITY: Material is practically non-toxic to fish on an acute basis (LC50 greater than 100 mg/L). Acute LC50 for fathead minnow (Pimephales promelas) is >100 mg/L. Acute LC50 LC50 for bluegill (Lepomis macrochirus) is 1030 mg/L.

13. DISPOSAL CONSIDERATIONS (See Section 15 for Regulatory Information)

DISPOSAL: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY

(Continued on page 7)
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BODY OF WATER. All disposal methods must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. THE DOW CHEMICAL COMPANY HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION 2 (Composition/Information On Ingredients).

FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: recycler, reclaimer. For additional information refer to: Regulation Information, MSDS Section 15 and Stability & Reactivity Information, MSDS Section 10.

As a service to its customers, Dow can provide lists of companies which recycle, reprocess or manage chemicals or plastics, and companies that manage used drums. Telephone Dow's Customer Information Center at 800-258-2436 or 517-832-1556 for further details.

14. TRANSPORT INFORMATION

DEPARTMENT OF TRANSPORTATION (D.O.T.):

For DOT regulatory information, if required, consult transportation regulations, product shipping papers or contact your Dow representative.

CANADIAN TDG INFORMATION:
For TDG regulatory information, if required, consult transportation regulations, product shipping papers or your Dow representative.

15. REGULATORY INFORMATION (Not meant to be all-inclusive--selected regulations represented)

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied is given. Regulatory requirements are subject to change and may differ from one location to another;

(Continued on page 8)
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it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations. See other sections for health and safety information.

U.S. REGULATIONS

SARA 313 INFORMATION: To the best of our knowledge, this product contains no chemical subject to SARA Title III Section 313 supplier notification requirements.

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

An immediate health hazard
A delayed health hazard

TOXIC SUBSTANCES CONTROL ACT (TSCA):

All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

STATE RIGHT-TO-KNOW: The following product components are cited on certain state lists as mentioned. Non-listed components may be shown in the composition section of the MSDS.

CHEMICAL NAME	CAS NUMBER	LIST

(Continued on page 9)
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REGULATORY INFORMATION (CONTINUED)

FORMALDEHYDE	000050-00-0	PA2
SODIUM HYDROXIDE (SOLUTION)	001310-73-2	NJ1 NJ3 PA1 PA3

NJ1=New Jersey Special Health Hazard Substance (present at greater than or equal to 0.1%).
NJ3=New Jersey Workplace Hazardous Substance (present at greater than or equal to 1.0%).
PA1=Pennsylvania Hazardous Substance (present at greater than or equal to 1.0%).
PA2=Pennsylvania Special Hazardous Substance (present at greater than or equal to 0.01%).
PA3=Pennsylvania Environmental Hazardous Substance (present at greater than or equal to 1.0%).

OSHA HAZARD COMMUNICATION STANDARD:

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

CANADIAN REGULATOINS

WHMIS INFORMATION: The Canadian Workplace Hazardous Materials Information System (WHMIS) Classification for this product is:

D2A - possible, probable or known human carcinogen according to classifications by IARC or ACGIH
D2B - eye or skin irritant
E - corrosive to metal or skin

Refer elsewhere in the MSDS for specific warnings and safe handling information. Refer to the employer's workplace education program.

CPR STATEMENT: This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

(Continued on page 10)
(R) Indicates a Trademark of The Dow Chemical Company

Product: VERSENE (R) 100 CHELATING AGENT
Product Code: 90684

Effective Date: 03/14/95 Date Printed: 08/23/95 MSD: 000568

REGULATORY INFORMATION (CONTINUED)

\- - - - -

HAZARDOUS PRODUCTS ACT INFORMATION: This product contains the following ingredients which are Controlled Products and/or on the Ingredient Disclosure List (Canadian HPA section 13 and 14):

COMPONENTS:	CAS #	AMOUNT (%w/w)
Tetrasodium salt of ethylenediaminetetraacetic acid	CAS# 000064-02-8	37%
Disodium ethylenediaminediacetate	CAS# 038011-25-5	1%
Trisodium ethylenediaminetriacetate	CAS# 019019-43-3	1%
Trisodium nitrilotriacetate	CAS# 005064-31-3	1%
Sodium hydroxide	CAS# 001310-73-2	1%

16. OTHER INFORMATION

HAZARD RATING SYSTEM:

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:

Health	1
Flammability	0
Reactivity	0

MSDS STATUS: Revised Section 13.

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The Information Herein Is Given In Good Faith, But No Warranty, Express Or Implied, Is Made. Consult The Dow Chemical Company For Further Information.

Section 1. - - - - - - - - - Chemical Identification - - - - - - - - - -

D.E.P.
FEB 11 1998
SOUTHWEST DISTRICT
TAMPA

CATALOG #: Z9629
NAME: SULFURIC ACID TECH. 66 BE

Section 2. - - - - - Composition/Information on Ingredients - - - - - -

CAS #: 7664-93-9
EC NO: 231-639-5
SYNONYMS
ACIDE SULFURIQUE (FRENCH) * ACIDO SOLFORICO (ITALIAN) * BATTERY ACID * BOV * DIHYDROGEN SULFATE * DIPPING ACID * ELECTROLYTE ACID * MATTLING ACID * OIL OF VITRIOL * SCHWEFELSAEURELOESUNGEN (GERMAN) * SULFURIC ACID (ACGIH,DOT,OSHA) * SULFURIC ACID, SPENT (UN1832) (DOT) * SULPHURIC ACID * UN1830 (DOT) * UN1832 (DOT) * VITRIOL BROWN OIL * ZWAVELZUUROPLOSSINGEN (DUTCH) *

Section 3. - - - - - - - - - - Hazards Identification - - - - - - - - -

LABEL PRECAUTIONARY STATEMENTS
OXIDIZING
HIGHLY TOXIC (USA DEFINITION)
TOXIC (EUROPEAN DEFINITION)
CONTACT WITH COMBUSTIBLE MATERIAL MAY CAUSE FIRE.
MAY CAUSE CANCER BY INHALATION.
CAUSES BURNS.
TOXIC BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.
REACTS VIOLENTLY WITH WATER.
KEEP AWAY FROM COMBUSTIBLE MATERIAL.
IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).
WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE PROTECTION.
DO NOT BREATHE VAPOR.

Section 4. - - - - - - - - - - First-Aid Measures - - - - - - - - - - -

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES OR SKIN WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES.
ASSURE ADEQUATE FLUSHING OF THE EYES BY SEPARATING THE EYELIDS WITH FINGERS.
IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.
IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS.
CALL A PHYSICIAN IMMEDIATELY.
WASH CONTAMINATED CLOTHING BEFORE REUSE.
DISCARD CONTAMINATED SHOES.

Section 5. - - - - - - - - - Fire Fighting Measures - - - - - - - - - -

EXTINGUISHING MEDIA
NONCOMBUSTIBLE.
USE EXTINGUISHING MEDIA APPROPRIATE TO SURROUNDING FIRE CONDITIONS.
DO NOT USE WATER.

SPECIAL FIREFIGHTING PROCEDURES
WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES.
STRONG OXIDIZER.
UNUSUAL FIRE AND EXPLOSIONS HAZARDS
EMITS TOXIC FUMES UNDER FIRE CONDITIONS.
CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE.

Section 6. - - - - - - - - Accidental Release Measures - - - - - - - - -

EVACUATE AREA.
WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY RUBBER GLOVES.
COVER WITH DRY-LIME, SAND, OR SODA ASH. PLACE IN COVERED CONTAINERS USING NON-SPARKING TOOLS AND TRANSPORT OUTDOORS.
VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.
AVOID INHALATION.

Section 7. - - - - - - - - - - Handling and Storage - - - - - - - - - -

REFER TO SECTION 8.
ADDITIONAL INFORMATION
INCOMPATIBLE WITH CARBIDES, CHLORATES, FULMINATES, NITRATES, PICRATES, CYANIDES, ALKALI HALIDES, ZINC IODIDE, PERMANGANATES, HYDROGEN PEROXIDE, AZIDES, PERCHLORATES, NITROMETHANE, PHOSPHOROUS, NITRITES. VIOLENT REACTION WITH: CYCLOPENTADIENE, CYCLOPENTANONE OXIME, NITROARYL AMINES, HEXALITHIUM DISILICIDE, PHOSPHOROUS (III) OXIDE.

Section 8. - - - - - - Exposure Controls/Personal Protection - - - - - -

WEAR APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATOR, CHEMICAL-RESISTANT GLOVES, SAFETY GOGGLES, OTHER PROTECTIVE CLOTHING.
USE ONLY IN A CHEMICAL FUME HOOD.
SAFETY SHOWER AND EYE BATH.
FACESHIELD (8-INCH MINIMUM).
DO NOT BREATHE VAPOR.
AVOID CONTACT WITH EYES, SKIN AND CLOTHING.
AVOID PROLONGED OR REPEATED EXPOSURE.
WASH THOROUGHLY AFTER HANDLING.
CARCINOGEN.
POISON
CORROSIVE.
KEEP TIGHTLY CLOSED.
DO NOT STORE NEAR, NOR ALLOW CONTACT WITH, CLOTHING AND OTHER COMBUSTIBLE MATERIAL.
DO NOT ALLOW CONTACT WITH WATER.
VERY HYGROSCOPIC
STORE IN A COOL DRY PLACE.

Section 9. - - - - - - - Physical and Chemical Properties - - - - - - -

APPEARANCE AND ODOR
CLEAR, COLORLESS LIQUID (ACS)
PHYSICAL PROPERTIES

FLASHPOINT	NONE
VAPOR PRESSURE:	1MM 145.8 C
SPECIFIC GRAVITY:	1.840
VAPOR DENSITY:	<.3 @ 25 C

Section 10. - - - - - - - - - Stability and Reactivity - - - - - - -

INCOMPATIBILITIES
BASES
HALIDES
ORGANIC MATERIALS
FINELY POWDERED METALS
PROTECT FROM MOISTURE.
DO NOT ALLOW WATER TO ENTER CONTAINER BECAUSE OF VIOLENT REACTION.
HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS
SULFUR OXIDES

Section 11. - - - - - - - - - Toxicogical Information - - - - - - - -

ACUTE EFFECTS
MAY BE FATAL IF SWALLOWED.
HARMFUL IF INHALED OR ABSORBED THROUGH SKIN.
MATERIAL IS EXTREMELY DESTRUCTIVE TO TISSUE OF THE MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT, EYES AND SKIN.
INHALATION MAY BE FATAL AS A RESULT OF SPASM, INFLAMMATION AND EDEMA OF THE LARYNX AND BRONCHI, CHEMICAL PNEUMONITIS AND PULMONARY EDEMA.
SYMPTOMS OF EXPOSURE MAY INCLUDE BURNING SENSATION, COUGHING, WHEEZING, LARYNGITIS, SHORTNESS OF BREATH, HEADACHE, NAUSEA AND VOMITING.
CHRONIC EFFECTS
CARCINOGEN.
THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (IARC) HAS DETERMINED THAT OCCUPATIONAL EXPOSURE TO STRONG-INORGANIC-ACID MISTS CONTAINING SULFURIC ACID IS CARCINOGENIC TO HUMANS (GROUP 1).
RTECS #: WS5600000
SULFURIC ACID
IRRITATION DATA

EYE-RBT 250 UG SEV	AJOPAA 29,1363,46
EYE-RBT 5 MG/30S RINSE SEV	TXCYAC 23,281,82

TOXICITY DATA

UNR-MAN LDLO:135 MG/KG	85DCAI 2,73,70
ORL-RAT LD50:2140 MG/KG	AIHAAP 30,470,69
IHL-RAT LC50:510 MG/M3/2H	85GMAT -,107,82
IHL-MUS LC50:320 MG/M3/2H	85GMAT -,107,82
IHL-GPG LC50:18 MG/M3	MELAAD 45,590,54

ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES (RTECS) DATA IS PRESENTED HERE. SEE ACTUAL ENTRY IN RTECS FOR COMPLETE INFORMATION.

Section 12. - - - - - - - - - Ecological Information - - - - - - - - - -

DATA NOT YET AVAILABLE.

Section 13. - - - - - - - - - Disposal Considerations - - - - - - - - -

FOR SMALL QUANTITIES: CAUTIOUSLY ADD TO A LARGE STIRRED EXCESS OF WATER. ADJUST THE PH TO NEUTRAL, SEPARATE ANY INSOLUBLE SOLIDS OR LIQUIDS AND PACKAGE THEM FOR HAZARDOUS-WASTE DISPOSAL. FLUSH THE AQUEOUS SOLUTION DOWN THE DRAIN WITH PLENTY OF WATER. THE HYDROLYSIS AND NEUTRALIZATION REACTIONS MAY GENERATE HEAT AND FUMES WHICH CAN BE CONTROLLED BY THE RATE OF ADDITION.
OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS.

Section 14. - - - - - - - - - Transport Information - - - - - - -

CONTACT SIGMA CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

Section 15. - - - - - - - - - Regulatory Information - - - - - - - - - -

EUROPEAN INFORMATION
EC INDEX NO: 016-020-00-8
R:8
CONTACT WITH COMBUSTIBLE MATERIAL MAY CAUSE FIRE.
R:49
MAY CAUSE CANCER BY INHALATION.
R:34
CAUSES BURNS.
R:23/24/25
TOXIC BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.
S:17
KEEP AWAY FROM COMBUSTIBLE MATERIAL.
S:45
IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).
S:36/37/39
WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE PROTECTION.
S:23
DO NOT BREATHE VAPOR.
REVIEWS, STANDARDS, AND REGULATIONS
OEL=MAK
ACGIH TLV-TWA 1 MG/M3; STEL 3 MG/M3 85INA8 6,1461,91
IARC CANCER REVIEW:HUMAN SUFFICIENT EVIDENCE IMEMDT 54,41,92
IARC CANCER REVIEW:GROUP 1 IMEMDT 54,41,92
EPA FIFRA 1988 PESTICIDE SUBJECT TO REGISTRATION OR RE-REGISTRATION
FEREAC 54,7740,89
MSHA STANDARD-AIR:TWA 1 MG/M3
DTLVS* 3,239,71
OSHA PEL (GEN INDU):8H TWA 1 MG/M3
CFRGBR 29,1910.1000,94
OSHA PEL (CONSTRUC):8H TWA 1 MG/M3
CFRGBR 29,1926.55,94
OSHA PEL (SHIPYARD):8H TWA 1 MG/M3
CFRGBR 29,1915.1000,93
OSHA PEL (FED CONT):8H TWA 1 MG/M3
CFRGBR 41,50-204.50,94
OEL-ARAB REPUBLIC OF EGYPT:TWA 1 MG/M3 JAN93
OEL-AUSTRALIA:TWA 1 MG/M3 JAN93
OEL-BELGIUM:TWA 1 MG/M3;STEL 3 MG/M3 JAN93
OEL-CZECHOSLOVAKIA:TWA 1 MG/M3;STEL 2 MG/M3 JAN93
OEL-DENMARK:TWA 1 MG/M3 JAN93
OEL-FINLAND:TWA 1 MG/M3;STEL 3 MG/M3;SKIN JAN93
OEL-FRANCE:TWA 1 MG/M3;STEL 3 MG/M3 JAN93
OEL-GERMANY:TWA 1 MG/M3 JAN93
OEL-HUNGARY:STEL 1 MG/M3 JAN93
OEL-JAPAN:TWA 1 MG/M3 JAN93
OEL-THE NETHERLANDS:TWA 1 MG/M3 JAN93
OEL-THE PHILIPPINES:TWA 1 MG/M3 JAN93
OEL-POLAND:TWA 1 MG/M3 JAN93
OEL-RUSSIA:STEL 1 MG/M3;SKIN JAN93
OEL-SWEDEN:TWA 1 MG/M3;STEL 3 MG/M3 JAN93
OEL-SWITZERLAND:TWA 1 MG/M3;STEL 2 MG/M3 JAN93
OEL-THAILAND:TWA 1 MG/M3 JAN93
OEL-TURKEY:TWA 1 MG/M3 JAN93

OEL-UNITED KINGDOM:T 1 MG/M3 JAN93
OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA CHECK ACGIH TLV
OEL IN NEW ZEALAND, SINGAPORE, VIETNAM CHECK ACGIH TLV
NIOSH REL TO SULFURIC ACID-AIR:10H TWA 1 MG/M3
NIOSH* DHHS #92-100,92
NOHS 1974: HZD 70870; NIS 313; TNF 54746; NOS 143; TNE 499446
NOES 1983: HZD 70870; NIS 300; TNF 54516; NOS 182; TNE 775587; TFE 173653
EPA TSCA SECTION 8(B) CHEMICAL INVENTORY
EPA TSCA SECTION 8(D) UNPUBLISHED HEALTH/SAFETY STUDIES
EPA TSCA SECTION 8(E) RISK NOTIFICATION, 8EHQ-0892-9247;8EHQ-0892-9248
EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, APRIL 1995
NIOSH ANALYTICAL METHOD, 1994: ACIDS, INORGANIC, 7903
OSHA ANALYTICAL METHOD #ID-113

U.S. INFORMATION

THIS PRODUCT IS SUBJECT TO SARA SECTION 313 REPORTING REQUIREMENTS.

Section 16. - - - - - - - - - - Other Information - - - - - - - - - - -

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT BUT DOES NOT PURPORT TO BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. SIGMA, ALDRICH, FLUKA SHALL NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING OR FROM CONTACT WITH THE ABOVE PRODUCT. SEE REVERSE SIDE OF INVOICE OR PACKING SLIP FOR ADDITIONAL TERMS AND CONDITIONS OF SALE.
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First Aid

EYES: FLUSH WITH WATER FOR AT LEAST 15 MINUTES WITH EYELIDS OPEN. GET MEDICAL ATTENTION. SKIN: WASH SKIN WITH PLENTY OF WATER. REMOVE CONTAMINATED CLOTHING AND WASH BEFORE REUSE. IF IRRITATION PERSIST, SEEK MEDICAL ATTENTION. MONITOR FOR SKIN ULCERS. INHALATION: REMOVE PERSON TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL RESPIRATION OR C.P.R. INGESTION: CORROSIVE MATERIAL. GIVE 2-4 GLASSES OF WATER. SEEK MEDICAL ATTENTION (IMMEDIATELY). IF UNCONSCIOUS DO NOT GIVE ANYTHING BY MOUTH. KEEP PERSON WARM AND QUIET.

D.E.P.
FEB 11 1998
SOUTH... DISTRICT
TAMPA

Fire and/or Explosion Control

Extinguishing Agent: N/A

Conditions of Flammability: N/A

Flammability Classification: N/A

Flammable: NO **Flash Point:** NONE **Autoignition:** N/A

Explosive Limits: Lower: N/A Higher: N/A

Special Procedures:
EMITS SUFFOCATING FUMES. VERY POWERFUL OXIDIZER. AVOID CONTACT WITH ORGANIC OR REDUCING MATERIALS.

Hazardous Combustion Products: HEAT/FIRE: WILL EMIT TOXIC FUMES AND NOx.

Explosion Data-Sensitivity to Mechanical Impact: VERY POWERFUL OXIDIZER.

Explosion Data-Sensitivity to Static Discharge:
N/A

Other Hazards:
EMITS SUFFOCATING FUMES. CREATES POTENTIALLY EXPLOSIVE/FLAMMABLE MIXTURES WITH A NUMBER OF CHEMICALS. GIVES EXOTHERMIC REACTION IN CONTACT WITH WATER OR STEAM.

...entive ...sures

Personal Protective Equipment:

Respirators: Normal conditions: IN POORLY VENTILATED AREAS, USE AIR SUPPLIED HOOD.

Confined space: AIR SUPPLIED HOOD/SELF CONTAINED BREATHING APPARATUS.

Emergency: SELF CONTAINED BREATHING APPARATUS.

Eyes: CHEMICAL GOGGLES.

Other: IMPERVIOUS GLOVES, APRON, SAFETY SHOES. SAFETY SHOWER ON PREMISES. IF WORK CLOTHES CONTAMINATED, REMOVE THEM AND LAUNDER BEFORE USE.

Ventilation:

Normal conditions: LOCAL EXHAUST AND GENERAL VENTILATION.

Confined space: LOCAL EXHAUST AND AIR MOVER.

Release/Spill Measures:

EVACUATE ALL NON-ESSENTIAL PERSONNEL. VENTILATE AREA WELL. DIKE WITH INERT MATERIAL. USE AIR SUPPLIED HOOD OR RESPIRATOR. AVOID CONTACT WITH ORGANIC OR REDUCING MATERIALS. ADD INERT ABSORBENT (E.G. SAND) AND PLACE INTO A SEALABLE CONTAINER.

Special shipping information: VERY POWERFUL OXIDIZER. LABEL BEFORE SHIPPING

Section 1. - - - - - - - - - Chemical Identification - - - - - - - - - -

CATALOG #: Z8130
NAME: SODIUM SULFATE ANHYDROUS PRACTICAL

Section 2. - - - - - Composition/Information on Ingredients - - - - - -

CAS #: 7757-82-6
EC NO: 231-820-9
SYNONYMS
DISODIUM SULFATE * NATRIUMSULFAT (GERMAN) * SALT CAKE * SODIUM SULFATE ANHYDROUS * SODIUM SULPHATE * SULFURIC ACID, DISODIUM SALT * THENARDITE * TRONA *

Section 3. - - - - - - - - - - Hazards Identification - - - - - - - - -

LABEL PRECAUTIONARY STATEMENTS
IRRITANT
IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.
IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE.
WEAR SUITABLE PROTECTIVE CLOTHING.

Section 4. - - - - - - - - - - First-Aid Measures - - - - - - - - - -

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES.
IN CASE OF CONTACT, IMMEDIATELY WASH SKIN WITH SOAP AND COPIOUS AMOUNTS OF WATER.
IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.
IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS. CALL A PHYSICIAN.
WASH CONTAMINATED CLOTHING BEFORE REUSE.

Section 5. - - - - - - - - - Fire Fighting Measures - - - - - - - - - -

EXTINGUISHING MEDIA
NONCOMBUSTIBLE.
USE EXTINGUISHING MEDIA APPROPRIATE TO SURROUNDING FIRE CONDITIONS.
SPECIAL FIREFIGHTING PROCEDURES
WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES.
UNUSUAL FIRE AND EXPLOSIONS HAZARDS
EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

Section 6. - - - - - - - - Accidental Release Measures - - - - - - - - -

WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY RUBBER GLOVES.
SWEEP UP, PLACE IN A BAG AND HOLD FOR WASTE DISPOSAL.
AVOID RAISING DUST.
VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.

Section 7. - - - - - - - - - - Handling and Storage - - - - - - - - - -

REFER TO SECTION 8.

Section 8. - - - - - - Exposure Controls/Personal Protection - - - - - -

WEAR APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATOR, CHEMICAL-RESISTANT GLOVES, SAFETY GOGGLES, OTHER PROTECTIVE CLOTHING.
SAFETY SHOWER AND EYE BATH.
MECHANICAL EXHAUST REQUIRED.
DO NOT BREATHE DUST.
AVOID CONTACT WITH EYES, SKIN AND CLOTHING.
AVOID PROLONGED OR REPEATED EXPOSURE.
WASH THOROUGHLY AFTER HANDLING.
IRRITANT.
KEEP TIGHTLY CLOSED.
STORE IN A COOL DRY PLACE.

Section 9. - - - - - - - Physical and Chemical Properties - - - - - - -

APPEARANCE AND ODOR
  SOLID.
PHYSICAL PROPERTIES
  MELTING POINT: 884 C
  SPECIFIC GRAVITY: 2.680

Section 10. - - - - - - - - -Stability and Reactivity - - - - - - - - -

INCOMPATIBILITIES
  STRONG ACIDS
  ALUMINUM
  MAGNESIUM
HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS
  SULFUR OXIDES

Section 11. - - - - - - - - - Toxicogical Information - - - - - - - -

ACUTE EFFECTS
  MAY BE HARMFUL BY INHALATION, INGESTION, OR SKIN ABSORPTION.
  CAUSES EYE AND SKIN IRRITATION.
  MATERIAL IS IRRITATING TO MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT.
  TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.
RTECS #: WE1650000
  SODIUM SULFATE (2:1)
TOXICITY DATA
  ORL-MUS LD50:5989 MG/KG SKEZAP 4,15,63
  IVN-RBT LD50:1220 MG/KG NIIRDN -,1257,90
TARGET ORGAN DATA
  SKIN AND APPENDAGES (TUMORS)
  EFFECTS ON EMBRYO OR FETUS (FETOTOXICITY)
  SPECIFIC DEVELOPMENTAL ABNORMALITIES (MUSCULOSKELETAL SYSTEM)
  TUMORIGENIC (EQUIVOCAL TUMORIGENIC AGENT BY RTECS CRITERIA)
  ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES (RTECS) DATA IS PRESENTED HERE. SEE ACTUAL ENTRY IN RTECS FOR COMPLETE INFORMATION.

Section 12. - - - - - - - - - - Ecological Information - - - - - - - - - -

DATA NOT YET AVAILABLE.

Section 13. - - - - - - - - - Disposal Considerations - - - - - - - - -

CONTACT A LICENSED PROFESSIONAL WASTE DISPOSAL SERVICE TO DISPOSE OF THIS MATERIAL.
OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS.

Section 14. - - - - - - - - - - Transport Information - - - - - - - - -

CONTACT SIGMA CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

Section 15. - - - - - - - - - - Regulatory Information - - - - - - - - - -

EUROPEAN INFORMATION
CAUTION: SUBSTANCE NOT YET FULLY TESTED.
R:36/37/38
IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.
S:26
IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE.
S:36
WEAR SUITABLE PROTECTIVE CLOTHING.
REVIEWS, STANDARDS, AND REGULATIONS
OEL=MAK
EPA FIFRA 1988 PESTICIDE SUBJECT TO REGISTRATION OR RE-REGISTRATION FEREAC 54,7740,89
NOHS 1974; HZD 81663; NIS 311; TNF 94825; NOS 160; TNE 866411
NOES 1983: HZD 81663; NIS 311; TNF 68367; NOS 202; TNE 1332131; TFE 543877
EPA GENETOX PROGRAM 1988, NEGATIVE: CELL TRANSFORM.-SA7/SHE
EPA TSCA SECTION 8(B) CHEMICAL INVENTORY
EPA TSCA SECTION 8(D) UNPUBLISHED HEALTH/SAFETY STUDIES
EPA TSCA SECTION 8(E) RISK NOTIFICATION, 8EHQ-0892-8786
EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, APRIL 1995

Section 16. - - - - - - - - - - Other Information - - - - - - - - - - -

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D.E.P.
FEB 11 1998
SOUTH TAMPA

Section 1. - - - - - - - - - Chemical Identification - - - - - - - - - -

CATALOG # Z8130
NAME SODIUM SULFATE ANHYDROUS PRACTICAL

Section 2. - - - - - Composition/Information on Ingredients - - - - - -

CAS #· 7757-82-6
EC NO 231-820-9
SYNONYMS
DISODIUM SULFATE * NATRIUMSULFAT (GERMAN) * SALT CAKE * SODIUM SULFATE ANHYDROUS * SODIUM SULPHATE * SULFURIC ACID, DISODIUM SALT * THENARDITE * TRONA *

Section 3. - - - - - - - - - - Hazards Identification - - - - - - - - -

LABEL PRECAUTIONARY STATEMENTS
IRRITANT
IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN
IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE
WEAR SUITABLE PROTECTIVE CLOTHING

Section 4. - - - - - - - - - - First-Aid Measures - - - - - - - - - -

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES
IN CASE OF CONTACT, IMMEDIATELY WASH SKIN WITH SOAP AND COPIOUS AMOUNTS OF WATER
IF INHALED, REMOVE TO FRESH AIR IF NOT BREATHING GIVE ARTIFICIAL RESPIRATION IF BREATHING IS DIFFICULT, GIVE OXYGEN
IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS
CALL A PHYSICIAN
WASH CONTAMINATED CLOTHING BEFORE REUSE.

Section 5. - - - - - - - - - Fire Fighting Measures - - - - - - - - - -

EXTINGUISHING MEDIA
NONCOMBUSTIBLE
USE EXTINGUISHING MEDIA APPROPRIATE TO SURROUNDING FIRE CONDITIONS
SPECIAL FIREFIGHTING PROCEDURES
WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES.
UNUSUAL FIRE AND EXPLOSIONS HAZARDS
EMITS TOXIC FUMES UNDER FIRE CONDITIONS

Section 6. - - - - - - - - Accidental Release Measures - - - - - - - - -

WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY RUBBER GLOVES
SWEEP UP, PLACE IN A BAG AND HOLD FOR WASTE DISPOSAL
AVOID RAISING DUST
VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.

Section 7. - - - - - - - - - - Handling and Storage - - - - - - - - - -

REFER TO SECTION 8

Section 8. - - - - - - Exposure Controls/Personal Protection - - - - - -

WEAR APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATOR, CHEMICAL-RESISTANT GLOVES, SAFETY GOGGLES, OTHER PROTECTIVE CLOTHING.
SAFETY SHOWER AND EYE BATH
MECHANICAL EXHAUST REQUIRED
DO NOT BREATHE DUST
AVOID CONTACT WITH EYES, SKIN AND CLOTHING
AVOID PROLONGED OR REPEATED EXPOSURE
WASH THOROUGHLY AFTER HANDLING
IRRITANT.
KEEP TIGHTLY CLOSED
STORE IN A COOL DRY PLACE

Section 9. - - - - - - - Physical and Chemical Properties - - - - - - -

APPEARANCE AND ODOR
SOLID.
PHYSICAL PROPERTIES

MELTING POINT	884 C
SPECIFIC GRAVITY	2 680

Section 10. - - - - - - - - -Stability and Reactivity - - - - - - - - -

INCOMPATIBILITIES
STRONG ACIDS
ALUMINUM
MAGNESIUM
HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS
SULFUR OXIDES

Section 11. - - - - - - - - - Toxicogical Information - - - - - - - -

ACUTE EFFECTS
MAY BE HARMFUL BY INHALATION, INGESTION, OR SKIN ABSORPTION
CAUSES EYE AND SKIN IRRITATION
MATERIAL IS IRRITATING TO MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT.
TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED
RTECS # WE1650000
SODIUM SULFATE (2 1)
TOXICITY DATA

ORL-MUS LD50 5989 MG/KG	SKEZAP 4,15,63
IVN-RBT LD50 1220 MG/KG	NIIRDN -,1257,90

TARGET ORGAN DATA
SKIN AND APPENDAGES (TUMORS)
EFFECTS ON EMBRYO OR FETUS (FETOTOXICITY)
SPECIFIC DEVELOPMENTAL ABNORMALITIES (MUSCULOSKELETAL SYSTEM)
TUMORIGENIC (EQUIVOCAL TUMORIGENIC AGENT BY RTECS CRITERIA)
ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES (RTECS) DATA IS PRESENTED HERE SEE ACTUAL ENTRY IN RTECS FOR COMPLETE INFORMATION.

Section 12. - - - - - - - - - Ecological Information - - - - - - - - - -

DATA NOT YET AVAILABLE

Section 13. - - - - - - - - - Disposal Considerations - - - - - - - - -

CONTACT A LICENSED PROFESSIONAL WASTE DISPOSAL SERVICE TO DISPOSE OF THIS MATERIAL
OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS

Section 14. - - - - - - - - - - Transport Information - - - - - - - - -

CONTACT SIGMA CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION

Section 15. - - - - - - - - - Regulatory Information - - - - - - - - - -

EUROPEAN INFORMATION
CAUTION SUBSTANCE NOT YET FULLY TESTED
R:36/37/38
IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN
S 26
IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE
S·36
WEAR SUITABLE PROTECTIVE CLOTHING
REVIEWS, STANDARDS, AND REGULATIONS
OEL=MAK
EPA FIFRA 1988 PESTICIDE SUBJECT TO REGISTRATION OR RE-REGISTRATION FEREAC 54,7740,89
NOHS 1974 HZD 81663, NIS 311, TNF 94825, NOS 160, TNE 866411
NOES 1983 HZD 81663, NIS 311, TNF 68367, NOS 202, TNE 1332131, TFE 543877
EPA GENETOX PROGRAM 1988, NEGATIVE: CELL TRANSFORM -SA7/SHE
EPA TSCA SECTION 8(B) CHEMICAL INVENTORY
EPA TSCA SECTION 8(D) UNPUBLISHED HEALTH/SAFETY STUDIES
EPA TSCA SECTION 8(E) RISK NOTIFICATION, 8EHQ-0892-8786
EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, APRIL 1995

Section 16. - - - - - - - - - - Other Information - - - - - - - - - - -

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT BUT DOES NOT PURPORT TO BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. SIGMA, ALDRICH, FLUKA SHALL NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING OR FROM CONTACT WITH THE ABOVE PRODUCT SEE REVERSE SIDE OF INVOICE OR PACKING SLIP FOR ADDITIONAL TERMS AND CONDITIONS OF SALE.
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FDEP	3804 Coconut Palm Drive, Tampa, FL 33619-8318

FAX

Date 2/4/98

Number of pages including cover sheet 10

To:
Richard Tedder
Solid Waste - FDEP

Phone

Fax phone 850/414-0414

CC

From:
Allison Amram
Solid Waste Section

Phone (813) 744-6100 x 336

Fax phone (813) 744-6125

REMARKS: ☐ Urgent ☐ For your review ☐ Reply ASAP ☐ Please comment

Richard - Here are the analytical results for the W. Pasco leachate evaporator solids - the letter we received from the Pasco SW Advisory group had the leachate results attached I'll also sent you an e-mail on this. As you can tell, we can use your input on this!

Thanks!

Allison

Transmit Confirmation Report

No		024
Receiver	·	818504140414
Transmitter	·	WASTE MGT TAMPA SWDIST
Date	·	Feb 04 98 18·20
Time	·	04·17
Mode		Norm
Pages		10
Result		OK

BROW[redacted]D TESTING LABORATO[redacted], LTD.
4416 N.E. 11TH AVE., FORT LAUDERDALE, FLORIDA 33334

Date: 11/20/97 Report #: 7230073 Laboratory ID #: 86418

Client: PASCO COUNTY UTILITIES
ATTN:CANDY MULHERN
8864 GOVERNMENT DR
NEW PORT RICHEY, FL 34654

Date Collected: 11/07/97
Time Collected: 10:00
SOURCE: LMF-SALT PRODUCT
LEACHATE MANAGEMENT FACILITY
SALT PRODUCT

Date received at lab: 11/10/97 Time received at lab: 12.00
Collected by : R.WALKER

ENVIRONMENTAL LABORATORY CERTIFICATION NUMBER: 836035
LABORATORY PARAMETER ANALYSIS REPORT

Analysis Performed	Method	Analysis Result	Anal Date

PARAMETERS WERE SUBCONTRACTED TO TOXIKON LABS, SEE ATTACHED

Gary J. Meyer

Gary Meyer, Lab Director

Post-it® Fax Note 7671 | Date 2/4/98 | # of pages ▶ 9
To Alison Annan | From Vince Mannella
Co./Dept. FDEP | Co.
Phone # | Phone # 856-0119
Fax # 813 744 6125 Fax | Fax # 856-0007

Page 1 TOXIKON CORP. REPORT Work Order # 97-11-050
Received: 11/11/97 12/02/97 11:05:04

REPORT NATIONAL TESTING LABORATORY
TO 6555 WILSON MILLS ROAD
CLEVELAND,OHIO 44143
1(800)458-3330 F(216)449-8585
ATTEN SUSAN HENDERSON

PREPARED TOXIKON WEST PALM BEACH
BY 1860 OLD OKEECHOBEE RD. #401
WEST PALM BEACH, FL 33409
HRS #E86278.86396 QA# 9101SQG CERTIFIED BY
ATTEN JOHN YAREMCHUK
PHONE (407) 478-4803 FAX 478-0214 CONTACT JOHN

CLIENT NTL SAMPLES 1
COMPANY NATIONAL TESTING LABORATORY
FACILITY 6555 WILSON MILLS ROAD
CLEVELAND,OHIO 44143

Previously Reported on 11/26/97.
First Reported on 11/25/97.

WORK ID 7230093
TAKEN 11/07/97
TRANS COURIER
TYPE SOLID
P.O. #
INV # 6772

SAMPLE IDENTIFICATION

01 7230093

TEST CODES and NAMES used on this workorder

8080	PESTICIDES/PCB
8240	PURGEABLE ORGANICS VOA/SOI
8270	A/BN EXTRACTABLES SOIL
CN TOT	CYANIDE TOTAL
MEX TS	METALS, TOTAL EXT., SOIL
PHENOL	PHENOL
PP13	METALS,13 PRI.POLL.

Page 2 TOXIKON CORP. REPORT Work Order # 97-11-050
Received: 11/11/97 Results by Sample

SAMPLE ID 7230093 SAMPLE # 01 FRACTIONS: A
Date & Time Collected 11/07/97 10:00:00 Category SOLID

CN_TOT	PHENOL
ND	ND
mg/Kg DL=1.05	mg/Kg DL=1.05
11/19/97	11/17/97

Page 3 TOXIKON CORP. REPORT Work Order # 97-11-050
Received: 11/11/97 Results by Sample

SAMPLE ID 7230093 FRACTION 01A TEST CODE 8080 NAME PESTICIDES/PCB
Date & Time Collected 11/07/97 10:00:00 Category SOLID

EPA 8080 - ORGANOCHLORINE PESTICIDES & PCB's

	RESULT	DETEC. LIMIT		RESULT	DETEC. LIMIT
Alpha-BHC	ND	1.00	Aroclor 1016	ND	10.0
Gamma-BHC (Lindane)	ND	1.00	Aroclor 1221	ND	10.0
Beta-BHC	ND	1.00	Aroclor 1232	ND	10.0
Heptachlor	ND	1.00	Aroclor 1242	ND	10.0
Delta-BHC	ND	1.00	Aroclor 1248	ND	10.0
Aldrin	ND	1.00	Aroclor 1254	ND	10.0
Heptachlor Epoxide	ND	8.00	Aroclor 1260	ND	10.0
Endosulfan I	ND	1.00			
4,4'-DDE	ND	1.00			
Dieldrin	ND	1.00			
Endrin	ND	1.00			
4,4'-DDD	ND	1.00			
Endosulfan II	ND	4.00			
4,4'-DDT	ND	1.00			
Endrin Aldehyde	ND	1.00			
Endosulfan Sulfate	ND	6.00			
Chlordane	ND	1.00			
Toxaphene	ND	5.00			
Methoxychlor	ND	1.00			

Notes and Definitions for this Report:

EXTRACTED: 11/18/97
DATE RUN: 11/21/97
ANALYST: CK
INSTRUMENT: HP-2
DIL FACTOR: 1
UNITS: mg/Kg

ND = not detected at detection limit

Page 4 TOXIKON CORP. REPORT Work Order # 97-11-050
Received: 11/11/97 Results by Sample

SAMPLE ID 7230093 FRACTION 01A TEST CODE 8240 NAME PURGEABLE ORGANICS VOA/SOI
Date & Time Collected 11/07/97 10:00:00 Category SOLID

	RESULT	LIMIT		RESULT	LIMIT
Chloromethane	ND	4.0			
Bromomethane	ND	4.0	Trichloroethene	ND	4.0
Vinyl Chloride	ND	20	Dibromochloromethane	ND	4.0
Chloroethane	ND	4.0	1,1,2-Trichloroethane	ND	4.0
Methylene Chloride	ND	20	Benzene	ND	4.0
Acetone	165	100	cis-1,3 Dichloropropene	ND	4.0
Carbon Disulfide	ND	100	2-Chloroethylvinylether	ND	4.0
1,1-Dichloroethene	ND	4.0	Bromoform	ND	4.0
Trichlorofluoromethane	ND	4.0	2-Hexanone	ND	8.0
1,1-Dichloroethane	ND	4.0	4-Methyl-2 pentanone	ND	8.0
Trans-1,2-Dichloroethene	ND	4.0	Tetrachloroethene	ND	4.0
Chloroform	ND	4.0	1,1,2,2-Tetrachloroethane	ND	4.0
1,2-Dichloroethane	ND	4.0	Toluene	5.3	4.0
2-Butanone	51.7	20	Chlorobenzene	ND	4.0
1,1,1-Trichloroethane	ND	4.0	Ethyl Benzene	ND	4.0
Carbon Tetrachloride	ND	4.0	Styrene	ND	4.0
Vinyl Acetate	ND	4.0	Total Xylenes	7.5	4.0
Bromodichloromethane	ND	4.0	1,2-Dichlorobenzene	ND	4.0
1,2-Dichloropropane	ND	4.0	1,3-Dichlorobenzene	ND	4.0
trans-1,3-Dichloropropene	ND	4.0	1,4-Dichlorobenzene	ND	4.0
			Acrolein	ND	200
			Acrylonitrile	ND	20

Notes and Definitions for this Report:

DATE RUN: 11/17/97
ANALYST: JPM
INSTRUMENT: A
DIL. FACTOR: *2
COMMENTS:
UNITS: UG/KG

ND = not detected at detection limit

Page 5 TOXIKON CORP. REPORT Work Order # 97-11-050
Received: 11/11/97 Results by Sample

SAMPLE ID 7230093 FRACTION 01A TEST CODE 8270 NAME A/BN EXTRACTABLES SOIL
Date & Time Collected 11/07/97 10:00:00 Category SOLID

	RESULT	LIMIT		RESULT	LIMIT
BASE NEUTRAL EXTRACTABLES					
bis(-2-Chloroethyl) ether	ND	330	Chrysene	ND	330
1,3-Dichlorobenzene	ND	330	Di-n-octyl phthalate	ND	330
1,4-Dichlorobenzene	ND	330	Benzo(b)fluoranthene	ND	330
1,2-Dichlorobenzene	ND	330	Benzo(k)fluoranthene	ND	330
bis(2-Chloroisopropyl) ether	ND	330	Benzo(a)pyrene	ND	330
N-Nitroso-Di-N-Propylamine	ND	330	Indeno(1,2,3-cd)pyrene	ND	330
Hexachloroethane	ND	330	Dibenz(a,h)anthracene	ND	330
Nitrobenzene	ND	330	Benzo(g,h,i)perylene	ND	330
Isophorone	ND	330	Dibenzofuran	ND	330
bis(2-Chloroethoxy) methane	ND	330	2-Methylnaphthalene	ND	330
1,2,4-Trichlorobenzene	ND	330	Benzidine	ND	330
Naphthalene	ND	330			
Hexachlorobutadiene	ND	330	ACID EXTRACTABLES		
Hexachlorocyclopentadiene	ND	330	Phenol	ND	330
2-Chloronaphthalene	ND	330	2-Chlorophenol	ND	330
Dimethyl phthalate	ND	330	Benzyl Alcohol	ND	660
Acenaphthylene	ND	330	2-Methylphenol	ND	330
Acenaphthene	ND	330	4-Methylphenol	ND	330
2,4-Dinitrotoluene	ND	330	2-Nitrophenol	ND	330
2,6-Dinitrotoluene	ND	330	2,4-Dimethylphenol	ND	330
Diethylphthalate	ND	330	Benzoic Acid	ND	1600
4-Chlorophenly phenyl ether	ND	330	2,4-Dichlorophenol	ND	330
Fluorene	ND	330	4-Chloroaniline	ND	660
N-Nitrosodiphenylamine	ND	330	4-Chloro-3 methylphenol	ND	660
4-Bromophenyl phenyl ether	ND	330	2,4,6-Trichlorophenol	ND	330
Hexachlorobenzene	ND	330	2,4,5-Trichlorophenol	ND	330
Phenanthrene	ND	330	2-Nitroaniline	ND	1600
Anthracene	ND	330	3-Nitroaniline	ND	1600
Di-n-butylphthalate	ND	330	2,4-Dinitrophenol	ND	1600
Fluoranthene	ND	330	4-Nitrophenol	ND	1600
Pyrene	ND	330	4-Nitroaniline	ND	1600
Butyl benzyl phthalate	ND	330	4,6-Dinitro-2-methylphenol	ND	1600
3,3'-Dichlorobenzidine	ND	660	Pentachlorophenol	ND	1600
Benzo (a) anthracene	ND	330	3-Methylphenol	ND	330
bis (2-ethylhexyl)phthalate	ND	330	2,6-dichlorophenol	ND	330

Notes and Definitions for this Report:

UNITS: ug/Kg
EXTRACTED: 11/19/97
DATE RUN: 11/24/97
ANALYST: BED
INSTRUMENT: GC
DIL. FACTOR: 1

COMMENTS: _____

ND = not detected at detection limit

Page 6 TOXIKON CORP. REPORT Work Order # 97-11-050
Received: 11/11/97 Results by Sample

SAMPLE ID 7230093 FRACTION 01A TEST CODE PP13 NAME METALS,13 PRI.POLL.
Date & Time Collected 11/07/97 10:00:00 Category SOLID

PRIORITY POLLUTANT METALS

	RESULT	DETEC. LIMIT
Silver	ND	0.700
Cadmium	ND	0.500
Chromium	ND	1.00
Copper	ND	1.00
Nickel	ND	2.00
Lead	ND	5.00
Zinc	ND	2.00
Arsenic	ND	10.0
Selenium	ND	25.0
Beryllium	ND	0.400
Antimony	ND	15.0
Thallium	ND	30.0
Mercury	ND	0.020

Notes and Definitions for this Report:

EXTRACTED 11/17/97
DATE RUN 11/19/97
ANALYST VR
INSTRUMENT ICP
CONC FACTOR 1
UNITS mg/Kg
ND = NOT DETECTED AT DETECTION LIMITS

TEST CODE 8080 NAME PESTICIDES/PCB

EPA Method: 8080, Oganochlorine Pesticides and PCB's

Reference: Test Methods for Evaulating Solid Waste- Physical/Chemical Methods. EPA SW-846 (Third Edition) November 1990. Office of Solid Waste, USEPA.

TEST CODE 8240 NAME PURGEABLE ORGANICS VOA/SOI

EPA METHOD: 8240: Gas Chromatography/Mass Spectrometry for Volatile Organics.

Reference: Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods EPA SW-846 (Third Edition) 1986. Office of Solid Waste USEPA.

TEST CODE 8270 NAME A/BN EXTRACTABLES SOIL

EPA METHOD: 8270: Gas Chromatography / Mass Spectrometry for Semivolatile Organics; Capillary Column Technique

Reference: Test Methods for Evaluating Solid Wastes- Physical/Chemical Methods. EPA SW-846 (Third Edition) 1986. Office of Solid Waste USEPA.

TEST CODE CN TOT NAME CYANIDE TOTAL

EPA METHOD: 335.2 for water sample

Reference: Methods for Chemical Analysis of Water and Wastes EPA 600/4-79-020 (Revised, March 1983) EPA/EMSL.

EPA METHOD: 9010 for soil sample

Reference: Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846 (Third Edition) 1986. Office of Solid Waste, USEPA.

TEST CODE MEX_TS NAME METALS, TOTAL EXT., SOIL

REFERENCE:
EPA METHOD 3050: Acid Digestion of Sediments, Sludges and Soils Test Methods for Evaluating Solid Waste Physical/Chemical Methods. SW 846, 3rd Edition.

TEST CODE PHENOL NAME PHENOL

EPA METHOD: 420.2 for water sample

Reference: Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL

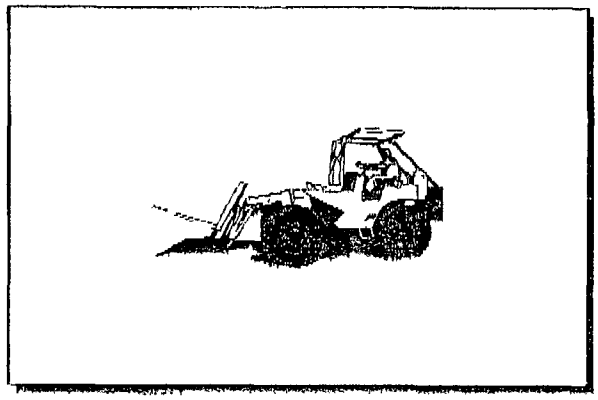
EPA METHOD- 9065 for soil sample

Reference: Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846 (Third Edition) 1986. Office of Solid Waste, USEPA.

TEST CODE PP13 NAME METALS,13 PRI.POLL.

REFERENCE: Test Methods for Evaluating Solid Waste,
Physical/Chemical Methods, Third Edition (EPA SW-846),
1986 as amended by Final Update 1, November 1990.

HERNANDO COUNTY
WASTE MANAGEMENT DIVISION
NORTHWEST FACILITY
14450 LANDFILL ROAD
BROOKSVILLE, FLORIDA 34614
PHONE (352) 754-4112
FAX (352) 754-4118



FAX TRANSMITTAL COVER SHEET

DATE: 2/4/98

RE: Spray Dryer Solids

ATTENTION: Allison Amram
(NAME)

COMPANY: FDEP

FAX NUMBER: (813) 744-6125

FROM: Stephanie Hinton
(NAME)

****

NUMBER OF PAGES (INCLUDING COVER SHEET) 7

ORIGINAL DOCUMENTS BEING SENT BY MAIL? ____ YES X NO

ADDITIONAL INFORMATION:

Waste Management

3411 N. 40th Street
Tampa, Florida 33605
Tel: 813/621-3055
Fax: 813/623-6776

Fax Cover Sheet

Date: 2-3-98

Attn: S. Hinson (Hope I spelled it right !!)

Company:

Phone: ( )

Fax: (352) 754 - 4118

From: Randy - John Phone: ( )

RE: Info

Number of pages including cover sheet: 6

Message: Thank-you - You can call John Wong or you can call me (Randy Pickering) and I can find John so we can talk. If you can't get John to call - 813-621-3055 - O and have Debbie Page us. TX> Randy

Confidentiality Notice
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Analytical Laboratory Report 98-042

Project: Pasco County/ Spray Dryer Solids

Results Sent To: Mike Spears, Bruce Keesing, Rob Solomon, George Jones

Date Received: June 6, 1997

Date Results Given: June 18, 1997

RCC Sample # 970603

		(-01) [3]
		Spray Dryer Solids 5/28/97
pH, standard units	--	9.2 [2]
Total Solids (105°C)	% w/w	94
Loss-On-Ignition (550°C)	% w/w	6.8 [3]
Calcium	mg/kg	185,000
Magnesium	mg/kg	200
Sodium	mg/kg	99,000
Potassium	mg/kg	60,000
Silica	mg/kg	< 500
Total Sulfur	mg/kg	20,000
Sulfate Sulfate	mg/kg	60,000
Chloride	mg/kg	480,000
Sulfide	mg/kg	< 50
Ammonia Nitrogen	mg/kg	90
Total Inorganic Carbon	mg/kg	< 500
Total Organic Carbon	mg/kg	1,300

[1] Results reported in mg/kg on an as-received basis except where otherwise noted.
[2] 5.0 g in 50 mL water.
[3] Reported on a dry (105°C) basis.

BID NO: 98-042

Page 5 TOXDATA CORP. REPORT Work order # 97-11-050
Received: 11/11/97 Results by Sample

SAMPLE ID [redacted] FRACTION DIA TEST CODE 8080 NAME PESTICIDES/PCB
Date & Time Collected 11/07/97 10:00:00 Category SOLID

EPA 8080 - ORGANOCHLORINE PESTICIDES & PCB'S

	RESULT	DETEC. LIMIT		RESULT	DETEC. LIMIT
Alpha-BHC	ND	1.00	Aroclor 1016	ND	10.0
Gamma-BHC (Lindane)	ND	1.00	Aroclor 1221	ND	10.0
Beta-BHC	ND	1.00	Aroclor 1232	ND	10.0
Heptachlor	ND	1.00	Aroclor 1242	ND	10.0
Delta-BHC	ND	1.00	Aroclor 1248	ND	10.0
Aldrin	ND	1.00	Aroclor 1254	ND	10.0
Heptachlor Epoxide	ND	8.00	Aroclor 1260	ND	10.0
Endosulfan I	ND	1.00			
4,4'-DDE	ND	1.00			
Dieldrin	ND	1.00			
Endrin	ND	1.00			
4,4'-DDD	ND	1.00			
Endosulfan II	ND	4.00			
4,4'-DDT	ND	1.00			
Endrin Aldehyde	ND	1.00			
Endosulfan Sulfate	ND	8.00			
Chlordane	ND	1.00			
Toxaphene	ND	5.00			
Methoxychlor	ND	1.00			

Notes and Definitions for this Report:

EXTRACTED: 11/08/97
DATE RUN: 11/21/97
ANALYST: CK
INSTRUMENT: HP-2
DIL. FACTOR: 1
UNITS: ~~UG/KG~~ mg/kg ~~ug/kg~~?

ND = not detected at detection limit

BID NO: 98-042

Page 4 - [redacted] REPORT Work Order # TT-11-00a
Received: 11/11/97 Results by Sample

SAMPLE ID 7230005 FRACTION SVA TEST CODE 8260 NAME PURGEABLE ORGANICS VOA/SOI
Date & Time Collected 11/07/97 10:00:00 Category SOLID

	RESULT	LIMIT		RESULT	LIMIT
Chloroethane	ND	4.0			
Bromoethane	ND	4.0	Trichloroethene	ND	4.0
Vinyl Chloride	ND	20	Dibromochloromethane	ND	4.0
Chloroethane	ND	4.0	1,1,2-Trichloroethane	ND	4.0
Methylene Chloride	ND	20	Benzene	ND	4.0
→ Acetone	146	100	cis-1,3-Dichloropropene	ND	4.0
Carbon Disulfide	ND	100	2-Chloroethylvinylether	ND	4.0
1,1-Dichloroethene	ND	4.0	Bromoform	ND	4.0
Trichlorofluoromethane	ND	4.0	2-Hexanone	ND	8.0
1,1-Dichloroethane	ND	4.0	4-Methyl-2-pentanone	ND	8.0
Trans-1,2-Dichloroethene	ND	4.0	Tetrachloroethene	ND	4.0
Chloroform	ND	4.0	1,1,2,2-Tetrachloroethane	ND	4.0
1,2-Dichloroethane	ND	4.0	Toluene	5.3	4.0
→ 2-Butanone	51.7	20	Chlorobenzene	ND	4.0
1,1,1-Trichloroethane	ND	4.0	Ethyl Benzene	ND	4.0
Carbon Tetrachloride	ND	4.0	Styrene	ND	4.0
Vinyl Acetate	ND	4.0	Total Xylenes	7.5	4.0
Bromodichloromethane	ND	4.0	1,2-Dichlorobenzene	ND	4.0
1,2-Dichloropropane	ND	4.0	1,3-Dichlorobenzene	ND	4.0
trans-1,3-Dichloropropene	ND	4.0	1,4-Dichlorobenzene	ND	4.0
			Acrolein	ND	200
			Acrylonitrile	ND	20

Notes and Definitions for this Report:

DATE RUN: 11/07/97
ANALYST: JDH
INSTRUMENT: A
DIL. FACTOR: 2
COMMENTS:
UNITS: UG/KG ug/kg

ND = not detected at detection limit

BID NO: 98-042

Page 5 TOKIKON CORP. REPORT Work Order # 97-11-080
Received: 11/11/97 Results by Sample

SAMPLE ID 7230093 FRACTION 01A TEST CODE 8270 NAME A/BN EXTRACTABLES SOIL
Date & Time Collected 11/07/97 10:00:00 Category SOLID

BASE NEUTRAL EXTRACTABLES	RESULT	LIMIT		RESULT	LIMIT
bis(-2-Chloroethyl) ether	ND	330	Chrysene	ND	330
1,3-Dichlorobenzene	ND	330	Di-n-octyl phthalate	ND	330
1,4-Dichlorobenzene	ND	330	Benzo(b)fluoranthene	ND	330
1,2-Dichlorobenzene	ND	330	Benzo(k)fluoranthene	ND	330
bis(2-Chloroisopropyl) ether	ND	330	Benzo(a)pyrene	ND	330
N-Nitroso-Di-N-Propylamine	ND	330	Indeno(1,2,3-cd)pyrene	ND	330
Hexachloroethane	ND	330	Dibenz(a,h)anthracene	ND	330
Nitrobenzene	ND	330	Benzo(g,h,i)perylene	ND	330
Isophorone	ND	330	Dibenzofuran	ND	330
bis(2-Chloroethoxy) methane	ND	330	2-Methylnaphthalene	ND	330
1,2,4-Trichlorobenzene	ND	330	Benzidine	ND	330
Naphthalene	ND	330			
Hexachlorobutadiene	ND	330	ACID EXTRACTABLES		
Hexachlorocyclopentadiene	ND	330	Phenol	ND	330
2-Chloronaphthalene	ND	330	2-Chlorophenol	ND	330
Dimethyl phthalate	ND	330	Benzyl Alcohol	ND	660
Acenaphthylene	ND	330	2-Methylphenol	ND	330
Acenaphthene	ND	330	4-Methylphenol	ND	330
2,4-Dinitrotoluene	ND	330	2-Nitrophenol	ND	330
2,6-Dinitrotoluene	ND	330	2,4-Dimethylphenol	ND	330
Diethylphthalate	ND	330	Benzoic Acid	ND	1600
4-Chlorophenly phenyl ether	ND	330	2,4-Dichlorophenol	ND	330
Fluorene	ND	330	4-Chloroaniline	ND	660
N-Nitrosodiphenylamine	ND	330	4-Chloro-3-methylphenol	ND	660
4-Bromophenyl phenyl ether	ND	330	2,4,6-Trichlorophenol	ND	330
Hexachlorobenzene	ND	330	2,4,5-Trichlorophenol	ND	330
Phenanthrene	ND	330	2-Nitroaniline	ND	1600
Anthracene	ND	330	3-Nitroaniline	ND	1600
Di-n-butylphthalate	ND	330	2,4-Dinitrophenol	ND	1600
Fluoranthene	ND	330	4-Nitrophenol	ND	1600
Pyrene	ND	330	4-Nitroaniline	ND	1600
Butyl benzyl phthalate	ND	330	4,6-Dinitro-2-methylphenol	ND	1600
3,3'-Dichlorobenzidine	ND	660	Pentachlorophenol	ND	1600
Benzo (a) anthracene	ND	330	3-Methylphenol	ND	330
bis (2-ethylhexyl)phthalate	ND	330	2,6-dichlorophenol	ND	330

Notes and Definitions for this Report:

UNITS: ug/kg ug/kg
EXTRACTED: 11/19/97
DATE RUN: 11/24/97
ANALYST: [illegible]
INSTRUMENT: GC
DIL. FACTOR: 1

COMMENTS:

ND = not detected at detection limit

BID NO: 98-042

Page 6
Received: 11/11/97

TOXICON CORP. REPORT
Results by Sample

Work Order # 97-11-058

SAMPLE ID 2230093 FRACTION 01A TEST CODE 8015 NAME METALS, 13 PRI POLL
Date & Time Collected 11/07/97 10:00:00 Category SOLID

PRIORITY POLLUTANT METALS

	RESULT	DETEC. LIMIT
Silver	ND	0.700
Cadmium	ND	0.500
Chromium	ND	1.00
Copper	ND	1.00
Nickel	ND	2.00
Lead	ND	5.00
Zinc	ND	2.00
Arsenic	ND	10.0
Selenium	ND	25.0
Beryllium	ND	0.400
Antimony	ND	15.0
Thallium	ND	30.0
Mercury	ND	0.020

Notes and Definitions for this Report:

EXTRACTED 11/17/97
DATE RUN 11/19/97
ANALYST VR
INSTRUMENT ICP ICP
CONC FACTOR 1
UNITS mg/kg mg/kg
ND = NOT DETECTED AT DETECTION LIMITS

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
SOUTHWEST DISTRICT

CONVERSATION RECORD

Date 2/4/98 Subject Leachate evaporator solids

Time 2:15 Permit No

County Pasco

M Vince Manella Telephone No 813/856-0119

Representing Pasco

[ ] Phoned Me [X] Was Called [ ] Scheduled Meeting [ ] Unscheduled Meeting

Other Individuals Involved in Conversation/Meeting

Summary of Conversation/Meeting

He will send me the solids fax (TCLP & totals, volatile analyses

Whibetors added to prevent acid corrosion in the heat exchanger - Vince doesn't think that they have solvents in them. He can fax me the MSDS for that later, if I need it

Solids shows no metals, some solvents - leachate shows some metals, only VOC detected was acetone (2/97 in Al 1° leachate)

(continue on another sheet, if necessary)

Signature A Amram

Title PGI

PA-01
1/96
pap

2/10 1:30 - Called Vince to arrange sampling for tomorrow (leachate, evaporator solids) & to pick up TCLP data on solids & MSDS for evaporator chemicals. He does not want to split samples w/ us tomorrow

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Southwest District Correspondence Control

Correspond Number	Date Received	Date Written	Subject Reference	Date Due
SW-00265	01/29/98	01/23/98	Gulf disposal	02/09/98

Name: Andrew Vogt
Affilitated Organization: Solid Wste Mgt Cit Adv Council
Address: P O Box 384

City/State/Zip: Port Richey, FL 34673
Phone: 813-842-2424

AffiliationType: Other
Secretary's Ref: EO-00715
Assigned to: Waste Management
County: Pasco
Category: Environmental Impacts
Rules:

INSTRUCTIONS Prepare Response for VW
Prepare in final form, a reply for the signature of Virginia Wetherell

COMMENTS Assigned to Bill Kutash

RESPONDED ON / /

facsimile
TRANSMITTAL

[redacted]

to: Sandra Lynch / Southwest District Office
fax #: 542-6084
re: Correspondence Control
date:
pages: 5, including this cover sheet.

From the desk of

Tocoi Arthur
Administrative Assistant II
Department of Environmental Protection
3900 Commonwealth Blvd
Tallahassee, FL 32399

291-1222
Fax 277-3267

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Office of the Secretary Correspondence Control

Correspond Number	Date Received	Date Written	Subject Reference	Date Due
EO-00715	01/27/98	01/23/98	gulf disposal	02/10/98

Name: Andrew Vogt
Affilitated Organization: Solid Waste Mgt Cit Adv Council
Address: P O. Box 384

City/State/Zip: Port Richey, FL 34673
Phone: 813-842-2424

AffiliationType. Other
Governor's Ref: SW DIST
Assigned to: ~~Waste Management~~ JP
County: Pasco
Category. Environmental Impacts
Rules.

INSTRUCTIONS: Prepare Response for VW
Prepare in final form, a reply for the signature of Virginia Wetherell. Return to Jack Pons
COMMENTS. ~~policy issue?~~ JP

Assigned by Jack Pons, Office of the Secretary ***Phone: 487-0940 SC 277-0940***

RECEIVED
JAN 29 1998
DIVISION OF
WASTE MANAGEMENT

SOLID WASTE MANAGEMENT CITIZENS ADVISORY COMMITTEE

Andrew C.Vogt
P.O.384
Port Richey
Florida 34673
(813)842-2424
Jan.23 1998

DEPARTMENT OF
ENVIRONMENTAL PROTECTION

JAN 29 1998

OFFICE OF THE SECRETARY

Ms.Virginia Wetherell
Secretary,Fl.D.E.P.
3900 Commonwealth Blvd.
Tallahassee
Fl.32399

Dear Ms.Wetherell;

As an appointed citizens advisory committee to the Pasco County Board of Commissioners we are interested in the feasibility of gulf disposal of our dehydrated end product of our Leachate Recovery Facility which is located in Shady Hills,Pasco County,Florida. The material is non-toxic as shown in the enclosed two page analysis. We wish to make this recommendation in deference to our current land fill procedure because of limited space.

To this end we are inquiring as to the appropriateness of such an action. If this matter does not fall within the purview of Florida D.E.P. we would appreciate a response so stating. However if this matter is within the purview of Florida D.E.P. we would appreciate the reference source and any additional information you would care to share with us.

Yours truly

Andrew C. Vogt

Andrew C.Vogt
Chairman of the
Solid Waste Management
Citizens Advisory Committee.

cc;Douglas Bramlett
Assistant County Administrator
(Utilities Services)

attach solids analyses after I get it from Stephanie

PASCO COUNTY, FLORIDA

ENVIRONMENTAL LABORATORY
8864 GOVERNMENT DRIVE
NEW PORT RICHEY, FL 34654
(813) 847-8902

REPORT OF ANALYSES

RESOURCE RECOVERY
14230 HAYS ROAD
SPRING HILL, FL 34610-
Attn: VINCENT MANNELLA

PROJECT NAME: RES REC LEACHAT
DATE: 01/08/98
DHRS #: 44237, E44123

SAMPLE NUMBER- 63256 SAMPLE ID- PRIMARY LEACHATE SAMPLE MATRIX- LE
DATE SAMPLED- 12/24/97 LOCATION- TIME SAMPLED- 0900
DATE RECEIVED- 12/24/97 SAMPLER- JAMES HOFFMAN RECEIVED BY- AS
TIME RECEIVED- 1055 DELIVERED BY- JIM HOFFMAN

ANALYSIS	METHOD	SAMPLE PREP DATE	BY	ANALYSIS DATE	TIME	BY	RESULT	UNITS
CHLORIDE	EPA 325.2			01/05/98	1100	JK	20558	mg/L
BIOCHEM.OXY.DEMAND	SM5210B			12/24/97	1300	CEM	436	mg/L
KJELDAHL NITROGEN	4500NorgB			12/24/97	1500	TER	10.2	mg/L
PH.LAB	EPA150.1			12/24/97	1145	JK	7.52	std units
TOTAL SUSP. SOLIDS	EPA160.2			12/24/97	1300	CEM	34	mg/L
ARSENIC.TOTAL	206.2	01/05/98	TER	01/07/98	1240	TER	<0.01	mg/L
CADMIUM.TOTAL	213.2	01/05/98	TER	01/07/98	1400	TER	0.15	mg/L
CHROMIUM.TOTAL	218.2	01/05/98	TER	01/07/98	1040	TER	<0.01	mg/L
COPPER.TOTAL	220.2	01/05/98	TER	01/07/98	0910	TER	0.28	mg/L
LEAD.TOTAL	239.2	01/05/98	TER	01/07/98	1115	TER	<0.01	mg/L
NICKEL.TOTAL	249.2	01/05/98	TER	01/07/98	0935	TER	1.19	mg/L
SELENIUM.TOTAL	270.2	01/05/98	TER	01/07/98	1330	TER	<0.01	mg/L
SILVER.TOTAL	272.2	01/05/98	TER	01/07/98	1415	TER	0.31	mg/L
ZINC.TOTAL	289.1	01/05/98	TER	01/07/98	0920	TER	0.15	mg/L

LABORATORY DIRECTOR

PASCO COUNTY, FLORIDA

ENVIRONMENTAL LABORATORY
8864 GOVERNMENT DRIVE
NEW PORT RICHEY, FL 34654
(813) 847-8902

REPORT OF ANALYSES

RESOURCE RECOVERY
14230 HAYS ROAD
SPRING HILL, FL 34610-
Attn: VINCENT MANNELLA

PROJECT NAME: DEMIN/LEACHATE
DATE: 01/08/98
DHRS # 44237, E44123

SAMPLE NUMBER- 63254 SAMPLE ID- A-1 PRIMARY LEACHATE SAMPLE MATRIX- LE
DATE SAMPLED- 12/24/97 LOCATION- NOT SPECIFIED TIME SAMPLED- 0900
DATE RECEIVED- 12/24/97 SAMPLER- WALTER DRADRANSKY RECEIVED BY- AS
TIME RECEIVED- 1040 DELIVERED BY- W DRADRANSKY

Page 1 of 1

ANALYSIS	METHOD	SAMPLE PREP DATE	BY	ANALYSIS DATE	TIME	BY	RESULT	UNITS
CHLORIDE	EPA 325 2			01/05/98	1100	JK	45733	mg/L
NITRATE	EPA 353.2			12/30/97	1600	IF	<0.11	mg/L
TOTAL DISS.SOLIDS	EPA160.1			12/24/97	1400	JK	100000	mg/L
SPEC.CONDUCTIVITY	EPA120.1			12/24/97	1045	JK	103200	umhos
SODIUM,TOTAL	273.1	01/05/98	TER	01/05/98	1100	TER	11200	mg/L

LABORATORY DIRECTOR [signature]

Check | Message

Jan 29 '98 12:00

D.O.7	Check condition of remote Fax.	86227786

Department of Environmental Protection

Lawton Chiles
Governor

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

Virginia B Wetherell
Secretary

FAX TRANSMITTAL SHEET

1-29-98
DATE

TO: DR NORDSTEDT TOTAL PAGES: 4

DEPT:

PHONE: FAX NUMBER:

FROM: JEMY HINTON

DEPT:

PHONE: 813-744-6100 SC 542-6100 FAX NUM. 813-744-6084 SC 542-6084

REFERENCE: Kathy said we need a

MESSAGE: 3rd Progress report.
Who did the others you or
Wes Stoney gave me the
report guidelines.

REPLY:

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
SOUTHWEST DISTRICT

CONVERSATION RECORD

Date 2/3/98 Subject Leachate evaporator solids

Time _____ Permit No _____

County Hernando

M Stephanie Hinson Telephone No 352/754-4112 x 14

Representing Hernando Co Solid Waste

[X] Phoned Me [ ] Was Called [ ] Scheduled Meeting [ ] Unscheduled Meeting

Other Individuals Involved in Conversation/Meeting _____

Summary of Conversation/Meeting

Pasco Co. is looking at disposal of spray dryer solids @ NW Hernando landfill - salts estimates 5 tons per day

2/4 10:20 Returned her call
Waste Mgt. is bidding on contract for solids disposal - wants to go to NW CF - next CF option is in Ft. Lauderdale.
Solids analysis is hard to read

Rec'd fax - DEP's concerns are on the treatability of NW's leachate if they accept this waste Leachate goes to a WWTP that doesn't have R/O - no treatment of chlorides, Na, other salts

(continue on another sheet, if necessary)

Signature A Amram

Title PG I

PA-01
1/96
pap

PASCO COUNTY, FLORIDA

DADE CITY	(352) 521-4274	UTILITIES SERVICES BRANCH
LAND O' LAKES	(813) 996-7341	PUB. WKS /UTILITIES BLDG ,S-213
NEW PORT RICHEY	(813) 847-8145	7530 LITTLE ROAD
FAX	(813) 847-8064	NEW PORT RICHEY, FL 34654

February 2, 1998

Mr. Richard D. Garrity, Ph.D.
Director of District Management
Florida Department of
Environmental Protection
3804 Coconut Palm Drive
Tampa, FL 33610-8318

Post-it Fax Note 7671	Date 2/4	# of pages ▸ 4
To R. Butera	From D. Bramlett	
Co./Dept. FDEP	Co. PCUSB	
Phone #	Phone # 847-8145	
Fax # 744-6125	Fax #	

RE: Certified Letter of January 20,1998

Dear Dr. Garrity.

I regret the late response to our letter referenced above, but an unusual event at the Pasco County Resource Recovery Facility, the result of which took some major time to resolve, temporarily delayed my response.

Item No. 1: Pasco County is forwarding copies of all leachate quantities, on a daily basis, via Fax to the Florida Department of Environmental Protection (FDEP).

Item No. 2: Changes to the manholes and valves in engineering drawings have been sent to the FDEP by Law Engineering and Environmental Services. Pasco County has, at the FDEP's request, installed a staff gauge and is reporting daily readings to the FDEP Pasco County cannot determine leachate volume based on staff gauge readings. The irregular periphery and bottom of the cell makes volume calculation impossible. However, it is computed that Cells A-1 plus A-2 contained approximately 23,000,000 gallons of leachate Rainfall since December 11, 1997 through December 31, 1997 totaled 14.0 inches; for January 1998 a total of 10.7 inches was recorded. The recorded rainfall of 24.7 inches will yield an additional volume of 7,982,806 gallons, or a total of 30.98 million gallons, including the 2 million in Crom Tank.

Mr. Richard D. Garrity, Ph.D.
February 2, 1998

Item No. 3: The plans and specifications for covering Cell A-1 are out for bid, with bids to be received on February 5, 1998. The bid award and construction will be implemented with all dispatch. The covering of Cell A-2 is under discussion with Law Engineering and Environmental Services and Pasco County. The covering of Unit A-2 will be placed on high priority for completion as soon as possible. The covering is, of course, subject to:

A) uncovered areas required for roadways for ash placement in the cells, and

B) the area under leachate cannot be covered until such time as the leachate in Cell A-2 permits exposure of the cells surface.

Pasco County has a serious concern with the cells over topping (A-1 and A-2) and we are monitoring the freeboard on both cells. Be advised that the freeboard on Cell A-1 is 3'7", the freeboard on Cell A-2 is 2'25". The covering of Cell A-1 will be placed on an emergency basis which will eliminate 50% of all future leachate generated; the covering of Cell A-2 will be resolved as soon as practical application can be implemented, as noted above in Conditions A and B.

Item No. 4: Yard trash is presently being mulched and spread on haul roads. This procedure will continue until all stocked mulch is spread or hauled to Pasco County parks.

Item No. 5: Matters covered in this item are correct as noted, however, Tampa personnel, the Waste Industrial Water Manager, advised Pasco County that the FDEP Domestic Waste Section directed them (Tampa Wastewater Treatment Plant) to limit the leachate they could accept to 12,000 gallons per day to determine the Tampa WWTP's discharge limits would not be exceeded; then gradually permitting an increase in the volume accepted assuring the discharge limits would not be exceeded, then the volume could increase. This plan is working well, Pasco County presently transports 60,000 gallons per day, seven days per week. Pasco County was noticed on Thursday, January 29, 1998, that New Port Richey could no longer accept ash leachate for co-treatment. We are working with the City to start deliveries of limited loads (1-2 per day) as soon as possible. Future plans have been covered in the Revised Operations Plans, submitted by Law Engineering to the FDEP for review. Future "leachate generated rates in response to anticipated rainfall" are under study and will be forwarded to the FDEP when completed.

The following comments are in response to the "Solid Waste Management Facility Checklist" which was attached in your letter.

Number 11: Operations revised, plan has been submitted.

Mr. Richard D. Garrity, Ph.D.
February 2, 1998

Number 17: This item has been covered in Revised Operations Plan

Number 18: Please refer to Items 11 and 17 above.

Number 21: Please refer to Items 11, 17, and 18 above.

Number 24: Please refer to Items 11, 17, 18, and 21 above.

Number 38: The wash-out at the culvert have been repaired

Number 44: Inadequate removal of leachate from Unit A-2 fully discussed. SW-1 ponded water result of rain storm that ended about 7:00 a m. (refer to Report of Daily Operations). Standing water is noted and pumping was under way. Note pumping decreases daily and Daily Report notes, "no standing water" where the standing water dissipates; the drainage system is working well.

Number 46: Leaking leachate hose repaired.

Number 47: Storm water ponded on Unit A-1, Pasco County constructed a small berm to slow run-off on east slope of unit preventing massive erosion problems from reoccurring.

Number 52: All washouts have been repaired.

I appreciate your understanding to bring Pasco County's site into full compliance as soon as possible. Please permit me to assure you we are making every effort to do so within County operating procedures with the Board of County Commissioners's cooperation and approval. I do not believe site conditions are going contrary to this goal. The County's progress is moving as rapidly as permitted and we have aggressively transported more than 1,000,000 gallons of leachate to the two WWTPs that permit us to do so. Further, the designers and constructors of the County's Leachate Management Facility are on-site making major modifications to the plant and start-up is in the immediate near future.

Mr. Richard D. Garrity
February 2, 1998

I trust all matters contained in your letter have been addressed. It is my belief and understanding that we both, the FDEP and Pasco County, are working diligently toward a final solution to this problem We again request permission to pump (trickle feed) approximately 30,000 gpd of ash leachate to the Shady Hills WWTP under our current Consent Agreement.

Sincerely,

Douglas S. Bramlett
Assistant County Administrator
(Utilities Services)

DSB/mvv/18/garrity

cc: Robert J. Butera, P.E. III, Division of Waste Management, FDEP, Tampa, FL
Kim B. Ford, P.E. I, Division of Waste Management, FDEP, Tampa, FL
John J. Gallagher, County Administrator
Vincent Mannella, P.E., Solid Waste Facility Manager
Ronald Walker, Solid Waste Superintendent