



**Public Service®**

16805 WCR 19 1/2; Platteville, Colorado 80651

Public Service  
Company of Colorado

October 15, 1992  
Fort St. Vrain  
Unit No. 1  
P-92292

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D. C. 20555

Docket No. 50-267

SUBJECT: NPDES Permit Renewal Application

REFERENCE: PSC Letter, Gahm to Berkow, dated January 13, 1986  
(P-86033)

Gentlemen:

Attached are copies of recent letters between Public Service Company of Colorado (PSC) and the Colorado Department of Health (CDH) regarding renewal of the Fort St. Vrain (FSV) Station Wastewater Discharge Permit, CO-0001121. This is the National Pollutant Discharge Elimination System (NPDES) permit for liquid effluent discharges from Fort St. Vrain. These letters are being provided for your information in accordance with the requirements of Section 3.2.d of the FSV Non-Radiological Technical Specifications, Appendix B to the FSV Operating License.

The attached permit renewal letters include the following:

- PSC Letter, Cohlma (PSC) to Shukle (CDH), dated October 1, 1990; this letter provides the initial permit renewal application.
- PSC Letter, Cohlma (PSC) to Nelson (CDH) dated October 31, 1990; this letter provides supplemental information for the renewal application, in the form of laboratory results for water samples taken near the plant.
- PSC Letter, Cohlma (PSC) to Nelson (CDH), dated January 29, 1992; this letter provided information on chemical additives used at the plant.

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October 15, 1992

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These NPDES permit renewal application documents are currently being processed by the CDH. These documents were not provided to the NRC concurrently with their submittal to the CDH, as is required by the FSV Non-Radiological Technical Specifications, due to an administrative oversight. We hope that the delay in submitting this information will not inconvenience your staff.

PSC is currently complying with the terms and conditions of the 1985 Colorado Wastewater Discharge Permit, provided to the NRC via the referenced letter. Liquid effluent discharges may continue under the current permit until the revised permit is issued.

If you have any questions regarding the attached information, please contact Mr. M. H. Holmes at (303) 620-1701.

Sincerely,

Donald W. Warembourg by *gberst*  
Donald W. Warembourg  
Manager, Nuclear Operations

DWW/SWC

cc (w/o attachments):

Regional Administrator, Region IV

Mr. J. B. Baird  
Senior Resident Inspector  
Fort St. Vrain

Mr. Robert M. Quillin, Director  
Radiation Control Division  
Colorado Department of Health





Public Service  
Company of Colorado  
P.O. Box 840  
Denver, CO 80201-0840

October 1, 1990

Mr. Bob Shukle, Chief  
Permits & Enforcement Section  
Water Quality Control Division  
Colorado Department of Health  
4210 East 11th Avenue  
Denver, CO 80220

RE: Fort St. Vrain Station Wastewater Discharge Permit Renewal  
Application CO-0001121

Dear Bob:

Attached please find two copies of the Public Service Company of Colorado Fort St. Vrain Station wastewater discharge permit renewal application. Analysis of several parameters under item 19A. have not been completed by Hauser Laboratories. This data will be provided as soon as possible.

Please feel free to contact me at 294-3715 with any questions in this regard.

Sincerely,

Peter J. Cohlma  
Air & Water Programs Coordinator

PJC:tc

Attachments

INDUSTRIAL WASTEWATER DISCHARGE APPLICATION

FOR AGENCY USE

APPLICATION NUMBER

/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

DATE RECEIVED

/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
YEAR			MONTH			DAY													

Do not attempt to complete this form before reading the accompanying instructions.

NEW \_\_\_\_\_

RENEWAL X

Existing permit number CO-0C01121

PLEASE PRINT OR TYPE

1. Name, address, and telephone number of the owner of the facility producing discharge.

Property Owner(s) Public Service Company of Colorado

Telephone Number (303 ) 571-7511  
Area Code

Mailing Address P. O. Box 840

Street Address 550 15th Street

City Denver State Colorado Zip Code 80201

2. Is the facility operated other than by the owner?

No X

Yes \_\_\_\_\_ Operator \_\_\_\_\_

Telephone Number ( ) \_\_\_\_\_  
Area Code

Mailing Address \_\_\_\_\_

Street Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

3. Specify whether owner or operator is making application for the permit.

The owner (PSCo) is applying for the permit.

4. Location of facility:

Legal description (Township, Range, 1/4 Section) Sections 34 and 35,

Township 4 North, Range 67 West, Section 3, Township 3 North, Range 67 West,  
6th Principal Meridian

Street P. O. Box 361

City Platteville

State Colorado

County Weld

Zip Code 80651

Local Contact (familiar with facility) Peter J. Cohlma

Telephone Number ( 303 ) 294-3715

Area Code

Name of operation Fort St. Vrain Electric Generating Station

5. If you have an existing NPDES or CDPS permit go to Item 6.

If you do not have an existing NPDES or CDPS permit go to Item 9.

6. If a priority pollutant scan (organic toxic pollutants listed in Appendix A) has been previously submitted, give the date of submittal: 9-15-88.

If a Materials Containment Plan or Spill Prevention and Containment Plan has been submitted, give the date of submittal: 5-30-86.

7. Has all of the information required in this application form been previously submitted to the Water Quality Control Division - Permits Section and is it accurately stated in your present permit?

No X On this application, provide that information not previously submitted and/or explain any updated information.

Yes \_\_\_\_\_

All applicants (new or renewals) must submit recent analyses as required in Item 19 A.

8. Has there been any change in chemical usage, either type or quantity, or any change in operating conditions at the site or any change which could affect the effluent quality?

No \_\_\_\_\_ Go to Item 25.

Yes X Complete all information on the application which pertains to the changes.

9. A location map (preferably a topographic map) designating the facility property and discharge points shall be submitted. The map shall be from a 7-1/2 or 15 minute USGS quad sheet or a map of comparable scale. A north arrow shall be shown. Any public water supply intakes within 5 miles downstream of the facility shall also be identified. See Attachment #1.
10. Type of facility (power plant, petroleum refinery, etc.) plus brief description of the nature of the business and the industrial processes used. (The applicant may want to submit a process flow sheet.) If this is a seasonal operation, list the months of operation. See Attachment #2.

Nuclear power plant being decommissioned.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

11. The principal product(s) and maximum production rate.  
Principal product was electricity. There is and will be no generation  
of power during decommissioning.

12. Standard industrial code (SIC) Number (if known) 4911.

13. A legible general sketch of the site shall be submitted and include appurtenant facilities (building, ponds, diversion ditches, intake structures, well locations, stockpiles, etc.), stream and other surface water locations, numbered discharge points, sampling and flow monitoring points. Sketch shall be on paper 8-1/2 x 11 inches. The discharge points on the sketch shall be labeled to correspond with the outfall numbers listed in Table 14 A. See Attachment #3.

14. Table 14 A - for each outfall provide: (1) The name of the receiving stream; (2) A description of all operations contributing wastewater to the effluent (example: water associated with each industrial process, sanitary wastewater, groundwater, cooling water, stormwater runoff, etc.); (3) The average and maximum flow contributed by each operation; and (4) The treatment received by the wastewater prior to discharge as well as the design capacity of the treatment system. Continue on additional sheets if necessary.

Begin with outfall number 001 and number sequentially.

If chemical additives (example: algicides, corrosion inhibitors, flocculants, etc.) are used at the plant fill out Table 14 B.



TABLE 14 A

OUTFALL NUMBER	RECEIVING WATER	OPERATIONS CONTRIBUTING FLOW			TREATMENT	
		OPERATION	30-Day AVG. FLOW (MGD)	MAXIMUM DAILY FLOW (MGD)	DESCRIPTION *	DESIGN CAPACITY (MGD)** AND DESIGN BASIS***
01SA	Farm pond over- flow to South Platte	Main Cooling Tower Blowdown - via N. yard drain (4 hrs./day)	1.1			
01SA	Farm pond over- flow to South Platte	Service Water Cooling Tower Blowdown - via N. yard drain	0.025			
01SA	Farm pond over- flow to South Platte	Domestic Wastewater via N. yard drain	0.003			
01SA	Farm pond over- flow to South Platte	Turbine Building Sump - via S. yard drain	0.03			
01SA	Farm pond over- flow to South Platte	Reactor Building Sump - via S. yard drain	0.007			
01SA	Farm pond over- flow to South Platte	Bypass Water - via N. yard drain	2.0			
01SB	Goosequill Ditch to Jay Thomas Ditch to S. Platte	Same as 01SA				
02SA	St. Vrain Creek	Alternate discharge for 01SB during ditch maintenance - (does not contain Jay Thomas ditch water)				
003	South Platte	Discharge from trash screens at South Platte River intake				
004	St. Vrain Creek	Discharge from trash screens at St. Vrain Creek intake				
005	St. Vrain Creek	Discharge from St. Vrain Creek Settling Pond				
Total Flow			2.065	3.7		4 - 4.5

\* Complex treatment processes should be described in more detail on additional pages.

\*\* If sediment pond, approximate volume of water.

\*\*\* Specify the basis for the design, for example - rainfall event, pump capacity, pipe size, treatment unit capacity, hydraulic capacity, etc.

TABLE 14 B

Please complete the following table for all chemical additives used at the plant which enter or could enter internal (process or treatment) waste streams.

PSCo MSDS # **	Chemical Name * (Common or IUPAC Name)	Trade Name	Manufacturer	Reason Used	Present in What Waste Stream	Final Disposition at Site
#761	Ammonium Hydroxide	Same	Variable	pH Control in Condensate	Turbine Bldg. Sump Reactor Bldg. Sump Demineralizer Sump	O2SA O1SA or O1SB Evaporation Ponds
#2658	Sodium Hydroxide	Same	Variable	Demineralizer Regeneration	Demineralizer Sump	Evaporation Ponds
#1771	Sulfuric Acid	Same	Variable	Demineralizer Regeneration	Demineralizer Sump	Evaporation Ponds
#2502	Calcium Hypochlorite	HTH	Variable	Chlorination of Sewage Lagoon Effluent	Sewage Lagoon Effluent	O1SA or O1SB
#4983	Chlorine/Bromine Powder	Halocide	Ross Chemical	Biocide in 42Sys Cooling Tower	Cooling Tower Blowdown	O1SA or O1SB
#180	N-Dodecyl/Guanidine Acetate	Calgon H-133	Calgon Corp.	Microbiocide	Cooling Tower Blowdown	O1SA or O1SB
#184	Sodium Tolytriazole	Calgon CL-5	Calgon Corp.	Cooling Tower Cut Corrosion Inhibitor	Cooling Tower Blowdown	O1SA or O1SB
#183	See MSDS	Calgon PCL-711	Calgon Corp.	Corrosion Inhibitor	Cooling Tower Blowdown	O1SA or O1SB
#2061	See MSDS	Calgon CL-361	Calgon Corp.	Cooling Water Surfactant	Cooling Tower Blowdown	O1SA or O1SB
#1393	Sodium Sulfite	Same	Variable	Reverse Osmosis Dechlorination	N/A	Evaporation Ponds
#181	Mineral Oil & Kerosene	Calgon CL-37	Calgon Corp.	Antifoam	Cooling Tower Blowdown	O1SA or O1SB
#1518 #1163	Soda Ash & Citric Acid	Same	Variable	Emergency for Spills	N/A	Evaporation Ponds

\* If the chemical formula is unknown or confidential, provide the manufacturer's name, contact person, address and phone # or a copy of the manufacturer's brochure, product label information, or materials handling data sheet for each product used. Please list the major constituents or active ingredient, if known.

\*\*MSDSs Attached

TABLE 14 B - Continued

Please complete the following table for all chemical additives used at the plant which enter or could enter internal (process or treatment) waste streams.

[illegible]

\* If the chemical formula is unknown or confidential, provide the manufacturer's name, contact person, address and phone # or a copy of the manufacturer's brochure, product label information, or materials handling data sheet for each product used. Please list the major constituents or active ingredient, if known.

\*\*\* MSDS not yet assigned PSC number.

15. Method of flow measurement for each discharge (i.e. 90 v-notch weir, pump capacity, parshall flume, etc.) Designate whether currently installed or proposed. Identify the minimum and maximum flow measurement capability. Parshall Flumes; Installed

01SB 24" measures from .43 MGD - 9.5 MGD

02SA 36" measures from .63 MGD - 32.6 MGD

16. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions on Table 1. A. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined, provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures. See Attachment #4.

17. Except for storm runoff, are any of the discharges described in Table 14 A intermittent or seasonal?

No X

Yes \_\_\_\_\_ Describe the frequency, duration and flow rate of each discharge occurrence.

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18. A. Do you have permits under any of the following programs? No

Mined Land Reclamation \_\_\_\_\_

Underground Injection Control \_\_\_\_\_

Dredge or fill permit under Section 404 of the Clean Water Act (CWA) \_\_\_\_\_

Resource Conservation and Recovery Act (RCRA) \_\_\_\_\_

- B. Do you have a certified operator?

No \_\_\_\_\_

Yes X

Name Jesse Brungardt

Certification Number 1496

Certification Level C (wastewater)

A (water)



19. Analytical data for the following parameters, unless waived by the WQC Division - Permits and Enforcement Section, shall be submitted from at least one composite sampling of each discharge point as well as state waters upstream of each discharge. Instream sampling is not required if upstream flow is intermittent or representative instream data exists. See instructions.

A. All applicants must submit analyses for the following:

<u>Parameter</u>	<u>Minimum Acceptable Detection Limit</u>
TDS, mg/l	10
Flow, MGD	NA
pH, s.u.	NA
Oil and Grease, mg/l	5
Dissolved Oxygen, mg/l	NA
Alkalinity, mg/l	10
Total Suspended Solids, mg/l	10
Total Ammonia as N, mg/l	0.05
Temperature, °C Winter	NA
Summer	NA
Biochemical Oxygen Demand, mg/l	1
Chemical Oxygen Demand, mg/l	30
Dissolved Aluminum, mg/l	0.1
Total Arsenic, mg/l	0.05
Total Recoverable Cadmium, mg/l	0.0004
Hexavalent Chromium, mg/l	0.025
Trivalent Chromium, mg/l	0.05
Total Chromium, mg/l	0.005
Total Recoverable Copper, mg/l	0.005
Total Recoverable Iron, mg/l	0.3
Total Recoverable Lead, mg/l	0.005
Total Recoverable Manganese, mg/l	0.5
Total Mercury, mg/l	0.00025
Total Recoverable Nickel, mg/l	0.05
Total Recoverable Silver, mg/l	0.0002
Total Recoverable Uranium, mg/l	0.03
Total Recoverable Zinc, mg/l	0.05
Total Residual Chlorine, mg/l	0.05
Fecal Coliform, #/100 ml	NA
Nitrate as N, mg/l	0.1
Nitrite as N, mg/l	0.002
Sulfide as H <sub>2</sub> S, mg/l	0.1

Continued on next page.

19. A. continued

Boron, mg/l	0.05
Chloride, mg/l	5
Sulfate, mg/l	5
Total Cyanide, mg/l	0.01
Dissolved Manganese, mg/l	0.05
Dissolved Iron, mg/l	0.3
Gross Alpha, pCi/l	8
Total Radium 226 and 228, pCi/l	1

B. You must report that dioxin may be discharged if you use or manufacture one of the following:

2,4,5-T	N/A
Silvex, 2,4,5-TP	
Erbon	
Rounel	
TCP	
or HCP	

See 40 CFR 122.21(g)(7)(v).

19A.

Analytical Data - Sampled 9/10/90  
Analyses by PSC Analytic Services Center

	St. Vrain Creek Upstream (All grab)	S. Platte River Upstream (All grab)	Goosequill (01SB) Discharge Grab (G) Composite (C)
Parameter, units			
TDS, mg/l	918	629	688 (C)
Flow, MGD	N/A	N/A	2.34
pH, S.W.	7.77	7.52	7.72 (G)
Oil & Grease, mg/l	<1	<1	<1 (G)
Dissolved Oxygen, mg/l	1.42	4.1	4.3 (G)
Alkalinity, mg CaCO <sub>3</sub> /l	225	187	196 (C)
TSS, mg/l	51.5	44.0	17.5 (C)
Total Ammonias as N, mg/l	<0.025	<0.025	0.40 (C)
Temperature, °C	18.6	19.4	22.6 (G)
BOD, mg/l	5.49	7.19	7.04 (C)
COD, mg/l	18.8	24.4	27.1 (C)
Dissolved Al mg/l	<0.05	0.06	0.06 (C)
Total As mg/l	<0.010	<0.010	<0.010 (C)
<hr/>			
Total rec. Cd, mg/l	*	*	* (C)
Hexavalent Cr, mg/l	<0.025	<0.025	<0.025 (C)
Trivalent Cr, mg/l	*	*	* (C)
Total Cr, mg/l	*	*	* (C)
Total rec. Cu, mg/l	0.014	0.016	0.015 (C)
Total rec. Fe, mg/l	1.885	1.354	0.525 (C)
Total rec. Pb, mg/l	<0.005	<0.005	<0.005 (C)
Total rec. Mn, mg/l	0.093	0.125	0.118 (C)
Total Hg, mg/l	<0.0002	<0.0002	<0.0002 (C)
Total rec. Ni, mg/l	0.019	0.021	0.020 (C)
Total rec. Ag, mg/l	*	*	* (C)
Total rec. Ur, mg/l	*	*	* (C)
Total rec. Zn, mg/l	0.025	0.050	0.017 (C)
Total Residual Cl <sub>2</sub> , mg/l	<0.050	<0.050	<0.050 (G)
Fecal Coliform, #/100 ml	200	100	30 (G)
Nitrate as N, mg/l	1.7	4.8	1.4 (C)
Nitrite as N, mg/l	0.14	0.14	0.27 (C)
Sulfide as H <sub>2</sub> S, mg/l	<0.1	<0.1	<0.1 (C)
Boron, mg/l	0.40	0.43	0.41 (C)
Chloride, mg/l	39	120	85 (C)
Sulfate, mg/l	351	190	249 (C)
Total Cyanide, mg/l	*	*	* (C)
Diss. Mn mg/l	<0.020	0.026	0.069 (C)
Diss. Fe, mg/l	0.029	0.043	0.080 (C)
Gross alpha, pCi/l	*	*	* (C)
Total Radium 226 pCi/l	*	*	* (C)
Total Radium 228 pCi/l	*	*	* (C)

\*Analyses by Hauser Laboratories - awaiting results.

19. C. In addition, if you have processes in one of the following industries you must also submit the analyses specified below:

- i) The "Metals, Cyanide and Total Phenols" listed in Appendix A, and
- ii) the appropriate GC/MS fraction(s) (specific compounds shown in Appendix A) listed in the following table:

Industry Category	GC/MS FRACTION <sup>2</sup>			
	Volatile	Acid	Neutral	Pesticide
Adhesives and sealants	(1)	(1)	(1)	
Aluminum forming	(1)	(1)	(1)	
Auto and other laundries	(1)	(1)	(1)	(1)
Battery manufacturing	(1)		(1)	
Coil coating	(1)	(1)	(1)	
Copper forming	(1)	(1)	(1)	
Electric and electronic compounds	(1)	(1)	(1)	(1)
Electroplating	(1)	(1)	(1)	
Explosives manufacturing		(1)	(1)	
Foundries	(1)	(1)	(1)	
Gum and wood (all sub parts except D and F)(3)	(1)	(1)		
Subpart S--tall oil rosin	(1)	(1)	(1)	
Subpart F--rosin-based derivatives	(1)	(1)	(1)	
Inorganic chemicals manufacturing	(1)	(1)	(1)	
Iron and steel manufacturing	(1)	(1)	(1)	
Leather tanning and finishing	(1)	(1)	(1)	
Mechanical Products manufacturing	(1)	(1)	(1)	
Nonferrous metals manufacturing	(1)	(1)	(1)	(1)
Organic chemicals manufacturing	(1)	(1)	(1)	(1)
Paint and ink Formulation	(1)	(1)	(1)	
Pesticides	(1)	(1)	(1)	(1)
Petroleum refining	(1)			



## 19. C. continued

Industry Category	GC/MS FRACTION <sup>2</sup>			
	Volatile	Acid	Neutral	Pesticide
Pharmaceutical preparations	(1)	(1)	(1)	
Photographic equipment and supplies	(1)	(1)	(1)	
Plastic and synthetic materials manufacturing	(1)	(1)	(1)	(1)
Plastic processing	(1)			
Porcelain enameling				
Printing and publishing	(1)	(1)	(1)	(1)
Pulp and paperboard mills <sup>(3)</sup>				
Rubber processing	(1)	(1)	(1)	
Soap and detergent manufacturing	(1)	(1)	(1)	
Steam electric power plants	(1)	(1)		
Textile mills (subpart C---Greige Mills are exempt from this table)	(1)	(1)	(1)	
Timber products processing	(1)	(1)	(1)	(1)
Landfills		---(4)---		
Oil and gas extraction--- produced water <sup>(5)</sup>	(1)	(1)	(1)	
Sugar processing	(1)	(1)	(1)	(1)
Oil Shale		---(4)---		

(1) Testing Required

(2) See Appendix A for specific pollutants in each fraction

(3) See 40 CFR Part 122, Appendix D Table 1 for testing requirements and additional information for these specific industries.

(4) Contact WQCD - Permits and Enforcements concerning required analyses.

(5) Per Federal Regulations produced water must be of acceptable quality for and be used in agriculture or wildlife propagation in order to be discharged. Specify the use here if you intend to discharge produced water:

19C. i) Sampled 9/10/90

Parameter, units	St. Vrain Creek Upstream (All grab)	S. Platte River Upstream (All grab)	Goosequill (OISB) Discharge Grab (G) Composite (C)
Total rec. Antimony, mg/l	*	*	* (C)
Total rec. Be, mg/l	*	*	* (C)
Total Se, mg/l	<0.010	<0.010	<0.010 (C)
Total rec. Thallium, mg/l	*	*	* (C)
Total Phenols, mg/l	ND	ND	ND

Parameter	St. Vrain Creek Upstream (All grab)	S. Platte River Upstream (All grab)	Goosequill (O1SB) Discharge Grab (G) Composite (C)
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Volatiles - Sampled 9/6/90

Acrolein	ND	ND	ND (G)
Acrylonitrile	ND	ND	ND (G)
Benzene	ND	ND	ND (G)
Bromoform	ND	ND	ND (G)
Carbon Tetrachloride	ND	ND	ND (G)
Chlorobenzene	ND	ND	ND (G)
Chlorodibromomethane	ND	ND	ND (G)
Chloroethane	ND	ND	ND (G)
2-chloroethylvinyl ether	ND	ND	ND (G)
Chloroform	ND	ND	ND (G)
Dichlorobromomethane	ND	ND	ND (G)
1,1-dichloroethane	ND	ND	ND (G)
1,2-dichloroethane	ND	ND	ND (G)
1,1-dichloroethylene	ND	ND	ND (G)
1,2-dichloropropane	ND	ND	ND (G)
1,3-dichloropropylene	ND	ND	ND (G)
Ethylbenzene	ND	ND	ND (G)
Methyl Bromide	ND	ND	ND (G)
Methyl Chloride	ND	ND	ND (G)
Methylene Chloride	ND	ND	ND (G)
1,1,2,2-tetrachloroethane	ND	ND	ND (G)
Tetrachloroethylene	ND	ND	ND (G)
Toluene	ND	ND	ND (G)
1,2-Trans-dichloroethylene	ND	ND	ND (G)
1,1,1-trichloroethane	ND	ND	ND (G)
1,1,2-trichloroethane	ND	ND	ND (G)
trichloroethylene	ND	ND	ND (G)
vinyl chloride	ND	ND	ND (G)

Acid Compounds - Sampled 9-10-90

2-Chlorophenol	ND	ND	ND (C)
2,4-Dichlorophenol	ND	ND	ND (C)
2,4-Dimethylphenol	ND	ND	ND (C)
4,6-Dinitro-o-cresol	ND	ND	ND (C)
2,4-Dinitrophenol	ND	ND	ND (C)
2-Nitrophenol	ND	ND	ND (C)
4-Nitrophenol	ND	ND	ND (C)
P-Chloro-m-cresol	ND	ND	ND (C)
Pentachlorophenol	ND	ND	ND (C)
Phenol	ND	ND	ND (C)
2,4,6-Trichlorophenol	ND	ND	ND (C)

19. D. All applicants must review the parameters listed in Appendix A and Appendix B to this application, list any known or believed to be present and provide quantitative data for those present or believed to be present.

See 19A and 19C,

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

- E. All applicants must identify any biological toxicity tests which have been performed within the last 5 years on any of the discharges or the receiving water in relation to a discharge from this facility.

None have been performed.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

20. Do you have bulk storage of diesel fuel, gasoline solvents or other hazardous materials on site?

No \_\_\_\_\_

Yes X Indicate location on general site sketch Item 13.  
See Attachment #5.

21. Is or will land application of any wastewater be practiced?

No X

Yes \_\_\_\_\_ Briefly describe the process: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



22. Is this operation located within one mile of a landfill (existing or closed), or any mine or mill tailings?

No X

Yes        Indicate location of the landfill or tailings on the location map, Item 9, or general site sketch, Item 13.

23. The applicant should submit any additional relevant information (such as additional sampling results or stream flow data (Q7-10)) that they feel the Division should consider in establishing permit conditions.
24. New permit applicants, amendment applicants or renewal applicants with changes:  
I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

A. Clegg Crawford  
SIGNATURE OF APPLICANT

10/1/80  
DATE SIGNED

A. Clegg Crawford  
NAME (PRINTED)

Vice President, Nuclear Operations  
TITLE

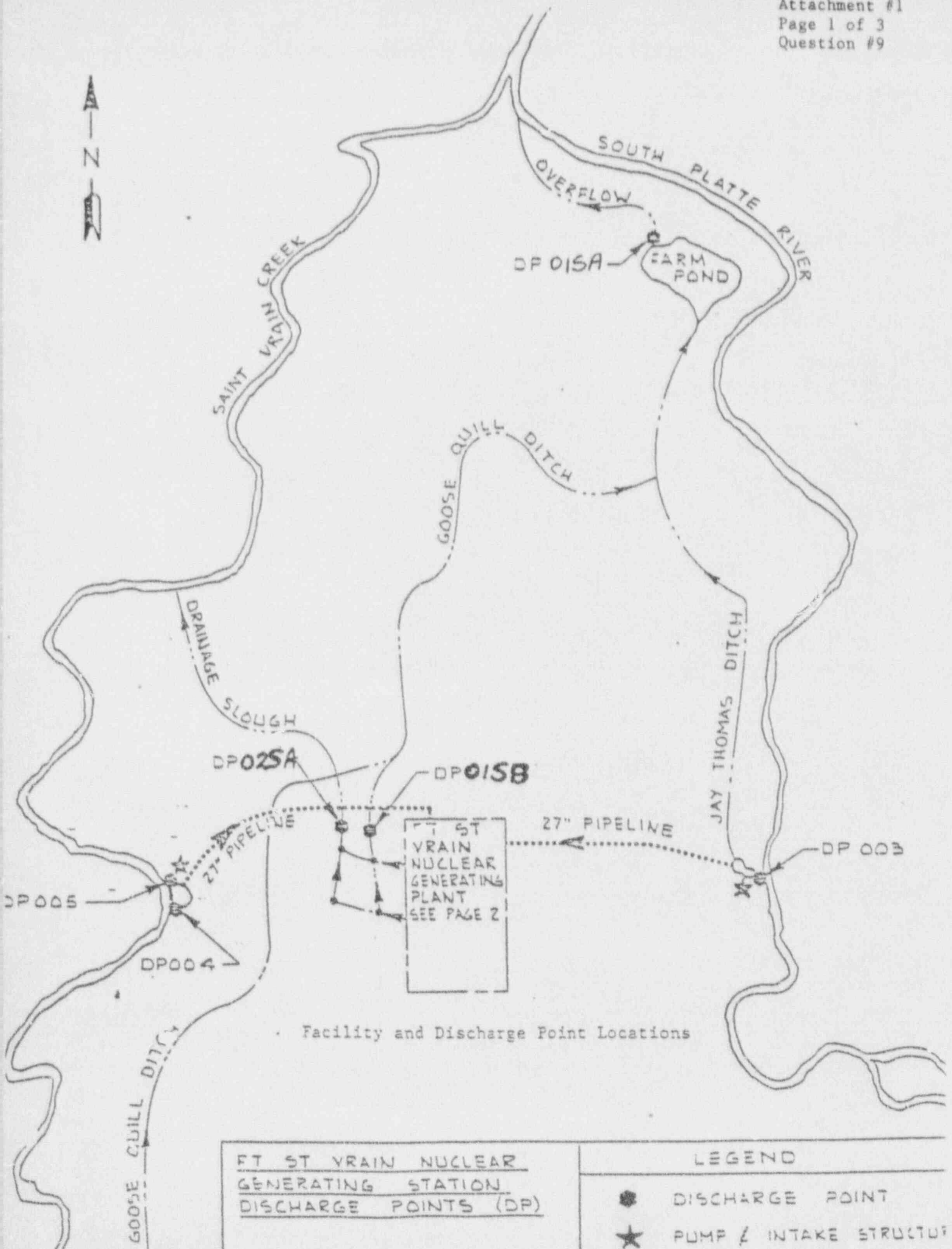
25. Renewal applicants if no change:  
I certify under penalty of law that I am familiar with the conditions at the site and that based on my inquiry of those individuals immediately responsible for the site, operating conditions, chemical usage, or other factors which could affect the effluent quality have not changed from that which is identified in our current permit. I therefore request renewal of our permit. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

\_\_\_\_\_  
SIGNATURE OF APPLICANT

\_\_\_\_\_  
DATE SIGNED

\_\_\_\_\_  
NAME (PRINTED)

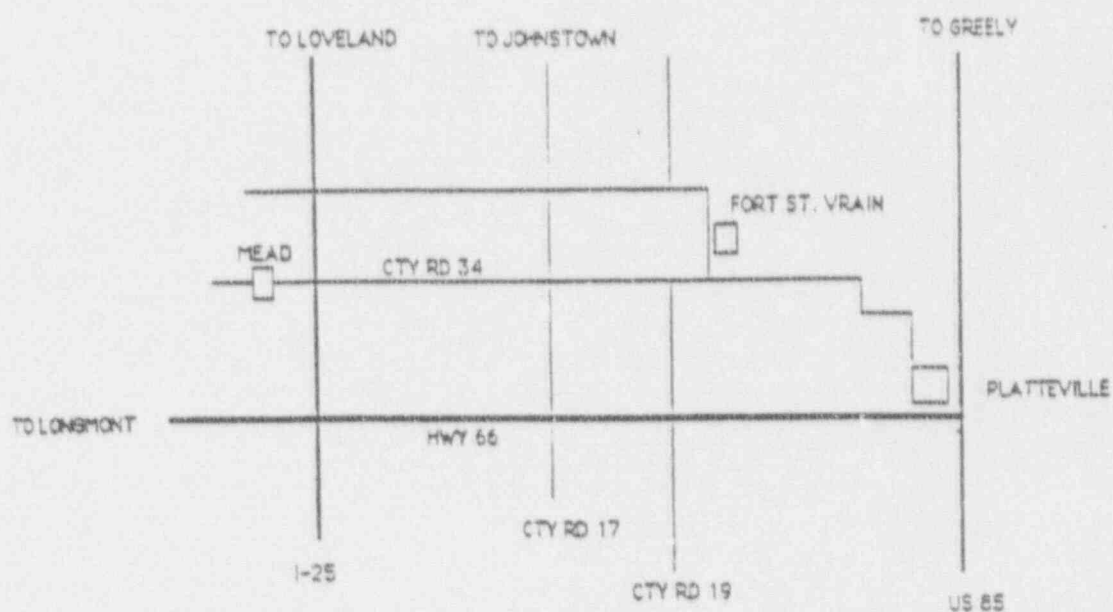
\_\_\_\_\_  
TITLE







FORT ST. VRAIN NUCLEAR GENERATING STATION  
PUBLIC SERVICE COMPANY OF COLORADO





Description of Business and Industrial Processes

In November of 1965, contracts were signed between General Atomic Company, Public Service Company of Colorado, and the U.S. Atomic Energy Commission (AEC) to construct a 330 MW(e) demonstration High Temperature Gas-Cooled Reactor plant (HTGR), later named Fort St. Vrain. In September 1968, a construction permit was granted by the AEC and construction was begun. Initial criticality was achieved on January 31, 1974, after a series of technical and regulatory delays. Initial electrical power production occurred on December 11, 1976, when the turbine generator was synchronized with the PSC transmission system for the first time. One hundred percent power was reached, for the first and only time, in November of 1981.

On December 5, 1988, Public Service Company announced that, because of financial and technical reasons, Fort St. Vrain would be permanently shut down on or before June 30, 1990. On August 18, 1989, the plant was shut down to repair a control rod malfunction. Approximately one week later, a leak was discovered in an accessible portion of one of the plant's steam generators. Efforts to repair the leak revealed a large number of cracks. Because of the time required for the repair effort and the possibility that the cracking problem extended to other portions of the steam generators, nuclear operations were terminated at the plant as of August 29, 1989.

On November 27, 1989, the first radioactive fuel elements were removed from the reactor to the on-site fuel storage wells pending an agreement with the State of Idaho to permit shipment of Fort St. Vrain's spent fuel to the Idaho National Engineering Laboratory per an existing contract. By the end of January 1990, approximately one-third of the reactor core had been transferred to the fuel storage wells, filling them to capacity. Since that time, the Company has been actively pursuing a resolution to the fuel shipping problem while making modifications necessary to promptly and efficiently ship fuel once permission is received. When all nuclear fuel is off-site, the plant may be converted to a gas-fired generation facility.

### Water Systems Summary

#### 1. Demineralizer Regeneration Backwashes (Non-discharging System)

The condenser/feedwater system is a closed loop demineralized system providing feedwater to the primary coolant system. The demineralizer regeneration backwash is discharged to evaporation ponds lined with 30 mil PVC. The evaporation ponds are to the north of the plant itself and to the east of the main cooling towers.

#### 2. Turbine Building Drains

Wastes from the turbine building sump are pretreated by an oil separator; the effluent from the separator is conveyed to the diversion box, where it is discharged with the main cooling tower blowdown. The oil is disposed of as solid waste. The turbine building effluent derives from the miscellaneous drains within the turbine building. Total discharge from this building averages 21 gpm (30,000 gpd).

#### 3. Service Water Cooling Tower Blowdown

The service water system serves to provide cooling for various individual pieces of equipment and/or closed cooling systems within the reactor or turbine generator or supporting systems. The service water makeup is domestic drinking water; the shallow well system is used as backup. Presently, the service water cooling tower blowdown is discharged to the main cooling tower system. The blowdown can be routed to the north yard drain and discharged with the circulating water system blowdown to the South Platte River (O1SB) or through the alternate (O2SA) to the St. Vrain Creek. Flow rate of the service water tower discharge averages 25,000 gpd.

#### 4. Domestic Wastewater Treatment System

Approximately 175 persons contribute to the domestic wastewater treatment system. Effluent flows estimated at 2,000 gpd are treated in an aerated lagoon system. Leach field effluent is currently added periodically to the domestic wastewater treatment system. The overflow from the lagoon is mixed with the north yard drain. Domestic wastewater constitutes less than 1% of the total effluent flow volume. Water supply for domestic purposes is the Central Weld County Water District.

#### 5. Main Cooling Tower Blowdown

This system is out of service except for spraying the structure four hours each day for fire protection. Sources of this water are the South Platte River and the St. Vrain Creek.

#### 6. Reactor Building Sump

Contents of the reactor building sump are normally filtered, monitored, and discharged at a restricted flow of 10 gpm. The filters are capable of removing potentially radioactive particulate matter from the

Water Systems Summary Continued

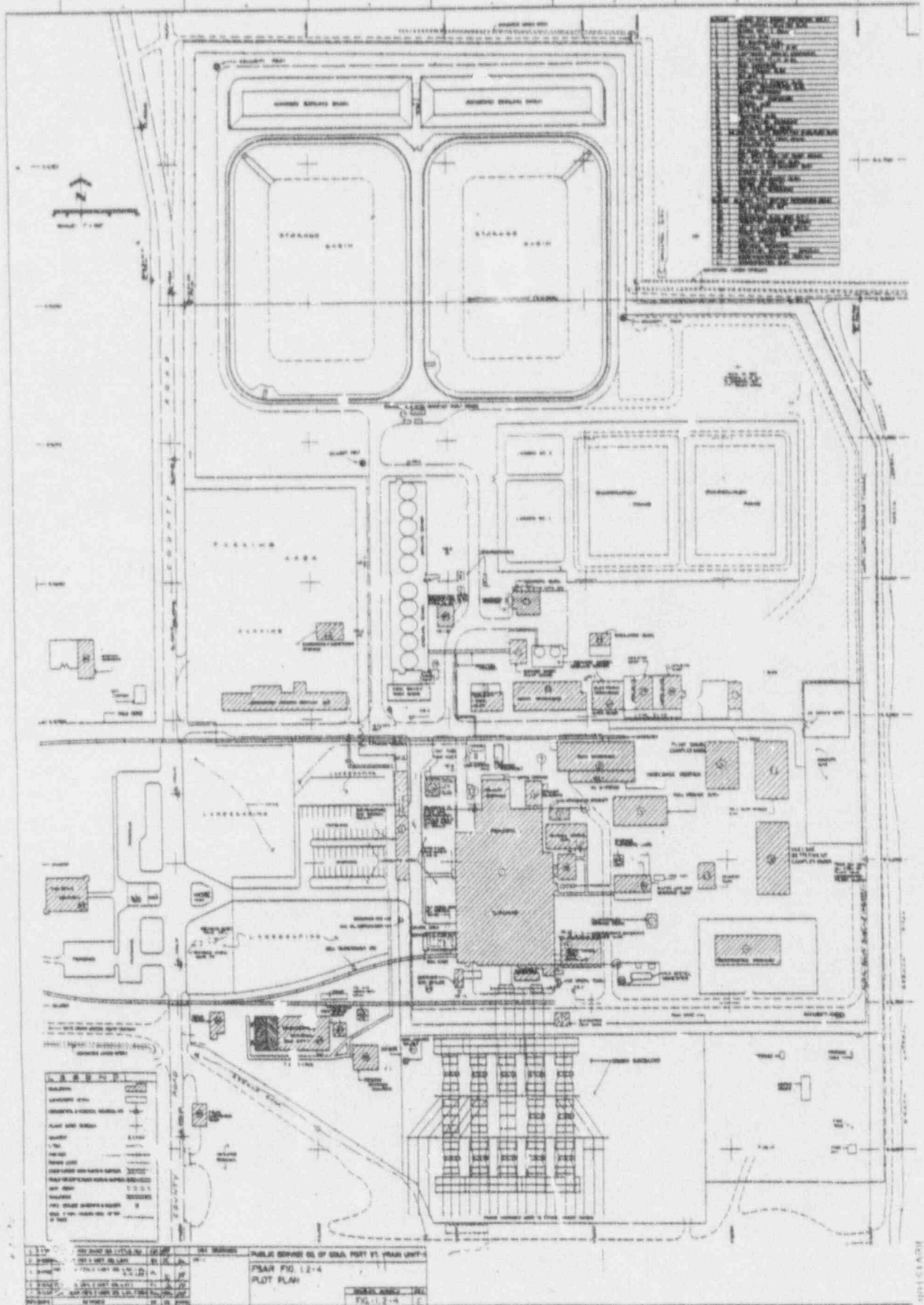
effluent. This effluent passes to the liquid waste disposal line through an oil separator and out to the cooling tower blowdown. Batch discharges from the reactor building sump may be made at a flow rate of 50 gpm. The water source for the reactor building sump is miscellaneous drains within the reactor building. Normal discharge from this sump averages 5 gpm (less than 7,000 gpd due to intermittent use).

This intermittent effluent is monitored for any radioactive materials prior to discharge; the discharge of any radioactive materials, including liquid wastes, is regulated by the Nuclear Regulatory Commission. Liquid effluent reports required by the Nuclear Regulatory Commission will be submitted as a part of the NPDES report. A summary of the radiological data submitted with the permit application has been included as Appendix A to this rationale.

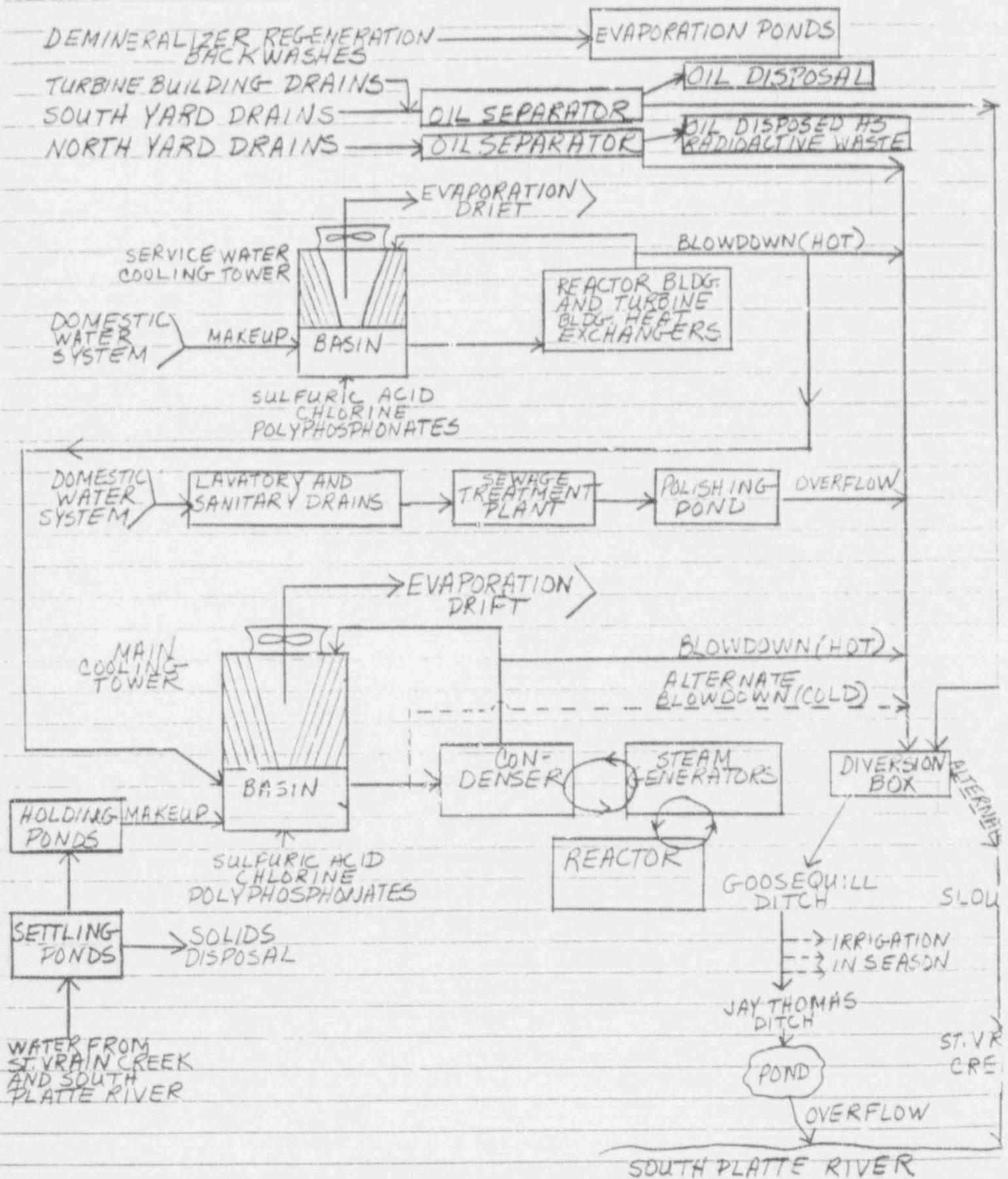
7. Water Sources to the facility

The water sources to the facility are summarized below:

1. South Platte River and St. Vrain Creek: 3,000 gpm (4.3 MGD) average estimated at full plant load; supplies the main cooling system. (Discharge points 003 and 004 are for cleaning the trash screens at these intake structures for the South Platte River and St. Vrain Creek respectively.)
2. Six (6) shallow wells, 40 to 120 foot depth, total rated capacity of 8,000 gpm; average pumping rate of 200 gpm (0.3 MGD). The wells act as a backup supply to the service water system; flows can be diverted to the main cooling system if required.
3. Domestic source is from the Central Weld Water District, estimated at 100,000 gpd.

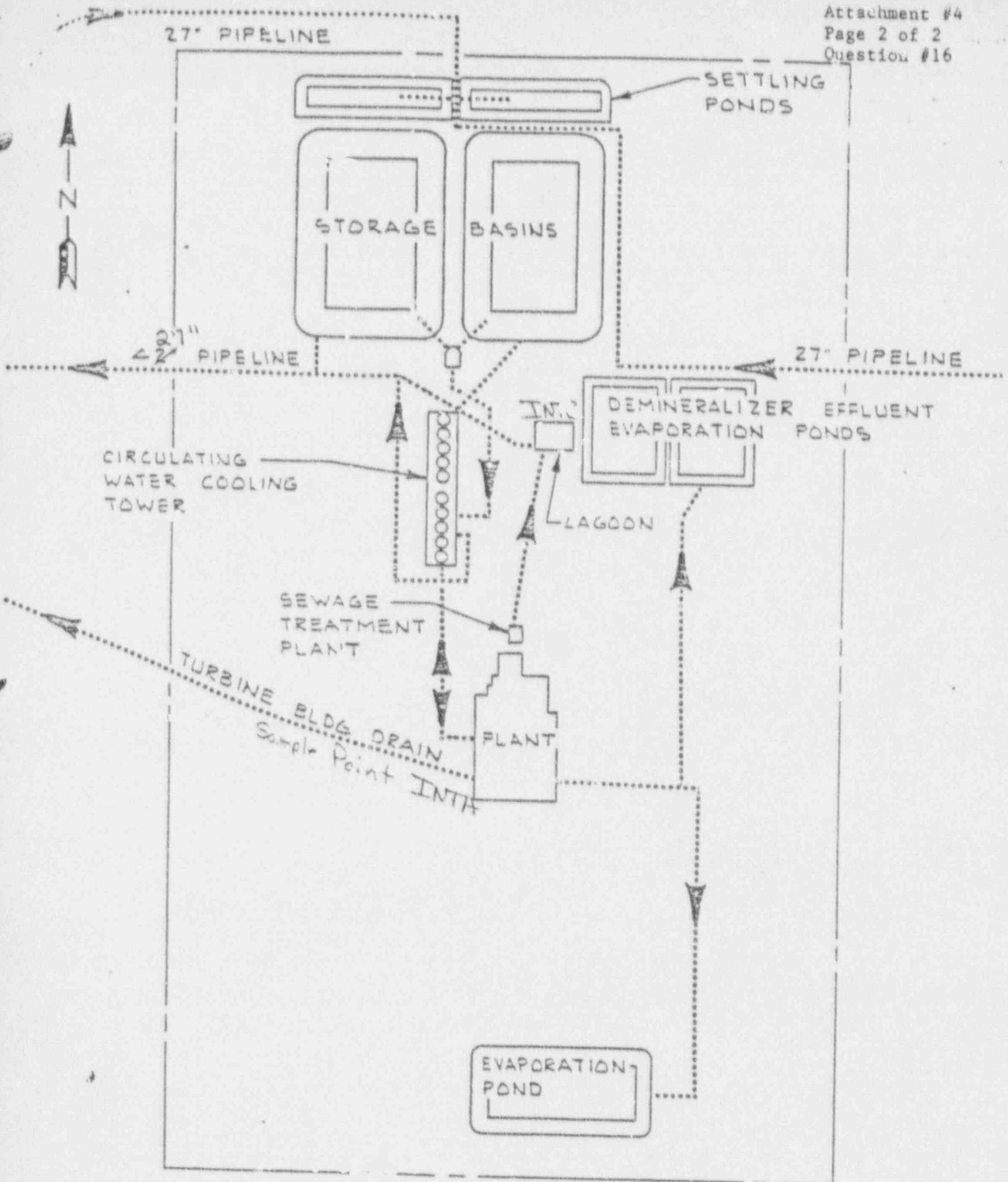




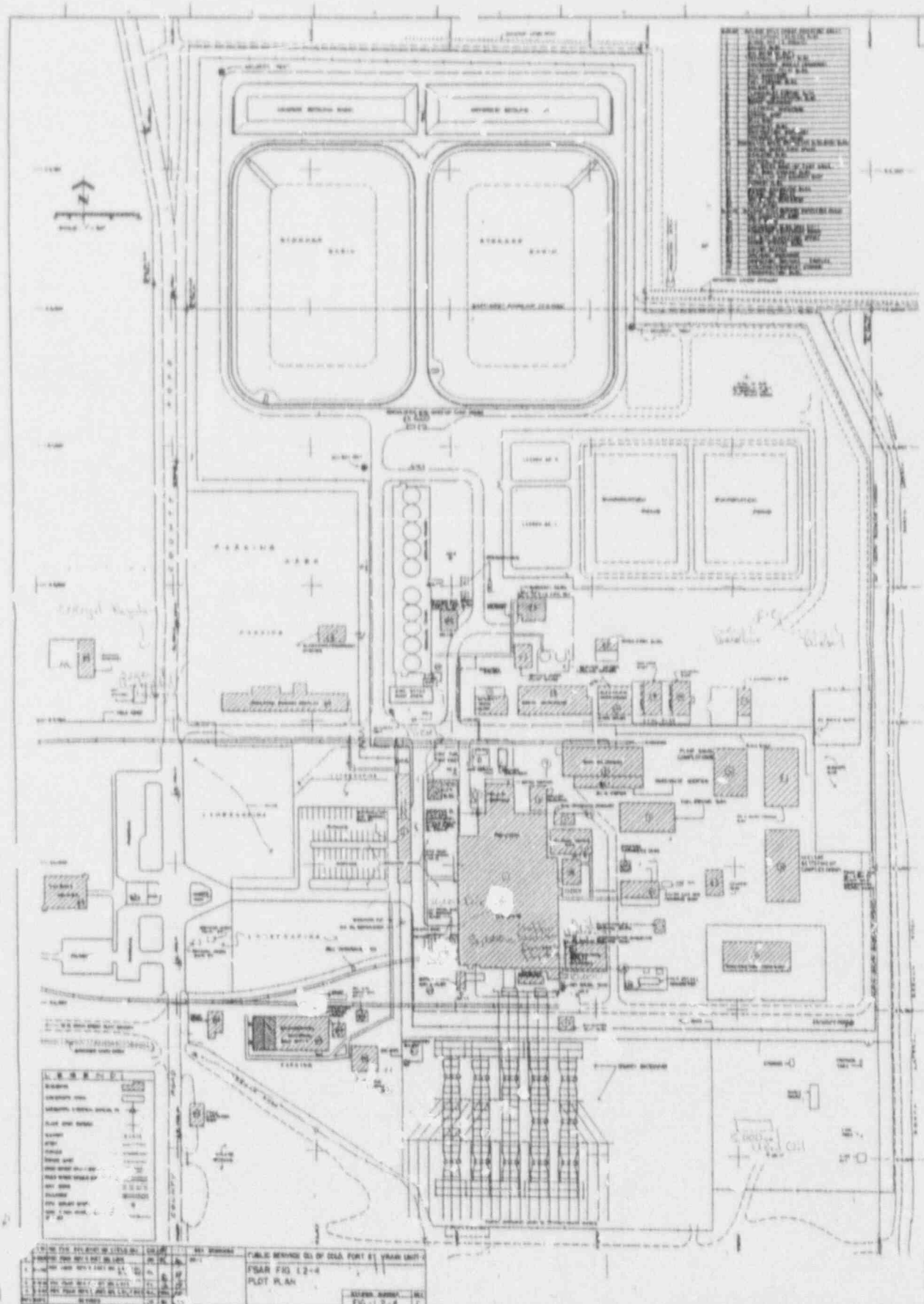


NONRADIOACTIVE LIQUID WASTE SYSTEM





Plant Facilities and Discharge Points  
FT ST VRAIN NUCLEAR  
GENERATING STATION  
DISCHARGE POINTS



UPDATED FSAR  
Revision 0

PSCO MATERIAL SAFETY DATA SHEET NUMBER: 761

THIS MSDS APPLIES TO IDENTIFICATION NUMBERS:

09260807

ORIGINAL ENTRY DATE: 091588

LAST REVISION DATE: 062389

PRODUCT TRADE NAME:

AMMONIUM HYDROXIDE, 25-30% SOLUTION- AQUA AMMONIA

-----  
\*\* MANUFACTURER(S) \*\*

ALLIED CHEMICAL

EM SCIENCE

-----  
\*\* SYNONYMS \*\*

AQUEOUS AMMONIA; AMMONIA SOLUTION; AMMONIACAL LIQUOR

-----  
\*\* HAZARDOUS COMPONENTS \*\*

25-30 % AMMONIUM HYDROXIDE

CAS: 1336-21-6

THIS IS NOT ON THE OSHA OR ACGIH LIST.

28-30 % AMMONIA

CAS: 7664-41-7

THE ACGIH LIMIT FOR THIS IS 25 PPM .

-----  
\*\* DESCRIPTION \*\*

WATER WHITE LIQUID WITH A STRONG, PUNGENT AMMONIA  
ODOR

-----  
\*\* POTENTIAL HEALTH EFFECTS \*\*

EYES: EYE CONTACT WITH THIS PRODUCT CAN CAUSE SEVERE IRRITATION  
AND/OR CORNEAL DAMAGE.

CORROSIVE TO TISSUES ON CONTACT. GAS AND VAPOR CAN ALSO  
IRRITATE EYES.

SKIN: SHORT TERM SKIN CONTACT WITH SIGNIFICANT AMOUNTS  
OF THIS PRODUCT OR SUBSTANCE CAN CAUSE IRRITATION.

CORROSIVE TO TISSUES ON CONTACT. CAN CAUSE BLISTERS.  
PRODUCT CAN IRRITATE MOIST SKIN.

INHALATION: BREATHING SIGNIFICANT CONCENTRATIONS OF DUSTS,  
MISTS, FUMES, VAPORS, OR GASEOUS FORMS OF PRODUCT, EVEN  
BRIEFLY, CAN CAUSE SEVERE IRRITATION AND/OR SWELLING.  
CAN CAUSE CHEST PAIN, PINK FROTHY SPUTUM, AND BRONCHIAL  
SPASMS.

INGESTION: INGESTION OF THIS PRODUCT CAN PRODUCE  
SEVERE TISSUE DAMAGE.

CORROSIVE TO TISSUES, CAUSES SEVERE BURNING OF GULLET, MOUTH  
STOMACH AND THROAT. ANY AMOUNT CAN BE DANGEROUS.

INGESTION OF THIS PRODUCT OR SUBSTANCE CAN BE FATAL.

NOTE: THE SEVERITY OF EFFECTS CAUSED BY EXPOSURE TO THIS PRODUCT OR  
SUBSTANCE DEPENDS ON CONCENTRATION, DURATION OF EXPOSURE AND  
EFFECTIVENESS OF ANY FIRST AID TREATMENT REQUIRED.

-----  
\*\* FIRE/EXPLOSION HAZARDS \*\*

NFPA HAZARD IDENTIFICATION - HEALTH: 3

FLAMMABILITY: 1 REACTIVITY: 0 OTHER: 0

THIS PRODUCT HAS NO FLASHPOINT.

SHEET NUMBER: 761

PAGE

AMMONIUM HYDROXIDE, 25-30% SOLUTION- AQUA AMMONIA

AMMONIA INCREASES THE FIRE HAZARD FROM OTHER COMBUSTIBLE MATERIALS, INCLUDING OIL. FLAMMABLE LIMITS ARE BROADENED BY INCREASING TEMPERATURES.

-- -- -- -- --  
\*\* REACTIVITY \*\*

THIS PRODUCT OR SUBSTANCE IS CONSIDERED TO BE STABLE. STABLE MATERIALS ARE THOSE THAT NORMALLY HAVE THE CAPACITY TO RESIST CHANGES IN THEIR CHEMICAL COMPOSITION.

CONDITIONS TO AVOID DURING USE:

AVOID HEAT. DECOMPOSES WITHOUT VIOLENCE IN THE ABSENCE OF INCOMPATIBLE MATERIALS.

MATERIALS NOT COMPATIBLE WITH THIS PRODUCT INCLUDE:

INORGANIC ACIDS, ORGANIC ACIDS    OXIDIZING AGENTS.

DURING USE OF THIS PRODUCT AVOID:

ACROLEIN, ACRYLIC ACID, DIMETHYL SULFATE, PROPYLENE OXIDE, SILVER NITRATE, PHOSPHOROUS TRIOXIDE, GOLD, MERCURY, NITROGEN TETROXIDE, POTASSIUM FERRICYANIDE, SILVER, SILVER CHLORIDE.

WHEN THIS PRODUCT OR SUBSTANCE IS HEATED TO A LEVEL WHERE IT DECOMPOSES, THE FOLLOWING COMPOUNDS ARE PRODUCED:

GASEOUS AMMONIA AND OXIDES OF NITROGEN

WHEN LEFT ALONE, THIS PRODUCT WILL NOT REACT WITH ITSELF IN A HAZARDOUS MANNER.

-- -- -- -- --  
\*\* PERSONAL PROTECTIVE METHODS \*\*

EYES: IF THERE IS ANY POSSIBILITY OF EYE CONTACT WITH THIS PRODUCT OR SUBSTANCE, WEAR CHEMICAL SAFETY GOGGLES.

AN EYEWASH SHOULD BE PROVIDED IN THE IMMEDIATE WORK AREA.

SKIN: IF THERE IS ANY POSSIBILITY OF SKIN CONTACT

WEAR IMPERVIOUS PANTS AND JACKET OR COVERALLS AND IMPERVIOUS BOOTS.

USE FULL PROTECTIVE CLOTHING FOR SPILLS, LEAKS, AND OTHER EMERGENCIES

WASH PROMPTLY WHEN SKIN BECOMES CONTAMINATED.

INHALATION: PROVIDE ADEQUATE LOCAL EXHAUST AND/OR GENERAL MECHANICAL VENTILATION.

IF IT IS POSSIBLE TO GENERATE SIGNIFICANT LEVELS OF VAPORS, MISTS, OR DUSTS, A NIOSH APPROVED RESPIRATOR IS REQUIRED.

INGESTION: AVOID INGESTING THIS PRODUCT OR SUBSTANCE. WASH HANDS WITH SOAP AND WATER BEFORE EATING. ALSO WASH HANDS BEFORE SMOKING IN AREAS WHERE NO FIRE HAZARD EXISTS AND SMOKING IS PERMITTED.

PROMPTLY REMOVE NON-IMPERVIOUS CLOTHING THAT BECOMES CONTAMINATED.

WORK CLOTHING SHOULD BE CHANGED DAILY AFTER WORK IF THERE IS ANY POSSIBILITY THAT THE CLOTHING IS CONTAMINATED.

WHEN HANDLING BULK QUANTITIES OF THIS PRODUCT OR SUBSTANCE, PROVIDE A QUICK-DRENCH FULL BODY SHOWER IN THE IMMEDIATE WORK AREA

SHEET NUMBER: 761

AMMONIUM HYDROXIDE, 25-30% SOLUTION- AQUA AMMONIA



CONTACT THE FACILITY HAZARDOUS MATERIALS/WASTE COORDINATOR AT YOUR FACILITY FOR INFORMATION AND INSTRUCTIONS ON WASHING AND DISPOSAL OF CLOTHING CONTAMINATED WITH HAZARDOUS MATERIALS. THE NATURE OF THE TASK AND AMOUNT OF PRODUCT INVOLVED MAY AFFECT THE AMOUNT OF PROTECTIVE CLOTHING REQUIRED, HOWEVER, ALWAYS DRESS PREPARED FOR THE MAXIMUM PROBABLE EXPOSURE. WEAR GLOVES, BOOTS, APRON AND A FACE SHIELD WITH CHEMICAL SPLASH GOGGLES IF EXPOSURE IS EXPECTED. A FULL SLICKER SUIT IS RECOMMENDED IF GROSS EXPOSURE IS POSSIBLE.

\*\*\*  
\*\* FIRE CONTROL \*\*

WEAR SELF CONTAINED BREATHING APPARATUS (SCBA) AND FULL PROTECTIVE CLOTHING.  
USE CLASS "A" EXTINGUISHING MEDIA.  
USE WATER SPRAY TO COOL CONTAINER AND DISPERSE VAPORS.  
DO NOT USE CARBON DIOXIDE BASED EXTINGUISHING MEDIA, AS IT MAY REACT VIOLENTLY WITH THIS PRODUCT.

\*\*\*  
\*\* STORAGE REQUIREMENTS - POINT OF USE \*\*

THIS PRODUCT SHOULD BE STORED IN A CONTAINER THAT IS PROPERLY LABELED AND AS RECEIVED FROM THE MANUFACTURER.

\*\*\*  
\*\* STORAGE REQUIREMENTS - SITE STORAGE \*\*

THE SARA THRESHOLD PLANNING QUANTITY FOR THIS PRODUCT OR SUBSTANCE IS 500 LBS.  
IT SHOULD BE STORED AWAY FROM  
NONCOMPATIBLE PRODUCTS OR SUBSTANCES AND SOURCES OF IGNITION.  
KEEP CONTAINERS TIGHTLY SEALED WHEN NOT IN USE.

\*\*\*  
\*\* TRANSPORTATION REQUIREMENTS \*\*

THIS PRODUCT OR SUBSTANCE IS REGULATED. THE DOT SHIPPING NAME OF THE PRODUCT IS:  
AMMONIUM HYDROXIDE SOLUTION  
CONTAINS - AMMONIA  
THE UN/NA NUMBER OF THIS PRODUCT IS NA2672 .  
THE HAZARD CLASS OF THIS PRODUCT IS:  
CORROSIVE MATERIAL  
CONTAINERS OF THIS PRODUCT MUST BE LABELLED: 'CORROSIVE'.  
EACH PACKAGE OR CONTAINER MUST BE LABELED IN ACCORDANCE WITH APPLICABLE DEPARTMENT OF TRANSPORTATION REGULATIONS.  
MOTOR VEHICLES CARRYING MORE THAN 1000 POUNDS OR MORE THAN 110 GALLONS OF THIS SUBSTANCE MUST BE PLACARDED ON EACH SIDE AND END WITH PLACARDING THAT READS:  
'CORROSIVE'.

IF THIS PRODUCT OR SUBSTANCE IS TRANSPORTED WITH OTHER MATERIALS (EXCEPT THOSE LABELED AS 'CLASS A' OR 'CLASS B EXPLOSIVES', 'POISON GAS', 'DANGEROUS WHEN WET', OR 'RADIOACTIVE I, II OR III'), A 'DANGEROUS' PLACARD MAY BE SUBSTITUTED FOR INDIVIDUAL PLACARDS. OTHERWISE, INDIVIDUAL PLACARDS MUST BE USED ON THE VEHICLE.

SHEET NUMBER: 761

AMMONIUM HYDROXIDE, 25-30% SOLUTION- AQUA AMMONIA

PAGE



A SHIPPING PAPER IS REQUIRED FOR TRANSPORT OF THIS MATERIAL.

\*\*\*  
\*\* SPILL CLEAN-UP / DISPOSAL METHODS \*\*

SMALL SPILLS:

REMOVE ALL SOURCES OF IGNITION.

EVACUATE THE AREA IMMEDIATELY. WARN OTHERS.

DILUTE WITH THE REQUIRED AMOUNT OF WATER.

CONTAINERIZE WASTE PRODUCT.

LARGE SPILLS:

STOP SOURCE OF LEAKAGE. REMOVE ALL SOURCES OF IGNITION.

REENTER ONLY WITH PERSONAL PROTECTIVE EQUIPMENT.

DIKE OFF SPILL WITH EARTH, SAND, ETC.

CONTAINERIZE WASTE PRODUCT.

IF THIS PRODUCT OR SUBSTANCE BECOMES A WASTE, IT IS CLASSIFIED AS A HAZARDOUS WASTE ACCORDING TO EPA REGULATION, AND MUST BE RECYCLED OR DISPOSED OF AS A HAZARDOUS WASTE.

FOR THE ORIGINAL, UNDILUTED PRODUCT THE FOLLOWING IS TRUE:

THE EPA WASTE NUMBER OF THIS SUBSTANCE IS : D002 .

THE CATEGORY OF THIS SUBSTANCE IS : CORROSIVE .

THE REPORTABLE QUANTITY OF THIS SUBSTANCE IS:100 LBS.

NOTE: BEFORE DISPOSING OF EMPTY CONTAINERS, ENSURE COMPLIANCE WITH THE RCRA EMPTY RULE (HAZARDOUS MATERIALS AND WASTE MANAGEMENT MANUAL, SECTION 7.6.1).

\*\*\*  
\*\* FIRST AID \*\*

EYES: IF THIS PRODUCT OR SUBSTANCE GETS INTO THE EYES, IMMEDIATELY WASH THE EYES WITH LARGE AMOUNTS OF WATER OR EYEWASH SAFETY FLUID FOR 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER LIDS. IF THE EMPLOYEE IS WEARING CONTACT LENSES, IMMEDIATELY REMOVE THE CONTACT LENSES PRIOR TO FLUSHING THE EYES.

GET MEDICAL ATTENTION IMMEDIATELY.

SKIN: IF THIS PRODUCT OR SUBSTANCE GETS ON THE SKIN, PROMPTLY WASH THE CONTAMINATED SKIN WITH WATER. IF THIS PRODUCT OR SUBSTANCE SOAKS THROUGH THE CLOTHING, PROMPTLY REMOVE THE CLOTHING AND WASH THE AREA WITH WATER. IF IRRITATION PERSISTS AFTER WASHING, GET MEDICAL ATTENTION.

INHALATION: IF A PERSON BREATHE IN LARGE AMOUNTS OF THIS PRODUCT OR SUBSTANCE, MOVE THE EXPOSED PERSON TO FRESH AIR AT ONCE. IF BREATHING HAS STOPPED, PERFORM ARTIFICIAL RESPIRATION. KEEP THE AFFECTED PERSON WARM AND AT REST. GET MEDICAL ATTENTION AS SOON POSSIBLE.

INGESTION: IF THIS PRODUCT OR SUBSTANCE HAS BEEN SWALLOWED, AND THE PERSON IS CONSCIOUS, IMMEDIATELY GIVE THE PERSON LARGE QUANTITIES OF WATER TO DILUTE THE PRODUCT OR SUBSTANCE.

DO NOT ATTEMPT TO MAKE THE PERSON VOMIT. GET MEDICAL ATTENTION IMMEDIATELY.

DILUTED VINEGAR, LEMON, ORANGE, OR OTHER FRUIT JUICES MAY BE SUBSTITUTED FOR WATER. FOLLOW WITH EGG WHITES, OLIVE OIL, OR MILK.

MATERIAL SAFETY DATA SHEET  
PUBLIC SERVICE COMPANY OF COLORADO  
POST OFFICE BOX 840  
DENVER CO 80201  
24 HOUR EMERGENCY NUMBER (800) 541-0918  
MSDS INFORMATION (303) 628-2828

PSCO MATERIAL SAFETY DATA SHEET NUMBER: 2658  
THIS MSDS APPLIES TO IDENTIFICATION NUMBERS:  
09212114  
ORIGINAL ENTRY DATE: 081588                      LAST REVISION DATE: 061190  
PRODUCT TRADE NAME:  
50% CAUSTIC SODA-RAYON

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\*\* MANUFACTURER(S) \*\*  
DIAMOND SHAMROCK  
ASHLAND CHEMICAL COMPANY  
DOW CHEMICAL U.S.A.  
VAN WATERS & ROGERS INC.

-----  
\*\* HAZARDOUS COMPONENTS \*\*  
50 % SODIUM HYDROXIDE  
CAS: 1310-73-2  
THE OSHA LIMIT FOR THIS CHEMICAL IS 2 MG/M3 C .  
< 0.2 % SODIUM CARBONATE  
CAS: 497-19-8  
THIS IS NOT ON THE OSHA OR ACGIH LIST.  
<1.0 % SODIUM CHLORIDE  
CAS: 7647-14-5  
THIS IS NOT ON THE OSHA OR ACGIH LIST.  
< 0.2 % SODIUM CHLORATE  
CAS: 7775-09-9  
THIS IS NOT ON THE OSHA OR ACGIH LIST.  
balance % WATER  
CAS: 7732-18-5  
THIS IS NOT ON THE OSHA OR ACGIH LIST.

-----  
\*\* DESCRIPTION \*\*  
CLEAR LIQUID WITH NO ODOR

-----  
\*\* POTENTIAL HEALTH EFFECTS \*\*  
EYES: EYE CONTACT WITH THIS PRODUCT CAN CAUSE  
SEVERE TISSUE DAMAGE AND/OR BLINDNESS.  
SKIN: SHORT TERM SKIN CONTACT WITH SIGNIFICANT AMOUNTS  
OF THIS PRODUCT OR SUBSTANCE CAN CAUSE BURNS.  
AND OTHER TISSUE DAMAGE.  
INHALATION: BREATHING SIGNIFICANT CONCENTRATIONS OF DUSTS,  
MISTS, FUMES, VAPORS, OR GASEOUS FORMS OF PRODUCT, EVEN  
BRIEFLY, CAN CAUSE SEVERE TISSUE DAMAGE AND/OR LUNG DAMAGE.  
COULD PRODUCE CHEMICAL PNEUMONIA  
INGESTION: INGESTION OF THIS PRODUCT CAN PRODUCE  
SEVERE TISSUE DAMAGE.

SHEET NUMBER: 2658  
50% CAUSTIC SODA-RAYON

PAGE

COULD ALSO CAUSE PERFORATION OF THE ESOPHAGUS, THROAT AND STOMACH.

NOTE: THE SEVERITY OF EFFECTS CAUSED BY EXPOSURE TO THIS PRODUCT OR SUBSTANCE DEPENDS ON CONCENTRATION, DURATION OF EXPOSURE AND EFFECTIVENESS OF ANY FIRST AID TREATMENT REQUIRED.

-- -- -- -- --  
\*\* FIRE/EXPLOSION HAZARDS \*\*

NFPA HAZARD IDENTIFICATION - HEALTH: 3  
FLAMMABILITY: 0 REACTIVITY: 1 OTHER: 0

THIS PRODUCT HAS NO FLASHPOINT.

-- -- -- -- --  
\*\* REACTIVITY \*\*

THIS PRODUCT OR SUBSTANCE IS CONSIDERED TO BE STABLE. STABLE MATERIALS ARE THOSE THAT NORMALLY HAVE THE CAPACITY TO RESIST CHANGES IN THEIR CHEMICAL COMPOSITION.

DURING USE OF THIS PRODUCT AVOID:

AVOID DIRECT CONTACT WITH WATER. AVOID CONTACT WITH ALUMINUM, TIN, ZINC AND ALLOYS CONTAINING THESE MATERIALS. DO NOT MIX WITH STRONG ACIDS WITHOUT DILUTION AND AGITATION TO PREVENT VIOLENT OR EXPLOSIVE REACTION. AVOID CONTACT WITH LEATHER OR WOOL.

WHEN THIS PRODUCT OR SUBSTANCE IS HEATED TO A LEVEL WHERE IT DECOMPOSES, THE FOLLOWING COMPOUNDS ARE PRODUCED:  
NONE

WHEN LEFT ALONE, THIS PRODUCT WILL NOT REACT WITH ITSELF IN A HAZARDOUS MANNER.

-- -- -- -- --  
\*\* PERSONAL PROTECTIVE METHODS \*\*

EYES: IF THERE IS ANY POSSIBILITY OF EYE CONTACT WITH THIS PRODUCT OR SUBSTANCE, WEAR CHEMICAL SAFETY GOGGLES AND FULL-FACE SHIELD.

AN EYEWASH SHOULD BE PROVIDED IN THE IMMEDIATE WORK AREA.

SKIN: IF THERE IS ANY POSSIBILITY OF SKIN CONTACT WEAR IMPERVIOUS GLOVES.

INHALATION: PROVIDE ADEQUATE LOCAL EXHAUST VENTILATION. FOR HIGH CONCENTRATIONS, USE A RESPIRATOR

IF IT IS POSSIBLE TO GENERATE SIGNIFICANT LEVELS OF VAPORS, MISTS, OR DUSTS, A NIOSH APPROVED RESPIRATOR IS REQUIRED.

INGESTION: AVOID INGESTING THIS PRODUCT OR SUBSTANCE. WASH HANDS WITH SOAP AND WATER BEFORE EATING. ALSO WASH HANDS BEFORE SMOKING IN AREAS WHERE NO FIRE HAZARD EXISTS AND SMOKING IS PERMITTED.

WHEN HANDLING BULK QUANTITIES OF THIS PRODUCT OR SUBSTANCE, PROVIDE A QUICK-DRENCH FULL BODY SHOWER IN THE IMMEDIATE WORK AREA

CONTACT THE FACILITY HAZARDOUS MATERIALS/WASTE COORDINATOR AT YOUR FACILITY FOR INFORMATION AND INSTRUCTIONS ON WASHING AND DISPOSAL OF CLOTHING CONTAMINATED WITH HAZARDOUS MATERIALS.

THE NATURE OF THE TASK AND AMOUNT OF PRODUCT INVOLVED MAY AFFECT THE AMOUNT OF PROTECTIVE CLOTHING REQUIRED, HOWEVER, ALWAYS DRESS PREPARED FOR THE MAXIMUM PROBABLE EXPOSURE. WEAR GLOVES, BOOTS, APRON AND A FACE SHIELD WITH CHEMICAL SPLASH GOGGLES IF EXPOSURE IS EXPECTED. A FULL SLICKER SUIT IS RECOMMENDED IF GROSS EXPOSURE IS POSSIBLE.

---  
\*\* FIRE CONTROL \*\*

USE WATER SPRAY, FOAM, CARBON DIOXIDE, OR DRY CHEMICALS TO EXTINGUISH FIRES.

---  
\*\* STORAGE REQUIREMENTS - POINT OF USE \*\*

THIS PRODUCT SHOULD BE STORED IN A CONTAINER THAT IS PROPERLY LABELED.

---  
\*\* STORAGE REQUIREMENTS - SITE STORAGE \*\*

THERE IS NO SARA THRESHOLD PLANNING QUANTITY FOR THIS PRODUCT. IT SHOULD BE STORED AWAY FROM NONCOMPATIBLE MATERIALS. KEEP CONTAINERS TIGHTLY SEALED WHEN NOT IN USE.

---  
\*\* TRANSPORTATION REQUIREMENTS \*\*

THIS PRODUCT OR SUBSTANCE IS REGULATED. THE DOT SHIPPING NAME OF THE PRODUCT IS:

SODIUM HYDROXIDE SOLUTION

THE UN/NA NUMBER OF THIS PRODUCT IS UN1824 .

THE HAZARD CLASS OF THIS PRODUCT IS:

CORROSIVE MATERIAL

CONTAINERS OF THIS PRODUCT MUST BE LABELLED: 'CORROSIVE'.

EACH PACKAGE OR CONTAINER MUST BE LABELED IN ACCORDANCE WITH APPLICABLE DEPARTMENT OF TRANSPORTATION REGULATIONS.

MOTOR VEHICLES CARRYING MORE THAN 1000 POUNDS OR MORE THAN 110 GALLONS OF THIS SUBSTANCE MUST BE PLACARDED ON EACH SIDE AND END WITH PLACARDING THAT READS:

'CORROSIVE'.

IF THIS PRODUCT OR SUBSTANCE IS TRANSPORTED WITH OTHER MATERIALS (EXCEPT THOSE LABELED AS 'CLASS A' OR 'CLASS B EXPLOSIVES', 'POISON GAS', 'DANGEROUS WHEN WET', OR 'RADIOACTIVE I, II OR III'), A 'DANGEROUS' PLACARD MAY BE SUBSTITUTED FOR INDIVIDUAL PLACARDS. OTHERWISE, INDIVIDUAL PLACARDS MUST BE USED ON THE VEHICLE.

A SHIPPING PAPER IS REQUIRED FOR TRANSPORT OF THIS MATERIAL.

---  
\*\* SPILL CLEAN-UP / DISPOSAL METHODS \*\*

SMALL SPILLS:

SAME PROCEDURE AS LARGE SPILLS.

LARGE SPILLS:

CONTAINERIZE WASTE PRODUCT.

SPILLS SHOULD BE REMOVED BY USING A VACUUM TRUCK. NEUTRALIZE REMAINING TRACES OF MATERIAL WITH ANY DILUTE INORGANIC ACID SUCH AS HYDROCHLORIC, SULFURIC, NITRIC, PHOSPHORIC, AND ACETIC ACID.

IF THIS PRODUCT OR SUBSTANCE BECOMES A WASTE, IT IS CLASSIFIED AS A HAZARDOUS WASTE ACCORDING TO EPA REGULATION, AND MUST BE RECYCLED OR DISPOSED OF AS A HAZARDOUS WASTE. FOR THE ORIGINAL, UNDILUTED PRODUCT THE FOLLOWING IS TRUE: THE EPA WASTE NUMBER OF THIS SUBSTANCE IS : D002 . THE CATEGORY OF THIS SUBSTANCE IS : CORROSIVE . THE REPORTABLE QUANTITY OF THIS SUBSTANCE IS:1000 LBS. NOTE: BEFORE DISPOSING OF EMPTY CONTAINERS, ENSURE COMPLIANCE WITH THE RCRA EMPTY RULE (HAZARDOUS MATERIALS AND WASTE MANAGEMENT MANUAL, SECTION 7.6.1).

---  
\*\* FIRST AID \*\*

EYES: IF THIS PRODUCT OR SUBSTANCE GETS INTO THE EYES, IMMEDIATELY WASH THE EYES WITH LARGE AMOUNTS OF WATER OR EYEWASH SAFETY FLUID FOR 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER LIDS. IF THE EMPLOYEE IS WEARING CONTACT LENSES, IMMEDIATELY REMOVE THE CONTACT LENSES PRIOR TO FLUSHING THE EYES. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN: IF THIS PRODUCT OR SUBSTANCE GETS ON THE SKIN, IMMEDIATELY FLUSH THE CONTAMINATED SKIN WITH WATER. IF THIS PRODUCT OR SUBSTANCE PENETRATES THROUGH CLOTHING, IMMEDIATELY REMOVE THE CLOTHING AND FLUSH THE SKIN WITH WATER. GET MEDICAL ATTENTION PROMPTLY.

DISCARD FOOTWEAR WHICH CANNOT BE DECONTAMINATED.

INHALATION: IF A PERSON BREATHES IN LARGE AMOUNTS OF THIS PRODUCT OR SUBSTANCE, MOVE THE EXPOSED PERSON TO FRESH AIR AT ONCE. IF BREATHING HAS STOPPED, PERFORM ARTIFICIAL RESPIRATION. KEEP THE AFFECTED PERSON WARM AND AT REST. GET MEDICAL ATTENTION AS SOON POSSIBLE.

INGESTION: IF THIS PRODUCT OR SUBSTANCE HAS BEEN SWALLOWED, AND THE PERSON IS CONSCIOUS, IMMEDIATELY GIVE THE PERSON LARGE QUANTITIES OF WATER TO DILUTE THE PRODUCT OR SUBSTANCE. DO NOT ATTEMPT TO MAKE THE PERSON VOMIT. GET MEDICAL ATTENTION IMMEDIATELY.

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06/12/90  
END OF MSDS



MATERIAL SAFETY DATA SHEET  
PUBLIC SERVICE COMPANY OF COLORADO  
POST OFFICE BOX 840  
DENVER CO 80201  
24 HOUR EMERGENCY NUMBER (800) 541-0918  
MSDS INFORMATION (303) 628-2828

PSCO MATERIAL SAFETY DATA SHEET NUMBER: 1771  
THIS MSDS APPLIES TO IDENTIFICATION NUMBERS:  
09250233 09250209 09250217  
ORIGINAL ENTRY DATE: 042888 LAST REVISION DATE: 060789  
PRODUCT TRADE NAME:  
SULFURIC ACID

- - - - -  
\*\* MANUFACTURER(S) \*\*  
PHILLIPS CHEMICAL COMPANY ALLIED CHEMICAL COMPANY  
CHEMICAL MARKETING SERVICES VAN WATERS & ROGERS INC.  
J.T. BAKER CHEMICAL COMPANY  
GENERAL CHEMICAL  
TEXASGULF CHEMICALS ROHM AND HAAS COMPANY

- - - - -  
\*\* HAZARDOUS COMPONENTS \*\*  
93-98 % SULFURIC ACID  
CAS: 7664-93-9  
THE OSHA LIMIT FOR THIS CHEMICAL IS 1 MG/M3 .

- - - - -  
\*\* DESCRIPTION \*\*  
COLORLESS TO BROWNISH OILY LIQUID WITH NO ODOR

- - - - -  
\*\* POTENTIAL HEALTH EFFECTS \*\*  
EYES: CORROSIVE; DEVASTATING INJURY RESULTING IN GLAUCOMA, CATARACTS,  
EXTENSIVE DAMAGE TO CORNEA AND CONJUNCTIVA.  
SKIN: CORROSIVE; CAN BURN AND CHAR THE SKIN WHICH CAN LEAD TO  
SCARRING  
INHALATION: BREATHING SIGNIFICANT CONCENTRATIONS OF DUSTS,  
MISTS, FUMES, VAPORS, OR GASEOUS FORMS OF PRODUCT, EVEN  
BRIEFLY, CAN CAUSE COUGHING, SEVERE IRRITATION, SWELLING  
AND/OR ASPHYXIATION.  
INGESTION: CORROSIVE TO TISSUES; IMMEDIATE PAIN WHEN TAKEN INTO THE  
MOUTH AS WELL AS SPASM OF THE LARYNX, TRACHEA, AND BRONCHI.  
EPIGASTRIC PAIN, NAUSEA, VOMITING INTENSE THIRST, CIRCULATORY  
COLLAPSE, PERFORATION OF THE TRACHEA OR STOMACH, AND DEATH.  
NOTE: THE SEVERITY OF EFFECTS CAUSED BY EXPOSURE TO THIS PRODUCT OR  
SUBSTANCE DEPENDS ON CONCENTRATION, DURATION OF EXPOSURE AND  
EFFECTIVENESS OF ANY FIRST AID TREATMENT REQUIRED.

- - - - -  
\*\* FIRE/EXPLOSION HAZARDS \*\*  
NFPA HAZARD IDENTIFICATION - HEALTH: 3  
FLAMMABILITY: 0 REACTIVITY: 2 OTHER: 0

THIS PRODUCT HAS NO FLASHPOINT.  
CAN CAUSE IGNITION ON CONTACT WITH COMBUSTIBLES. EXOTHERMIC

WITH WATER. SULFURIC OXIDES AND HYDROGEN GAS MAY BE RELEASED AS DECOMPOSITION PRODUCTS.

\*\*\*  
\*\* REACTIVITY \*\*

THIS PRODUCT OR SUBSTANCE IS CONSIDERED TO BE STABLE. STABLE MATERIALS ARE THOSE THAT NORMALLY HAVE THE CAPACITY TO RESIST CHANGES IN THEIR CHEMICAL COMPOSITION.

DURING USE OF THIS PRODUCT AVOID:

AVOID OXIDIZING OR REDUCING MATERIALS, METALS, COMBUSTIBLE MATERIALS AND MOISTURE. DO NOT ADD WATER TO THE PRODUCT.

WHEN THIS PRODUCT OR SUBSTANCE IS HEATED TO A LEVEL WHERE IT DECOMPOSES, THE FOLLOWING COMPOUNDS ARE PRODUCED:

SULFURIC ACID MISTS AND SULFUR OXIDES. HYDROGEN GAS CAN BE GENERATED AS A DECOMPOSITION PRODUCT WHICH IS FLAMMABLE.

WHEN LEFT ALONE, THIS PRODUCT WILL NOT REACT WITH ITSELF IN A HAZARDOUS MANNER.

\*\*\*  
\*\* PERSONAL PROTECTIVE METHODS \*\*

EYES: IF THERE IS ANY POSSIBILITY OF EYE CONTACT WITH THIS PRODUCT OR SUBSTANCE, WEAR CHEMICAL SAFETY GOGGLES AND FULL-FACE SHIELD.

AN EYEWASH SHOULD BE PROVIDED IN THE IMMEDIATE WORK AREA.

SKIN: IF THERE IS ANY POSSIBILITY OF SKIN CONTACT WEAR IMPERVIOUS GLOVES.

INHALATION: PROVIDE ADEQUATE GENERAL MECHANICAL VENTILATION. FOR HIGH CONCENTRATIONS, USE A RESPIRATOR

IF IT IS POSSIBLE TO GENERATE SIGNIFICANT LEVELS OF VAPORS, MISTS, OR DUSTS, A NIOSH APPROVED RESPIRATOR IS REQUIRED.

INGESTION: AVOID INGESTING THIS PRODUCT OR SUBSTANCE. WASH HANDS WITH SOAP AND WATER BEFORE EATING. ALSO WASH HANDS BEFORE SMOKING IN AREAS WHERE NO FIRE HAZARD EXISTS AND SMOKING IS PERMITTED.

WHEN HANDLING BULK QUANTITIES OF THIS PRODUCT OR SUBSTANCE, PROVIDE A QUICK-DRENCH FULL BODY SHOWER IN THE IMMEDIATE WORK AREA

CONTACT THE FACILITY HAZARDOUS MATERIALS/WASTE COORDINATOR AT YOUR FACILITY FOR INFORMATION AND INSTRUCTIONS ON WASHING AND DISPOSAL OF CLOTHING CONTAMINATED WITH HAZARDOUS MATERIALS.

THE NATURE OF THE TASK AND AMOUNT OF PRODUCT INVOLVED MAY AFFECT THE AMOUNT OF PROTECTIVE CLOTHING REQUIRED, HOWEVER, ALWAYS DRESS PREPARED FOR THE MAXIMUM PROBABLE EXPOSURE. WEAR GLOVES, BOOTS, APRON AND A FACE SHIELD WITH CHEMICAL SPLASH GOGGLES IF EXPOSURE IS EXPECTED. A FULL SLICKER SUIT IS RECOMMENDED IF GROSS EXPOSURE IS POSSIBLE.

\*\*\*  
\*\* FIRE CONTROL \*\*

USE CLASS "B" EXTINGUISHING MEDIA.

\*\*\*  
\*\* STORAGE REQUIREMENTS - POINT OF USE \*\*

SHEET NUMBER: 1771  
SULFURIC ACID

PAGE

THIS PRODUCT SHOULD BE STORED IN A CONTAINER THAT IS PROPERLY LABELED.

-- -- -- -- --  
\*\* STORAGE REQUIREMENTS - SITE STORAGE \*\*

THE SARA THRESHOLD PLANNING QUANTITY FOR THIS PRODUCT OR SUBSTANCE IS 1000 LBS.

IT SHOULD BE STORED AWAY FROM NONCOMPATIBLE MATERIALS AND SOURCES OF IGNITION.

KEEP CONTAINERS TIGHTLY SEALED WHEN NOT IN USE.

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\*\* TRANSPORTATION REQUIREMENTS \*\*

THIS PRODUCT OR SUBSTANCE IS REGULATED. THE DOT SHIPPING NAME OF THE PRODUCT IS:

SULFURIC ACID

THE UN/NA NUMBER OF THIS PRODUCT IS UN1830 .

THE HAZARD CLASS OF THIS PRODUCT IS:

CORROSIVE MATERIAL

CONTAINERS OF THIS PRODUCT MUST BE LABELLED: 'CORROSIVE'.

EACH PACKAGE OR CONTAINER MUST BE LABELED IN ACCORDANCE WITH APPLICABLE DEPARTMENT OF TRANSPORTATION REGULATIONS.

MOTOR VEHICLES CARRYING MORE THAN 1000 POUNDS OR MORE THAN 110 GALLONS OF THIS SUBSTANCE MUST BE PLACARDED ON EACH SIDE AND END WITH PLACARDING THAT READS:

'CORROSIVE'.

IF THIS PRODUCT OR SUBSTANCE IS TRANSPORTED WITH OTHER MATERIALS (EXCEPT THOSE LABELED AS 'CLASS A' OR 'CLASS B EXPLOSIVES',

'POISON GAS', 'DANGEROUS WHEN WET', OR 'RADIOACTIVE I, II

OR III'), A 'DANGEROUS' PLACARD MAY BE SUBSTITUTED FOR INDIVIDUAL PLACARDS. OTHERWISE, INDIVIDUAL PLACARDS MUST BE USED ON THE VEHICLE.

A SHIPPING PAPER IS REQUIRED FOR TRANSPORT OF THIS MATERIAL.

-- -- -- -- --  
\*\* SPILL CLEAN-UP / DISPOSAL METHODS \*\*

SMALL SPILLS:

SAME PROCEDURE AS LARGE SPILLS.

LARGE SPILLS:

DIKE OFF SPILL WITH EARTH, SAND, ETC.

NEUTRALIZE WITH REQUIRED AMOUNT OF BASE.

CONTAINERIZE WASTE PRODUCT.

DON'T FLUSH TO A SEWER OR WATER SUPPLY.

PROTECT FROM CONTACT WITH COMBUSTIBLES

IF THIS PRODUCT OR SUBSTANCE BECOMES A WASTE, IT IS CLASSIFIED AS A HAZARDOUS WASTE ACCORDING TO EPA REGULATION, AND MUST BE RECYCLED OR DISPOSED OF AS A HAZARDOUS WASTE.

FOR THE ORIGINAL, UNDILUTED PRODUCT THE FOLLOWING IS TRUE:

THE EPA WASTE NUMBER OF THIS SUBSTANCE IS : D002 .

THE CATEGORY OF THIS SUBSTANCE IS : CORROSIVE .

THE REPORTABLE QUANTITY OF THIS SUBSTANCE IS:1000 LBS.

NOTE: BEFORE DISPOSING OF EMPTY CONTAINERS, ENSURE COMPLIANCE WITH THE RCRA EMPTY RULE (HAZARDOUS MATERIALS AND WASTE MANAGEMENT MANUAL, SECTION 7.6.1).

-----  
\*\* FIRST AID \*\*

EYES: IF THIS PRODUCT OR SUBSTANCE GETS INTO THE EYES, IMMEDIATELY WASH THE EYES WITH LARGE AMOUNTS OF WATER OR EYEWASH SAFETY FLUID FOR 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER LIDS. IF THE EMPLOYEE IS WEARING CONTACT LENSES, IMMEDIATELY REMOVE THE CONTACT LENSES PRIOR TO FLUSHING THE EYES. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN: IF THIS PRODUCT OR SUBSTANCE GETS ON THE SKIN, IMMEDIATELY FLUSH THE CONTAMINATED SKIN WITH WATER. IF THIS PRODUCT OR SUBSTANCE PENETRATES THROUGH CLOTHING, IMMEDIATELY REMOVE THE CLOTHING AND FLUSH THE SKIN WITH WATER. GET MEDICAL ATTENTION PROMPTLY.

TRE, / OR SHOCK AS NECESSARY.

INHALATION: IF A PERSON BREATHE IN LARGE AMOUNTS OF THIS PRODUCT OR SUBSTANCE, MOVE THE EXPOSED PERSON TO FRESH AIR AT ONCE. IF BREATHING HAS STOPPED, PERFORM ARTIFICIAL RESPIRATION. KEEP THE AFFECTED PERSON WARM AND AT REST. GET MEDICAL ATTENTION AS SOON POSSIBLE.

INGESTION: IF THIS PRODUCT OR SUBSTANCE HAS BEEN SWALLOWED, DO NOT INDUCE VOMITING. GET MEDICAL ATTENTION IMMEDIATELY. IF VOMITUS IS BLOODY, DO NOT ATTEMPT TO GIVE ANYTHING BY MOUTH OTHERWISE, RINSE VICTIMS MOUTH AND LIPS AND ASSIST VICTIM IN DRINKING LARGE AMOUNTS OF WATER. DO NOT ATTEMPT NEUTRALIZATION

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04/27/90  
END OF MSDS

MATERIAL SAFETY DATA SHEET  
PUBLIC SERVICE COMPANY OF COLORADO  
POST OFFICE BOX 840  
DENVER CO 80201  
24 HOUR EMERGENCY NUMBER (800) 541-0918  
MSDS INFORMATION (303) 628-2828

PSCO MATERIAL SAFETY DATA SHEET NUMBER: 2502  
THIS MSDS APPLIES TO IDENTIFICATION NUMBERS:  
09242890 09241513 09241505  
ORIGINAL ENTRY DATE: 081588 LAST REVISION DATE: 061589  
PRODUCT TRADE NAME:  
HTH INDUSTRIAL AND COMMERCIAL TABLETS

\*\*\*  
\*\* MANUFACTURER(S) \*\*

OLIN CORPORATION  
PPG INDUSTRIES, INC.

\*\*\*  
\*\* HAZARDOUS COMPONENTS \*\*

100 % CALCIUM HYPOCHLORITE  
CAS: 7778-54-3

THIS IS NOT ON THE OSHA OR ACGIH LIST.

\*\*\*  
\*\* DESCRIPTION \*\*

WHITE TABLETS WITH CHLORINE ODOR

\*\*\*  
\*\* POTENTIAL HEALTH EFFECTS \*\*

EYES: EYE CONTACT WITH THIS PRODUCT CAN CAUSE SEVERE IRRITATION.

SKIN: SHORT TERM SKIN CONTACT WITH SIGNIFICANT AMOUNTS  
OF THIS PRODUCT OR SUBSTANCE CAN CAUSE IRRITATION.

REDNESS, PAIN. CORROSIVE TO ALL TISSUES CONTACTED.

REPEATED OR PROLONGED SKIN CONTACT CAN PRODUCE  
INFLAMMATION OF THE SKIN.

INHALATION: BREATHING SIGNIFICANT CONCENTRATIONS OF DUSTS,  
MISTS, FUMES, VAPORS, OR GASEOUS FORMS OF PRODUCT, EVEN  
BRIEFLY, CAN CAUSE IRRITATION.

CORROSIVE TO ALL TISSUES CONTACTED

INGESTION: INGESTION OF THIS PRODUCT CAN PRODUCE  
NAUSEA OR VOMITING.

CORROSIVE TO ALL TISSUES CONTACTED. MAY CAUSE CONSTRICTION  
OF THROAT, BREATHING DIFFICULTY, AND PERFORATION OF THE GUT.

NOTE: THE SEVERITY OF EFFECTS CAUSED BY EXPOSURE TO THIS PRODUCT OR  
SUBSTANCE DEPENDS ON CONCENTRATION, DURATION OF EXPOSURE AND  
EFFECTIVENESS OF ANY FIRST AID TREATMENT REQUIRED.

\*\*\*  
\*\* FIRE/EXPLOSION HAZARDS \*\*

NFPA HAZARD IDENTIFICATION - HEALTH: 2  
FLAMMABILITY: 0 REACTIVITY: 2 OTHER: 0

THIS PRODUCT HAS NO FLASHPOINT.

\*\*\*  
\*\* REACTIVITY \*\*



THIS PRODUCT OR SUBSTANCE IS CONSIDERED TO BE UNSTABLE.  
UNSTABLE MATERIALS ARE CAPABLE OF UNDERGOING VIOLENT CHEMICAL  
CHANGE OR REACTION.

CONDITIONS TO AVOID DURING USE:

DO NOT MIX WITH ANYTHING BUT WATER

MATERIALS NOT COMPATIBLE WITH THIS PRODUCT INCLUDE:

INORGANIC ACIDS, ORGANIC ACIDS, ORGANIC COMPOUNDS  
, ORGANIC SOLVENTS.

ALSO NOT COMPATIBLE WITH:

ALSO AVOID POOL CHEMICALS (SPECIFICALLY ISOCYANURATES)

WHEN THIS PRODUCT OR SUBSTANCE IS HEATED TO A LEVEL WHERE IT  
DECOMPOSES, THE FOLLOWING COMPOUNDS ARE PRODUCED:

CHLORINE GAS

WHEN LEFT ALONE, THIS PRODUCT WILL NOT REACT WITH ITSELF IN A  
HAZARDOUS MANNER.

-- -- -- -- --  
\*\* PERSONAL PROTECTIVE METHODS \*\*

EYES: IF THERE IS ANY POSSIBILITY OF EYE CONTACT WITH  
THIS PRODUCT OR SUBSTANCE, WEAR CHEMICAL SAFETY GOGGLES.

SKIN: IF THERE IS ANY POSSIBILITY OF SKIN CONTACT

WEAR IMPERVIOUS PANTS AND JACKET OR COVERALLS, IMPERVIOUS BOOTS  
AND IMPERVIOUS GLOVES.

WASH PROMPTLY WHEN SKIN BECOMES CONTAMINATED.

INHALATION: PROVIDE ADEQUATE LOCAL EXHAUST VENTILATION.

IF IT IS POSSIBLE TO GENERATE SIGNIFICANT LEVELS OF VAPORS,  
MISTS, OR DUSTS, A NIOSH APPROVED RESPIRATOR IS REQUIRED.

INGESTION: AVOID INGESTING THIS PRODUCT OR SUBSTANCE. WASH  
HANDS WITH SOAP AND WATER BEFORE EATING. ALSO WASH HANDS  
BEFORE SMOKING IN AREAS WHERE NO FIRE HAZARD EXISTS AND  
SMOKING IS PERMITTED.

PROMPTLY REMOVE NON-IMPERVIOUS CLOTHING THAT BECOMES  
CONTAMINATED.

WORK CLOTHING SHOULD BE CHANGED DAILY AFTER WORK IF THERE IS  
ANY POSSIBILITY THAT THE CLOTHING IS CONTAMINATED.

CONTACT THE FACILITY HAZARDOUS MATERIALS/WASTE COORDINATOR AT  
YOUR FACILITY FOR INFORMATION AND INSTRUCTIONS ON WASHING AND  
DISPOSAL OF CLOTHING CONTAMINATED WITH HAZARDOUS MATERIALS.

THE NATURE OF THE TASK AND AMOUNT OF PRODUCT INVOLVED MAY AFFECT  
THE AMOUNT OF PROTECTIVE CLOTHING REQUIRED, HOWEVER, ALWAYS  
DRESS PREPARED FOR THE MAXIMUM PROBABLE EXPOSURE. WEAR GLOVES,  
BOOTS, APRON AND A FACE SHIELD WITH CHEMICAL SPLASH GOGGLES IF  
EXPOSURE IS EXPECTED. A FULL SLICKER SUIT IS RECOMMENDED IF  
GROSS EXPOSURE IS POSSIBLE.

-- -- -- -- --  
\*\* FIRE CONTROL \*\*

WEAR SELF CONTAINED BREATHING APPARATUS (SCBA) AND FULL  
PROTECTIVE CLOTHING.

USE CLASS "A" EXTINGUISHING MEDIA.

USE WATER SPRAY TO COOL CONTAINER AND DISPERSE VAPORS.

FIRE TEMPERATURES MAY CAUSE CONTAINERS TO EXPLODE.

-- -- -- -- --  
\*\* STORAGE REQUIREMENTS - POINT OF USE \*\*

THIS PRODUCT SHOULD BE STORED IN A CONTAINER THAT IS  
PROPERLY LABELED AND AS RECEIVED FROM THE MANUFACTURER.

-- -- -- -- --  
\*\* STORAGE REQUIREMENTS - SITE STORAGE \*\*

THERE IS NO SARA THRESHOLD PLANNING QUANTITY FOR THIS PRODUCT.  
THE CONTAINER SHOULD BE STORED IN A PLACE THAT IS COOL, DRY  
AND WELL-VENTILATED.

IT SHOULD BE STORED AWAY FROM NONCOMPATIBLE MATERIALS,  
SOURCES OF IGNITION AND SOURCES OF HEAT,  
COMBUSTIBLE CHEMICALS

KEEP CONTAINERS TIGHTLY SEALED WHEN NOT IN USE.

-- -- -- -- --  
\*\* TRANSPORTATION REQUIREMENTS \*\*

THIS PRODUCT OR SUBSTANCE IS REGULATED. THE DOT SHIPPING  
NAME OF THE PRODUCT IS:

CALCIUM HYPOCHLORITE, HYDRATED

THE UN/NA NUMBER OF THIS PRODUCT IS UN2880 .

THE HAZARD CLASS OF THIS PRODUCT IS:

OXIDIZER

CONTAINERS OF THIS PRODUCT MUST BE LABELLED: 'OXIDIZER'.

EACH PACKAGE OR CONTAINER MUST BE LABELED IN ACCORDANCE WITH  
APPLICABLE DEPARTMENT OF TRANSPORTATION REGULATIONS.

MOTOR VEHICLES CARRYING MORE THAN 1000 POUNDS OR MORE THAN  
110 GALLONS OF THIS SUBSTANCE MUST BE PLACARDED ON EACH SIDE  
AND END WITH PLACARDING THAT READS:

'OXIDIZER'.

IF THIS PRODUCT OR SUBSTANCE IS TRANSPORTED WITH OTHER MATERIALS  
(EXCEPT THOSE LABELED AS 'CLASS A' OR 'CLASS B EXPLOSIVES',  
'POISON GAS', 'DANGEROUS WHEN WET', OR 'RADIOACTIVE I, II  
OR III'), A 'DANGEROUS' PLACARD MAY BE SUBSTITUTED FOR  
INDIVIDUAL PLACARDS. OTHERWISE, INDIVIDUAL PLACARDS MUST BE  
USED ON THE VEHICLE.

A SHIPPING PAPER IS REQUIRED FOR TRANSPORT OF THIS MATERIAL.

-- -- -- -- --  
\*\* SPILL CLEAN-UP / DISPOSAL METHODS \*\*

SMALL SPILLS:

REMOVE ALL SOURCES OF IGNITION. SWEEP UP PRODUCT OR SUBSTANCE.  
CONTAINERIZE WASTE PRODUCT.

MINIMIZE CONTACT BETWEEN PRODUCT AND ORGANIC MATERIALS.

LARGE SPILLS:

REMOVE ALL SOURCES OF IGNITION.

VENTILATE COMPLETELY OR USE AN APPROPRIATE RESPIRATOR.

REENTER ONLY WITH PERSONAL PROTECTIVE EQUIPMENT.

CONTAINERIZE WASTE PRODUCT.

DON'T FLUSH TO A SEWER OR WATER SUPPLY.

CALL EMERGENCY CONTACT NUMBER. MINIMIZE CONTACT BETWEEN  
PRODUCT AND ORGANIC MATERIALS

IF THIS PRODUCT OR SUBSTANCE BECOMES A WASTE, IT IS CLASSIFIED

SHEET NUMBER: 2502  
HTH INDUSTRIAL AND COMMERCIAL TABLETS

PAGE

AS A HAZARDOUS WASTE ACCORDING TO EPA REGULATION, AND MUST  
BE RECYCLED OR DISPOSED OF AS A HAZARDOUS WASTE.  
FOR THE ORIGINAL, UNDILUTED PRODUCT THE FOLLOWING IS TRUE:  
THE EPA WASTE NUMBER OF THIS SUBSTANCE IS : D003 .  
THE CATEGORY OF THIS SUBSTANCE IS : REACTIVE .  
THE REPORTABLE QUANTITY OF THIS SUBSTANCE IS:10 LBS.  
NOTE: BEFORE DISPOSING OF EMPTY CONTAINERS, ENSURE COMPLIANCE WITH  
THE RCRA EMPTY RULE (HAZARDOUS MATERIALS AND WASTE MANAGEMENT  
MANUAL, SECTION 7.6.1).

---  
\*\* FIRST AID \*\*

EYES: IF THIS PRODUCT OR SUBSTANCE GETS INTO THE EYES,  
IMMEDIATELY WASH THE EYES WITH LARGE AMOUNTS OF WATER OR EYEWASH  
SAFETY FLUID FOR 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER  
LIDS. IF THE EMPLOYEE IS WEARING CONTACT LENSES, IMMEDIATELY  
REMOVE THE CONTACT LENSES PRIOR TO FLUSHING THE EYES.

GET MEDICAL ATTENTION IMMEDIATELY.

SKIN: IF THIS PRODUCT OR SUBSTANCE GETS ON THE SKIN,  
FLUSH THE CONTAMINATED SKIN WITH WATER. IF THIS PRODUCT OR  
SUBSTANCE SOAKS THROUGH THE CLOTHING, IMMEDIATELY REMOVE  
THE CLOTHING AND FLUSH SKIN WITH WATER. IF IRRITATION PERSISTS  
AFTER WASHING, GET MEDICAL ATTENTION.

INHALATION: IF A PERSON BREATHE IN LARGE AMOUNTS OF THIS PRODUCT  
OR SUBSTANCE, MOVE THE EXPOSED PERSON TO FRESH AIR AT ONCE. IF  
SYMPTOMS PERSIST, SEEK MEDICAL ATTENTION.

INGESTION: IF THIS PRODUCT OR SUBSTANCE HAS BEEN SWALLOWED, AND  
THE PERSON IS CONSCIOUS, IMMEDIATELY GIVE THE PERSON LARGE  
QUANTITIES OF WATER TO DILUTE THE PRODUCT OR SUBSTANCE.

DO NOT ATTEMPT TO MAKE THE PERSON VOMIT. GET MEDICAL ATTENTION  
IMMEDIATELY.

---  
05/09/90  
END OF MSDS

MATERIAL SAFETY DATA SHEET  
PUBLIC SERVICE COMPANY OF COLORADO  
POST OFFICE BOX 840  
DENVER CO 80201  
24 HOUR EMERGENCY NUMBER (800) 541-0918  
MSDS INFORMATION (303) 628-2828

PSCO MATERIAL SAFETY DATA SHEET NUMBER: 4983  
THIS MSDS APPLIES TO IDENTIFICATION NUMBERS:  
0924153

ORIGINAL ENTRY DATE: 072490  
PRODUCT TRADE NAME:  
HALOCIDE

LAST REVISION DATE: 072490

-----  
\*\* MANUFACTURER(S) \*\*  
ROSS CHEMICAL INC.

-----  
\*\* HAZARDOUS COMPONENTS \*\*  
60 % 1-BROMO-3-CHLORO-5,5-DIMETHYLHYDANTOIN  
CAS: 126-06-7  
THIS IS NOT ON THE OSHA OR ACGIH LIST.  
27.4 % 1,3-DICHLORO-5,5-DIMETHYLHYDANTOIN  
CAS: 118-52-5  
THE OSHA LIMIT FOR THIS CHEMICAL IS .2 MG/M3 .  
10.6 % 1,3-DICHLORO-5-ETHYL-5-METHYLHYDANTOIN  
CAS: 89415-87-2  
THIS IS NOT ON THE OSHA OR ACGIH LIST.

-----  
\*\* DESCRIPTION \*\*  
OFF WHITE GRANULAR SOLID WITH A SLIGHT PUNGENT ODOR.

-----  
\*\* POTENTIAL HEALTH EFFECTS \*\*  
EYES: EYE CONTACT WITH THIS PRODUCT CAN CAUSE SEVERE IRRITATION AND/OR SEVERE TISSUE DAMAGE.  
CONTACT CAN PRODUCE IRREVERSIBLE CELLULAR DAMAGE. THIS PRODUCT IS CORROSIVE TO EYES.  
SKIN: SHORT TERM SKIN CONTACT WITH SIGNIFICANT AMOUNTS OF THIS PRODUCT OR SUBSTANCE CAN CAUSE IRRITATION AND/OR BURNS. PRODUCT IS CORROSIVE TO SKIN. REPETITIVE SKIN EXPOSURE CAN CAUSE SENSITIZATION.  
REPEATED OR PROLONGED SKIN CONTACT CAN PRODUCE AN ALLERGIC REACTION AND/OR BURNS.  
INHALATION: BREATHING SIGNIFICANT CONCENTRATIONS OF DUSTS, MISTS, FUMES, VAPORS, OR GASEOUS FORMS OF PRODUCT, EVEN BRIEFLY, CAN CAUSE SEVERE IRRITATION AND/OR SEVERE TISSUE DAMAGE. SYSTEMIC ABSORPTION MAY OCCUR.  
INGESTION: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE HEALTH EFFECTS RESULTING FROM INGESTION OF THIS PRODUCT, OR HAS INDICATED NO HARMFUL EFFECTS RESULT FROM INGESTION OF THE PRODUCT.

NOTE: THE SEVERITY OF EFFECTS CAUSED BY EXPOSURE TO THIS PRODUCT OF



SHEET NUMBER: 4983  
HALOCIDE

PAGE 1

SUBSTANCE DEPENDS ON CONCENTRATION, DURATION OF EXPOSURE AND EFFECTIVENESS OF ANY FIRST AID TREATMENT REQUIRED.

---  
\*\* FIRE/EXPLOSION HAZARDS \*\*

NFPA HAZARD IDENTIFICATION - HEALTH: U  
FLAMMABILITY: U REACTIVITY: U OTHER: 0  
NOTE: U = UNKNOWN

THIS PRODUCT HAS NO FLASHPOINT.  
PRODUCT DECOMPOSES AT 165 DEG C. MATERIAL IS  
COMBUSTIBLE IN A FIRE.

---  
\*\* REACTIVITY \*\*

THIS PRODUCT OR SUBSTANCE IS CONSIDERED TO BE STABLE. STABLE MATERIALS ARE THOSE THAT NORMALLY HAVE THE CAPACITY TO RESIST CHANGES IN THEIR CHEMICAL COMPOSITION.

CONDITIONS TO AVOID DURING USE:

HIGH TEMPERATURES AND MOISTURE DURING STORAGE.

MATERIALS NOT COMPATIBLE WITH THIS PRODUCT INCLUDE:

INORGANIC ACIDS, INORGANIC BASES, ORGANIC COMPOUNDS.

WHEN THIS PRODUCT OR SUBSTANCE IS HEATED TO A LEVEL WHERE IT DECOMPOSES, THE FOLLOWING COMPOUNDS ARE PRODUCED:

NOXIOUS GASES.

WHEN LEFT ALONE, THIS PRODUCT WILL NOT REACT WITH ITSELF IN A HAZARDOUS MANNER.

---  
\*\* PERSONAL PROTECTIVE METHODS \*\*

EYES: IF THERE IS ANY POSSIBILITY OF EYE CONTACT WITH THIS PRODUCT OR SUBSTANCE, WEAR CHEMICAL SAFETY GOGGLES. AN EYEWASH SHOULD BE PROVIDED IN THE IMMEDIATE WORK AREA.

SKIN: IF THERE IS ANY POSSIBILITY OF SKIN CONTACT WEAR IMPERVIOUS GLOVES.

USE ADDITIONAL PROTECTION TO PROTECT SKIN FROM REPEATED OR PROLONGED EXPOSURE.

WASH IMMEDIATELY WHEN SKIN BECOMES CONTAMINATED.

INHALATION: PROVIDE ADEQUATE LOCAL EXHAUST VENTILATION.

IF IT IS POSSIBLE TO GENERATE SIGNIFICANT LEVELS OF VAPORS, MISTS, OR DUSTS, A NIOSH APPROVED RESPIRATOR IS REQUIRED.

INGESTION: AVOID INGESTING THIS PRODUCT OR SUBSTANCE. WASH HANDS WITH SOAP AND WATER BEFORE EATING. ALSO WASH HANDS BEFORE SMOKING IN AREAS WHERE NO FIRE HAZARD EXISTS AND SMOKING IS PERMITTED.

IMMEDIATELY REMOVE ANY CLOTHING THAT BECOMES CONTAMINATED.

WORK CLOTHING SHOULD BE CHANGED DAILY AFTER WORK IF THERE IS ANY POSSIBILITY THAT THE CLOTHING IS CONTAMINATED.

WHEN HANDLING BULK QUANTITIES OF THIS PRODUCT OR SUBSTANCE, PROVIDE A QUICK-DRENCH FULL BODY SHOWER IN THE IMMEDIATE WORK AREA

CONTACT THE FACILITY HAZARDOUS MATERIALS/WASTE COORDINATOR AT



YOUR FACILITY FOR INFORMATION AND INSTRUCTIONS ON WASHING AND DISPOSAL OF CLOTHING CONTAMINATED WITH HAZARDOUS MATERIALS. THE NATURE OF THE TASK AND AMOUNT OF PRODUCT INVOLVED MAY AFFECT THE AMOUNT OF PROTECTIVE CLOTHING REQUIRED, HOWEVER, ALWAYS DRESS PREPARED FOR THE MAXIMUM PROBABLE EXPOSURE. WEAR GLOVES, BOOTS, APRON, AND A FACE SHIELD WITH CHEMICAL SPLASH GOGGLES IF EXPOSURE IS EXPECTED. A FULL SLICKER SUIT IS RECOMMENDED IF GROSS EXPOSURE IS POSSIBLE.

\*\*\*\*\*  
\*\* FIRE CONTROL \*\*

WEAR SELF CONTAINED BREATHING APPARATUS (SCBA) AND FULL PROTECTIVE CLOTHING.  
USE CLASS "B" EXTINGUISHING MEDIA.  
USE WATER SPRAY TO COOL CONTAINER AND DISPERSE VAPORS.  
FIRE TEMPERATURES MAY PRODUCE TOXIC BY-PRODUCTS.  
WATER FOG MAY ALSO BE USED TO CONTROL FIRE.

\*\*\*\*\*  
\*\* STORAGE REQUIREMENTS - POINT OF USE \*\*

THIS PRODUCT SHOULD BE STORED IN A CONTAINER THAT IS PROPERLY LABELED AND AS RECEIVED FROM THE MANUFACTURER.

\*\*\*\*\*  
\*\* STORAGE REQUIREMENTS - SITE STORAGE \*\*

THERE IS NO SARA THRESHOLD PLANNING QUANTITY FOR THIS PRODUCT. THE CONTAINER SHOULD BE STORED IN A PLACE THAT IS COOL AND DRY. IT SHOULD BE STORED AWAY FROM NONCOMPATIBLE MATERIALS AND SOURCES OF HEAT.  
KEEP CONTAINERS TIGHTLY SEALED WHEN NOT IN USE.

\*\*\*\*\*  
\*\* TRANSPORTATION REQUIREMENTS \*\*

THIS PRODUCT OR SUBSTANCE IS REGULATED. THE DOT SHIPPING NAME OF THE PRODUCT IS:

OXIDIZER, CORROSIVE, SOLID, N.O.S.  
CONTAINS - 1-BROMO-3-CHLORO 5,5-DIMETHYLHYDANTOIN  
THE UN/NA NUMBER OF THIS PRODUCT IS NA9194 .  
THE HAZARD CLASS OF THIS PRODUCT IS:

OXIDIZER

CONTAINERS OF THIS PRODUCT MUST BE LABELLED: 'CORROSIVE' AND 'OXIDIZER'.

EACH PACKAGE OR CONTAINER MUST BE LABELED IN ACCORDANCE WITH APPLICABLE DEPARTMENT OF TRANSPORTATION REGULATIONS.

MOTOR VEHICLES CARRYING MORE THAN 1000 POUNDS OR MORE THAN 110 GALLONS OF THIS SUBSTANCE MUST BE PLACARDED ON EACH SIDE AND END WITH PLACARDING THAT READS:

'CORROSIVE' AND 'OXIDIZER'.

IF THIS PRODUCT OR SUBSTANCE IS TRANSPORTED WITH OTHER MATERIALS (EXCEPT THOSE LABELED AS 'CLASS A' OR 'CLASS B EXPLOSIVES', 'POISON GAS', 'DANGEROUS WHEN WET', OR 'RADIOACTIVE I, II OR III'), A 'DANGEROUS' PLACARD MAY BE SUBSTITUTED FOR INDIVIDUAL PLACARDS. OTHERWISE, INDIVIDUAL PLACARDS MUST BE USED ON THE VEHICLE.

A SHIPPING PAPER IS REQUIRED FOR TRANSPORT OF THIS MATERIAL.

\*\*\*\*\*  
\*\* SPILL CLEAN-UP / DISPOSAL METHODS \*\*

SMALL SPILLS:

SAME PROCEDURE AS LARGE SPILLS.

LARGE SPILLS:

VENTILATE COMPLETELY OR USE AN APPROPRIATE RESPIRATOR.

REENTER ONLY WITH PERSONAL PROTECTIVE EQUIPMENT.

ABSORB WITH APPROPRIATE ABSORBENT, SAND, OR DIRT.

SWEEP UP PRODUCT OR SUBSTANCE. CONTAINERIZE WASTE PRODUCT.

ANY PRODUCT MAY BE A HAZARDOUS WASTE. CONTACT THE SITE

COORDINATOR AT YOUR FACILITY FOR INFORMATION ON PROPER

DISPOSAL OF WASTE. WASTE MANAGEMENT IS A SHARED

RESPONSIBILITY FOR ALL EMPLOYEES. EVERY EFFORT SHOULD

BE MADE TO MINIMIZE HAZARDOUS WASTE.

SOLUTIONS OF THIS PRODUCT MAY BE CLASSIFIED AS A RCRA CORROSIVE WASTE

THERE IS NO REPORTABLE QUANTITY FOR THIS PRODUCT.

NOTE: BEFORE DISPOSING OF EMPTY CONTAINERS, ENSURE COMPLIANCE WITH

THE RCRA EMPTY RULE (HAZARDOUS MATERIALS AND WASTE MANAGEMENT  
MANUAL, SECTION 7.6.1).

\*\*\*\*\*  
\*\* FIRST AID \*\*

EYES: IF THIS PRODUCT OR SUBSTANCE GETS INTO THE EYES,  
IMMEDIATELY WASH THE EYES WITH LARGE AMOUNTS OF WATER OR EYEWASH  
SAFETY FLUID FOR 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER  
LIDS. IF THE EMPLOYEE IS WEARING CONTACT LENSES, IMMEDIATELY  
REMOVE THE CONTACT LENSES PRIOR TO FLUSHING THE EYES.

GET MEDICAL ATTENTION IMMEDIATELY.

SKIN: IF THIS PRODUCT OR SUBSTANCE GETS ON THE SKIN,  
IMMEDIATELY WASH THE CONTAMINATED SKIN WITH SOAP OR MILD  
DETERGENT AND WATER. IF THIS PRODUCT OR SUBSTANCE SOAKS  
THROUGH THE CLOTHING, IMMEDIATELY REMOVE CLOTHING AND WASH  
THE SKIN WITH SOAP OR MILD DETERGENT AND WATER. GET  
MEDICAL ATTENTION PROMPTLY.

INHALATION: IF A PERSON BREATHES IN LARGE AMOUNTS OF THIS PRODUCT  
OR SUBSTANCE, MOVE THE EXPOSED PERSON TO FRESH AIR AT ONCE. IF  
BREATHING HAS STOPPED, PERFORM ARTIFICIAL RESPIRATION. KEEP THE  
AFFECTED PERSON WARM AND AT REST. GET MEDICAL ATTENTION AS SOON  
POSSIBLE.

INGESTION: IF THIS PRODUCT OR SUBSTANCE HAS BEEN SWALLOWED, AND  
THE PERSON IS CONSCIOUS, IMMEDIATELY GIVE THE PERSON LARGE  
QUANTITIES OF WATER TO DILUTE THE PRODUCT OR SUBSTANCE.  
DO NOT ATTEMPT TO MAKE THE PERSON VOMIT. GET MEDICAL ATTENTION  
IMMEDIATELY.

MATERIAL SAFETY DATA SHEET  
PUBLIC SERVICE COMPANY OF COLORADO  
POST OFFICE BOX 840  
DENVER CO 80201  
24 HOUR EMERGENCY NUMBER (800) 541-0918  
MSDS INFORMATION (303) 628-2828

PSCO MATERIAL SAFETY DATA SHEET NUMBER: 180  
THIS MSDS APPLIES TO IDENTIFICATION NUMBERS:  
09242700  
ORIGINAL ENTRY DATE: 050589                      LAST REVISION DATE: 081589  
PRODUCT TRADE NAME:  
H-133

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\*\* MANUFACTURER(S) \*\*  
CALGON CORPORATION

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\*\* HAZARDOUS COMPONENTS \*\*  
40 % ETHYLENE GLYCOL  
CAS: 107-21-1  
THE OSHA LIMIT FOR THIS CHEMICAL IS 50 PPM C .  
12 % DODECYLGUANIDINE HYDROCHLORIC ACID  
THIS IS NOT ON THE OSHA OR ACGIH LIST.  
5 % ISOPROPANOL  
CAS: 67-63-0  
THE OSHA LIMIT FOR THIS CHEMICAL IS 400 PPM .

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\*\* DESCRIPTION \*\*  
SLIGHTLY TURBID PALE YELLOW TO WATER-WHITE LIQUID.

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\*\* POTENTIAL HEALTH EFFECTS \*\*  
EYES: EYE CONTACT WITH THIS PRODUCT CAN CAUSE CORNEAL DAMAGE.  
CONJUNCTIVITIS, INFLAMMATION OF THE IRIS  
SKIN: SHORT TERM SKIN CONTACT WITH SIGNIFICANT AMOUNTS  
OF THIS PRODUCT OR SUBSTANCE CAN CAUSE IRRITATION.  
INHALATION: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE  
HEALTH EFFECTS RESULTING FROM INHALATION OF THIS PRODUCT, OR HAS  
INDICATED NO HARMFUL EFFECTS RESULT FROM INHALATION.

INGESTION: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE  
HEALTH EFFECTS RESULTING FROM INGESTION OF THIS PRODUCT, OR HAS  
INDICATED NO HARMFUL EFFECTS RESULT FROM INGESTION OF THE PRODUCT.

NOTE: THE SEVERITY OF EFFECTS CAUSED BY EXPOSURE TO THIS PRODUCT OR  
SUBSTANCE DEPENDS ON CONCENTRATION, DURATION OF EXPOSURE AND  
EFFECTIVENESS OF ANY FIRST AID TREATMENT REQUIRED.

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\*\* FIRE/EXPLOSION HAZARDS \*\*  
NFPA HAZARD IDENTIFICATION - HEALTH: U  
FLAMMABILITY: U    REACTIVITY: U    OTHER: 0  
NOTE: U = UNKNOWN  
THE FLASHPOINT OF THIS PRODUCT IS 165 DEG F.

THIS PRODUCT OR SUBSTANCE IS A COMBUSTIBLE MATERIAL.  
DO NOT USE ON WARM SURFACES, NEAR FLAMES OR WHERE ELECTRICAL  
ARCING MAY OCCUR.

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\*\* REACTIVITY \*\*

THIS PRODUCT OR SUBSTANCE IS CONSIDERED TO BE STABLE. STABLE  
MATERIALS ARE THOSE THAT NORMALLY HAVE THE CAPACITY TO RESIST  
CHANGES IN THEIR CHEMICAL COMPOSITION.

MATERIALS NOT COMPATIBLE WITH THIS PRODUCT INCLUDE:

OXIDIZING AGENTS.

WHEN THIS PRODUCT OR SUBSTANCE IS HEATED TO A LEVEL WHERE IT  
DECOMPOSES, THE FOLLOWING COMPOUNDS ARE PRODUCED:

HYDROCHLORIC ACID, AMMONIA

WHEN LEFT ALONE, THIS PRODUCT WILL NOT REACT WITH ITSELF IN A  
HAZARDOUS MANNER.

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\*\* PERSONAL PROTECTIVE METHODS \*\*

EYES: IF THERE IS ANY POSSIBILITY OF EYE CONTACT WITH  
THIS PRODUCT OR SUBSTANCE, WEAR CHEMICAL SAFETY GOGGLES.

SKIN: IF THERE IS ANY POSSIBILITY OF SKIN CONTACT

WEAR IMPERVIOUS GLOVES.

PROTECTIVE CLOTHING

WASH PROMPTLY WHEN SKIN BECOMES CONTAMINATED.

INHALATION: PROVIDE ADEQUATE LOCAL EXHAUST AND/OR GENERAL  
MECHANICAL VENTILATION.

IF IT IS POSSIBLE TO GENERATE SIGNIFICANT LEVELS OF VAPORS,  
MISTS, OR DUSTS, A NIOSH APPROVED RESPIRATOR IS REQUIRED.

INGESTION: AVOID INGESTING THIS PRODUCT OR SUBSTANCE. WASH  
HANDS WITH SOAP AND WATER BEFORE EATING. ALSO WASH HANDS  
BEFORE SMOKING IN AREAS WHERE NO FIRE HAZARD EXISTS AND  
SMOKING IS PERMITTED.

PROMPTLY REMOVE NON-IMPERVIOUS CLOTHING THAT BECOMES  
CONTAMINATED.

WORK CLOTHING SHOULD BE CHANGED DAILY AFTER WORK IF THERE  
IS A REASONABLE PROBABILITY THAT THE CLOTHING IS CONTAMINATED  
CONTACT THE FACILITY HAZARDOUS MATERIALS/WASTE COORDINATOR AT  
YOUR FACILITY FOR INFORMATION AND INSTRUCTIONS ON WASHING AND  
DISPOSAL OF CLOTHING CONTAMINATED WITH HAZARDOUS MATERIALS.  
THE NATURE OF THE TASK AND AMOUNT OF PRODUCT INVOLVED MAY AFFECT  
THE AMOUNT OF PROTECTIVE CLOTHING REQUIRED, HOWEVER, ALWAYS  
DRESS PREPARED FOR THE MAXIMUM PROBABLE EXPOSURE. WEAR GLOVES,  
BOOTS, APRON AND A FACE SHIELD WITH CHEMICAL SPLASH GOGGLES IF  
EXPOSURE IS EXPECTED. A FULL SLICKER SUIT IS RECOMMENDED IF  
GROSS EXPOSURE IS POSSIBLE.

---  
\*\* FIRE CONTROL \*\*

WEAR SELF CONTAINED BREATHING APPARATUS (SCBA).  
USE CLASS "B" EXTINGUISHING MEDIA.

\*\* STORAGE REQUIREMENTS - POINT OF USE \*\*

THIS PRODUCT SHOULD BE STORED IN A CONTAINER THAT IS PROPERLY LABELED AND AS RECEIVED FROM THE MANUFACTURER.

\*\* STORAGE REQUIREMENTS - SITE STORAGE \*\*

THERE IS NO SARA THRESHOLD PLANNING QUANTITY FOR THIS PRODUCT. THE CONTAINER SHOULD BE STORED IN A PLACE THAT IS COOL. IT SHOULD BE STORED AWAY FROM SOURCES OF IGNITION AND SOURCES OF HEAT. KEEP CONTAINERS TIGHTLY SEALED WHEN NOT IN USE.

\*\* TRANSPORTATION REQUIREMENTS \*\*

THIS PRODUCT OR SUBSTANCE IS REGULATED. THE DOT SHIPPING NAME OF THE PRODUCT IS:

COMBUSTIBLE LIQUID, N.O.S.

CONTAINS - ISOPROPANOL

THE UN/NA NUMBER OF THIS PRODUCT IS NA1993 .

THE HAZARD CLASS OF THIS PRODUCT IS:

COMBUSTIBLE LIQUID

THIS MATERIAL SHOULD GENERALLY BE LABELED WITH ITS HAZARD CLASS. REFER TO 49 CFR PARTS 100-177 OR CONTACT YOUR SITE COORDINATOR FOR MORE INFORMATION.

MOTOR VEHICLES CARRYING MORE THAN 1000 POUNDS OR MORE THAN 110 GALLONS OF THIS SUBSTANCE MUST BE PLACARDED ON EACH SIDE AND END WITH PLACARDING THAT READS:

'COMBUSTIBLE'.

IF THIS PRODUCT OR SUBSTANCE IS TRANSPORTED WITH OTHER MATERIALS (EXCEPT THOSE LABELED AS 'CLASS A' OR 'CLASS B EXPLOSIVES', 'POISON GAS', 'DANGEROUS WHEN WET', OR 'RADIOACTIVE I, II OR III'), A 'DANGEROUS' PLACARD MAY BE SUBSTITUTED FOR INDIVIDUAL PLACARDS. OTHERWISE, INDIVIDUAL PLACARDS MUST BE USED IN THE VEHICLE.

A SHIPPING PAPER IS REQUIRED FOR TRANSPORT OF THIS MATERIAL.

\*\* SPILL CLEAN-UP / DISPOSAL METHODS \*\*

SMALL SPILLS:

SAME PROCEDURE AS LARGE SPILLS.

LARGE SPILLS:

DIKE OFF SPILL WITH EARTH, SAND, ETC.

ABSORB WITH APPROPRIATE ABSORBENT, SAND, OR DIRT.

CONTAINERIZE WASTE PRODUCT.

ANY PRODUCT MAY BE A HAZARDOUS WASTE. CONTACT THE SITE COORDINATOR AT YOUR FACILITY FOR INFORMATION ON PROPER DISPOSAL OF WASTE. WASTE MANAGEMENT IS A SHARED

RESPONSIBILITY FOR ALL EMPLOYEES. EVERY EFFORT SHOULD BE MADE TO MINIMIZE HAZARDOUS WASTE.

THERE IS NO REPORTABLE QUANTITY FOR THIS PRODUCT.

NOTE: BEFORE DISPOSING OF EMPTY CONTAINERS, ENSURE COMPLIANCE WITH THE RCRA EMPTY RULE (HAZARDOUS MATERIALS AND WASTE MANAGEMENT MANUAL, SECTION 7.6.1).



\*\* FIRST AID \*\*

EYES: IF THIS PRODUCT OR SUBSTANCE GETS INTO THE EYES, IMMEDIATELY WASH THE EYES WITH LARGE AMOUNTS OF WATER OR EYEWASH SAFETY FLUID FOR 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER LIDS. IF THE EMPLOYEE IS WEARING CONTACT LENSES, IMMEDIATELY REMOVE THE CONTACT LENSES PRIOR TO FLUSHING THE EYES.

GET MEDICAL ATTENTION IMMEDIATELY.

SKIN: IF THIS PRODUCT OR SUBSTANCE GETS ON THE SKIN, FLUSH THE CONTAMINATED SKIN WITH WATER. IF THIS PRODUCT OR SUBSTANCE SOAKS THROUGH THE CLOTHING, IMMEDIATELY REMOVE THE CLOTHING AND FLUSH SKIN WITH WATER. IF IRRITATION PERSISTS AFTER WASHING, GET MEDICAL ATTENTION.

INHALATION: MANUFACTURER PROVIDES NO INFORMATION ON FIRST AID FOR INHALATION OF THIS PRODUCT. IF IRRITATION OR OTHER EFFECTS OCCUR THEN CONTACT A PHYSICIAN.

INGESTION: IF THIS PRODUCT OR SUBSTANCE HAS BEEN SWALLOWED AND THE PERSON IS CONSCIOUS, IMMEDIATELY GIVE THE PERSON LARGE QUANTITIES OF WATER. AFTER THE WATER HAS BEEN SWALLOWED, TRY TO GET THE PERSON TO VOMIT BY HAVING HIM TOUCH THE BACK OF THE THROAT WITH THE FINGER. DO NOT MAKE AN UNCONSCIOUS PERSON VOMIT. GET MEDICAL ATTENTION IMMEDIATELY.

- - - - -

04/27/90  
END OF MSDS

MATERIAL SAFETY DATA SHEET  
PUBLIC SERVICE COMPANY OF COLORADO  
POST OFFICE BOX 840  
DENVER CO 80201  
24 HOUR EMERGENCY NUMBER (800) 541-0918  
MSL INFORMATION (303) 628-2828

PSCO MATERIAL SAFETY DATA SHEET NUMBER: 184  
THIS MSDS APPLIES TO IDENTIFICATION NUMBERS:  
09271720

ORIGINAL ENTRY DATE: 120888 LAST REVISION DATE: 072589

PRODUCT TRADE NAME:  
CALGON CL-5 CORROSION INHIBITOR

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\*\* MANUFACTURER(S) \*\*  
CALGON CORPORATION  
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\*\* HAZARDOUS COMPONENTS \*\*  
25 % SODIUM TOLYTRIAZOLE  
CAS: 64665-57-2  
THIS IS NOT ON THE OSHA OR ACGIH LIST.  
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\*\* DESCRIPTION \*\*  
CLEAR RED-BROWN SOLUTION  
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\*\* POTENTIAL HEALTH EFFECTS \*\*  
EYES: EYE CONTACT WITH THIS PRODUCT CAN CAUSE IRRITATION.  
SKIN: SHORT TERM SKIN CONTACT WITH SIGNIFICANT AMOUNTS  
OF THIS PRODUCT OR SUBSTANCE CAN CAUSE IRRITATION.  
INHALATION: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE  
HEALTH EFFECTS RESULTING FROM INHALATION OF THIS PRODUCT, OR HAS  
INDICATED NO HARMFUL EFFECTS RESULT FROM INHALATION.

INGESTION: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE  
HEALTH EFFECTS RESULTING FROM INGESTION OF THIS PRODUCT, OR HAS  
INDICATED NO HARMFUL EFFECTS RESULT FROM INGESTION OF THE PRODUCT.

NOTE: THE SEVERITY OF EFFECTS CAUSED BY EXPOSURE TO THIS PRODUCT OR  
SUBSTANCE DEPENDS ON CONCENTRATION, DURATION OF EXPOSURE AND  
EFFECTIVENESS OF ANY FIRST AID TREATMENT REQUIRED.

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\*\* FIRE/EXPLOSION HAZARDS \*\*  
NFPA HAZARD IDENTIFICATION - HEALTH: U  
FLAMMABILITY: U REACTIVITY: U OTHER: 0  
NOTE: U = UNKNOWN

THIS PRODUCT HAS NO FLASHPOINT.  
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\*\* REACTIVITY \*\*  
THIS PRODUCT OR SUBSTANCE IS CONSIDERED TO BE STABLE. STABLE  
MATERIALS ARE THOSE THAT NORMALLY HAVE THE CAPACITY TO RESIST  
CHANGES IN THEIR CHEMICAL COMPOSITION.

MATERIALS NOT COMPATIBLE WITH THIS PRODUCT INCLUDE:  
INORGANIC ACIDS, ORGANIC ACIDS.  
WHEN THIS PRODUCT OR SUBSTANCE IS HEATED TO A LEVEL WHERE IT  
DECOMPOSES, THE FOLLOWING COMPOUNDS ARE PRODUCED:  
CARBON MONOXIDE, NITROGEN OXIDE, HYDROGEN CYANIDE.

WHEN LEFT ALONE, THIS PRODUCT WILL NOT REACT WITH ITSELF IN A  
HAZARDOUS MANNER.

- - - - -  
\*\* PERSONAL PROTECTIVE METHODS \*\*

EYES: IF THERE IS ANY POSSIBILITY OF EYE CONTACT WITH  
THIS PRODUCT OR SUBSTANCE, WEAR CHEMICAL SAFETY GOGGLES  
AND FULL-FACE SHIELD.

AN EYEWASH SHOULD BE PROVIDED IN THE IMMEDIATE WORK AREA.

SKIN: IF THERE IS ANY POSSIBILITY OF SKIN CONTACT  
WEAR IMPERVIOUS PANTS AND JACKET OR COVERALLS  
AND IMPERVIOUS GLOVES.

WASH IMMEDIATELY WHEN SKIN BECOMES CONTAMINATED.

INHALATION:

IF IT IS POSSIBLE TO GENERATE SIGNIFICANT LEVELS OF VAPORS,  
MISTS, OR DUSTS, A NIOSH APPROVED RESPIRATOR IS REQUIRED.

INGESTION: AVOID INGESTING THIS PRODUCT OR SUBSTANCE. WASH  
HANDS WITH SOAP AND WATER BEFORE EATING. ALSO WASH HANDS  
BEFORE SMOKING IN AREAS WHERE NO FIRE HAZARD EXISTS AND  
SMOKING IS PERMITTED.

PROMPTLY REMOVE NON-IMPERVIOUS CLOTHING THAT BECOMES  
CONTAMINATED.

WHEN HANDLING BULK QUANTITIES OF THIS PRODUCT OR SUBSTANCE,  
PROVIDE A QUICK-DRENCH FULL BODY SHOWER IN THE IMMEDIATE  
WORK AREA.

CONTACT THE FACILITY HAZARDOUS MATERIALS/WASTE COORDINATOR AT  
YOUR FACILITY FOR INFORMATION AND INSTRUCTIONS ON WASHING AND  
DISPOSAL OF CLOTHING CONTAMINATED WITH HAZARDOUS MATERIALS.  
THE NATURE OF THE TASK AND AMOUNT OF PRODUCT INVOLVED MAY AFFECT  
THE AMOUNT OF PROTECTIVE CLOTHING REQUIRED, HOWEVER, ALWAYS  
DRESS PREPARED FOR THE MAXIMUM PROBABLE EXPOSURE. WEAR GLOVES,  
BOOTS, APRON AND A FACE SHIELD WITH CHEMICAL SPLASH GOGGLES IF  
EXPOSURE IS EXPECTED. A FULL SLICKER SUIT IS RECOMMENDED IF  
GROSS EXPOSURE IS POSSIBLE.

- - - - -  
\*\* FIRE CONTROL \*\*

THE MANUFACTURER HAS PROVIDED NO FIRE-FIGHTING INSTRUCTIONS.  
USE ADEQUATE PERSONAL PROTECTION AND FIRE-FIGHTING MEDIA  
APPROPRIATE FOR SURROUNDING FIRE.

- - - - -  
\*\* STORAGE REQUIREMENTS - POINT OF USE \*\*

THIS PRODUCT SHOULD BE STORED IN A CONTAINER THAT IS  
PROPERLY LABELED AND AS RECEIVED FROM THE MANUFACTURER.

\*\* STORAGE REQUIREMENTS - SITE STORAGE \*\*

THERE IS NO SARA THRESHOLD PLANNING QUANTITY FOR THIS PRODUCT.  
IT SHOULD BE STORED AWAY FROM NONCOMPATIBLE MATERIALS.  
KEEP CONTAINERS TIGHTLY SEALED WHEN NOT IN USE.

\*\* TRANSPORTATION REQUIREMENTS \*\*

THIS PRODUCT OR SUBSTANCE IS REGULATED. THE DOT SHIPPING  
NAME OF THE PRODUCT IS:

CORROSIVE LIQUID, N.O.S.

CONTAINS - SODIUM TOLYTRIAZOLE

THE UN/NA NUMBER OF THIS PRODUCT IS UN1760 .

THE HAZARD CLASS OF THIS PRODUCT 'S:

CORROSIVE MATERIAL

CONTAINERS OF THIS PRODUCT MUST BE LABELLED: 'CORROSIVE'.

EACH PACKAGE OR CONTAINER MUST BE LABELED IN ACCORDANCE WITH  
APPLICABLE DEPARTMENT OF TRANSPORTATION REGULATIONS.

MOTOR VEHICLES CARRYING MORE THAN 1000 POUNDS OR MORE THAN  
110 GALLONS OF THIS SUBSTANCE MUST BE PLACARDED ON EACH SIDE  
AND END WITH PLACARDING THAT READS:

'CORROSIVE'.

IF THIS PRODUCT OR SUBSTANCE IS TRANSPORTED WITH OTHER MATERIALS  
(EXCEPT THOSE LABELED AS 'CLASS A' OR 'CLASS B EXPLOSIVES',  
'POISON GAS', 'DANGEROUS WHEN WET', OR 'RADIOACTIVE I, II  
OR III'), A 'DANGEROUS' PLACARD MAY BE SUBSTITUTED FOR  
INDIVIDUAL PLACARDS. OTHERWISE, INDIVIDUAL PLACARDS MUST BE  
USED ON THE VEHICLE.

A SHIPPING PAPER IS REQUIRED FOR TRANSPORT OF THIS MATERIAL.

\*\* SPILL CLEAN-UP / DISPOSAL METHODS \*\*

SMALL SPILLS:

ABSORB WITH ABSORBENT, SAND OR DIRT.

NEUTRALIZE WITH THE REQUIRED AMOUNT OF ACID.

SWEEP UP PRODUCT OR SUBSTANCE. CONTAINERIZE WASTE PRODUCT.

LARGE SPILLS:

DIKE OFF SPILL WITH EARTH, SAND, ETC.

NEUTRALIZE WITH REQUIRED AMOUNT OF ACID.

ABSORB WITH APPROPRIATE ABSORBENT, SAND, OR DIRT.

SWEEP UP PRODUCT OR SUBSTANCE. CONTAINERIZE WASTE PRODUCT.

DON'T FLUSH TO A SEWER OR WATER SUPPLY.

NOTIFY ENVIRONMENTAL AFFAIRS IN CASE OF A LARGE SPILL  
(571-7655).

IF THIS PRODUCT OR SUBSTANCE BECOMES A WASTE, IT IS CLASSIFIED  
AS A HAZARDOUS WASTE ACCORDING TO EPA REGULATION, AND MUST  
BE RECYCLED OR DISPOSED OF AS A HAZARDOUS WASTE.

FOR THE ORIGINAL, UNDILUTED PRODUCT THE FOLLOWING IS TRUE:

THE EPA WASTE NUMBER OF THIS SUBSTANCE IS : D002 .

THE CATEGORY OF THIS SUBSTANCE IS : CORROSIVE .

THERE IS NO REPORTABLE QUANTITY FOR THIS PRODUCT.

NOTE: BEFORE DISPOSING OF EMPTY CONTAINERS, ENSURE COMPLIANCE WITH  
THE RCRA EMPTY RULE (HAZARDOUS MATERIALS AND WASTE MANAGEMENT  
MANUAL, SECTION 7.6.1).

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\*\* FIRST AID \*\*

EYES: IF THIS PRODUCT OR SUBSTANCE GETS INTO THE EYES, IMMEDIATELY WASH THE EYES WITH LARGE AMOUNTS OF WATER OR EYEWASH SAFETY FLUID FOR 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER LIDS. IF THE EMPLOYEE IS WEARING CONTACT LENSES, IMMEDIATELY REMOVE THE CONTACT LENSES PRIOR TO FLUSHING THE EYES. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN: IF THIS PRODUCT OR SUBSTANCE GETS ON THE SKIN, IMMEDIATELY FLUSH THE CONTAMINATED SKIN WITH WATER. IF THIS PRODUCT OR SUBSTANCE PENETRATES THROUGH CLOTHING, IMMEDIATELY REMOVE THE CLOTHING AND FLUSH THE SKIN WITH WATER. GET MEDICAL ATTENTION PROMPTLY.

INHALATION: IF A PERSON BREATHES IN LARGE AMOUNTS OF THIS PRODUCT OR SUBSTANCE, MOVE THE EXPOSED PERSON TO FRESH AIR AT ONCE. IF BREATHING HAS STOPPED, PERFORM ARTIFICIAL RESPIRATION. KEEP THE AFFECTED PERSON WARM AND AT REST. GET MEDICAL ATTENTION AS SOON POSSIBLE.

INGESTION: IF THIS PRODUCT OR SUBSTANCE HAS BEEN SWALLOWED, GET MEDICAL ATTENTION.

-----  
04/27/90  
END OF MSDS



MATERIAL SAFETY DATA SHEET  
PUBLIC SERVICE COMPANY OF COLORADO  
POST OFFICE BOX 840  
DENVER CO 80201  
24 HOUR EMERGENCY NUMBER (800) 541-0918  
MSDS INFORMATION (303) 628-2828

PSCO MATERIAL SAFETY DATA SHEET NUMBER: 183  
THIS MSDS APPLIES TO IDENTIFICATION NUMBERS:  
09242698  
ORIGINAL ENTRY DATE: 050589                      LAST REVISION DATE: 081589  
PRODUCT TRADE NAME:  
PCL-711

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\*\* MANUFACTURER(S) \*\*  
CALGON CORPORATION

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\*\* HAZARDOUS COMPONENTS \*\*  
THE MANUFACTURER(S) OF THIS PRODUCT HAVE DETERMINED THAT IT  
CONTAINS NO HAZARDOUS INGREDIENTS UNDER THE OSHA HAZARD  
COMMUNICATION RULE, 29 CFR 1910.1200. FOR MORE INFORMATION  
CALL THE MSDS INFORMATION HOTLINE AT 628-2828.

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\*\* DESCRIPTION \*\*  
CLEAR PALE YELLOW LIQUID

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\*\* POTENTIAL HEALTH EFFECTS \*\*  
EYES: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE  
HEALTH EFFECTS RESULTING FROM EYE EXPOSURE TO THIS PRODUCT, OR  
HAS INDICATED NO HARMFUL EFFECTS RESULT FROM EYE EXPOSURE.

SKIN: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE HEALTH  
EFFECTS RESULTING FROM SKIN EXPOSURE TO THIS PRODUCT, OR HAS  
INDICATED NO HARMFUL EFFECTS RESULT FROM SKIN EXPOSURE.

INHALATION: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE  
HEALTH EFFECTS RESULTING FROM INHALATION OF THIS PRODUCT, OR HAS  
INDICATED NO HARMFUL EFFECTS RESULT FROM INHALATION.

INGESTION: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE  
HEALTH EFFECTS RESULTING FROM INGESTION OF THIS PRODUCT, OR HAS  
INDICATED NO HARMFUL EFFECTS RESULT FROM INGESTION OF THE PRODUCT.

NOTE: THE SEVERITY OF EFFECTS CAUSED BY EXPOSURE TO THIS PRODUCT OR  
SUBSTANCE DEPENDS ON CONCENTRATION, DURATION OF EXPOSURE AND  
EFFECTIVENESS OF ANY FIRST AID TREATMENT REQUIRED.

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\*\* FIRE/EXPLOSION HAZARDS \*\*  
NFPA HAZARD IDENTIFICATION - HEALTH: U  
FLAMMABILITY: U    REACTIVITY: U    OTHER: 0  
NOTE: U = UNKNOWN

THIS PRODUCT HAS NO FLASHPOINT.  
NO SPECIAL PRECAUTIONS ARE REQUIRED.

---  
\*\* REACTIVITY \*\*

THIS PRODUCT OR SUBSTANCE IS CONSIDERED TO BE STABLE. STABLE MATERIALS ARE THOSE THAT NORMALLY HAVE THE CAPACITY TO RESIST CHANGES IN THEIR CHEMICAL COMPOSITION.

MATERIALS NOT COMPATIBLE WITH THIS PRODUCT INCLUDE:

OXIDIZING AGENTS.

WHEN LEFT ALONE, THIS PRODUCT WILL NOT REACT WITH ITSELF IN A HAZARDOUS MANNER.

---  
\*\* PERSONAL PROTECTIVE METHODS \*\*

SKIN:

WASH PROMPTLY WHEN SKIN BECOMES CONTAMINATED.

INHALATION:

IF IT IS POSSIBLE TO GENERATE SIGNIFICANT LEVELS OF VAPORS, MISTS, OR DUSTS, A NIOSH APPROVED RESPIRATOR IS REQUIRED.

INGESTION: AVOID INGESTING THIS PRODUCT OR SUBSTANCE. WASH HANDS WITH SOAP AND WATER BEFORE EATING. ALSO WASH HANDS BEFORE SMOKING IN AREAS WHERE NO FIRE HAZARD EXISTS AND SMOKING IS PERMITTED.

CONTACT THE FACILITY HAZARDOUS MATERIALS/WASTE COORDINATOR AT YOUR FACILITY FOR INFORMATION AND INSTRUCTIONS ON WASHING AND DISPOSAL OF CLOTHING CONTAMINATED WITH HAZARDOUS MATERIALS. THE NATURE OF THE TASK AND AMOUNT OF PRODUCT INVOLVED MAY AFFECT THE AMOUNT OF PROTECTIVE CLOTHING REQUIRED, HOWEVER, ALWAYS DRESS PREPARED FOR THE MAXIMUM PROBABLE EXPOSURE. WEAR GLOVES, BOOTS, APRON AND A FACE SHIELD WITH CHEMICAL SPLASH GOGGLES IF EXPOSURE IS EXPECTED. A FULL SLICKER SUIT IS RECOMMENDED IF GROSS EXPOSURE IS POSSIBLE.

---  
\*\* FIRE CONTROL \*\*

THE MANUFACTURER HAS PROVIDED NO FIRE-FIGHTING INSTRUCTIONS. USE ADEQUATE PERSONAL PROTECTION AND FIRE-FIGHTING MEDIA APPROPRIATE FOR SURROUNDING FIRE.

---  
\*\* STORAGE REQUIREMENTS - POINT OF USE \*\*

THIS PRODUCT SHOULD BE STORED IN A CONTAINER THAT IS PROPERLY LABELED AND AS RECEIVED FROM THE MANUFACTURER.

---  
\*\* STORAGE REQUIREMENTS - SITE STORAGE \*\*

THERE IS NO SARA THRESHOLD PLANNING QUANTITY FOR THIS PRODUCT. KEEP CONTAINERS TIGHTLY SEALED WHEN NOT IN USE.

---  
\*\* TRANSPORTATION REQUIREMENTS \*\*

THIS PRODUCT IS NOT REGULATED BY THE DEPARTMENT OF TRANSPORTATION. IT HAS NO SHIPPING NAME, HAZARD CLASS, OR

UN/NA NUMBER. FOR MORE INFORMATION REFER TO 49 CFR 100-177 OR  
CONSULT YOUR SITE COORDINATOR.  
EACH PACKAGE OR CONTAINER MUST BE LABELED IN ACCORDANCE WITH  
APPLICABLE DEPARTMENT OF TRANSPORTATION REGULATIONS.

- - - - -  
\*\* SPILL CLEAN-UP / DISPOSAL METHODS \*\*

SMALL SPILLS:

SAME PROCEDURE AS LARGE SPILLS.

LARGE SPILLS:

DIKE OFF SPILL WITH EARTH, SAND, ETC.

ABSORB WITH APPROPRIATE ABSORBENT, SAND, OR DIRT.

CONTAINERIZE WASTE PRODUCT.

ANY PRODUCT MAY BE A HAZARDOUS WASTE. CONTACT THE SITE  
COORDINATOR AT YOUR FACILITY FOR INFORMATION ON PROPER  
DISPOSAL OF WASTE. WASTE MANAGEMENT IS A SHARED  
RESPONSIBILITY FOR ALL EMPLOYEES. EVERY EFFORT SHOULD  
BE MADE TO MINIMIZE HAZARDOUS WASTE.

THERE IS NO REPORTABLE QUANTITY FOR THIS PRODUCT.

NOTE: BEFORE DISPOSING OF EMPTY CONTAINERS, ENSURE COMPLIANCE WITH  
THE RCRA EMPTY RULE (HAZARDOUS MATERIALS AND WASTE MANAGEMENT  
MANUAL, SECTION 7.6.1).

- - - - -  
\*\* FIRST AID \*\*

EYES: IF THIS PRODUCT OR SUBSTANCE GETS INTO THE EYES,  
IMMEDIATELY WASH THE EYES WITH LARGE AMOUNTS OF WATER OR EYEWASH  
SAFETY FLUID FOR 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER  
LIDS. IF THE EMPLOYEE IS WEARING CONTACT LENSES, IMMEDIATELY  
REMOVE THE CONTACT LENSES PRIOR TO FLUSHING THE EYES.  
GET MEDICAL ATTENTION PROMPTLY IF DISCOMFORT PERSISTS.

SKIN: THE MANUFACTURER PROVIDES NO INFORMATION ON FIRST AID  
FOR SKIN CONTACT WITH THIS PRODUCT. IF IRRITATION OR OTHER  
EFFECTS OCCUR THEN CONTACT A PHYSICIAN.

INHALATION: MANUFACTURER PROVIDES NO INFORMATION ON FIRST AID  
FOR INHALATION OF THIS PRODUCT. IF IRRITATION OR OTHER  
EFFECTS OCCUR THEN CONTACT A PHYSICIAN.

INGESTION: MANUFACTURER PROVIDES NO INFORMATION ON FIRST AID  
FOR INGESTION OF THIS PRODUCT. IF IRRITATION OR OTHER  
EFFECTS OCCUR THEN CONTACT A PHYSICIAN.

8/23/90

## MATERIAL SAFETY DATA SHEET

2061

CALGON CORPORATION  
P.O. Box 1346  
Pittsburgh, PA 15230-1346



SUBSIDIARY OF MERCK &amp; CO. INC.

24 Hour Emergency Telephone -- (412) 777-8000

I. PRODUCT IDENTIFICATION

PRODUCT NAME: CL-361

CHEMICAL DESCRIPTION: Aqueous solution

PRODUCT CLASS: Surfactant

II. HAZARDOUS INGREDIENTS AND EXPOSURE LIMITS

Chemical Name	CAS No.	% by Weight	Oral LD50 (rat)	Dermal LD50 (rabbit)	ACGIH TLV OSHA PEL
Polyoxyethylene-polyoxypropylene copolymer	9003-12-6	15	2300 mg/kg	> 10.2 g/kg	Not listed
Ethoxylated nonylphenol	9015-45-2	10	1310 mg/kg	1760 mg/kg	Not listed

III. TYPICAL PHYSICAL PROPERTIES

BOILING POINT: &gt; 212°F

SOLUBILITY IN WATER: Complete

VAPOR PRESSURE: Similar to water

SPECIFIC GRAVITY: 1.01 - 1.03

VAPOR DENSITY (air=1): Similar to water

pH: 5.0 - 5.5

% VOLATILE BY WEIGHT: 7%

APPEARANCE AND ODOR: Clear, colorless liquid with a very mild organic odor.

IV. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: This product is not flammable or combustible.

EXTINGUISHING MEDIA: Use any means suitable for extinguishing the surrounding fire.

SPECIAL FIREFIGHTING PROCEDURES: Exercise caution when fighting any chemical fire. A self-contained breathing apparatus and protective clothing are essential. Use water to keep fire-exposed containers cool.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Emits toxic gases under fire conditions.

MFPA RATINGS: Health = 1      Flammability = 0      Reactivity = 0      Special Hazard = NONE

While this information and recommendations set forth herein are believed to be accurate as of the date hereof, CALGON CORPORATION MAKES NO WARRANTY WITH RESPECT HERETO AND DISCLAIMS ALL LIABILITY FROM RELIANCE THEREON.

MSDS No.: 5819-06-29-89-578

Page 1 of 4

Date: 6/6/90



## V. REACTIVITY DATA

CHEMICAL STABILITY: Stable

HAZARDOUS POLYMERIZATION: Will not occur.

INCOMPATIBILITY: Strong oxidizing or reducing materials.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide and carbon dioxide.

## VI. HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY: Eye and skin contact

TARGET ORGANS: Skin, eye

### WARNING!

May cause skin and eye irritation.

### EFFECTS OF OVEREXPOSURE:

#### ACUTE

EYE CONTACT: This product would be expected to be minimally irritating upon contact with the eye. During testing, the product produced only slight temporary conjunctival irritation in rabbit eyes.

SKIN CONTACT: This product may produce irritation upon contact with the skin. The Primary Irritation Index is 2.0+/8. Available data indicates that this product will not produce an allergic skin reaction or be absorbed through the skin in harmful amounts.

INGESTION: This product would be considered practically non-toxic by ingestion.

INHALATION: This product is not expected to present an inhalation hazard.

#### SUBCHRONIC, CHRONIC

No applicable information was found concerning any potential health effects resulting from subchronic or chronic exposure to the product.

#### CARCINOGENICITY:

NTP: No  
IARC: No  
OSHA: No

HMIS RATINGS: Health = 1      Flammability = 0      Reactivity = 0  
Personal Protective Equipment = to be supplied by user depending on use conditions



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## VII. APPLICABLE CONTROL MEASURES

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APPROPRIATE HYGIENIC PRACTICES: Avoid contact with eyes, skin and clothing.

PERSONAL PROTECTIVE EQUIPMENT:

EYE PROTECTION: Chemical splash goggles

SKIN PROTECTION: Chemical resistant gloves

RESPIRATORY PROTECTION: Normally not required.

HANDLING AND STORAGE PRECAUTIONS: Use with adequate ventilation, especially where drums are being opened since traces of ethylene oxide could accumulate in headspace of storage vessels.  
Wash thoroughly after handling.  
Keep container closed when not in use.

ENGINEERING CONTROLS: Use local exhaust at elevated temperatures or if mists are generated.

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## VIII. FIRST AID

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EYE CONTACT: In case of contact, immediately flush eyes with plenty of water. Seek medical aid if irritation persists.

SKIN CONTACT: In case of contact, flush skin with plenty of water. Remove contaminated clothing. Seek medical aid if irritation persists. Wash clothing before reuse.

INGESTION: Not an expected route of overexposure.

INHALATION: Not an expected route of overexposure.

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## IX. SPILL OR LEAK PROCEDURES/WASTE DISPOSAL

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STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Wearing appropriate personal protective equipment, contain spill, collect onto inert absorbent and place into suitable container.

WASTE DISPOSAL: Dispose of in accordance with local, state and federal regulations.

AQUATIC TOXICITY DATA:

	48-hr. LC50	96-hr. LC50
Bluegill	2900 mg/l	2300 mg/l
Rainbow trout	1500 mg/l	1100 mg/l
Daphnia magna	8600 mg/l	---

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## X. REGULATORY STATUS

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TSCA STATUS: The ingredients of this product are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory.

RCRA STATUS: This product as sold would not be considered a RCRA Hazardous Waste.

CERCLA reportable quantity of EPA hazardous substances in product: None

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## X. REGULATORY STATUS (continued)

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### SARA TITLE III:

Section 302 Extremely Hazardous Substances: None

Section 311 and 312 Health and Physical Hazards:

Immediate	Delayed	Fire	Pressure	Reactivity
[yes]	[no]	[no]	[no]	[no]

Section 313 Toxic Chemicals: None

DOT CLASSIFICATION: Not restricted

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PREPARED BY: P.J. Maloney

IMP-0578/V

MATERIAL SAFETY DATA SHEET  
PUBLIC SERVICE COMPANY OF COLORADO  
POST OFFICE BOX 840  
DENVER CO 80201  
24 HOUR EMERGENCY NUMBER (800) 541-0918  
MSDS INFORMATION (303) 628-2828

PSCO MATERIAL SAFETY DATA SHEET NUMBER: 2061  
THIS MSDS APPLIES TO IDENTIFICATION NUMBERS:  
09270939  
ORIGINAL ENTRY DATE: 040689                      LAST REVISION DATE: 060189  
PRODUCT TRADE NAME:  
CL-361

- - - - -  
\*\* MANUFACTURER(S) \*\*  
CALGON CORPORATION

- - - - -  
\*\* HAZARDOUS COMPONENTS \*\*  
THE MANUFACTURER(S) OF THIS PRODUCT HAVE DETERMINED THAT IT  
CONTAINS NO HAZARDOUS INGREDIENTS UNDER THE OSHA HAZARD  
COMMUNICATION RULE, 29 CFR 1910.1200. FOR MORE INFORMATION  
CALL THE MSDS INFORMATION HOTLINE AT 628-2828.

- - - - -  
\*\* DESCRIPTION \*\*  
CLEAR COLORLESS LIQUID WITH A MILD ORGANIC ODOR.

- - - - -  
\*\* POTENTIAL HEALTH EFFECTS \*\*  
EYES: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE  
HEALTH EFFECTS RESULTING FROM EYE EXPOSURE TO THIS PRODUCT, OR  
HAS INDICATED NO HARMFUL EFFECTS RESULT FROM EYE EXPOSURE.

SKIN: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE HEALTH  
EFFECTS RESULTING FROM SKIN EXPOSURE TO THIS PRODUCT, OR HAS  
INDICATED NO HARMFUL EFFECTS RESULT FROM SKIN EXPOSURE.

INHALATION: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE  
HEALTH EFFECTS RESULTING FROM INHALATION OF THIS PRODUCT, OR HAS  
INDICATED NO HARMFUL EFFECTS RESULT FROM INHALATION.

INGESTION: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE  
HEALTH EFFECTS RESULTING FROM INGESTION OF THIS PRODUCT, OR HAS  
INDICATED NO HARMFUL EFFECTS RESULT FROM INGESTION OF THE PRODUCT.

NOTE: THE SEVERITY OF EFFECTS CAUSED BY EXPOSURE TO THIS PRODUCT OF  
SUBSTANCE DEPENDS ON CONCENTRATION, DURATION OF EXPOSURE AND  
EFFECTIVENESS OF ANY FIRST AID TREATMENT REQUIRED.

- - - - -  
\*\* FIRE/EXPLOSION HAZARDS \*\*  
NFPA HAZARD IDENTIFICATION - HEALTH: U  
FLAMMABILITY: U    REACTIVITY: U    OTHER: 0  
NOTE: U = UNKNOWN

THIS PRODUCT HAS NO FLASHPOINT.  
NO SPECIAL PRECAUTIONS ARE REQUIRED.

\*\*\*  
\*\* REACTIVITY \*\*

THIS PRODUCT OR SUBSTANCE IS CONSIDERED TO BE STABLE. STABLE MATERIALS ARE THOSE THAT NORMALLY HAVE THE CAPACITY TO RESIST CHANGES IN THEIR CHEMICAL COMPOSITION.

MATERIALS NOT COMPATIBLE WITH THIS PRODUCT INCLUDE:

STRONG BASES

WHEN LEFT ALONE, THIS PRODUCT WILL NOT REACT WITH ITSELF IN A HAZARDOUS MANNER.

\*\*\*  
\*\* PERSONAL PROTECTIVE METHODS \*\*

SKIN:

WASH PROMPTLY WHEN SKIN BECOMES CONTAMINATED.

INHALATION:

IF IT IS POSSIBLE TO GENERATE SIGNIFICANT LEVELS OF VAPORS, MISTS, OR DUSTS, A NIOSH APPROVED RESPIRATOR IS REQUIRED.

INGESTION: AVOID INGESTING THIS PRODUCT OR SUBSTANCE. WASH HANDS WITH SOAP AND WATER BEFORE EATING. ALSO WASH HANDS BEFORE SMOKING IN AREAS WHERE NO FIRE HAZARD EXISTS AND SMOKING IS PERMITTED.

CONTACT THE FACILITY HAZARDOUS MATERIALS/WASTE COORDINATOR AT YOUR FACILITY FOR INFORMATION AND INSTRUCTIONS ON WASHING AND DISPOSAL OF CLOTHING CONTAMINATED WITH HAZARDOUS MATERIALS. THE NATURE OF THE TASK AND AMOUNT OF PRODUCT INVOLVED MAY AFFECT THE AMOUNT OF PROTECTIVE CLOTHING REQUIRED, HOWEVER, ALWAYS DRESS PREPARED FOR THE MAXIMUM PROBABLE EXPOSURE. WEAR GLOVES, BOOTS, APRON AND A FACE SHIELD WITH CHEMICAL SPLASH GOGGLES IF EXPOSURE IS EXPECTED. A FULL SLICKER SUIT IS RECOMMENDED IF GROSS EXPOSURE IS POSSIBLE.

\*\*\*  
\*\* FIRE CONTROL \*\*

THE MANUFACTURER HAS PROVIDED NO FIRE-FIGHTING INSTRUCTIONS. USE ADEQUATE PERSONAL PROTECTION AND FIRE-FIGHTING MEDIA APPROPRIATE FOR SURROUNDING FIRE.

\*\*\*  
\*\* STORAGE REQUIREMENTS - POINT OF USE \*\*

THIS PRODUCT SHOULD BE STORED IN A CONTAINER THAT IS PROPERLY LABELED AND AS RECEIVED FROM THE MANUFACTURER.

\*\*\*  
\*\* STORAGE REQUIREMENTS - SITE STORAGE \*\*

THERE IS NO SARA THRESHOLD PLANNING QUALITY FOR THIS PRODUCT. KEEP CONTAINERS TIGHTLY SEALED WHEN NOT IN USE.

\*\*\*  
\*\* TRANSPORTATION REQUIREMENTS \*\*

THIS PRODUCT IS NOT REGULATED BY THE DEPARTMENT OF TRANSPORTATION. IT HAS NO SHIPPING NAME, HAZARD CLASS, OR

UN/NA NUMBER. FOR MORE INFORMATION REFER TO 49 CFR 100-177 OR  
CONSULT YOUR SITE COORDINATOR.  
EACH PACKAGE OR CONTAINER MUST BE LABELED IN ACCORDANCE WITH  
APPLICABLE DEPARTMENT OF TRANSPORTATION REGULATIONS.

- - - - -  
\*\* SPILL CLEAN-UP / DISPOSAL METHODS \*\*

SMALL SPILLS:

SAME PROCEDURE AS LARGE SPILLS.

LARGE SPILLS:

DIKE OFF SPILL WITH EARTH, SAND, ETC.

ABSORB WITH APPROPRIATE ABSORBENT, SAND, OR DIRT.

CONTAINERIZE WASTE PRODUCT.

ANY PRODUCT MAY BE A HAZARDOUS WASTE. CONTACT THE SITE  
COORDINATOR AT YOUR FACILITY FOR INFORMATION ON PROPER  
DISPOSAL OF WASTE. WASTE MANAGEMENT IS A SHARED  
RESPONSIBILITY FOR ALL EMPLOYEES. EVERY EFFORT SHOULD  
BE MADE TO MINIMIZE HAZARDOUS WASTE.

THERE IS NO REPORTABLE QUANTITY FOR THIS PRODUCT.

NOTE: BEFORE DISPOSING OF EMPTY CONTAINERS, ENSURE COMPLIANCE WITH  
THE RCRA EMPTY RULE (HAZARDOUS MATERIALS AND WASTE MANAGEMENT  
MANUAL, SECTION 7.6.1).

- - - - -  
\*\* FIRST AID \*\*

EYES: IF THIS PRODUCT OR SUBSTANCE GETS INTO THE EYES,  
IMMEDIATELY WASH THE EYES WITH LARGE AMOUNTS OF WATER OR EYEWASH  
SAFETY FLUID FOR 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER  
LIDS. IF THE EMPLOYEE IS WEARING CONTACT LENSES, IMMEDIATELY  
REMOVE THE CONTACT LENSES PRIOR TO FLUSHING THE EYES.

GET MEDICAL ATTENTION PROMPTLY IF DISCOMFORT PERSISTS.

SKIN: THE MANUFACTURER PROVIDES NO INFORMATION ON FIRST AID  
FOR SKIN CONTACT WITH THIS PRODUCT. IF IRRITATION OR OTHER  
EFFECTS OCCUR THEN CONTACT A PHYSICIAN.

INHALATION: MANUFACTURER PROVIDES NO INFORMATION ON FIRST AID  
FOR INHALATION OF THIS PRODUCT. IF IRRITATION OR OTHER  
EFFECTS OCCUR THEN CONTACT A PHYSICIAN.

INGESTION: MANUFACTURER PROVIDES NO INFORMATION ON FIRST AID  
FOR INGESTION OF THIS PRODUCT. IF IRRITATION OR OTHER  
EFFECTS OCCUR THEN CONTACT A PHYSICIAN.



MATERIAL SAFETY DATA SHEET  
PUBLIC SERVICE COMPANY OF COLORADO  
POST OFFICE BOX 840  
DENVER CO 80201  
24 HOUR EMERGENCY NUMBER (800) 541-0918  
MSDS INFORMATION (303) 628-2828

FSCO MATERIAL SAFETY DATA SHEET NUMBER: 1393  
THIS MSDS APPLIES TO IDENTIFICATION NUMBERS:  
09211592 09212800

ORIGINAL ENTRY DATE: 121288                      LAST REVISION DATE: 072790  
PRODUCT TRADE NAME:  
SODIUM SULFITE, ANHYDROUS

- - - - -  
\*\* MANUFACTURER(S) \*\*  
GENERAL CHEMICAL CORPORATION  
ALLIED CORPORATION, CHEMICAL SECTOR  
THOMPSON-HAYWORD CHEMICAL CO.  
VIRGINIA CHEMICALS INC.

- - - - -  
\*\* HAZARDOUS COMPONENTS \*\*  
100 % SODIUM SULFITE  
CAS: 7757-83-7  
THIS IS NOT ON THE OSHA OR ACGIH LIST.

- - - - -  
\*\* DESCRIPTION \*\*  
WHITE GRANULAR CRYSTALS OR POWDER WITH NO ODOR.

- - - - -  
\*\* POTENTIAL HEALTH EFFECTS \*\*  
EYES: EYE CONTACT WITH THIS PRODUCT CAN CAUSE IRRITATION.  
MAY CAUSE BURNS. SOLUTIONS OF THIS PRODUCT MAY IRRITATE OR  
CAUSE BURNS.  
SKIN: SHORT TERM SKIN CONTACT WITH SIGNIFICANT AMOUNTS  
OF THIS PRODUCT OR SUBSTANCE CAN CAUSE IRRITATION.  
SOLUTIONS OF THIS PRODUCT WILL IRRITATE SKIN.  
INHALATION: BREATHING SIGNIFICANT CONCENTRATIONS OF DUSTS,  
MISTS, FUMES, VAPORS, OR GASEOUS FORMS OF PRODUCT, EVEN  
BRIEFLY, CAN CAUSE IRRITATION.  
HYPERSENSITIVE INDIVIDUALS, PARTICULARLY ASTHMATICS, MAY  
EXPERIENCE ALLERGIC REACTIONS, INCLUDING RESPIRATORY DISTRESS  
INGESTION: INGESTION OF THIS PRODUCT CAN PRODUCE  
IRRITATION AND/OR AN ALLERGIC REACTION.  
ESTIMATED TO BE MODERATELY TOXIC. LARGE DOSES MAY CAUSE  
COLIC, DIARRHEA, CIRCULATORY DISTURBANCES, CNS DEPRESSION.  
INGESTION OF THIS PRODUCT OR SUBSTANCE CAN BE FATAL.  
INGESTION MAY CAUSE SEVERE ALLERGIC REACTIONS IN SOME  
ASTHMATICS AND IN SULFITE-SENSITIVE INDIVIDUALS.  
NOTE: THE SEVERITY OF EFFECTS CAUSED BY EXPOSURE TO THIS PRODUCT OR  
SUBSTANCE DEPENDS ON CONCENTRATION, DURATION OF EXPOSURE AND  
EFFECTIVENESS OF ANY FIRST AID TREATMENT REQUIRED.  
- - - - -

SHEET NUMBER: 1393  
SODIUM SULFITE, ANHYDROUS

PAGE

\*\* FIRE/EXPLOSION HAZARDS \*\*  
NFPA HAZARD IDENTIFICATION - HEALTH: 3  
FLAMMABILITY: 0 REACTIVITY: 0 OTHER: 0

THIS PRODUCT HAS NO FLASHPOINT.  
PRODUCT DECOMPOSES BEFORE MELTING. HIGH TEMPERATURES YIELD  
SULFUR DIOXIDE GAS AND A HAZARDOUS RESIDUE WHICH IS NOT  
COMPATIBLE WITH ACIDS. TLV FOR SO<sub>2</sub> IS 5 MG/M<sup>3</sup>.

---  
\*\* REACTIVITY \*\*  
THIS PRODUCT OR SUBSTANCE IS CONSIDERED TO BE STABLE. STABLE  
MATERIALS ARE THOSE THAT NORMALLY HAVE THE CAPACITY TO RESIST  
CHANGES IN THEIR CHEMICAL COMPOSITION.  
CONDITIONS TO AVOID DURING USE:  
HIGH TEMPERATURES  
MATERIALS NOT COMPATIBLE WITH THIS PRODUCT INCLUDE:  
INORGANIC ACIDS, ORGANIC ACIDS, OXIDIZING AGENTS.  
WHEN THIS PRODUCT OR SUBSTANCE IS HEATED TO A LEVEL WHERE IT  
DECOMPOSES, THE FOLLOWING COMPOUNDS ARE PRODUCED:  
SULFUR DIOXIDE GAS AND HAZARDOUS RESIDUE.

WHEN LEFT ALONE, THIS PRODUCT WILL NOT REACT WITH ITSELF IN A  
HAZARDOUS MANNER.

---  
\*\* PERSONAL PROTECTIVE METHODS \*\*  
EYES: IF THERE IS ANY POSSIBILITY OF EYE CONTACT WITH  
THIS PRODUCT OR SUBSTANCE, WEAR CHEMICAL SAFETY GOGGLES  
AND DO NOT WEAR CONTACT LENSES WHEN USING THIS PRODUCT.  
AN EYEWASH SHOULD BE PROVIDED IN THE IMMEDIATE WORK AREA.  
SKIN: IF THERE IS ANY POSSIBILITY OF SKIN CONTACT  
WEAR LONG-SLEEVE WORK CLOTHING AND IMPERVIOUS GLOVES.  
FOR SOLUTIONS WEAR IMPERVIOUS GLOVES AND APRON. IF CONTACT IS  
REPEATED OR PROLONGED WEAR FULL IMPERVIOUS CLOTHING.  
WASH IMMEDIATELY WHEN SKIN BECOMES CONTAMINATED  
AND AT THE END OF EACH WORK SHIFT.  
INHALATION: PROVIDE ADEQUATE LOCAL EXHAUST VENTILATION.  
IF IT IS POSSIBLE TO GENERATE SIGNIFICANT LEVELS OF VAPORS,  
MISTS, OR DUSTS, A NIOSH APPROVED RESPIRATOR IS REQUIRED.

INGESTION: AVOID INGESTING THIS PRODUCT OR SUBSTANCE. WASH  
HANDS WITH SOAP AND WATER BEFORE EATING. ALSO WASH HANDS  
BEFORE SMOKING IN AREAS WHERE NO FIRE HAZARD EXISTS AND  
SMOKING IS PERMITTED.  
IMMEDIATELY REMOVE ANY CLOTHING THAT BECOMES CONTAMINATED.  
WORK CLOTHING SHOULD BE CHANGED DAILY AFTER WORK IF THERE IS  
ANY POSSIBILITY THAT THE CLOTHING IS CONTAMINATED.  
CONTACT THE FACILITY HAZARDOUS MATERIALS/WASTE COORDINATOR AT  
YOUR FACILITY FOR INFORMATION AND INSTRUCTIONS ON WASHING AND  
DISPOSAL OF CLOTHING CONTAMINATED WITH HAZARDOUS MATERIALS.  
THE NATURE OF THE TASK AND AMOUNT OF PRODUCT INVOLVED MAY AFFECT  
THE AMOUNT OF PROTECTIVE CLOTHING REQUIRED, HOWEVER, ALWAYS

DRESS PREPARED FOR THE MAXIMUM PROBABLE EXPOSURE. WEAR GLOVES, BOOTS, APRON AND A FACE SHIELD WITH CHEMICAL SPLASH GOGGLES IF EXPOSURE IS EXPECTED. A FULL SLICKER SUIT IS RECOMMENDED IF GROSS EXPOSURE IS POSSIBLE.

---  
\*\* FIRE CONTROL \*\*

WEAR SELF CONTAINED BREATHING APPARATUS (SCBA).  
USE WATER SPRAY TO COOL CONTAINER AND DISPERSE VAPORS.  
USE MEDIA APPROPRIATE FOR SURROUNDING FIRE.

---  
\*\* STORAGE REQUIREMENTS - POINT OF USE \*\*

THIS PRODUCT SHOULD BE STORED IN A CONTAINER THAT IS PROPERLY LABELED AND AS RECEIVED FROM THE MANUFACTURER.

---  
\*\* STORAGE REQUIREMENTS - SITE STORAGE \*\*

THERE IS NO SARA THRESHOLD PLANNING QUANTITY FOR THIS PRODUCT. THE CONTAINER SHOULD BE STORED IN A PLACE THAT IS COOL AND DRY. IT SHOULD BE STORED AWAY FROM NONCOMPATIBLE MATERIALS. ALSO PROTECT FROM PHYSICAL DAMAGE. KEEP CONTAINERS TIGHTLY SEALED WHEN NOT IN USE.

---  
\*\* TRANSPORTATION REQUIREMENTS \*\*

THIS PRODUCT IS NOT REGULATED BY THE DEPARTMENT OF TRANSPORTATION. IT HAS NO SHIPPING NAME, HAZARD CLASS, OR UN/NA NUMBER. FOR MORE INFORMATION REFER TO 49 CFR 100-177 OR CONSULT YOUR SITE COORDINATOR. EACH PACKAGE OR CONTAINER MUST BE LABELED IN ACCORDANCE WITH APPLICABLE DEPARTMENT OF TRANSPORTATION REGULATIONS.

---  
\*\* SPILL CLEAN-UP / DISPOSAL METHODS \*\*

SMALL SPILLS:

SWEEP UP PRODUCT OR SUBSTANCE. CONTAINERIZE WASTE PRODUCT.

LARGE SPILLS:

SWEEP UP PRODUCT OR SUBSTANCE. CONTAINERIZE WASTE PRODUCT.

ANY PRODUCT MAY BE A HAZARDOUS WASTE. CONTACT THE SITE COORDINATOR AT YOUR FACILITY FOR INFORMATION ON PROPER DISPOSAL OF WASTE. WASTE MANAGEMENT IS A SHARED RESPONSIBILITY FOR ALL EMPLOYEES. EVERY EFFORT SHOULD BE MADE TO MINIMIZE HAZARDOUS WASTE.

THERE IS NO REPORTABLE QUANTITY FOR THIS PRODUCT.

NOTE: BEFORE DISPOSING OF EMPTY CONTAINERS, ENSURE COMPLIANCE WITH THE RCRA EMPTY RULE (HAZARDOUS MATERIALS AND WASTE MANAGEMENT MANUAL, SECTION 7.6.1).

---  
\*\* FIRST AID \*\*

EYES: IF THIS PRODUCT OR SUBSTANCE GETS INTO THE EYES, IMMEDIATELY WASH THE EYES WITH LARGE AMOUNTS OF WATER OR EYEWASH SAFETY FLUID FOR 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER LIDS. IF THE EMPLOYEE IS WEARING CONTACT LENSES, IMMEDIATELY REMOVE THE CONTACT LENSES PRIOR TO FLUSHING THE EYES.

SHEET NUMBER: 1393  
SODIUM SULFITE, ANHYDROUS

PAGE

GET MEDICAL ATTENTION IMMEDIATELY.

SKIN: IF THIS PRODUCT OR SUBSTANCE GETS ON THE SKIN, IMMEDIATELY WASH THE CONTAMINATED SKIN WITH SOAP OR MILD DETERGENT AND WATER. IF THIS PRODUCT OR SUBSTANCE SOAKS THROUGH THE CLOTHING, IMMEDIATELY REMOVE CLOTHING AND WASH THE SKIN WITH SOAP OR MILD DETERGENT AND WATER. GET MEDICAL ATTENTION PROMPTLY.

INHALATION: IF A PERSON BREATHES IN LARGE AMOUNTS OF THIS PRODUCT OR SUBSTANCE, MOVE THE EXPOSED PERSON TO FRESH AIR AT ONCE. IF SYMPTOMS PERSIST, SEEK MEDICAL ATTENTION.

INGESTION: IF THIS PRODUCT OR SUBSTANCE HAS BEEN SWALLOWED AND THE PERSON IS CONSCIOUS, IMMEDIATELY GIVE THE PERSON LARGE QUANTITIES OF WATER. AFTER THE WATER HAS BEEN SWALLOWED, TRY TO GET THE PERSON TO VOMIT BY HAVING HIM TOUCH THE BACK OF THE THROAT WITH THE FINGER. DO NOT MAKE AN UNCONSCIOUS PERSON VOMIT. GET MEDICAL ATTENTION IMMEDIATELY. MILK MAY BE SUBSTITUTED FOR WATER.

- - - - -

07/31/90  
END OF MSDS



MATERIAL SAFETY DATA SHEET  
PUBLIC SERVICE COMPANY OF COLORADO  
POST OFFICE BOX 840  
DENVER CO 80201  
24 HOUR EMERGENCY NUMBER (800) 541-0918  
MSDS INFORMATION (303) 628-2828

PSCO MATERIAL SAFETY DATA SHEET NUMBER: 181  
THIS MSDS APPLIES TO IDENTIFICATION NUMBERS:  
09250452  
ORIGINAL ENTRY DATE: 050589                      LAST REVISION DATE: 062689  
PRODUCT TRADE NAME:  
CALGON CL-37

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\*\* MANUFACTURER(S) \*\*  
CALGON CORPORATION  
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\*\* HAZARDOUS COMPONENTS \*\*  
THE MANUFACTURER(S) OF THIS PRODUCT HAVE DETERMINED THAT IT  
CONTAINS NO HAZARDOUS INGREDIENTS UNDER THE OSHA HAZARD  
COMMUNICATION RULE, 29 CFR 1910.1200. FOR MORE INFORMATION  
CALL THE MSDS INFORMATION HOTLINE AT 628-2828.  
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\*\* DESCRIPTION \*\*  
WHITE OPAQUE EMULSION  
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\*\* POTENTIAL HEALTH EFFECTS \*\*  
EYES: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE  
HEALTH EFFECTS RESULTING FROM EYE EXPOSURE TO THIS PRODUCT, OR  
HAS INDICATED NO HARMFUL EFFECTS RESULT FROM EYE EXPOSURE.

SKIN: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE HEALTH  
EFFECTS RESULTING FROM SKIN EXPOSURE TO THIS PRODUCT, OR HAS  
INDICATED NO HARMFUL EFFECTS RESULT FROM SKIN EXPOSURE.

INHALATION: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE  
HEALTH EFFECTS RESULTING FROM INHALATION OF THIS PRODUCT, OR HAS  
INDICATED NO HARMFUL EFFECTS RESULT FROM INHALATION.

INGESTION: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE  
HEALTH EFFECTS RESULTING FROM INGESTION OF THIS PRODUCT, OR HAS  
INDICATED NO HARMFUL EFFECTS RESULT FROM INGESTION OF THE PRODUCT.

THIS PRODUCT IS PRACTICALLY NON-TOXIC THROUGH INGESTION AND  
DERMAL ABSORPTION. THE PRODUCT IS NOT A PRIMARY SKIN OR EYE  
IRRITANT.

NOTE: THE SEVERITY OF EFFECTS CAUSED BY EXPOSURE TO THIS PRODUCT OF  
SUBSTANCE DEPENDS ON CONCENTRATION, DURATION OF EXPOSURE AND  
EFFECTIVENESS OF ANY FIRST AID TREATMENT REQUIRED.

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\*\* FIRE/EXPLOSION HAZARDS \*\*  
NFPA HAZARD IDENTIFICATION - HEALTH: U



SHEET NUMBER: 181  
CALGON CL-37

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FLAMMABILITY: U    REACTIVITY: U    OTHER: 0  
NOTE: U = UNKNOWN

THIS PRODUCT HAS NO FLASHPOINT.

---  
\*\* REACTIVITY \*\*

THIS PRODUCT OR SUBSTANCE IS CONSIDERED TO BE STABLE. STABLE MATERIALS ARE THOSE THAT NORMALLY HAVE THE CAPACITY TO RESIST CHANGES IN THEIR CHEMICAL COMPOSITION.

MATERIALS NOT COMPATIBLE WITH THIS PRODUCT INCLUDE:  
OXIDIZING AGENTS.

WHEN THIS PRODUCT OR SUBSTANCE IS HEATED TO A LEVEL WHERE IT DECOMPOSES, THE FOLLOWING COMPOUNDS ARE PRODUCED:  
CARBON MONOXIDE, CARBON DIOXIDE, OXIDES OF SILICONE

WHEN LEFT ALONE, THIS PRODUCT WILL NOT REACT WITH ITSELF IN A HAZARDOUS MANNER.

---  
\*\* PERSONAL PROTECTIVE METHODS \*\*

SKIN:

WASH PROMPTLY WHEN SKIN BECOMES CONTAMINATED.

INHALATION:

IF IT IS POSSIBLE TO GENERATE SIGNIFICANT LEVELS OF VAPORS, MISTS, OR DUSTS, A NIOSH APPROVED RESPIRATOR IS REQUIRED.

INGESTION: AVOID INGESTING THIS PRODUCT OR SUBSTANCE. WASH HANDS WITH SOAP AND WATER BEFORE EATING. ALSO WASH HANDS BEFORE SMOKING IN AREAS WHERE NO FIRE HAZARD EXISTS AND SMOKING IS PERMITTED.

CONTACT THE FACILITY HAZARDOUS MATERIALS/WASTE COORDINATOR AT YOUR FACILITY FOR INFORMATION AND INSTRUCTIONS ON WASHING AND DISPOSAL OF CLOTHING CONTAMINATED WITH HAZARDOUS MATERIALS. THE NATURE OF THE TASK AND AMOUNT OF PRODUCT INVOLVED MAY AFFECT THE AMOUNT OF PROTECTIVE CLOTHING REQUIRED, HOWEVER, ALWAYS DRESS PREPARED FOR THE MAXIMUM PROBABLE EXPOSURE. WEAR GLOVES, BOOTS, APRON AND A FACE SHIELD WITH CHEMICAL SPLASH GOGGLES IF EXPOSURE IS EXPECTED. A FULL SLICKER SUIT IS RECOMMENDED IF GROSS EXPOSURE IS POSSIBLE.

---  
\*\* FIRE CONTROL \*\*

THE MANUFACTURER HAS PROVIDED NO FIRE-FIGHTING INSTRUCTIONS. USE ADEQUATE PERSONAL PROTECTION AND FIRE-FIGHTING MEDIA APPROPRIATE FOR SURROUNDING FIRE.

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\*\* STORAGE REQUIREMENTS - POINT OF USE \*\*

THIS PRODUCT SHOULD BE STORED IN A CONTAINER THAT IS PROPERLY LABELED.

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\*\* STORAGE REQUIREMENTS - SITE STORAGE \*\*

THERE IS NO SARA THRESHOLD PLANNING QUANTITY FOR THIS PRODUCT.  
KEEP CONTAINERS TIGHTLY SEALED WHEN NOT IN USE.

\*\*\*  
\*\* TRANSPORTATION REQUIREMENTS \*\*

THIS PRODUCT IS NOT REGULATED BY THE DEPARTMENT OF  
TRANSPORTATION. IT HAS NO SHIPPING NAME, HAZARD CLASS, OR  
UN/NA NUMBER. FOR MORE INFORMATION REFER TO 49 CFR 100-177 OR  
CONSULT YOUR SITE COORDINATOR.  
EACH PACKAGE OR CONTAINER MUST BE LABELED IN ACCORDANCE WITH  
APPLICABLE DEPARTMENT OF TRANSPORTATION REGULATIONS.

\*\*\*  
\*\* SPILL CLEAN-UP / DISPOSAL METHODS \*\*

SMALL SPILLS:

ABSORB WITH ABSORBENT, SAND OR DIRT.  
CONTAINERIZE WASTE PRODUCT.

LARGE SPILLS:

ABSORB WITH APPROPRIATE ABSORBENT, SAND, OR DIRT.  
CONTAINERIZE WASTE PRODUCT.

ANY PRODUCT MAY BE A HAZARDOUS WASTE. CONTACT THE SITE  
COORDINATOR AT YOUR FACILITY FOR INFORMATION ON PROPER  
DISPOSAL OF WASTE. WASTE MANAGEMENT IS A SHARED  
RESPONSIBILITY FOR ALL EMPLOYEES. EVERY EFFORT SHOULD  
BE MADE TO MINIMIZE HAZARDOUS WASTE.

THERE IS NO REPORTABLE QUANTITY FOR THIS PRODUCT.

NOTE: BEFORE DISPOSING OF EMPTY CONTAINERS, ENSURE COMPLIANCE WITH  
THE RCRA EMPTY RULE (HAZARDOUS MATERIALS AND WASTE MANAGEMENT  
MANUAL, SECTION 7.6.1).

\*\*\*  
\*\* FIRST AID \*\*

EYES: IF THIS PRODUCT OR SUBSTANCE GETS INTO THE EYES,  
IMMEDIATELY WASH THE EYES WITH LARGE AMOUNTS OF WATER OR EYEWASH  
SAFETY FLUID FOR 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER  
LIDS. IF THE EMPLOYEE IS WEARING CONTACT LENSES, IMMEDIATELY  
REMOVE THE CONTACT LENSES PRIOR TO FLUSHING THE EYES.

GET MEDICAL ATTENTION PROMPTLY IF DISCOMFORT PERSISTS.

SKIN: IF THIS PRODUCT OR SUBSTANCE GETS ON THE SKIN, PROMPTLY  
WASH THE CONTAMINATED SKIN WITH WATER. IF THIS PRODUCT  
OR SUBSTANCE SOAKS THROUGH THE CLOTHING, PROMPTLY REMOVE THE  
CLOTHING AND WASH THE AREA WITH WATER. IF IRRITATION PERSISTS  
AFTER WASHING, GET MEDICAL ATTENTION.

INHALATION: MANUFACTURER PROVIDES NO INFORMATION ON FIRST AID  
FOR INHALATION OF THIS PRODUCT. IF IRRITATION OR OTHER  
EFFECTS OCCUR THEN CONTACT A PHYSICIAN.

INGESTION: MANUFACTURER PROVIDES NO INFORMATION ON FIRST AID  
FOR INGESTION OF THIS PRODUCT. IF IRRITATION OR OTHER  
EFFECTS OCCUR THEN CONTACT A PHYSICIAN.

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CALGON CL-37

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END OF MSDS

MATERIAL SAFETY DATA SHEET  
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DENVER CO 80201  
24 HOUR EMERGENCY NUMBER (800) 543-018  
MSDS INFORMATION (303) 628-2928

PSCO MATERIAL SAFETY DATA SHEET NUMBER: 1518  
THIS MSDS APPLIES TO IDENTIFICATION NUMBERS:  
09212210 09212202  
ORIGINAL ENTRY DATE: 091588 LAST REVISION DATE: 062089  
PRODUCT TRADE NAME:  
SODA ASH

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\*\* MANUFACTURER(S) \*\*  
STAUFFER CHEMICAL COMPANY  
GENERAL CHEMICAL COMPANY  
FMC CORPORATION, ALKALI CHEMICAL DIVISION  
THOMPSON-HAYWARD CHEMICAL COMPANY  
EM SCIENCE  
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\*\* SYNONYMS \*\*  
DISODIUM CARBONATE, CARBONIC ACID DISODIUM SALT  
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\*\* HAZARDOUS COMPONENTS \*\*  
100 % SODIUM CARBONATE, ANHYDROUS  
CAS: 497-19-8  
THIS IS NOT ON THE OSHA OR ACGIH LIST.  
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\*\* DESCRIPTION \*\*  
WHITE GRANULAR ODORLESS SOLID  
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\*\* POTENTIAL HEALTH EFFECTS \*\*  
EYES: EYE CONTACT WITH THIS PRODUCT CAN CAUSE SEVERE IRRITATION.  
CONTACT WITH THIS PRODUCT MAY RESULT IN CORNEAL OPACITIES OR  
BURNS.  
SKIN: SHORT TERM SKIN CONTACT WITH SIGNIFICANT AMOUNTS  
OF THIS PRODUCT OR SUBSTANCE CAN CAUSE IRRITATION.  
REPEATED CONTACT MAY CAUSE INFLAMMATION AND DRY CRACKED SKIN.  
REPEATED OR PROLONGED SKIN CONTACT CAN PRODUCE DRYING OF THE SKIN.  
INHALATION: BREATHING SIGNIFICANT CONCENTRATIONS OF DUSTS,  
MISTS, FUMES, VAPORS, OR GASEOUS FORMS OF PRODUCT, EVEN  
BRIEFLY, CAN CAUSE IRRITATION.  
INGESTION: INGESTION OF THIS PRODUCT CAN PRODUCE  
IRRITATION.  
INGESTION OF LARGE QUANTITIES MAY PRODUCE CORROSION OF THE  
GASTROINTESTINAL TRACT, VOMITING AND DIARRHEA  
NOTE: THE SEVERITY OF EFFECTS CAUSED BY EXPOSURE TO THIS PRODUCT OF  
SUBSTANCE DEPENDS ON CONCENTRATION, DURATION OF EXPOSURE AND  
EFFECTIVENESS OF ANY FIRST AID TREATMENT REQUIRED.  
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\*\* FIRE/EXPLOSION HAZARDS \*\*  
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SODA ASH

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NFPA HAZARD IDENTIFICATION - HEALTH: 2  
FLAMMABILITY: 0 REACTIVITY: 1 OTHER: 0

THIS PRODUCT HAS NO FLASHPOINT.

-- -- -- -- --  
\*\* REACTIVITY \*\*

THIS PRODUCT OR SUBSTANCE IS CONSIDERED TO BE STABLE. STABLE MATERIALS ARE THOSE THAT NORMALLY HAVE THE CAPACITY TO RESIST CHANGES IN THEIR CHEMICAL COMPOSITION.

CONDITIONS TO AVOID DURING USE:

AVOID SIMULTANEOUS EXPOSURE TO SODA ASH AND LIME DUST. IN THE PRESENCE OF MOISTURE, THE TWO MATERIALS COMBINE TO FORM CAUSTIC SODA, WHICH MAY CAUSE BURNS.

MATERIALS NOT COMPATIBLE WITH THIS PRODUCT INCLUDE:

INORGANIC ACIDS, ORGANIC ACIDS, ORGANIC COMPOUNDS.

ALSO NOT COMPATIBLE WITH:

AVOID CONTACT WITH REDUCING SUGARS

DURING USE OF THIS PRODUCT AVOID:

AVOID CONTACT WITH LIME DUST, ALUMINUM METAL, PHOSPHOROUS PENTOXIDE.

WHEN THIS PRODUCT OR SUBSTANCE IS HEATED TO A LEVEL WHERE IT DECOMPOSES, THE FOLLOWING COMPOUNDS ARE PRODUCED:

CARBON DIOXIDE

WHEN LEFT ALONE, THIS PRODUCT WILL NOT REACT WITH ITSELF IN A HAZARDOUS MANNER.

-- -- -- -- --  
\*\* PERSONAL PROTECTIVE METHODS \*\*

EYES: IF THERE IS ANY POSSIBILITY OF EYE CONTACT WITH THIS PRODUCT OR SUBSTANCE, WEAR CHEMICAL SAFETY GOGGLES.

SKIN: IF THERE IS ANY POSSIBILITY OF SKIN CONTACT WEAR LONG-SLEEVE WORK CLOTHING AND COTTON WORKGLOVES.

WASH PROMPTLY WHEN SKIN BECOMES CONTAMINATED.

INHALATION: PROVIDE ADEQUATE LOCAL EXHAUST VENTILATION.

IF IT IS POSSIBLE TO GENERATE SIGNIFICANT LEVELS OF VAPORS, MISTS, OR DUSTS, A NIOSH APPROVED RESPIRATOR IS REQUIRED.

INGESTION: AVOID INGESTING THIS PRODUCT OR SUBSTANCE. WASH HANDS WITH SOAP AND WATER BEFORE EATING. ALSO WASH HANDS BEFORE SMOKING IN AREAS WHERE NO FIRE HAZARD EXISTS AND SMOKING IS PERMITTED.

CONTACT THE FACILITY HAZARDOUS MATERIALS/WASTE COORDINATOR AT YOUR FACILITY FOR INFORMATION AND INSTRUCTIONS ON WASHING AND DISPOSAL OF CLOTHING CONTAMINATED WITH HAZARDOUS MATERIALS. THE NATURE OF THE TASK AND AMOUNT OF PRODUCT INVOLVED MAY AFFECT THE AMOUNT OF PROTECTIVE CLOTHING REQUIRED, HOWEVER, ALWAYS DRESS PREPARED FOR THE MAXIMUM PROBABLE EXPOSURE. WEAR GLOVES, BOOTS, APRON AND A FACE SHIELD WITH CHEMICAL SPLASH GOGGLES IF EXPOSURE IS EXPECTED. A FULL SLICKER SUIT IS RECOMMENDED IF



GROSS EXPOSURE IS POSSIBLE.

---  
\*\* FIRE CONTROL \*\*

WEAR SELF CONTAINED BREATHING APPARATUS (SCBA) AND FULL PROTECTIVE CLOTHING.

USE CLASS "A" EXTINGUISHING MEDIA.

USE CLASS "B" EXTINGUISHING MEDIA.

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\*\* STORAGE REQUIREMENTS - POINT OF USE \*\*

THIS PRODUCT SHOULD BE STORED IN A CONTAINER THAT IS PROPERLY LABELED AND AS RECEIVED FROM THE MANUFACTURER.

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\*\* STORAGE REQUIREMENTS - SITE STORAGE \*\*

THERE IS NO SARA THRESHOLD PLANNING QUANTITY FOR THIS PRODUCT. THE CONTAINER SHOULD BE STORED IN A PLACE THAT IS COOL AND DRY. IT SHOULD BE STORED AWAY FROM NONCOMPATIBLE MATERIALS, SOURCES OF IGNITION AND SOURCES OF HEAT. KEEP CONTAINERS TIGHTLY SEALED WHEN NOT IN USE.

---  
\*\* TRANSPORTATION REQUIREMENTS \*\*

THIS PRODUCT IS NOT REGULATED BY THE DEPARTMENT OF TRANSPORTATION. IT HAS NO SHIPPING NAME, HAZARD CLASS, OR UN/NA NUMBER. FOR MORE INFORMATION REFER TO 49 CFR 100-177 OR CONSULT YOUR SITE COORDINATOR.

EACH PACKAGE OR CONTAINER MUST BE LABELED IN ACCORDANCE WITH APPLICABLE DEPARTMENT OF TRANSPORTATION REGULATIONS.

---  
\*\* SPILL CLEAN-UP / DISPOSAL METHODS \*\*

SMALL SPILLS:

VENTILATE COMPLETELY OR USE AN APPROPRIATE RESPIRATOR. SWEEP UP PRODUCT OR SUBSTANCE. CONTAINERIZE WASTE PRODUCT.

LARGE SPILLS:

VENTILATE COMPLETELY OR USE AN APPROPRIATE RESPIRATOR. SWEEP UP PRODUCT OR SUBSTANCE. CONTAINERIZE WASTE PRODUCT. DON'T FLUSH TO A SEWER OR WATER SUPPLY.

ANY PRODUCT MAY BE A HAZARDOUS WASTE. CONTACT THE SITE COORDINATOR AT YOUR FACILITY FOR INFORMATION ON PROPER DISPOSAL OF WASTE. WASTE MANAGEMENT IS A SHARED RESPONSIBILITY FOR ALL EMPLOYEES. EVERY EFFORT SHOULD BE MADE TO MINIMIZE HAZARDOUS WASTE.

THERE IS NO REPORTABLE QUANTITY FOR THIS PRODUCT.

NOTE: BEFORE DISPOSING OF EMPTY CONTAINERS, ENSURE COMPLIANCE WITH THE RCRA EMPTY RULE (HAZARDOUS MATERIALS AND WASTE MANAGEMENT MANUAL, SECTION 7.6.1).

---  
\*\* FIRST AID \*\*

EYES: IF THIS PRODUCT OR SUBSTANCE GETS INTO THE EYES, IMMEDIATELY WASH THE EYES WITH LARGE AMOUNTS OF WATER OR EYEWASH SAFETY FLUID FOR 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER LIDS. IF THE EMPLOYEE IS WEARING CONTACT LENSES, IMMEDIATELY

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SODA ASH

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REMOVE THE CONTACT LENSES PRIOR TO FLUSHING THE EYES.  
GET MEDICAL ATTENTION PROMPTLY IF DISCOMFORT PERSISTS.  
SKIN: IF THIS PRODUCT OR SUBSTANCE GETS ON THE SKIN, PROMPTLY  
WASH THE CONTAMINATED SKIN WITH WATER. IF THIS PRODUCT  
OR SUBSTANCE SOAKS THROUGH THE CLOTHING, PROMPTLY REMOVE THE  
CLOTHING AND WASH THE AREA WITH WATER. IF IRRITATION PERSISTS  
AFTER WASHING, GET MEDICAL ATTENTION.  
INHALATION: IF A PERSON BREATHES IN LARGE AMOUNTS OF THIS PRODUCT  
OR SUBSTANCE, MOVE THE EXPOSED PERSON TO FRESH AIR AT ONCE. IF  
SYMPTOMS PERSIST, SEEK MEDICAL ATTENTION.  
INGESTION: IF THIS PRODUCT OR SUBSTANCE HAS BEEN SWALLOWED, AND  
THE PERSON IS CONSCIOUS, IMMEDIATELY GIVE THE PERSON LARGE  
QUANTITIES OF WATER TO DILUTE THE PRODUCT OR SUBSTANCE.  
DO NOT ATTEMPT TO MAKE THE PERSON VOMIT. GET MEDICAL ATTENTION  
IMMEDIATELY.

- - - - -

04/27/90  
END OF MSDS

MATERIAL SAFETY DATA SHEET  
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DENVER CO 80201  
24 HOUR EMERGENCY NUMBER (800) 541-0918  
MSDS INFORMATION (303) 628-2828

PSCO MATERIAL SAFETY DATA SHEET NUMBER: 1163  
THIS MSDS APPLIES TO IDENTIFICATION NUMBERS:  
09250225

ORIGINAL ENTRY DATE: 062088

LAST REVISION DATE: 060789

PRODUCT TRADE NAME:

CITRIC ACID, ANHYDROUS

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\*\* MANUFACTURER(S) \*\*

MILES LABORATORIES

JOH. A. BENCKISER

MALLINCRODT CHEMICAL

HARCROS CHEMICALS

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\*\* SYNONYMS \*\*

2-HYDROXY-1,2,3,PROPANETRICARBOXYLIC ACID

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\*\* HAZARDOUS COMPONENTS \*\*

100 % CITRIC ACID

CAS: 77-92-9

THIS IS NOT ON THE OSHA OR ACGIH LIST.

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\*\* DESCRIPTION \*\*

ODORLESS, FREE FLOWING, WHITE CRYSTALLINE MATERIAL, WITH  
A STRONG ACID TASTE.

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\*\* POTENTIAL HEALTH EFFECTS \*\*

EYES: EYE CONTACT WITH THIS PRODUCT CAN CAUSE SEVERE IRRITATION.

SKIN: SHORT TERM SKIN CONTACT WITH SIGNIFICANT AMOUNTS

OF THIS PRODUCT OR SUBSTANCE CAN CAUSE IRRITATION.

INHALATION: BREATHING SIGNIFICANT CONCENTRATIONS OF DUSTS,  
MISTS, FUMES, VAPORS, OR GASEOUS FORMS OF PRODUCT, EVEN  
BRIEFLY, CAN CAUSE IRRITATION.

INGESTION: INGESTION OF THIS PRODUCT CAN PRODUCE  
IRRITATION, HEADACHE AND/OR NAUSEA OR VOMITING.

NOTE: THE SEVERITY OF EFFECTS CAUSED BY EXPOSURE TO THIS PRODUCT OR  
SUBSTANCE DEPENDS ON CONCENTRATION, DURATION OF EXPOSURE AND  
EFFECTIVENESS OF ANY FIRST AID TREATMENT REQUIRED.

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\*\* FIRE/EXPLOSION HAZARDS \*\*

NFPA HAZARD IDENTIFICATION - HEALTH: 1

FLAMMABILITY: 0 REACTIVITY: 0 OTHER: 0

THIS PRODUCT HAS NO FLASHPOINT.

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\*\* REACTIVITY \*\*

THIS PRODUCT OR SUBSTANCE IS CONSIDERED TO BE STABLE. STABLE MATERIALS ARE THOSE THAT NORMALLY HAVE THE CAPACITY TO RESIST CHANGES IN THEIR CHEMICAL COMPOSITION.

DURING USE OF THIS PRODUCT AVOID:

AQUEOUS REACTION WITH CAUSTIC CAN CREATE HEAT (STRONG EXOTHERM). INCOMPATIBLE WITH POTASSIUM TARTRATE, ACETATES, METAL NITRATES, AND SULFIDES.

WHEN THIS PRODUCT OR SUBSTANCE IS HEATED TO A LEVEL WHERE IT DECOMPOSES, THE FOLLOWING COMPOUNDS ARE PRODUCED:  
TOXIC OXIDES OF CARBON

WHEN LEFT ALONE, THIS PRODUCT WILL NOT REACT WITH ITSELF IN A HAZARDOUS MANNER.

---  
\*\* PERSONAL PROTECTIVE METHODS \*\*

EYES: IF THERE IS ANY POSSIBILITY OF EYE CONTACT WITH THIS PRODUCT OR SUBSTANCE, WEAR CHEMICAL SAFETY GOGGLES AND FULL-FACE SHIELD.

AN EYEWASH SHOULD BE PROVIDED IN THE IMMEDIATE WORK AREA.

SKIN: IF THERE IS A REASONABLE PROBABILITY OF SKIN CONTACT WEAR IMPERVIOUS PANTS AND JACKET OR COVERALLS AND IMPERVIOUS GLOVES.

EYES, NOSE, MOUTH, AND EXPOSED SKIN AREAS SHOULD BE COVERED AS NEEDED TO HELP PREVENT IRRITATION.

INHALATION: PROVIDE ADEQUATE LOCAL EXHAUST VENTILATION. IF IT IS POSSIBLE TO GENERATE SIGNIFICANT LEVELS OF VAPORS, MISTS, OR DUSTS, A NIOSH APPROVED RESPIRATOR IS REQUIRED.

INGESTION: AVOID INGESTING THIS PRODUCT OR SUBSTANCE. WASH HANDS WITH SOAP AND WATER BEFORE EATING. ALSO WASH HANDS BEFORE SMOKING IN AREAS WHERE NO FIRE HAZARD EXISTS AND SMOKING IS PERMITTED.

PROMPTLY REMOVE NON-IMPERVIOUS CLOTHING THAT BECOMES CONTAMINATED.

WORK CLOTHING SHOULD BE CHANGED DAILY AFTER WORK IF THERE IS ANY POSSIBILITY THAT THE CLOTHING IS CONTAMINATED.

CONTACT THE FACILITY HAZARDOUS MATERIALS/WASTE COORDINATOR AT YOUR FACILITY FOR INFORMATION AND INSTRUCTIONS ON WASHING AND DISPOSAL OF CLOTHING CONTAMINATED WITH HAZARDOUS MATERIALS.

THE NATURE OF THE TASK AND AMOUNT OF PRODUCT INVOLVED MAY AFFECT THE AMOUNT OF PROTECTIVE CLOTHING REQUIRED, HOWEVER, ALWAYS DRESS PREPARED FOR THE MAXIMUM PROBABLE EXPOSURE. WEAR GLOVES, BOOTS, APRON AND A FACE SHIELD WITH CHEMICAL SPLASH GOGGLES IF EXPOSURE IS EXPECTED. A FULL SLICKER SUIT IS RECOMMENDED IF GROSS EXPOSURE IS POSSIBLE.

---  
\*\* FIRE CONTROL \*\*

WEAR SELF CONTAINED BREATHING APPARATUS (SCBA) AND FULL PROTECTIVE CLOTHING.

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\*\* STORAGE REQUIREMENTS - POINT OF USE \*\*



THIS PRODUCT SHOULD BE STORED IN A CONTAINER THAT IS PROPERLY LABELED AND APPROVED.

\*\*\*  
\*\* STORAGE REQUIREMENTS - SITE STORAGE \*\*

THERE IS NO SARA THRESHOLD PLANNING QUANTITY FOR THIS PRODUCT. THE CONTAINER SHOULD BE STORED IN A PLACE THAT IS DRY. IT SHOULD BE STORED AWAY FROM NONCOMPATIBLE MATERIALS. KEEP CONTAINERS TIGHTLY SEALED WHEN NOT IN USE.

\*\*\*  
\*\* TRANSPORTATION REQUIREMENTS \*\*

THIS PRODUCT IS NOT REGULATED BY THE DEPARTMENT OF TRANSPORTATION. IT HAS NO SHIPPING NAME, HAZARD CLASS, OR UN/NA NUMBER. FOR MORE INFORMATION REFER TO 49 CFR 100-177 OR CONSULT YOUR SITE COORDINATOR. EACH PACKAGE OR CONTAINER MUST BE LABELED IN ACCORDANCE WITH APPLICABLE DEPARTMENT OF TRANSPORTATION REGULATIONS.

\*\*\*  
\*\* SPILL CLEAN-UP / DISPOSAL METHODS \*\*

SMALL SPILLS:

SWEEP UP PRODUCT OR SUBSTANCE. CONTAINERIZE WASTE PRODUCT.

LARGE SPILLS:

SWEEP UP PRODUCT OR SUBSTANCE. CONTAINERIZE WASTE PRODUCT.

ANY PRODUCT MAY BE A HAZARDOUS WASTE. CONTACT THE SITE COORDINATOR AT YOUR FACILITY FOR INFORMATION ON PROPER DISPOSAL OF WASTE. WASTE MANAGEMENT IS A SHARED RESPONSIBILITY FOR ALL EMPLOYEES. EVERY EFFORT SHOULD BE MADE TO MINIMIZE HAZARDOUS WASTE.

THERE IS NO REPORTABLE QUANTITY FOR THIS PRODUCT.

NOTE: BEFORE DISPOSING OF EMPTY CONTAINERS, ENSURE COMPLIANCE WITH THE RCRA EMPTY RULE (HAZARDOUS MATERIALS AND WASTE MANAGEMENT MANUAL, SECTION 7.6.1).

\*\*\*  
\*\* FIRST AID \*\*

EYES: IF THIS PRODUCT OR SUBSTANCE GETS INTO THE EYES, IMMEDIATELY WASH THE EYES WITH LARGE AMOUNTS OF WATER OR EYEWASH SAFETY FLUID FOR 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER LIDS. IF THE EMPLOYEE IS WEARING CONTACT LENSES, IMMEDIATELY REMOVE THE CONTACT LENSES PRIOR TO FLUSHING THE EYES. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN: IF THIS PRODUCT OR SUBSTANCE GETS ON THE SKIN, FLUSH THE CONTAMINATED SKIN WITH WATER. IF THIS PRODUCT OR SUBSTANCE SOAKS THROUGH THE CLOTHING, IMMEDIATELY REMOVE THE CLOTHING AND FLUSH SKIN WITH WATER. IF IRRITATION PERSISTS AFTER WASHING, GET MEDICAL ATTENTION.

INHALATION: MANUFACTURER PROVIDES NO INFORMATION ON FIRST AID FOR INHALATION OF THIS PRODUCT. IF IRRITATION OR OTHER EFFECTS OCCUR THEN CONTACT A PHYSICIAN.

INGESTION: MANUFACTURER PROVIDES NO INFORMATION ON FIRST AID FOR INGESTION OF THIS PRODUCT. IF IRRITATION OR OTHER



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EFFECTS OCCUR THEN CONTACT PHYSICIAN.

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04/27/90  
END OF MSDS

MATERIAL SAFETY DATA SHEET  
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POST OFFICE BOX 840  
DENVER CO 80201  
24 HOUR EMERGENCY NUMBER (800) 541-0918  
MSDS INFORMATION (303) 628-2828

PSCO MATERIAL SAFETY DATA SHEET NUMBER: 5365  
THIS MSDS APPLIES TO IDENTIFICATION NUMBERS:  
09282489

ORIGINAL ENTRY DATE: 080690                      LAST REVISION DATE: 080690  
PRODUCT TRADE NAME:  
FORMULA 755

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\*\* MANUFACTURER(S) \*\*  
SUMMIT LABORATORIES, INC.

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\*\* HAZARDOUS COMPONENTS \*\*  
10 % ISOASCORBIC ACID, SODIUM SALT  
CAS: 6381-77-7  
THIS IS NOT ON THE OSHA OR ACGIH LIST.

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\*\* DESCRIPTION \*\*  
CLEAR WATER WHITE LIQUID WITH NO ODOR.

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\*\* POTENTIAL HEALTH EFFECTS \*\*  
EYES: EYE CONTACT WITH THIS PRODUCT CAN CAUSE IRRITATION.  
SKIN : REPEATED OR PROLONGED SKIN CONTACT WITH AMOUNTS  
OF THIS PRODUCT OR SUBSTANCE CAN RESULT IN  
INFLAMMATION OF THE SKIN.  
INHALATION: BREATHING SIGNIFICANT CONCENTRATIONS OF DUSTS,  
MISTS, FUMES, VAPORS, OR GASEOUS FORMS OF PRODUCT, EVEN  
BRIEFLY, CAN CAUSE IRRITATION.  
REPEATED OR PROLONGED INHALATION CAN RESULT IN IRRITATION.  
INGESTION. MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE  
HEALTH EFFECTS RESULTING FROM INGESTION OF THIS PRODUCT, OR HAS  
INDICATED NO HARMFUL EFFECTS RESULT FROM INGESTION OF THE PRODUCT.

DO NOT GET IN EYES, ON SKIN, OR ON CLOTHING.  
NOTE: THE SEVERITY OF EFFECTS CAUSED BY EXPOSURE TO THIS PRODUCT OF  
SUBSTANCE DEPENDS ON CONCENTRATION, DURATION OF EXPOSURE AND  
EFFECTIVENESS OF ANY FIRST AID TREATMENT REQUIRED.

-----  
\*\* FIRE/EXPLOSION HAZARDS \*\*  
NFPA HAZARD IDENTIFICATION - HEALTH: U  
FLAMMABILITY: U    REACTIVITY: U    OTHER: 0  
NOTE: U = UNKNOWN

THIS PRODUCT HAS NO FLASHPOINT

-----  
\*\* REACTIVITY \*\*

THIS PRODUCT OR SUBSTANCE IS CONSIDERED TO BE STABLE. STABLE MATERIALS ARE THOSE THAT NORMALLY HAVE THE CAPACITY TO RESIST CHANGES IN THEIR CHEMICAL COMPOSITION.

MATERIALS NOT COMPATIBLE WITH THIS PRODUCT INCLUDE:

OXIDIZING AGENTS.

WHEN LEFT ALONE, THIS PRODUCT WILL NOT REACT WITH ITSELF IN A HAZARDOUS MANNER.

-- -- -- -- --  
\*\* PERSONAL PROTECTIVE METHODS \*\*

EYES: IF THERE IS ANY POSSIBILITY OF EYE CONTACT WITH THIS PRODUCT OR SUBSTANCE, WEAR SAFETY GLASSES.

SKIN: IF THERE IS ANY POSSIBILITY OF SKIN CONTACT WEAR IMPERVIOUS GLOVES.

WASH PROMPTLY WHEN SKIN BECOMES CONTAMINATED.

INHALATION: PROVIDE ADEQUATE GENERAL MECHANICAL VENTILATION. IF IT IS POSSIBLE TO GENERATE SIGNIFICANT LEVELS OF VAPORS, MISTS, OR DUSTS, A NIOSH APPROVED RESPIRATOR IS REQUIRED.

INGESTION: AVOID INGESTING THIS PRODUCT OR SUBSTANCE. WASH HANDS WITH SOAP AND WATER BEFORE EATING. ALSO WASH HANDS BEFORE SMOKING IN AREAS WHERE NO FIRE HAZARD EXISTS AND SMOKING IS PERMITTED.

PROMPTLY REMOVE NON-IMPERVIOUS CLOTHING THAT BECOMES CONTAMINATED.

WORK CLOTHING SHOULD BE CHANGED DAILY AFTER WORK IF THERE IS A REASONABLE PROBABILITY THAT THE CLOTHING IS CONTAMINATED. CONTACT THE FACILITY HAZARDOUS MATERIALS/WASTE COORDINATOR AT YOUR FACILITY FOR INFORMATION AND INSTRUCTIONS ON WASHING AND DISPOSAL OF CLOTHING CONTAMINATED WITH HAZARDOUS MATERIALS. THE NATURE OF THE TASK AND AMOUNT OF PRODUCT INVOLVED MAY AFFECT THE AMOUNT OF PROTECTIVE CLOTHING REQUIRED. HOWEVER, ALWAYS DRESS PREPARED FOR THE MAXIMUM PROBABLE EXPOSURE. WEAR GLOVES, BOOTS, APRON AND A FACE SHIELD WITH CHEMICAL SPLASH GOGGLES IF EXPOSURE IS EXPECTED. A FULL SLICKER SUIT IS RECOMMENDED IF GROSS EXPOSURE IS POSSIBLE.

-- -- -- -- --  
\*\* FIRE CONTROL \*\*

USE CLASS "A" EXTINGUISHING MEDIA.

USE CLASS "B" EXTINGUISHING MEDIA.

-- -- -- -- --  
\*\* STORAGE REQUIREMENTS - POINT OF USE \*\*

THIS PRODUCT SHOULD BE STORED IN A CONTAINER THAT IS PROPERLY LABELED AND AS RECEIVED FROM THE MANUFACTURER.

-- -- -- -- --  
\*\* STORAGE REQUIREMENTS - SITE STORAGE \*\*

THERE IS NO SARA THRESHOLD PLANNING QUANTITY FOR THIS PRODUCT. THE CONTAINER SHOULD BE STORED IN A PLACE THAT IS WARM. IT SHOULD BE STORED AWAY FROM SOURCES OF HEAT. KEEP CONTAINERS TIGHTLY SEALED WHEN NOT IN USE.

-- -- -- -- --  
\*\* TRANSPORTATION REQUIREMENTS \*\*

THIS PRODUCT IS NOT REGULATED BY THE DEPARTMENT OF TRANSPORTATION. IT HAS NO SHIPPING NAME, HAZARD CLASS, OR UN/NA NUMBER. FOR MORE INFORMATION REFER TO 49 CFR 100-177 OR CONSULT YOUR SITE COORDINATOR. EACH PACKAGE OR CONTAINER MUST BE LABELED IN ACCORDANCE WITH APPLICABLE DEPARTMENT OF TRANSPORTATION REGULATIONS.

- - - - -  
\*\* SPILL CLEAN-UP / DISPOSAL METHODS \*\*

SMALL SPILLS:

WIPE UP WITH RAGS. DISPOSE OF PROPERLY.

LARGE SPILLS:

DIKE OFF SPILL WITH EARTH, SAND, ETC.

ABSORB WITH APPROPRIATE ABSORBENT, SAND, OR DIRT.

CONTAINERIZE WASTE PRODUCT.

ANY PRODUCT MAY BE A HAZARDOUS WASTE. CONTACT THE SITE COORDINATOR AT YOUR FACILITY FOR INFORMATION ON PROPER DISPOSAL OF WASTE. WASTE MANAGEMENT IS A SHARED RESPONSIBILITY FOR ALL EMPLOYEES. EVERY EFFORT SHOULD BE MADE TO MINIMIZE HAZARDOUS WASTE.

THERE IS NO REPORTABLE QUANTITY FOR THIS PRODUCT.

NOTE: BEFORE DISPOSING OF EMPTY CONTAINERS, ENSURE COMPLIANCE WITH THE RCRA EMPTY RULE (HAZARDOUS MATERIALS AND WASTE MANAGEMENT MANUAL, SECTION 7.6.1).

- - - - -  
\*\* FIRST AID \*\*

EYES: IF THIS PRODUCT OR SUBSTANCE GETS INTO THE EYES, IMMEDIATELY WASH THE EYES WITH LARGE AMOUNTS OF WATER OR EYEWASH SAFETY FLUID FOR 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER LIDS. IF THE EMPLOYEE IS WEARING CONTACT LENSES, IMMEDIATELY REMOVE THE CONTACT LENSES PRIOR TO FLUSHING THE EYES.

GET MEDICAL ATTENTION PROMPTLY IF DISCOMFORT PERSISTS.

SKIN: IF THIS PRODUCT OR SUBSTANCE GETS ON THE SKIN, FLUSH THE CONTAMINATED SKIN WITH WATER. IF THIS PRODUCT OR SUBSTANCE SOAKS THROUGH THE CLOTHING, IMMEDIATELY REMOVE THE CLOTHING AND FLUSH SKIN WITH WATER. IF IRRITATION PERSISTS AFTER WASHING, GET MEDICAL ATTENTION.

INHALATION: IF A PERSON BREATHES IN LARGE AMOUNTS OF THIS PRODUCT OR SUBSTANCE, MOVE THE EXPOSED PERSON TO FRESH AIR AT ONCE. IF SYMPTOMS PERSIST, SEEK MEDICAL ATTENTION.

INGESTION: MATERIAL GENERALLY RECOGNIZED AS SAFE FOR USE IN FOOD. EMERGENCY FIRST AID SHOULD NOT BE REQUIRED.

\* MSDS not yet  
Assigned PSC number

Page 1

## MATERIAL SAFETY DATA SHEET

SUMMIT LABORATORIES, INC.  
1771 EAST 58TH AVENUE UNIT E  
DENVER, CO 80216

PHONE NUMBER:  
(303) 293-9862

### SECTION 1 - IDENTITY INFORMATION

TRADENAME: FORMULA 756

DESCRIPTION: BOILER FEEDWATER TREATMENT

PRODUCT TYPE: OXYGEN SCAVENGER

HAZARD STATEMENT:

THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD 29 CFR 1910.1200.

### HAZARDOUS INGREDIENTS:

INGREDIENTS	CAS #	%	TLV UNITS
ISOASCORBIC ACID, SODIUM SALT			
(NON HAZARDOUS)	6381-77-7	2 TO 3	
SODIUM METABISULFITE			
(NON HAZARDOUS)	7681-57-4	12 TO 13	
SODIUM SULFITE			
(HAZARDOUS)	7757-83-7	4 TO 5	

NOTE: PRODUCT COMPONENTS DO NOT APPEAR IN THE "CONSOLIDATED LIST OF CHEMICALS"  
SUBJECT TO REPORTING UNDER EPCRA.

### SECTION 2 - PHYSICAL DATA

APPEARANCE:

CLEAR WATER WHITE

ODOR:

SLIGHT ACRID SULFUR



PAGE 2

BOILING POINT: 100 - 103 C (WATER)

FREEZING POINT: 0 - 5 C

DECOMPOSITION TEMPERATURE: N.E.

EVAPORATION RATE: EQUIVALENT TO WATER

PERCENT VOLATILE: APPROX. 80 PERCENT (WATER)

VAPOR DENSITY: EQUIVALENT TO WATER

VAPOR PRESSURE: N.E.

SOLUBILITY IN WATER: COMPLETE

pH: 5.4 TO 5.8

SPECIFIC GRAVITY: 1.16

POUNDS PER GALLON: 9.6

SECTION 3 - FIRE AND EXPLOSION HAZARD DATA
--

FLASH POINT:

NOT APPLICABLE, WATER SOLUTION

FLAMMABLE LIMITS IN AIR-LOWER:

NOT APPLICABLE

FLAMMABLE LIMITS IN AIR-UPPER:

NOT APPLICABLE

NFPA CODE:

N.E.

EXTINGUISHING MEDIA:

MATERIAL IS NOT COMBUSTIBLE. USE EXTINGUISHING MEDIA APPROPRIATE FOR SURROUNDING FIRE.

FIRE FIGHTING PROCEDURES-SPECIAL:

NONE NORMALLY REQUIRED

UNUSUAL FIRE AND EXPLOSION HAZARDS:

NIL

PAGE 3

#### SECTION 4 - REACTIVITY DATA

STABILITY: STABLE

INCOMPATIBILITY: AVOID CONTACT WITH OXIDIZING AGENTS AND ACIDS. CONTACT WITH ACIDS RELEASES IRRITATING SULFUR DIOXIDE GAS.

HAZARDOUS DECOMPOSITION PRODUCTS: CAN LIBERATE OXIDES OF SULFUR

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

#### SECTION 5 - HEALTH HAZARD DATA

EFFECTS OF EXPOSURE - EMERGENCY FIRST AID

EYES: CONTACT MAY CAUSE EYE IRRITATION. FLUSH EYES WITH PLENTY OF WATER. GET MEDICAL ATTENTION IF IRRITATION PERSISTS.

SKIN: CONTACT MAY CAUSE SKIN IRRITATION. FLUSH CONTACTED AREA WITH WATER. LAUNDRY CLOTHING BEFORE REUSE.

INHALATION: INHALATION OF MISTS AND VAPORS CAN CAUSE IRRITATION OF NOSE, THROAT, AND LUNGS. REMOVE TO FRESH AIR.

INGESTION: INGESTION WILL CAUSE IRRITATION OF TO THE MOUTH, ESOPHAGUS, AND STOMACH, RESULTING IN NAUSEA, VOMITING, HEADACHE, AND ABDOMINAL PAIN.

#### SECTION 6 - SPILL OR LEAK PROCEDURES

SPILL PROCEDURES:

LARGE SPILL: DAM AREA TO PREVENT SPILL FROM SPREADING. PUMP INTO APPROPRIATE CONTAINER.

SMALL SPILL: FLUSH LIQUID TO SEWER WITH COPIOUS AMOUNTS OF WATER.

WASTE DISPOSAL METHODS:

DISPOSE IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.

#### SECTION 7 - SPECIAL PROTECTION INFORMATION

VENTILATION: GENERAL MECHANICAL VENTILATION RECOMMENDED FOR ENCLOSED AREAS.

PROTECTIVE GLOVES: IMPERVIOUS GLOVES

RESPIRATORY PROTECTION: NONE REQUIRED FOR NORMAL CONDITIONS.

EYE PROTECTION: SAFETY GLASSES OR CHEMICAL GOGGLES. DO NOT WEAR CONTACT LENSES WHEN WORKING WITH CHEMICALS.

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SPECIAL PRECAUTIONS
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KEEP CONTAINERS TIGHTLY CLOSED WHEN NOT IN USE. AVOID EXCESSIVE HEAT AND COLD.

DO NOT GET IN EYES, ON SKIN, OR ON CLOTHING. DO NOT TAKE INTERNALLY.

WASH THOROUGHLY AFTER HANDLING.

**FOR INDUSTRIAL USE ONLY**

THE INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE BASED UPON DATA BELIEVED TO BE CORRECT. HOWEVER, NO GUARANTEE OR WARRANTY OF ANY KIND EXPRESSED OR IMPLIED IS MADE WITH RESPECT TO THE CONTAINED HEREIN.

Date Prepared : JULY 1990

**SUMMIT LABORATORIES, INC.**  
**PRODUCT BULLETIN**

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**FORMULA 756 OXYGEN SCAVENGER**

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**PRODUCT APPLICATIONS** .... FORMULA 756 IS A FORMULATION CONTAINING SULFITE AND ISOASCORBIC ACID. THE PRODUCT IS DESIGNED TO PROVIDE OXYGEN REMOVAL AND METAL PASSIVATION IN PREBOILER AND BOILER SYSTEMS. THE PRODUCT IS SUPPLIED IN A FORM FOR EASE OF FEEDING AND HANDLING. THIS PRODUCT IS COMPATIBLE WITH MOST STANDARD WATER TREATMENT CHEMICALS WHEN USED AS RECOMMENDED BY YOUR SERVICE REPRESENTATIVE.

**PRODUCT ADVANTAGES** .... FORMULA 756 IS STABLE DURING STORAGE AND USE. THE PRODUCT PROVIDES RAPID LOW TEMPERATURE OXYGEN SCAVENGING AND METAL PASSIVATION. IN ADDITION, THIS PRODUCT IS ENVIRONMENTALLY ACCEPTABLE AND OFFERS NO DISPOSAL PROBLEMS.

**GENERAL DESCRIPTION** ....

COLOR - WATER WHITE

FREEZE POINT - 0-5 C (WATER)

ODOR - SLIGHT ACRID SULFUR

pH (NEAT) - 5.4 TO 5.8

DENSITY - 9.6 LBS/GAL

**APPLICATION RATE** .... THE SPECIFIC DOSAGE OF FORMULA 756 WILL VARY DEPENDING UPON THE OPERATING PRESSURE AND THE FEEDWATER CHEMISTRY. TYPICAL APPLICATIONS OF THIS PRODUCT SHOULD MAINTAIN VALUES OF 20 PPM TO 50 PPM SODIUM SULFITE IN THE BOILER WATER.

**HANDLING AND STORAGE** .... WHEN HANDLING FORMULA 756 AVOID CONTACT WITH EYES, SKIN, CLOTHING AND AVOID BREATHING MIST. DO NOT TAKE INTERNALLY. EYE PROTECTION AND RUBBER GLOVES SHOULD BE WORN WHEN HANDLING. KEEP CONTAINER CLOSED WHEN NOT IN USE. AVOID CONTACT WITH ACIDS AND OXIDIZERS.

**SHIPPING** .... FORMULA 756 IS SHIPPED FROM DENVER, COLORADO. PRODUCT CAN BE SUPPLIED IN 15, 30 OR 55 GALLON RETURNABLE DRUMS OR TOTE (350 GALLON) QUANTITIES.

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SUMMIT LABORATORIES, INC.  
1771 EAST 58th AVE., UNIT E

Phone: (303) 293-9862



Public Service  
Company of Colorado  
P.O. Box 840  
Denver, CO 80201-0840

October 31, 1990

Ms. Pat Nelson  
Industrial Unit Chief  
Permits & Enforcement Section  
Water Quality Control Division  
Colorado Department of Health  
4210 East 11th Avenue  
Denver, CO 80220

RE: Fort St. Vrain Station Wastewater Discharge Permit Renewal  
Application CO-0001121

Dear Pat:

On October 2, 1990, Public Service Company of Colorado hand delivered a wastewater discharge permit renewal application to you for our Fort St. Vrain Station. Data for several parameters under items #19A and #19C were not available at the time the Fort St. Vrain permit renewal application was submitted. This data is attached (2 copies) for inclusion into the Fort St. Vrain application.

Please feel free to contact me at 294-3715 with any questions in this regard.

Sincerely,

Peter J. Cohlma  
Air & Water Programs Coordinator

PJC:tc

Attachments



19A. Sampled 9/10/90

Parameter, units	S. Platte River Upstream (Grab Samples)	St. Vrain Creek Upstream (Grab Samples)	Goosequill (O1SB) Discharge Grab (G) Composite (C)
Total Recoverable Cadmium, mg/l*	<0.005	<0.005	<0.005 (C)
Trivalent Chromium, mg/l*	<0.005	<0.005	<0.005 (C)
Total Chromium, mg/l*	<0.005	<0.005	<0.005 (C)
Total Recoverable Silver, mg/l*	<0.010	<0.010	<0.010 (C)
Total Uranium, mg/l**	0.0356	0.0192	0.0213 (C)
Total Cyanide, mg/l*	0.0925	0.0279	0.101 (C)
Gross Alpha, pCi/l**	5.3±6	5.9±8	23±9 (C)
Total Radium 226, pCi/l**	0.1±0.2	0.2±0.3	0.3±0.3 (C)
Total Radium 228, pCi/l**	1.0±1.3	1.8±1.1	0.9±1.3 (C)

\* Analyzed by Hauser Laboratories, Boulder, CO

\*\* Analyzed by Barringer Laboratories, Golden, CO

19C. i) Sampled 9/10/90

Parameter, units	S. Platte River Upstream (Grab Samples)	St. Vrain Creek Upstream (Grab Samples)	Goosequill (O1SB) Discharge Grab (G) Composite (C)
Total Recoverable Antimony, mg/l*	<0.003	<0.003	<0.003 (C)
Total Recoverable Beryllium, mg/l*	<0.010	<0.010	<0.010 (C)
Total Recoverable Thallium, mg/l*	<0.010	<0.010	<0.010 (C)
Total Cyanide, mg/l*	0.0925	0.0279	0.101 (C)

\* Analyzed by Hauser Laboratories, Boulder, CO



Public Service

Public Service  
Company of Colorado

Anaconda Tower  
555 17th Street, Suite 1200  
Denver, CO 80202-3912

January 29, 1992

Ms. Pat Nelson  
Industrial Unit Chief  
Permits & Enforcement Section  
Water Quality Control Division  
Colorado Department of Health  
4210 East 11th Avenue  
Denver, CO 80220-3716

RE: Fort St. Vrain Station, CDPS No. CO-0001121

Dear Pat:

Public Service Company of Colorado (PSC) submitted the Fort St. Vrain Station wastewater discharge permit renewal application to the Colorado Water Quality Control Division (CWQCD) on October 1, 1990. Since that time, chemical additives have been changed at the Station. To ensure accuracy in the renewal of this permit, a revised Table 14B of all current chemical additives for the Fort St. Vrain Station is attached. Material Safety Data Sheets for all listed products are included.

Please feel free to contact me at 294-2810 with any questions regarding this matter. Thank you.

Sincerely,

*Louise Meyer-Kord for*

Peter J. Cohlma  
Supervisor, Environmental Programs

Attachments

cc: George Vonesh  
Ken Weisser

TABLE 14 B

Please complete the following table for all chemical additives used at the plant which enter or could enter internal (process or treatment) waste streams.

PSCo MSDS # **	Chemical Name * (Common or IUPAC Name)	Trade Name	Manufacturer	Reason Used	Present in What Waste Stream	Final Disposition at Site
#761	Ammonium Hydroxide	Same	Variable	pH Control in Condensate	Turbine Bldg. Sump Reactor Bldg. Sump Demineralizer Sump	02SA 01SA or 01SB Evaporation Ponds
#2658	Sodium Hydroxide	Same	Variable	Demineralizer Regeneration	Demineralizer Sump	Evaporation Ponds
#1771	Sulfuric Acid	Same	Variable	Demineralizer Regeneration	Demineralizer Sump	Evaporation Ponds
#2502	Calcium Hypochlorite	HTH	Variable	Chlorination of Sewage Lagoon Effluent	Sewage Lagoon Effluent	01SA or 01SB
#4983	Chlorine/Bromine Powder	Halocide	Ross Chemical	Biocide in 42 Sys Cooling Tower	Cooling Tower Blowdown	01SA or 01SB
#180	N-Dodecyl/Guanidine Acetate	Calgon H-133	Calgon Corp.	Microbiocide	Cooling Tower Blowdown	01SA or 01SB
#184	Sodium Tolytriazole	Calgon CL-5	Calgon Corp.	Cooling Tower Cut Corrosion Inhibitor	Cooling Tower Blowdown	01SA or 01SB
#183	See MSDS	Calgon PCL-711	Calgon Corp.	Corrosion Inhibitor	Cooling Tower Blowdown	01SA or 01SB
#2061	See MSDS	Calgon CL-361	Calgon Corp.	Cooling Water Surfactant	Cooling Tower Blowdown	01SA or 01SB
#1393	Sodium Sulfite	Same	Variable	Reverse Osmosis Dechlorination	N/A	Evaporation Ponds
#181	Mineral Oil & Kerosene	Calgon CL-37	Calgon Corp.	Antifoam	Cooling Tower Blowdown	01SA or 01SB
#1518 #1163	Soda Ash & Citric Acid	Same	Variable	Emergency for Spills	N/A	Evaporation Ponds

\* If the chemical formula is unknown or confidential, provide the manufacturer's name, contact person, address and phone # or a copy of the manufacturer's brochure, product label information, or materials handling data sheet for each product used. Please list the major constituents or active ingredient, if known.

\*\*MSDSs Attached

TABLE 14 B

Please complete the following table for all chemical additives used at the plant which enter or could enter internal (process or treatment) waste streams.

PSCo MSDS #	Chemical Name * (Common or IUPAC Name)	Trade Name	Manufacturer	Reason Used	Present in What Waste Stream	Final Disposition at Site
397	Sodium Sulfite/Sodium Metabisulfite	Formula 756B	Summit Labs	O <sub>2</sub> Scavenger	Turbine Bldg. Sump Reactor Bldg. Sump	OISA or OISB
	Potassium Hydroxide	Formula 713	Summit Labs	pH Control Aux. Boiler	Turbine Bldg. Sump	OISA or OISB
	Polyacrylic Copolymer					
	Tri-Sodium Phosphate		Various	pH Control Corrosion Inhibitor	Turbine Bldg. Sump	OISA or OISB

\* If the chemical formula is unknown or confidential, provide the manufacturer's name, contact person, address and phone # or a copy of the manufacturer's brochure, product label information, or materials handling data sheet for each product used. Please list the major constituents or active ingredient, if known.



PSCO MATERIAL SAFETY DATA SHEET NUMBER: 761  
THIS MSDS APPLIES TO IDENTIFICATION NUMBERS:  
09250807

ORIGINAL ENTRY DATE: 091588

LAST REVISION DATE: 062389

PRODUCT TRADE NAME:

AMMONIUM HYDROXIDE, 25-30% SOLUTION- AQUA AMMONIA

\*\*- MANUFACTURER(S) \*\*

ALLIED CHEMICAL  
EM SCIENCE

\*\*- SYNONYMS \*\*

AQUEOUS AMMONIA; AMMONIA SOLUTION; AMMONIACAL LIQUOR

\*\*- HAZARDOUS COMPONENTS \*\*

25-30 % AMMONIUM HYDROXIDE

CAS: 1336-21-6

THIS IS NOT ON THE OSHA OR ACGIH LIST.

28-30 % AMMONIA

CAS: 7664-41-7

THE ACGIH LIMIT FOR THIS IS 25 PPM .

\*\*- DESCRIPTION \*\*

WATER WHITE LIQUID WITH A STRONG, PUNGENT AMMONIA  
ODOR

\*\*- POTENTIAL HEALTH EFFECTS \*\*

EYES: EYE CONTACT WITH THIS PRODUCT CAN CAUSE SEVERE IRRITATION  
AND/OR CORNEAL DAMAGE.

CORROSIVE TO TISSUES ON CONTACT. GAS AND VAPOR CAN ALSO  
IRRITATE EYES.

SKIN: SHORT TERM SKIN CONTACT WITH SIGNIFICANT AMOUNTS  
OF THIS PRODUCT OR SUBSTANCE CAN CAUSE IRRITATION.

CORROSIVE TO TISSUES ON CONTACT. CAN CAUSE BLISTERS.  
PRODUCT CAN IRRITATE MOIST SKIN.

INHALATION: BREATHING SIGNIFICANT CONCENTRATIONS OF DUSTS,  
MISTS, FUMES, VAPORS, OR GASEOUS FORMS OF PRODUCT, EVEN  
BRIEFLY, CAN CAUSE SEVERE IRRITATION AND/OR SWELLING.  
CAN CAUSE CHEST PAIN, PINK FROTHY SPUTUM, AND BRONCHIAL  
SPASMS.

INGESTION: INGESTION OF THIS PRODUCT CAN PRODUCE  
SEVERE TISSUE DAMAGE.

CORROSIVE TO TISSUES, CAUSES SEVERE BURNING OF GULLET, MOUTH  
STOMACH AND THROAT. ANY AMOUNT CAN BE DANGEROUS.

INGESTION OF THIS PRODUCT OR SUBSTANCE CAN BE FATAL.

NOTE: THE SEVERITY OF EFFECTS CAUSED BY EXPOSURE TO THIS PRODUCT OR  
SUBSTANCE DEPENDS ON CONCENTRATION, DURATION OF EXPOSURE AND  
EFFECTIVENESS OF ANY FIRST AID TREATMENT REQUIRED.

\*\*- FIRE/EXPLOSION HAZARDS \*\*

NFPA HAZARD IDENTIFICATION - HEALTH: 3

FLAMMABILITY: 1 REACTIVITY: 0 OTHER: 0

THIS PRODUCT HAS NO FLASHPOINT.  
SHEET NUMBER: 761

PAGE

AMMONIUM HYDROXIDE, 25-30% SOLUTION- AQUA AMMONIA

AMMONIA INCREASES THE FIRE HAZARD FROM OTHER COMBUSTIBLE MATERIALS, INCLUDING OIL. FLAMMABLE LIMITS ARE BROADENED BY INCREASING TEMPERATURES.

- - - - -

\*\* REACTIVITY \*\*

THIS PRODUCT OR SUBSTANCE IS CONSIDERED TO BE STABLE. STABLE MATERIALS ARE THOSE THAT NORMALLY HAVE THE CAPACITY TO RESIST CHANGES IN THEIR CHEMICAL COMPOSITION.

CONDITIONS TO AVOID DURING USE:

AVOID HEAT. DECOMPOSES WITHOUT VIOLENCE IN THE ABSENCE OF INCOMPATIBLE MATERIALS.

MATERIALS NOT COMPATIBLE WITH THIS PRODUCT INCLUDE:

INORGANIC ACIDS, ORGANIC ACIDS OXIDIZING AGENTS.

DURING USE OF THIS PRODUCT AVOID:

ACROLEIN, ACRYLIC ACID, DIMETHYL SULFATE, PROPYLENE OXIDE, SILVER NITRATE, PHOSPHOROUS TRIOXIDE, GOLD, MERCURY, NITROGEN TETROXIDE, POTASSIUM FERRICYANIDE, SILVER, SILVER CHLORIDE.

WHEN THIS PRODUCT OR SUBSTANCE IS HEATED TO A LEVEL WHERE IT DECOMPOSES, THE FOLLOWING COMPOUNDS ARE PRODUCED:

GASEOUS AMMONIA AND OXIDES OF NITROGEN

WHEN LEFT ALONE, THIS PRODUCT WILL NOT REACT WITH ITSELF IN A HAZARDOUS MANNER.

- - - - -

\*\* PERSONAL PROTECTIVE METHODS \*\*

EYES: IF THERE IS ANY POSSIBILITY OF EYE CONTACT WITH THIS PRODUCT OR SUBSTANCE, WEAR CHEMICAL SAFETY GOGGLES. AN EYEWASH SHOULD BE PROVIDED IN THE IMMEDIATE WORK AREA.

SKIN: IF THERE IS ANY POSSIBILITY OF SKIN CONTACT

WEAR IMPERVIOUS PANTS AND JACKET OR COVERALLS

AND IMPERVIOUS BOOTS.

USE FULL PROTECTIVE CLOTHING FOR SPILLS, LEAKS, AND OTHER EMERGENCIES

WASH PROMPTLY WHEN SKIN BECOMES CONTAMINATED.

INHALATION: PROVIDE ADEQUATE LOCAL EXHAUST AND/OR GENERAL MECHANICAL VENTILATION.

IF IT IS POSSIBLE TO GENERATE SIGNIFICANT LEVELS OF VAPORS, MISTS, OR DUSTS, A NIOSH APPROVED RESPIRATOR IS REQUIRED.

INGESTION: AVOID INGESTING THIS PRODUCT OR SUBSTANCE. WASH HANDS WITH SOAP AND WATER BEFORE EATING. ALSO WASH HANDS BEFORE SMOKING IN AREAS WHERE NO FIRE HAZARD EXISTS AND SMOKING IS PERMITTED.

PROMPTLY REMOVE NON-IMPERVIOUS CLOTHING THAT BECOMES CONTAMINATED.

WORK CLOTHING SHOULD BE CHANGED DAILY AFTER WORK IF THERE IS ANY POSSIBILITY THAT THE CLOTHING IS CONTAMINATED.

WHEN HANDLING BULK QUANTITIES OF THIS PRODUCT OR SUBSTANCE, PROVIDE A QUICK-DRENCH FULL BODY SHOWER IN THE IMMEDIATE WORK AREA

SHEET NUMBER: 761

AMMONIUM HYDROXIDE, 25-30% SOLUTION- AQUA AMMONIA

CONTACT THE FACILITY HAZARDOUS MATERIALS/WASTE COORDINATOR AT YOUR FACILITY FOR INFORMATION AND INSTRUCTIONS ON WASHING AND DISPOSAL OF CLOTHING CONTAMINATED WITH HAZARDOUS MATERIALS. THE NATURE OF THE TASK AND AMOUNT OF PRODUCT INVOLVED MAY AFFECT THE AMOUNT OF PROTECTIVE CLOTHING REQUIRED. HOWEVER, ALWAYS DRESS PREPARED FOR THE MAXIMUM PROBABLE EXPOSURE. WEAR GLOVES, BOOTS, APRON AND A FACE SHIELD WITH CHEMICAL SPLASH GOGGLES IF EXPOSURE IS EXPECTED. A FULL SLICKER SUIT IS RECOMMENDED IF GROSS EXPOSURE IS POSSIBLE.

-- -- -- -- --  
\*\* FIRE CONTROL \*\*

WEAR SELF CONTAINED BREATHING APPARATUS (SCBA) AND FULL PROTECTIVE CLOTHING.  
USE CLASS "A" EXTINGUISHING MEDIA.  
USE WATER SPRAY TO COOL CONTAINER AND DISPERSE VAPORS.  
DO NOT USE CARBON DIOXIDE BASED EXTINGUISHING MEDIA, AS IT MAY REACT VIOLENTLY WITH THIS PRODUCT.

-- -- -- -- --  
\*\* STORAGE REQUIREMENTS - POINT OF USE \*\*

THIS PRODUCT SHOULD BE STORED IN A CONTAINER THAT IS PROPERLY LABELED AND AS RECEIVED FROM THE MANUFACTURER.

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\*\* STORAGE REQUIREMENTS - SITE STORAGE \*\*

THE SARA THRESHOLD PLANNING QUANTITY FOR THIS PRODUCT OR SUBSTANCE IS 500 LBS.  
IT SHOULD BE STORED AWAY FROM  
NONCOMPATIBLE PRODUCTS OR SUBSTANCES AND SOURCES OF IGNITION.  
KEEP CONTAINERS TIGHTLY SEALED WHEN NOT IN USE.

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\*\* TRANSPORTATION REQUIREMENTS \*\*

THIS PRODUCT OR SUBSTANCE IS REGULATED. THE DOT SHIPPING NAME OF THE PRODUCT IS:

AMMONIUM HYDROXIDE SOLUTION  
CONTAINS - AMMONIA

THE UN/NA NUMBER OF THIS PRODUCT IS NA2672 .

THE HAZARD CLASS OF THIS PRODUCT IS:

CORROSIVE MATERIAL

CONTAINERS OF THIS PRODUCT MUST BE LABELLED: 'CORROSIVE'.  
EACH PACKAGE OR CONTAINER MUST BE LABELED IN ACCORDANCE WITH APPLICABLE DEPARTMENT OF TRANSPORTATION REGULATIONS.

MOTOR VEHICLES CARRYING MORE THAN 1000 POUNDS OR MORE THAN 110 GALLONS OF THIS SUBSTANCE MUST BE PLACARDED ON EACH SIDE AND END WITH PLACARDING THAT READS:

'CORROSIVE'.

IF THIS PRODUCT OR SUBSTANCE IS TRANSPORTED WITH OTHER MATERIALS (EXCEPT THOSE LABELED AS 'CLASS A' OR 'CLASS B EXPLOSIVES', 'POISON GAS', 'DANGEROUS WHEN WET', OR 'RADIOACTIVE I, II OR III'), A 'DANGEROUS' PLACARD MAY BE SUBSTITUTED FOR INDIVIDUAL PLACARDS. OTHERWISE, INDIVIDUAL PLACARDS MUST BE USED ON THE VEHICLE.

SHEET NUMBER: 761

AMMONIUM HYDROXIDE, 25-30% SOLUTION- AQUA AMMONIA

A SHIPPING PAPER IS REQUIRED FOR TRANSPORT OF THIS MATERIAL.

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\*\* SPILL CLEAN-UP / DISPOSAL METHODS \*\*

SMALL SPILLS:

REMOVE ALL SOURCES OF IGNITION.  
EVACUATE THE AREA IMMEDIATELY. WARN OTHERS.  
DILUTE WITH THE REQUIRED AMOUNT OF WATER.  
CONTAINERIZE WASTE PRODUCT.

LARGE SPILLS:

STOP SOURCE OF LEAKAGE. REMOVE ALL SOURCES OF IGNITION.  
REENTER ONLY WITH PERSONAL PROTECTIVE EQUIPMENT.  
DIKE OFF SPILL WITH EARTH, SAND, ETC.  
CONTAINERIZE WASTE PRODUCT.

IF THIS PRODUCT OR SUBSTANCE BECOMES A WASTE, IT IS CLASSIFIED  
AS A HAZARDOUS WASTE ACCORDING TO EPA REGULATION, AND MUST  
BE RECYCLED OR DISPOSED OF AS A HAZARDOUS WASTE.

FOR THE ORIGINAL, UNDILUTED PRODUCT THE FOLLOWING IS TRUE:

THE EPA WASTE NUMBER OF THIS SUBSTANCE IS : D002 .

THE CATEGORY OF THIS SUBSTANCE IS : CORROSIVE .

THE REPORTABLE QUANTITY OF THIS SUBSTANCE IS: 100 LBS.

NOTE: BEFORE DISPOSING OF EMPTY CONTAINERS, ENSURE COMPLIANCE WITH  
THE RCRA EMPTY RULE (HAZARDOUS MATERIALS AND WASTE MANAGEMENT  
MANUAL, SECTION 7.6.1).

-- -- -- -- --  
\*\* FIRST AID \*\*

EYES: IF THIS PRODUCT OR SUBSTANCE GETS INTO THE EYES,  
IMMEDIATELY WASH THE EYES WITH LARGE AMOUNTS OF WATER OR EYEWASH  
SAFETY FLUID FOR 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER  
LIDS. IF THE EMPLOYEE IS WEARING CONTACT LENSES, IMMEDIATELY  
REMOVE THE CONTACT LENSES PRIOR TO FLUSHING THE EYES.  
GET MEDICAL ATTENTION IMMEDIATELY.

SKIN: IF THIS PRODUCT OR SUBSTANCE GETS ON THE SKIN, PROMPTLY  
WASH THE CONTAMINATED SKIN WITH WATER. IF THIS PRODUCT  
OR SUBSTANCE SOAKS THROUGH THE CLOTHING, PROMPTLY REMOVE THE  
CLOTHING AND WASH THE AREA WITH WATER. IF IRRITATION PERSISTS  
AFTER WASHING, GET MEDICAL ATTENTION.

INHALATION: IF A PERSON BREATHES IN LARGE AMOUNTS OF THIS PRODUCT  
OR SUBSTANCE, MOVE THE EXPOSED PERSON TO FRESH AIR AT ONCE. IF  
BREATHING HAS STOPPED, PERFORM ARTIFICIAL RESPIRATION. KEEP THE  
AFFECTED PERSON WARM AND AT REST. GET MEDICAL ATTENTION AS SOON  
POSSIBLE.

INGESTION: IF THIS PRODUCT OR SUBSTANCE HAS BEEN SWALLOWED, AND  
THE PERSON IS CONSCIOUS, IMMEDIATELY GIVE THE PERSON LARGE  
QUANTITIES OF WATER TO DILUTE THE PRODUCT OR SUBSTANCE.  
DO NOT ATTEMPT TO MAKE THE PERSON VOMIT. GET MEDICAL ATTENTION  
IMMEDIATELY.

DILUTED VINEGAR, LEMON, ORANGE, OR OTHER FRUIT JUICES MAY BE  
SUBSTITUTED FOR WATER. FOLLOW WITH EGG WHITES, OLIVE OIL, OR  
MILK.



MATERIAL SAFETY DATA SHEET  
PUBLIC SERVICE COMPANY OF COLORADO  
POST OFFICE BOX 840  
DENVER CO 80201  
24 HOUR EMERGENCY NUMBER (800) 541-0918  
MSDS INFORMATION (303) 628-2828

PSCO MATERIAL SAFETY DATA SHEET NUMBER: 2658  
THIS MSDS APPLIES TO IDENTIFICATION NUMBERS:  
09212114

ORIGINAL ENTRY DATE: 081588

LAST REVISION DATE: 061190

PRODUCT TRADE NAME:

50% CAUSTIC SODA-RAYON

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\*\* MANUFACTURER(S) \*\*

DIAMOND SHAMROCK

ASHLAND CHEMICAL COMPANY

DOW CHEMICAL U.S.A.

VAN WATERS & ROGERS INC.

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\*\* HAZARDOUS COMPONENTS \*\*

50 % SODIUM HYDROXIDE

CAS: 1310-73-2

THE OSHA LIMIT FOR THIS CHEMICAL IS 2 MG/M3 C .

< 0.2 % SODIUM CARBONATE

CAS: 497-19-8

THIS IS NOT ON THE OSHA OR ACGIH LIST.

<1.0 % SODIUM CHLORIDE

CAS: 7647-14-5

THIS IS NOT ON THE OSHA OR ACGIH LIST.

< 0.2 % SODIUM CHLORATE

CAS: 7775-09-9

THIS IS NOT ON THE OSHA OR ACGIH LIST.

balance % WATER

CAS: 7732-18-5

THIS IS NOT ON THE OSHA OR ACGIH LIST.

---  
\*\* DESCRIPTION \*\*

CLEAR LIQUID WITH NO ODOR

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\*\* POTENTIAL HEALTH EFFECTS \*\*

EYES: EYE CONTACT WITH THIS PRODUCT CAN CAUSE  
SEVERE TISSUE DAMAGE AND/OR BLINDNESS.

SKIN: SHORT TERM SKIN CONTACT WITH SIGNIFICANT AMOUNTS  
OF THIS PRODUCT OR SUBSTANCE CAN CAUSE BURNS,  
AND OTHER TISSUE DAMAGE.

INHALATION: BREATHING SIGNIFICANT CONCENTRATIONS OF DUSTS,  
MISTS, FUMES, VAPORS, OR GASEOUS FORMS OF PRODUCT, EVEN  
BRIEFLY, CAN CAUSE SEVERE TISSUE DAMAGE AND/OR LUNG DAMAGE.  
COUL. PRODUCE CHEMICAL PNEUMONIA

INGESTION: INGESTION OF THIS PRODUCT CAN PRODUCE  
SEVERE TISSUE DAMAGE.



COULD ALSO CAUSE PERFORATION OF THE ESOPHAGUS, THROAT AND STOMACH.

NOTE: THE SEVERITY OF EFFECTS CAUSED BY EXPOSURE TO THIS PRODUCT OR SUBSTANCE DEPENDS ON CONCENTRATION, DURATION OF EXPOSURE AND EFFECTIVENESS OF ANY FIRST AID TREATMENT REQUIRED.

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\*\* FIRE/EXPLOSION HAZARDS \*\*

NFPA HAZARD IDENTIFICATION - HEALTH: 3  
FLAMMABILITY: 0 REACTIVITY: 1 OTHER: 0

THIS PRODUCT HAS NO FLASHPOINT.

-----  
\*\* REACTIVITY \*\*

THIS PRODUCT OR SUBSTANCE IS CONSIDERED TO BE STABLE. STABLE MATERIALS ARE THOSE THAT NORMALLY HAVE THE CAPACITY TO RESIST CHANGES IN THEIR CHEMICAL COMPOSITION.

DURING USE OF THIS PRODUCT AVOID:

AVOID DIRECT CONTACT WITH WATER. AVOID CONTACT WITH ALUMINUM, TIN, ZINC AND ALLOYS CONTAINING THESE MATERIALS. DO NOT MIX WITH STRONG ACIDS WITHOUT DILUTION AND AGITATION TO PREVENT VIOLENT OR EXPLOSIVE REACTION. AVOID CONTACT WITH LEATHER OR WOOL.

WHEN THIS PRODUCT OR SUBSTANCE IS HEATED TO A LEVEL WHERE IT DECOMPOSES, THE FOLLOWING COMPOUNDS ARE PRODUCED:  
NONE

WHEN LEFT ALONE, THIS PRODUCT WILL NOT REACT WITH ITSELF IN A HAZARDOUS MANNER.

-----  
\*\* PERSONAL PROTECTIVE METHODS \*\*

EYES: IF THERE IS ANY POSSIBILITY OF EYE CONTACT WITH THIS PRODUCT OR SUBSTANCE, WEAR CHEMICAL SAFETY GOGGLES AND FULL-FACE SHIELD.

AN EYEWASH SHOULD BE PROVIDED IN THE IMMEDIATE WORK AREA.

SKIN: IF THERE IS ANY POSSIBILITY OF SKIN CONTACT WEAR IMPERVIOUS GLOVES.

INHALATION: PROVIDE ADEQUATE LOCAL EXHAUST VENTILATION. FOR HIGH CONCENTRATIONS, USE A RESPIRATOR

IF IT IS POSSIBLE TO GENERATE SIGNIFICANT LEVELS OF VAPORS, MISTS, OR DUSTS, A NIOSH APPROVED RESPIRATOR IS REQUIRED.

INGESTION: AVOID INGESTING THIS PRODUCT OR SUBSTANCE. WASH HANDS WITH SOAP AND WATER BEFORE EATING. ALSO WASH HANDS BEFORE SMOKING IN AREAS WHERE NO FIRE HAZARD EXISTS AND SMOKING IS PERMITTED.

WHEN HANDLING BULK QUANTITIES OF THIS PRODUCT OR SUBSTANCE, PROVIDE A QUICK-DRENCH FULL BODY SHOWER IN THE IMMEDIATE WORK AREA

CONTACT THE FACILITY HAZARDOUS MATERIALS/WASTE COORDINATOR AT YOUR FACILITY FOR INFORMATION AND INSTRUCTIONS ON WASHING AND DISPOSAL OF CLOTHING CONTAMINATED WITH HAZARDOUS MATERIALS.

THE NATURE OF THE TASK AND AMOUNT OF PRODUCT INVOLVED MAY AFFECT THE AMOUNT OF PROTECTIVE CLOTHING REQUIRED, HOWEVER, ALWAYS DRESS PREPARED FOR THE MAXIMUM PROBABLE EXPOSURE. WEAR GLOVES, BOOTS, APRON AND A FACE SHIELD WITH CHEMICAL SPLASH GOGGLES IF EXPOSURE IS EXPECTED. A FULL SLICKER SUIT IS RECOMMENDED IF GROSS EXPOSURE IS POSSIBLE.

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\*\* FIRE CONTROL \*\*

USE WATER SPRAY, FOAM, CARBON DIOXIDE, OR DRY CHEMICALS TO EXTINGUISH FIRES.

\*\*\*  
\*\* STORAGE REQUIREMENTS - POINT OF USE \*\*

THIS PRODUCT SHOULD BE STORED IN A CONTAINER THAT IS PROPERLY LABELED.

\*\*\*  
\*\* STORAGE REQUIREMENTS - SITE STORAGE \*\*

THERE IS NO SARA THRESHOLD PLANNING QUANTITY FOR THIS PRODUCT. IT SHOULD BE STORED AWAY FROM NONCOMPATIBLE MATERIALS. KEEP CONTAINERS TIGHTLY SEALED WHEN NOT IN USE.

\*\*\*  
\*\* TRANSPORTATION REQUIREMENTS \*\*

THIS PRODUCT OR SUBSTANCE IS REGULATED. THE DOT SHIPPING NAME OF THE PRODUCT IS:

SODIUM HYDROXIDE SOLUTION

THE UN/NA NUMBER OF THIS PRODUCT IS UN1824 .

THE HAZARD CLASS OF THIS PRODUCT IS:

CORROSIVE MATERIAL

CONTAINERS OF THIS PRODUCT MUST BE LABELLED: 'CORROSIVE'. EACH PACKAGE OR CONTAINER MUST BE LABELED IN ACCORDANCE WITH APPLICABLE DEPARTMENT OF TRANSPORTATION REGULATIONS.

MOTOR VEHICLES CARRYING MORE THAN 1000 POUNDS OR MORE THAN 110 GALLONS OF THIS SUBSTANCE MUST BE PLACARDED ON EACH SIDE AND END WITH PLACARDING THAT READS: 'CORROSIVE'.

IF THIS PRODUCT OR SUBSTANCE IS TRANSPORTED WITH OTHER MATERIALS (EXCEPT THOSE LABELED AS 'CLASS A' OR 'CLASS B EXPLOSIVES', 'POISON GAS', 'DANGEROUS WHEN WET', OR 'RADIOACTIVE I, II OR III'), A 'DANGEROUS' PLACARD MAY BE SUBSTITUTED FOR INDIVIDUAL PLACARDS. OTHERWISE, INDIVIDUAL PLACARDS MUST BE USED ON THE VEHICLE.

A SHIPPING PAPER IS REQUIRED FOR TRANSPORT OF THIS MATERIAL.

\*\*\*  
\*\* SPILL CLEAN-UP / DISPOSAL METHODS \*\*

SMALL SPILLS:

SAME PROCEDURE AS LARGE SPILLS.

LARGE SPILLS:

CONTAINERIZE WASTE PRODUCT.

SPILLS SHOULD BE REMOVED BY USING A VACUUM TRUCK. NEUTRALIZE REMAINING TRACES OF MATERIAL WITH ANY DILUTE INORGANIC ACID SUCH AS HYDROCHLORIC, SULFURIC, NITRIC, PHOSPHORIC, AND ACETIC ACID.

IF THIS PRODUCT OR SUBSTANCE BECOMES A WASTE, IT IS CLASSIFIED AS A HAZARDOUS WASTE ACCORDING TO EPA REGULATION, AND MUST BE RECYCLED OR DISPOSED OF AS A HAZARDOUS WASTE. FOR THE ORIGINAL, UNDILUTED PRODUCT THE FOLLOWING IS TRUE: THE EPA WASTE NUMBER OF THIS SUBSTANCE IS : D002 . THE CATEGORY OF THIS SUBSTANCE IS : CORROSIVE . THE REPORTABLE QUANTITY OF THIS SUBSTANCE IS:1000 LBS. NOTE: BEFORE DISPOSING OF EMPTY CONTAINERS, ENSURE COMPLIANCE WITH THE RCRA EMPTY RULE (HAZARDOUS MATERIALS AND WASTE MANAGEMENT MANUAL, SECTION 7.6.1).

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\*\* FIRST AID \*\*

EYES: IF THIS PRODUCT OR SUBSTANCE GETS INTO THE EYES, IMMEDIATELY WASH THE EYES WITH LARGE AMOUNTS OF WATER OR EYEWASH SAFETY FLUID FOR 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER LIDS. IF THE EMPLOYEE IS WEARING CONTACT LENSES, IMMEDIATELY REMOVE THE CONTACT LENSES PRIOR TO FLUSHING THE EYES. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN: IF THIS PRODUCT OR SUBSTANCE GETS ON THE SKIN, IMMEDIATELY FLUSH THE CONTAMINATED SKIN WITH WATER. IF THIS PRODUCT OR SUBSTANCE PENETRATES THROUGH CLOTHING, IMMEDIATELY REMOVE THE CLOTHING AND FLUSH THE SKIN WITH WATER. GET MEDICAL ATTENTION PROMPTLY.

DISCARD FOOTWEAR WHICH CANNOT BE DECONTAMINATED.

INHALATION: IF A PERSON BREATHES IN LARGE AMOUNTS OF THIS PRODUCT OR SUBSTANCE, MOVE THE EXPOSED PERSON TO FRESH AIR AT ONCE. IF BREATHING HAS STOPPED, PERFORM ARTIFICIAL RESPIRATION. KEEP THE AFFECTED PERSON WARM AND AT REST. GET MEDICAL ATTENTION AS SOON POSSIBLE.

INGESTION: IF THIS PRODUCT OR SUBSTANCE HAS BEEN SWALLOWED, AND THE PERSON IS CONSCIOUS, IMMEDIATELY GIVE THE PERSON LARGE QUANTITIES OF WATER TO DILUTE THE PRODUCT OR SUBSTANCE. DO NOT ATTEMPT TO MAKE THE PERSON VOMIT. GET MEDICAL ATTENTION IMMEDIATELY.

---  
06/12/90  
END OF MSDS

MATERIAL SAFETY DATA SHEET  
PUBLIC SERVICE COMPANY OF COLORADO  
POST OFFICE BOX 840  
DENVER CO 80201  
24 HOUR EMERGENCY NUMBER (800) 541-0918  
MSDS INFORMATION (303) 628-2828

PSCO MATERIAL SAFETY DATA SHEET NUMBER: 1771  
THIS MSDS APPLIES TO IDENTIFICATION NUMBERS:  
09250233 09250209 09250217  
ORIGINAL ENTRY DATE: 042888 LAST REVISION DATE: 060789  
PRODUCT TRADE NAME:  
SULFURIC ACID

\*\*\* MANUFACTURER(S) \*\*\*  
PHILLIPS CHEMICAL COMPANY ALLIED CHEMICAL COMPANY  
CHEMICAL MARKETING SERVICES VAN WATERS & ROGERS INC.  
J.T. BAKER CHEMICAL COMPANY  
GENERAL CHEMICAL  
TEXASGULF CHEMICALS ROHM AND HAAS COMPANY

\*\*\* HAZARDOUS COMPONENTS \*\*\*  
93-98 % SULFURIC ACID  
CAS: 7664-93-9  
THE OSHA LIMIT FOR THIS CHEMICAL IS 1 MG/M3 .

\*\*\* DESCRIPTION \*\*\*  
COLORLESS TO BROWNISH OILY LIQUID WITH NO ODOR

\*\*\* POTENTIAL HEALTH EFFECTS \*\*\*  
EYES: CORROSIVE; DEVASTATING INJURY RESULTING IN GLAUCOMA, CATARACTS,  
EXTENSIVE DAMAGE TO CORNEA AND CONJUNCTIVA.  
SKIN: CORROSIVE; CAN BURN AND CHAR THE SKIN WHICH CAN LEAD TO  
SCARRING  
INHALATION: BREATHING SIGNIFICANT CONCENTRATIONS OF DUSTS,  
MISTS, FUMES, VAPORS, OR GASEOUS FORMS OF PRODUCT, EVEN  
BRIEFLY, CAN CAUSE COUGHING, SEVERE IRRITATION, SWELLING  
AND/OR ASPHYXIATION.  
INGESTION: CORROSIVE TO TISSUES; IMMEDIATE PAIN WHEN TAKEN INTO THE  
MOUTH AS WELL AS SPASM OF THE LARYNX, TRACHEA, AND BRONCHI.  
EPGASTRIC PAIN, NAUSEA, VOMITING INTENSE THIRST, CIRCULATORY  
COLLAPSE, PERFORATION OF THE TRACHEA OR STOMACH, AND DEATH.  
NOTE: THE SEVERITY OF EFFECTS CAUSED BY EXPOSURE TO THIS PRODUCT OR  
SUBSTANCE DEPENDS ON CONCENTRATION, DURATION OF EXPOSURE AND  
EFFECTIVENESS OF ANY FIRST AID TREATMENT REQUIRED.

\*\*\* FIRE/EXPLOSION HAZARDS \*\*\*  
NFPA HAZARD IDENTIFICATION - HEALTH: 3  
FLAMMABILITY: 0 REACTIVITY: 2 OTHER: 0

THIS PRODUCT HAS NO FLASHPOINT.  
CAN CAUSE IGNITION ON CONTACT WITH COMBUSTIBLES. EXOTHERMIC

WITH WATER. SULFURIC OXIDES AND HYDROGEN GAS MAY BE RELEASED AS DECOMPOSITION PRODUCTS.

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REACTIVITY \*\*

THIS PRODUCT OR SUBSTANCE IS CONSIDERED TO BE STABLE. STABLE MATERIALS ARE THOSE THAT NORMALLY HAVE THE CAPACITY TO RESIST CHANGES IN THEIR CHEMICAL COMPOSITION.

DURING USE OF THIS PRODUCT AVOID:

AVOID OXIDIZING OR REDUCING MATERIALS, METALS, COMBUSTIBLE MATERIALS AND MOISTURE. DO NOT ADD WATER TO THE PRODUCT.

WHEN THIS PRODUCT OR SUBSTANCE IS HEATED TO A LEVEL WHERE IT DECOMPOSES, THE FOLLOWING COMPOUNDS ARE PRODUCED:

SULFURIC ACID MISTS AND SULFUR OXIDES. HYDROGEN GAS CAN BE GENERATED AS A DECOMPOSITION PRODUCT WHICH IS FLAMMABLE.

WHEN LEFT ALONE, THIS PRODUCT WILL NOT REACT WITH ITSELF IN A HAZARDOUS MANNER.

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\*\* PERSONAL PROTECTIVE METHODS \*\*

EYES: IF THERE IS ANY POSSIBILITY OF EYE CONTACT WITH THIS PRODUCT OR SUBSTANCE, WEAR CHEMICAL SAFETY GOGGLES AND FULL-FACE SHIELD.

AN EYEWASH SHOULD BE PROVIDED IN THE IMMEDIATE WORK AREA.

SKIN: IF THERE IS ANY POSSIBILITY OF SKIN CONTACT WEAR IMPERVIOUS GLOVES.

INHALATION: PROVIDE ADEQUATE GENERAL MECHANICAL VENTILATION. FOR HIGH CONCENTRATIONS, USE A RESPIRATOR

IF IT IS POSSIBLE TO GENERATE SIGNIFICANT LEVELS OF VAPORS, MISTS, OR DUSTS, A NIOSH APPROVED RESPIRATOR IS REQUIRED.

INGESTION: AVOID INGESTING THIS PRODUCT OR SUBSTANCE. WASH HANDS WITH SOAP AND WATER BEFORE EATING. ALSO WASH HANDS BEFORE SMOKING IN AREAS WHERE NO FIRE HAZARD EXISTS AND SMOKING IS PERMITTED.

WHEN HANDLING BULK QUANTITIES OF THIS PRODUCT OR SUBSTANCE, PROVIDE A QUICK-DRENCH FULL BODY SHOWER IN THE IMMEDIATE WORK AREA

CONTACT THE FACILITY HAZARDOUS MATERIALS/WASTE COORDINATOR AT YOUR FACILITY FOR INFORMATION AND INSTRUCTIONS ON WASHING AND DISPOSAL OF CLOTHING CONTAMINATED WITH HAZARDOUS MATERIALS. THE NATURE OF THE TASK AND AMOUNT OF PRODUCT INVOLVED MAY AFFECT THE AMOUNT OF PROTECTIVE CLOTHING REQUIRED, HOWEVER, ALWAYS DRESS PREPARED FOR THE MAXIMUM PROBABLE EXPOSURE. WEAR GLOVES, BOOTS, APRON AND A FACE SHIELD WITH CHEMICAL SPLASH GOGGLES IF EXPOSURE IS EXPECTED. A FULL SLICKER SUIT IS RECOMMENDED IF GROSS EXPOSURE IS POSSIBLE.

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\*\* FIRE CONTROL \*\*

USE CLASS "B" EXTINGUISHING MEDIA.

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\*\* STORAGE REQUIREMENTS - POINT OF USE \*\*



THIS PRODUCT SHOULD BE STORED IN A CONTAINER THAT IS PROPERLY LABELED.

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\*\* STORAGE REQUIREMENTS - SITE STORAGE \*\*  
THE SARA THRESHOLD PLANNING QUANTITY FOR THIS PRODUCT OR SUBSTANCE IS 1000 LBS.  
IT SHOULD BE STORED AWAY FROM NONCOMPATIBLE MATERIALS AND SOURCES OF IGNITION.  
KEEP CONTAINERS TIGHTLY SEALED WHEN NOT IN USE.

-- -- -- -- --  
\*\* TRANSPORTATION REQUIREMENTS \*\*  
THIS PRODUCT OR SUBSTANCE IS REGULATED. THE DOT SHIPPING NAME OF THE PRODUCT IS:  
SULFURIC ACID  
THE UN/NA NUMBER OF THIS PRODUCT IS UN1830 .  
THE HAZARD CLASS OF THIS PRODUCT IS:  
CORROSIVE MATERIAL  
CONTAINERS OF THIS PRODUCT MUST BE LABELLED: 'CORROSIVE'.  
EACH PACKAGE OR CONTAINER MUST BE LABELED IN ACCORDANCE WITH APPLICABLE DEPARTMENT OF TRANSPORTATION REGULATIONS.  
MOTOR VEHICLES CARRYING MORE THAN 1000 POUNDS OR MORE THAN 110 GALLONS OF THIS SUBSTANCE MUST BE PLACARDED ON EACH SIDE AND END WITH PLACARDING THAT READS:  
'CORROSIVE'.  
IF THIS PRODUCT OR SUBSTANCE IS TRANSPORTED WITH OTHER MATERIALS (EXCEPT THOSE LABELED AS 'CLASS A' OR 'CLASS B EXPLOSIVES', 'POISON GAS', 'DANGEROUS WHEN WET', OR 'RADIOACTIVE I, II OR III'), A 'DANGEROUS' PLACARD MAY BE SUBSTITUTED FOR INDIVIDUAL PLACARDS. OTHERWISE, INDIVIDUAL PLACARDS MUST BE USED ON THE VEHICLE.  
A SHIPPING PAPER IS REQUIRED FOR TRANSPORT OF THIS MATERIAL.

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\*\* SPILL CLEAN-UP / DISPOSAL METHODS \*\*  
SMALL SPILLS:  
SAME PROCEDURE AS LARGE SPILLS.  
LARGE SPILLS:  
DIKE OFF SPILL WITH EARTH, SAND, ETC.  
NEUTRALIZE WITH REQUIRED AMOUNT OF BASE.  
CONTAINERIZE WASTE PRODUCT.  
DON'T FLUSH TO A SEWER OR WATER SUPPLY.  
PROTECT FROM CONTACT WITH COMBUSTIBLES  
IF THIS PRODUCT OR SUBSTANCE BECOMES A WASTE, IT IS CLASSIFIED AS A HAZARDOUS WASTE ACCORDING TO EPA REGULATION, AND MUST BE RECYCLED OR DISPOSED OF AS A HAZARDOUS WASTE.  
FOR THE ORIGINAL, UNDILUTED PRODUCT THE FOLLOWING IS TRUE:  
THE EPA WASTE NUMBER OF THIS SUBSTANCE IS : D002 .  
THE CATEGORY OF THIS SUBSTANCE IS : CORROSIVE .  
THE REPORTABLE QUANTITY OF THIS SUBSTANCE IS:1000 LBS.  
NOTE: BEFORE DISPOSING OF EMPTY CONTAINERS, ENSURE COMPLIANCE WITH THE RCRA EMPTY RULE (HAZARDOUS MATERIALS AND WASTE MANAGEMENT MANUAL, SECTION 7.6.1).

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\*\* FIRST AID \*\*

EYES: IF THIS PRODUCT OR SUBSTANCE GETS INTO THE EYES, IMMEDIATELY WASH THE EYES WITH LARGE AMOUNTS OF WATER OR EYEWASH SAFETY FLUID FOR 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER LIDS. IF THE EMPLOYEE IS WEARING CONTACT LENSES, IMMEDIATELY REMOVE THE CONTACT LENSES PRIOR TO FLUSHING THE EYES. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN: IF THIS PRODUCT OR SUBSTANCE GETS ON THE SKIN, IMMEDIATELY FLUSH THE CONTAMINATED SKIN WITH WATER. IF THIS PRODUCT OR SUBSTANCE PENETRATES THROUGH CLOTHING, IMMEDIATELY REMOVE THE CLOTHING AND FLUSH THE SKIN WITH WATER. GET MEDICAL ATTENTION PROMPTLY.

TREAT FOR SHOCK AS NECESSARY.

INHALATION: IF A PERSON BREATHES IN LARGE AMOUNTS OF THIS PRODUCT OR SUBSTANCE, MOVE THE EXPOSED PERSON TO FRESH AIR AT ONCE. IF BREATHING HAS STOPPED, PERFORM ARTIFICIAL RESPIRATION. KEEP THE AFFECTED PERSON WARM AND AT REST. GET MEDICAL ATTENTION AS SOON POSSIBLE.

INGESTION: IF THIS PRODUCT OR SUBSTANCE HAS BEEN SWALLOWED, DO NOT INDUCE VOMITING. GET MEDICAL ATTENTION IMMEDIATELY. IF VOMITUS IS BLOODY, DO NOT ATTEMPT TO GIVE ANYTHING BY MOUTH OTHERWISE, RINSE VICTIMS MOUTH AND LIPS AND ASSIST VICTIM IN DRINKING LARGE AMOUNTS OF WATER. DO NOT ATTEMPT NEUTRALIZATION

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04/27/90  
END OF MSDS

MATERIAL SAFETY DATA SHEET  
PUBLIC SERVICE COMPANY OF COLORADO  
POST OFFICE BOX 840  
DENVER CO 80201  
24 HOUR EMERGENCY NUMBER (800) 541-0918  
MSDS INFORMATION (303) 628-2828

PSCO MATERIAL SAFETY DATA SHEET NUMBER: 2502  
THIS MSDS APPLIES TO IDENTIFICATION NUMBERS:  
09242890 09241513 09241505  
ORIGINAL ENTRY DATE: 081588 LAST REVISION DATE: 061589  
PRODUCT TRADE NAME:  
HTH INDUSTRIAL AND COMMERCIAL TABLETS

\*\*\* MANUFACTURER(S) \*\*\*  
OLIN CORPORATION  
PPG INDUSTRIES, INC.

\*\*\* HAZARDOUS COMPONENTS \*\*\*  
100 % CALCIUM HYPOCHLORITE  
CAS: 7778-54-3  
THIS IS NOT ON THE OSHA OR ACGIH LIST.

\*\*\* DESCRIPTION \*\*\*  
WHITE TABLETS WITH CHLORINE ODOR

\*\*\* POTENTIAL HEALTH EFFECTS \*\*\*  
EYES: EYE CONTACT WITH THIS PRODUCT CAN CAUSE SEVERE IRRITATION.  
SKIN: SHORT TERM SKIN CONTACT WITH SIGNIFICANT AMOUNTS  
OF THIS PRODUCT OR SUBSTANCE CAN CAUSE IRRITATION.  
REDNESS, PAIN. CORROSIVE TO ALL TISSUES CONTACTED.  
REPEATED OR PROLONGED SKIN CONTACT CAN PRODUCE  
INFLAMMATION OF THE SKIN.  
INHALATION: BREATHING SIGNIFICANT CONCENTRATIONS OF DUSTS,  
MISTS, FUMES, VAPORS, OR GASEOUS FORMS OF PRODUCT, EVEN  
BRIEFLY, CAN CAUSE IRRITATION.  
CORROSIVE TO ALL TISSUES CONTACTED  
INGESTION: INGESTION OF THIS PRODUCT CAN PRODUCE  
NAUSEA OR VOMITING.  
CORROSIVE TO ALL TISSUES CONTACTED. MAY CAUSE CONSTRICTION  
OF THROAT, BREATHING DIFFICULTY, AND PERFORATION OF THE GUT.  
NOTE: THE SEVERITY OF EFFECTS CAUSED BY EXPOSURE TO THIS PRODUCT OR  
SUBSTANCE DEPENDS ON CONCENTRATION, DURATION OF EXPOSURE AND  
EFFECTIVENESS OF ANY FIRST AID TREATMENT REQUIRED.

\*\*\* FIRE/EXPLOSION HAZARDS \*\*\*  
NFPA HAZARD IDENTIFICATION - HEALTH: 2  
FLAMMABILITY: 0 REACTIVITY: 2 OTHER: 0

THIS PRODUCT HAS NO FLASHPOINT.

\*\*\* REACTIVITY \*\*\*

THIS PRODUCT OR SUBSTANCE IS CONSIDERED TO BE UNSTABLE.  
UNSTABLE MATERIALS ARE CAPABLE OF UNDERGOING VIOLENT CHEMICAL  
CHANGE OR REACTION.

CONDITIONS TO AVOID DURING USE:

DO NOT MIX WITH ANYTHING BUT WATER

MATERIALS NOT COMPATIBLE WITH THIS PRODUCT INCLUDE:

INORGANIC ACIDS, ORGANIC ACIDS, ORGANIC COMPOUNDS  
, ORGANIC SOLVENTS.

ALSO NOT COMPATIBLE WITH:

ALSO AVOID POOL CHEMICALS (SPECIFICALLY ISOCYANURATES)

WHEN THIS PRODUCT OR SUBSTANCE IS HEATED TO A LEVEL WHERE IT  
DECOMPOSES, THE FOLLOWING COMPOUNDS ARE PRODUCED:

CHLORINE GAS

WHEN LEFT ALONE, THIS PRODUCT WILL NOT REACT WITH ITSELF IN A  
HAZARDOUS MANNER.

- - - - -  
\*\* PERSONAL PROTECTIVE METHODS \*\*

EYES: IF THERE IS ANY POSSIBILITY OF EYE CONTACT WITH  
THIS PRODUCT OR SUBSTANCE, WEAR CHEMICAL SAFETY GOGGLES.

SKIN: IF THERE IS ANY POSSIBILITY OF SKIN CONTACT  
WEAR IMPERVIOUS PANTS AND JACKET OR COVERALLS, IMPERVIOUS BOOTS  
AND IMPERVIOUS GLOVES.

WASH PROMPTLY WHEN SKIN BECOMES CONTAMINATED.

INHALATION: PROVIDE ADEQUATE LOCAL EXHAUST VENTILATION.

IF IT IS POSSIBLE TO GENERATE SIGNIFICANT LEVELS OF VAPORS,  
MISTS, OR DUSTS, A NIOSH APPROVED RESPIRATOR IS REQUIRED.

INGESTION: AVOID INGESTING THIS PRODUCT OR SUBSTANCE. WASH  
HANDS WITH SOAP AND WATER BEFORE EATING. ALSO WASH HANDS  
BEFORE SMOKING IN AREAS WHERE NO FIRE HAZARD EXISTS AND  
SMOKING IS PERMITTED.

PROMPTLY REMOVE NON-IMPERVIOUS CLOTHING THAT BECOMES  
CONTAMINATED.

WORK CLOTHING SHOULD BE CHANGED DAILY AFTER WORK IF THERE IS  
ANY POSSIBILITY THAT THE CLOTHING IS CONTAMINATED.

CONTACT THE FACILITY HAZARDOUS MATERIALS/WASTE COORDINATOR AT  
YOUR FACILITY FOR INFORMATION AND INSTRUCTIONS ON WASHING AND  
DISPOSAL OF CLOTHING CONTAMINATED WITH HAZARDOUS MATERIALS.

THE NATURE OF THE TASK AND AMOUNT OF PRODUCT INVOLVED MAY AFFECT  
THE AMOUNT OF PROTECTIVE CLOTHING REQUIRED, HOWEVER, ALWAYS  
DRESS PREPARED FOR THE MAXIMUM PROBABLE EXPOSURE. WEAR GLOVES,  
BOOTS, APRON AND A FACE SHIELD WITH CHEMICAL SPLASH GOGGLES IF  
EXPOSURE IS EXPECTED. A FULL SLICKER SUIT IS RECOMMENDED IF  
GROSS EXPOSURE IS POSSIBLE.

- - - - -  
\*\* FIRE CONTROL \*\*

WEAR SELF CONTAINED BREATHING APPARATUS (SCBA) AND FULL  
PROTECTIVE CLOTHING.

USE CLASS "A" EXTINGUISHING MEDIA.

USE WATER SPRAY TO COOL CONTAINER AND DISPERSE VAPORS.

FIKE TEMPERATURES MAY CAUSE CONTAINERS TO EXPLODE.

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\*\* STORAGE REQUIREMENTS - POINT OF USE \*\*  
THIS PRODUCT SHOULD BE STORED IN A CONTAINER THAT IS  
PROPERLY LABELED AND AS RECEIVED FROM THE MANUFACTURER.

\*\*\*  
\*\* STORAGE REQUIREMENTS - SITE STORAGE \*\*  
THERE IS NO SARA THRESHOLD PLANNING QUANTITY FOR THIS PRODUCT.  
THE CONTAINER SHOULD BE STORED IN A PLACE THAT IS COOL, DRY  
AND WELL-VENTILATED.  
IT SHOULD BE STORED AWAY FROM NONCOMPATIBLE MATERIALS,  
SOURCES OF IGNITION AND SOURCES OF HEAT.  
COMBUSTIBLE CHEMICALS  
KEEP CONTAINERS TIGHTLY SEALED WHEN NOT IN USE.

\*\*\*  
\*\* TRANSPORTATION REQUIREMENTS \*\*  
THIS PRODUCT OR SUBSTANCE IS REGULATED. THE DOT SHIPPING  
NAME OF THE PRODUCT IS:  
CALCIUM HYPOCHLORITE, HYDRATED  
THE UN/NA NUMBER OF THIS PRODUCT IS UN2880 .  
THE HAZARD CLASS OF THIS PRODUCT IS:  
OXIDIZER  
CONTAINERS OF THIS PRODUCT MUST BE LABELLED: 'OXIDIZER'.  
EACH PACKAGE OR CONTAINER MUST BE LABELED IN ACCORDANCE WITH  
APPLICABLE DEPARTMENT OF TRANSPORTATION REGULATIONS.  
MOTOR VEHICLES CARRYING MORE THAN 1000 POUNDS OR MORE THAN  
110 GALLONS OF THIS SUBSTANCE MUST BE PLACARDED ON EACH SIDE  
AND END WITH PLACARDING THAT READS:  
'OXIDIZER'.  
IF THIS PRODUCT OR SUBSTANCE IS TRANSPORTED WITH OTHER MATERIALS  
(EXCEPT THOSE LABELED AS 'CLASS A' OR 'CLASS B EXPLOSIVES',  
'POISON GAS', 'DANGEROUS WHEN WET', OR 'RADIOACTIVE 1, II  
OR III'), A 'DANGEROUS' PLACARD MAY BE SUBSTITUTED FOR  
INDIVIDUAL PLACARDS. OTHERWISE, INDIVIDUAL PLACARDS MUST BE  
USED ON THE VEHICLE.  
A SHIPPING PAPER IS REQUIRED FOR TRANSPORT OF THIS MATERIAL.

\*\*\*  
\*\* SPILL CLEAN-UP / DISPOSAL METHODS \*\*  
SMALL SPILLS:  
REMOVE ALL SOURCES OF IGNITION. SWEEP UP PRODUCT OR SUBSTANCE.  
CONTAINERIZE WASTE PRODUCT.  
MINIMIZE CONTACT BETWEEN PRODUCT AND ORGANIC MATERIALS.  
LARGE SPILLS:  
REMOVE ALL SOURCES OF IGNITION.  
VENTILATE COMPLETELY OR USE AN APPROPRIATE RESPIRATOR.  
REENTER ONLY WITH PERSONAL PROTECTIVE EQUIPMENT.  
CONTAINERIZE WASTE PRODUCT.  
DON'T FLUSH TO A SEWER OR WATER SUPPLY.  
CALL EMERGENCY CONTACT NUMBER. MINIMIZE CONTACT BETWEEN  
PRODUCT AND ORGANIC MATERIALS  
IF THIS PRODUCT OR SUBSTANCE BECOMES A WASTE, IT IS CLASSIFIED



SHEET NUMBER: 2502  
HTH INDUSTRIAL AND COMMERCIAL TABLETS

PAGE

AS A HAZARDOUS WASTE ACCORDING TO EPA REGULATION, AND MUST  
BE RECYCLED OR DISPOSED OF AS A HAZARDOUS WASTE.  
FOR THE ORIGINAL, UNDILUTED PRODUCT THE FOLLOWING INFORMATION:  
THE EPA WASTE NUMBER OF THIS SUBSTANCE IS : D003 .  
THE CATEGORY OF THIS SUBSTANCE IS : REACTIVE .  
THE REPORTABLE QUANTITY OF THIS SUBSTANCE IS: 10 LBS.  
NOTE: BEFORE DISPOSING OF EMPTY CONTAINERS, ENSURE COMPLIANCE WITH  
THE RCRA EMPTY RULE (HAZARDOUS MATERIALS AND WASTE MANAGEMENT  
MANUAL, SECTION 7.6.1).

---  
\*\* FIRST AID \*\*

EYES: IF THIS PRODUCT OR SUBSTANCE GETS INTO THE EYES,  
IMMEDIATELY WASH THE EYES WITH LARGE AMOUNTS OF WATER OR EYEWASH  
SAFETY FLUID FOR 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER  
LIDS. IF THE EMPLOYEE IS WEARING CONTACT LENSES, IMMEDIATELY  
REMOVE THE CONTACT LENSES PRIOR TO FLUSHING THE EYES.

GET MEDICAL ATTENTION IMMEDIATELY.

SKIN: IF THIS PRODUCT OR SUBSTANCE GETS ON THE SKIN,  
FLUSH THE CONTAMINATED SKIN WITH WATER. IF THIS PRODUCT OR  
SUBSTANCE SOAKS THROUGH THE CLOTHING, IMMEDIATELY REMOVE  
THE CLOTHING AND FLUSH SKIN WITH WATER. IF IRRITATION PERSISTS  
AFTER WASHING, GET MEDICAL ATTENTION.

INHALATION: IF A PERSON BREATHES IN LARGE AMOUNTS OF THIS PRODUCT  
OR SUBSTANCE, MOVE THE EXPOSED PERSON TO FRESH AIR AT ONCE. IF  
SYMPTOMS PERSIST, SEEK MEDICAL ATTENTION.

INGESTION: IF THIS PRODUCT OR SUBSTANCE HAS BEEN SWALLOWED, AND  
THE PERSON IS CONSCIOUS, IMMEDIATELY GIVE THE PERSON LARGE  
QUANTITIES OF WATER TO DILUTE THE PRODUCT OR SUBSTANCE.  
DO NOT ATTEMPT TO MAKE THE PERSON VOMIT. GET MEDICAL ATTENTION  
IMMEDIATELY.

---  
05/09/90  
END OF MSDS

MATERIAL SAFETY DATA SHEET  
PUBLIC SERVICE COMPANY OF COLORADO  
POST OFFICE BOX 840  
DENVER CO 80201  
24 HOUR EMERGENCY NUMBER (800) 541-0918  
MSDS INFORMATION (303) 628-2828

PSCC MATERIAL SAFETY DATA SHEET NUMBER: 4983  
THIS MSDS APPLIES TO IDENTIFICATION NUMBERS:  
0924153

ORIGINAL ENTRY DATE: 072490      LAST REVISION DATE: 072490  
PRODUCT TRADE NAME:  
HALOCIDE

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\*\* MANUFACTURER(S) \*\*  
ROSS CHEMICAL INC.

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\*\* HAZARDOUS COMPONENTS \*\*  
60 % 1-BROMO-3-CHLORO-5,5-DIMETHYLHYDANTOIN  
CAS: 126-06-7  
THIS IS NOT ON THE OSHA OR ACGIH LIST.  
27.4 % 1,3-DICHLORO-5,5-DIMETHYLHYDANTOIN  
CAS: 118-52-5  
THE OSHA LIMIT FOR THIS CHEMICAL IS .2 MG/M3 .  
1.6 % 1,3-DICHLORO-5-ETHYL-5-METHYLHYDANTOIN  
CAS: 89-5-87-2  
THIS IS NOT ON THE OSHA OR ACGIH LIST.

---  
\*\* DESCRIPTION \*\*  
OFF WHITE GRANULAR SOLID WITH A SLIGHT PUNGENT ODOR.

---  
\*\* POTENTIAL HEALTH EFFECTS \*\*  
EYES: EYE CONTACT WITH THIS PRODUCT CAN CAUSE SEVERE IRRITATION  
AND/OR SEVERE TISSUE DAMAGE.  
CONTACT CAN PRODUCE IRREVERSIBLE CELLULAR DAMAGE. THIS  
PRODUCT IS CORROSIVE TO EYES.  
SKIN: SHORT TERM SKIN CONTACT WITH SIGNIFICANT AMOUNTS  
OF THIS PRODUCT OR SUBSTANCE CAN CAUSE IRRITATION AND/OR BURNS.  
PRODUCT IS CORROSIVE TO SKIN. REPETITIVE SKIN EXPOSURE CAN  
CAUSE SENSITIZATION.  
REPEATED OR PROLONGED SKIN CONTACT CAN PRODUCE  
AN ALLERGIC REACTION AND/OR BURNS.  
INHALATION: BREATHING SIGNIFICANT CONCENTRATIONS OF DUSTS,  
MISTS, FUMES, VAPORS, OR GASEOUS FORMS OF PRODUCT, EVEN  
BRIEFLY, CAN CAUSE SEVERE IRRITATION AND/OR SEVERE TISSUE DAMAGE.  
SYSTEMIC ABSORPTION MAY OCCUR.  
INGESTION: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE  
HEALTH EFFECTS RESULTING FROM INGESTION OF THIS PRODUCT, OR HAS  
INDICATED NO HARMFUL EFFECTS RESULT FROM INGESTION OF THE PRODUCT.

NOTE: THE SEVERITY OF EFFECTS CAUSED BY EXPOSURE TO THIS PRODUCT OR

SHEET NUMBER: 4983  
HALOCIDE

PAGE

SUBSTANCE DEPENDS ON CONCENTRATION, DURATION OF EXPOSURE AND EFFECTIVENESS OF ANY FIRST AID TREATMENT REQUIRED.

-----  
\*\* FIRE/EXPLOSION HAZARDS \*\*

NFPA HAZARD IDENTIFICATION - HEALTH: U

FLAMMABILITY: U REACTIVITY: U OTHER: 0

NOTE: U = UNKNOWN

THIS PRODUCT HAS NO FLASHPOINT.  
PRODUCT DECOMPOSES AT 165 DEG C. MATERIAL IS  
COMBUSTIBLE IN A FIRE.

-----  
\*\* REACTIVITY \*\*

THIS PRODUCT OR SUBSTANCE IS CONSIDERED TO BE STABLE. STABLE MATERIALS ARE THOSE THAT NORMALLY HAVE THE CAPACITY TO RESIST CHANGES IN THEIR CHEMICAL COMPOSITION.

CONDITIONS TO AVOID DURING USE:

HIGH TEMPERATURES AND MOISTURE DURING STORAGE.

MATERIALS NOT COMPATIBLE WITH THIS PRODUCT INCLUDE:

INORGANIC ACIDS, INORGANIC BASES, ORGANIC COMPOUNDS.

WHEN THIS PRODUCT OR SUBSTANCE IS HEATED TO A LEVEL WHERE IT DECOMPOSES, THE FOLLOWING COMPOUNDS ARE PRODUCED:  
NOXIOUS GASES.

WHEN LEFT ALONE, THIS PRODUCT WILL NOT REACT WITH ITSELF IN A HAZARDOUS MANNER.

-----  
\*\* PERSONAL PROTECTIVE METHODS \*\*

EYES: IF THERE IS ANY POSSIBILITY OF EYE CONTACT WITH THIS PRODUCT OR SUBSTANCE, WEAR CHEMICAL SAFETY GOGGLES. AN EYEWASH SHOULD BE PROVIDED IN THE IMMEDIATE WORK AREA.

SKIN: IF THERE IS ANY POSSIBILITY OF SKIN CONTACT WEAR IMPERVIOUS GLOVES.

USE ADDITIONAL PROTECTION TO PROTECT SKIN FROM REPEATED OR PROLONGED EXPOSURE.

WASH IMMEDIATELY WHEN SKIN BECOMES CONTAMINATED.

INHALATION: PROVIDE ADEQUATE LOCAL EXHAUST VENTILATION.

IF IT IS POSSIBLE TO GENERATE SIGNIFICANT LEVELS OF VAPORS, MISTS, OR DUSTS, A NIOSH APPROVED RESPIRATOR IS REQUIRED.

INGESTION: AVOID INGESTING THIS PRODUCT OR SUBSTANCE. WASH HANDS WITH SOAP AND WATER BEFORE EATING. ALSO WASH HANDS BEFORE SMOKING IN AREAS WHERE NO FIRE HAZARD EXISTS AND SMOKING IS PERMITTED.

IMMEDIATELY REMOVE ANY CLOTHING THAT BECOMES CONTAMINATED. WORK CLOTHING SHOULD BE CHANGED DAILY AFTER WORK IF THERE IS ANY POSSIBILITY THAT THE CLOTHING IS CONTAMINATED.

WHEN HANDLING BULK QUANTITIES OF THIS PRODUCT OR SUBSTANCE, PROVIDE A QUICK-DRENCH FULL BODY SHOWER IN THE IMMEDIATE WORK AREA

CONTACT THE FACILITY HAZARDOUS MATERIALS/WASTE COORDINATOR AT

YOUR FACILITY FOR INFORMATION AND INSTRUCTIONS ON WASHING AND DISPOSAL OF CLOTHING CONTAMINATED WITH HAZARDOUS MATERIALS. THE NATURE OF THE TASK AND AMOUNT OF PRODUCT INVOLVED MAY AFFECT THE AMOUNT OF PROTECTIVE CLOTHING REQUIRED, HOWEVER, ALWAYS DRESS PREPARED FOR THE MAXIMUM PROBABLE EXPOSURE. WEAR GLOVES, BOOTS, APRON AND A FACE SHIELD WITH CHEMICAL SPLASH GOGGLES IF EXPOSURE IS EXPECTED. A FULL SLICKER SUIT IS RECOMMENDED IF GROSS EXPOSURE IS POSSIBLE.

- - - - -  
\*\* FIRE CONTROL \*\*

WEAR SELF CONTAINED BREATHING APPARATUS (SCBA) AND FULL PROTECTIVE CLOTHING.  
USE CLASS "B" EXTINGUISHING MEDIA.  
USE WATER SPRAY TO COOL CONTAINER AND DISPERSE VAPORS.  
FIRE TEMPERATURES MAY PRODUCE TOXIC BY-PRODUCTS.  
WATER FOG MAY ALSO BE USED TO CONTROL FIRE.

- - - - -  
\*\* STORAGE REQUIREMENTS - POINT OF USE \*\*

THIS PRODUCT SHOULD BE STORED IN A CONTAINER THAT IS PROPERLY LABELED AND AS RECEIVED FROM THE MANUFACTURER.

- - - - -  
\*\* STORAGE REQUIREMENTS - SITE STORAGE \*\*

THERE IS NO SARA THRESHOLD PLANNING QUANTITY FOR THIS PRODUCT. THE CONTAINER SHOULD BE STORED IN A PLACE THAT IS COOL AND DRY. IT SHOULD BE STORED AWAY FROM NONCOMPATIBLE MATERIALS AND SOURCES OF HEAT.  
KEEP CONTAINERS TIGHTLY SEALED WHEN NOT IN USE.

- - - - -  
\*\* TRANSPORTATION REQUIREMENTS \*\*

THIS PRODUCT OR SUBSTANCE IS REGULATED. THE DOT SHIPPING NAME OF THE PRODUCT IS:

OXIDIZER, CORROSIVE, SOLID, N.O.S.  
CONTAINS - 1-BROMO-3-CHLORO 5,5-DIMETHYLHYDANTOIN  
THE UN/NA NUMBER OF THIS PRODUCT IS NA9194 .  
THE HAZARD CLASS OF THIS PRODUCT IS:

OXIDIZER

CONTAINERS OF THIS PRODUCT MUST BE LABELLED: 'CORROSIVE' AND 'OXIDIZER'.

EACH PACKAGE OR CONTAINER MUST BE LABELED IN ACCORDANCE WITH APPLICABLE DEPARTMENT OF TRANSPORTATION REGULATIONS.

MOTOR VEHICLES CARRYING MORE THAN 1000 POUNDS OR MORE THAN 110 GALLONS OF THIS SUBSTANCE MUST BE PLACARDED ON EACH SIDE AND END WITH PLACARDING THAT READS:

'CORROSIVE' AND 'OXIDIZER'.

IF THIS PRODUCT OR SUBSTANCE IS TRANSPORTED WITH OTHER MATERIALS (EXCEPT THOSE LABELED AS 'CLASS A' OR 'CLASS B EXPLOSIVES', 'POISON GAS', 'DANGEROUS WHEN WET', OR 'RADIOACTIVE I, II OR III'), A 'DANGEROUS' PLACARD MAY BE SUBSTITUTED FOR INDIVIDUAL PLACARDS. OTHERWISE, INDIVIDUAL PLACARDS MUST BE USED ON THE VEHICLE.

A SHIPPING PAPER IS REQUIRED FOR TRANSPORT OF THIS MATERIAL.



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\*\* SPILL CLEAN-UP / DISPOSAL METHODS \*\*

SMALL SPILLS:

SAME PROCEDURE AS LARGE SPILLS.

LARGE SPILLS:

VENTILATE COMPLETELY OR USE AN APPROPRIATE RESPIRATOR.

REENTER ONLY WITH PERSONAL PROTECTIVE EQUIPMENT.

ABSORB WITH APPROPRIATE ABSORBENT, SAND, OR DIRT.

SWEEP UP PRODUCT OR SUBSTANCE. CONTAINERIZE WASTE PRODUCT.

ANY PRODUCT MAY BE A HAZARDOUS WASTE. CONTACT THE SITE

COORDINATOR AT YOUR FACILITY FOR INFORMATION ON PROPER

DISPOSAL OF WASTE. WASTE MANAGEMENT IS A SHARED

RESPONSIBILITY FOR ALL EMPLOYEES. EVERY EFFORT SHOULD

BE MADE TO MINIMIZE HAZARDOUS WASTE.

SOLUTIONS OF THIS PRODUCT MAY BE CLASSIFIED AS A RCRA CORROSIVE WAS

THERE IS NO REPORTABLE QUANTITY FOR THIS PRODUCT.

NOTE: BEFORE DISPOSING OF EMPTY CONTAINERS, ENSURE COMPLIANCE WITH  
THE RCRA EMPTY RULE (HAZARDOUS MATERIALS AND WASTE MANAGEMENT  
MANUAL, SECTION 7.6.1).

---  
\*\* FIRST AID \*\*

EYES: IF THIS PRODUCT OR SUBSTANCE GETS INTO THE EYES,  
IMMEDIATELY WASH THE EYES WITH LARGE AMOUNTS OF WATER OR EYEWASH  
SAFETY FLUID FOR 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER  
LIDS. IF THE EMPLOYEE IS WEARING CONTACT LENSES, IMMEDIATELY  
REMOVE THE CONTACT LENSES PRIOR TO FLUSHING THE EYES.  
GET MEDICAL ATTENTION IMMEDIATELY.

SKIN: IF THIS PRODUCT OR SUBSTANCE GETS ON THE SKIN,  
IMMEDIATELY WASH THE CONTAMINATED SKIN WITH SOAP OR MILD  
DETERGENT AND WATER. IF THIS PRODUCT OR SUBSTANCE SOAKS  
THROUGH THE CLOTHING, IMMEDIATELY REMOVE CLOTHING AND WASH  
THE SKIN WITH SOAP OR MILD DETERGENT AND WATER. GET  
MEDICAL ATTENTION PROMPTLY.

INHALATION: IF A PERSON BREATHES IN LARGE AMOUNTS OF THIS PRODUCT  
OR SUBSTANCE, MOVE THE EXPOSED PERSON TO FRESH AIR AT ONCE. IF  
BREATHING HAS STOPPED, PERFORM ARTIFICIAL RESPIRATION. KEEP THE  
AFFECTED PERSON WARM AND AT REST. GET MEDICAL ATTENTION AS SOON  
POSSIBLE.

INGESTION: IF THIS PRODUCT OR SUBSTANCE HAS BEEN SWALLOWED, AND  
THE PERSON IS CONSCIOUS, IMMEDIATELY GIVE THE PERSON LARGE  
QUANTITIES OF WATER TO DILUTE THE PRODUCT OR SUBSTANCE.  
DO NOT ATTEMPT TO MAKE THE PERSON VOMIT. GET MEDICAL ATTENTION  
IMMEDIATELY.



MATERIAL SAFETY DATA SHEET  
PUBLIC SERVICE COMPANY OF COLORADO  
POST OFFICE BOX 840  
DENVER CO 80201  
24 HOUR EMERGENCY NUMBER (800) 541-0918  
MSDS INFORMATION (303) 628-2828

PSCO MATERIAL SAFETY DATA SHEET NUMBER: 180  
THIS MSDS APPLIES TO IDENTIFICATION NUMBERS:  
09242700  
ORIGINAL ENTRY DATE: 050589                      LAST REVISION DATE: 081589  
PRODUCT TRADE NAME:  
H-133

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\*\* MANUFACTURER(S) \*\*  
CALGON CORPORATION

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\*\* HAZARDOUS COMPONENTS \*\*  
40 % ETHYLENE GLYCOL  
CAS: 107-21-1  
THE OSHA LIMIT FOR THIS CHEMICAL IS 50 PPM C .  
12 % DODECYLGUANIDINE HYDROCHLORIC ACID  
THIS IS NOT ON THE OSHA OR ACGIH LIST.  
5 % ISOPROPANOL  
CAS: 67-63-0  
THE OSHA LIMIT FOR THIS CHEMICAL IS 400 PPM .

-----  
\*\* DESCRIPTION \*\*  
SLIGHTLY TURBID PALE YELLOW TO WATER-WHITE LIQUID.

-----  
\*\* POTENTIAL HEALTH EFFECTS \*\*  
EYES: EYE CONTACT WITH THIS PRODUCT CAN CAUSE CORNEAL DAMAGE.  
CONJUNCTIVITIS, INFLAMMATION OF THE IRIS  
SKIN: SHORT TERM SKIN CONTACT WITH SIGNIFICANT AMOUNTS  
OF THIS PRODUCT OR SUBSTANCE CAN CAUSE IRRITATION.  
INHALATION: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE  
HEALTH EFFECTS RESULTING FROM INHALATION OF THIS PRODUCT, OR HAS  
INDICATED NO HARMFUL EFFECTS RESULT FROM INHALATION.

INGESTION: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE  
HEALTH EFFECTS RESULTING FROM INGESTION OF THIS PRODUCT, OR HAS  
INDICATED NO HARMFUL EFFECTS RESULT FROM INGESTION OF THE PRODUCT.

NOTE: THE SEVERITY OF EFFECTS CAUSED BY EXPOSURE TO THIS PRODUCT OR  
SUBSTANCE DEPENDS ON CONCENTRATION, DURATION OF EXPOSURE AND  
EFFECTIVENESS OF ANY FIRST AID TREATMENT REQUIRED.

-----  
\*\* FIRE/EXPLOSION HAZARDS \*\*  
NFPA HAZARD IDENTIFICATION - HEALTH: U  
FLAMMABILITY: U    REACTIVITY: U    OTHER: O  
NOTE: U = UNKNOWN  
THE FLASHPOINT OF THIS PRODUCT IS 165 DEG F.

THIS PRODUCT OR SUBSTANCE IS A COMBUSTIBLE MATERIAL.  
DO NOT USE ON WARM SURFACES, NEAR FLAMES OR WHERE ELECTRICAL  
ARCING MAY OCCUR.

---  
\*\* REACTIVITY \*\*

THIS PRODUCT OR SUBSTANCE IS CONSIDERED TO BE STABLE. STABLE  
MATERIALS ARE THOSE THAT NORMALLY HAVE THE CAPACITY TO RESIST  
CHANGES IN THEIR CHEMICAL COMPOSITION.

MATERIALS NOT COMPATIBLE WITH THIS PRODUCT INCLUDE:  
OXIDIZING AGENTS.

WHEN THIS PRODUCT OR SUBSTANCE IS HEATED TO A LEVEL WHERE IT  
DECOMPOSES, THE FOLLOWING COMPOUNDS ARE PRODUCED:  
HYDROCHLORIC ACID, AMMONIA

WHEN LEFT ALONE, THIS PRODUCT WILL NOT REACT WITH ITSELF IN A  
HAZARDOUS MANNER.

---  
\*\* PERSONAL PROTECTIVE METHODS \*\*

EYES: IF THERE IS ANY POSSIBILITY OF EYE CONTACT WITH  
THIS PRODUCT OR SUBSTANCE, WEAR CHEMICAL SAFETY GOGGLES.

SKIN: IF THERE IS ANY POSSIBILITY OF SKIN CONTACT  
WEAR IMPERVIOUS GLOVES.

PROTECTIVE CLOTHING

WASH PROMPTLY WHEN SKIN BECOMES CONTAMINATED.

INHALATION: PROVIDE ADEQUATE LOCAL EXHAUST AND/OR GENERAL  
MECHANICAL VENTILATION.

IF IT IS POSSIBLE TO GENERATE SIGNIFICANT LEVELS OF VAPORS,  
MISTS, OR DUSTS, A NIOSH APPROVED RESPIRATOR IS REQUIRED.

INGESTION: AVOID INGESTING THIS PRODUCT OR SUBSTANCE. WASH  
HANDS WITH SOAP AND WATER BEFORE EATING. ALSO WASH HANDS  
BEFORE SMOKING IN AREAS WHERE NO FIRE HAZARD EXISTS AND  
SMOKING IS PERMITTED.

PROMPTLY REMOVE NON-IMPERVIOUS CLOTHING THAT BECOMES  
CONTAMINATED.

WORK CLOTHING SHOULD BE CHANGED DAILY AFTER WORK IF THERE  
IS A REASONABLE PROBABILITY THAT THE CLOTHING IS CONTAMINATED.  
CONTACT THE FACILITY HAZARDOUS MATERIALS/WASTE COORDINATOR AT  
YOUR FACILITY FOR INFORMATION AND INSTRUCTIONS ON WASHING AND  
DISPOSAL OF CLOTHING CONTAMINATED WITH HAZARDOUS MATERIALS.  
THE NATURE OF THE TASK AND AMOUNT OF PRODUCT INVOLVED MAY AFFECT  
THE AMOUNT OF PROTECTIVE CLOTHING REQUIRED, HOWEVER, ALWAYS  
DRESS PREPARED FOR THE MAXIMUM PROBABLE EXPOSURE. WEAR GLOVES,  
BOOTS, APRON AND A FACE SHIELD WITH CHEMICAL SPLASH GOGGLES IF  
EXPOSURE IS EXPECTED. A FULL SLICKER SUIT IS RECOMMENDED IF  
GROSS EXPOSURE IS POSSIBLE.

---  
\*\* FIRE CONTROL \*\*

WEAR SELF CONTAINED BREATHING APPARATUS (SCBA).  
USE CLASS "B" EXTINGUISHING MEDIA.

\*\* - STORAGE REQUIREMENTS - POINT OF USE \*\*

THIS PRODUCT SHOULD BE STORED IN A CONTAINER THAT IS PROPERLY LABELED AND AS RECEIVED FROM THE MANUFACTURER.

\*\* STORAGE REQUIREMENTS - SITE STORAGE \*\*

THERE IS NO SARA THRESHOLD PLANNING QUANTITY FOR THIS PRODUCT. THE CONTAINER SHOULD BE STORED IN A PLACE THAT IS COOL. IT SHOULD BE STORED AWAY FROM SOURCES OF IGNITION AND SOURCES OF HEAT. KEEP CONTAINERS TIGHTLY SEALED WHEN NOT IN USE.

\*\* TRANSPORTATION REQUIREMENTS \*\*

THIS PRODUCT OR SUBSTANCE IS REGULATED. THE DOT SHIPPING NAME OF THE PRODUCT IS:

COMBUSTIBLE LIQUID, N.O.S.

CONTAINS - ISOPROPANOL

THE UN/NA NUMBER OF THIS PRODUCT IS NA1993 .

THE HAZARD CLASS OF THIS PRODUCT IS:

COMBUSTIBLE LIQUID

THIS MATERIAL SHOULD GENERALLY BE LABELED WITH ITS HAZARD CLASS. REFER TO 49 CFR PARTS 100-177 OR CONTACT YOUR SITE COORDINATOR FOR MORE INFORMATION.

MOTOR VEHICLES CARRYING MORE THAN 1000 POUNDS OR MORE THAN 110 GALLONS OF THIS SUBSTANCE MUST BE PLACARDED ON EACH SIDE AND END WITH PLACARDING THAT READS:

'COMBUSTIBLE'.

IF THIS PRODUCT OR SUBSTANCE IS TRANSPORTED WITH OTHER MATERIALS (EXCEPT THOSE LABELED AS 'CLASS A' OR 'CLASS B EXPLOSIVES', 'POISON GAS', 'DANGEROUS WHEN WET', OR 'RADIOACTIVE I, II OR III'), A 'DANGEROUS' PLACARD MAY BE SUBSTITUTED FOR INDIVIDUAL PLACARDS. OTHERWISE, INDIVIDUAL PLACARDS MUST BE USED ON THE VEHICLE.

A SHIPPING PAPER IS REQUIRED FOR TRANSPORT OF THIS MATERIAL.

\*\* SPILL CLEAN-UP / DISPOSAL METHODS \*\*

SMALL SPILLS:

SAME PROCEDURE AS LARGE SPILLS.

LARGE SPILLS:

DIKE OFF SPILL WITH EARTH, SAND, ETC.

ABSORB WITH APPROPRIATE ABSORBENT, SAND, OR DIRT.

CONTAINERIZE WASTE PRODUCT.

ANY PRODUCT MAY BE A HAZARDOUS WASTE. CONTACT THE SITE COORDINATOR AT YOUR FACILITY FOR INFORMATION ON PROPER DISPOSAL OF WASTE. WASTE MANAGEMENT IS A SHARED RESPONSIBILITY FOR ALL EMPLOYEES. EVERY EFFORT SHOULD BE MADE TO MINIMIZE HAZARDOUS WASTE.

THERE IS NO REPORTABLE QUANTITY FOR THIS PRODUCT.

NOTE: BEFORE DISPOSING OF EMPTY CONTAINERS, ENSURE COMPLIANCE WITH THE RCRA EMPTY RULE (HAZARDOUS MATERIALS AND WASTE MANAGEMENT MANUAL, SECTION 7.6.1).

\*\* FIRST AID \*\*

EYES: IF THIS PRODUCT OR SUBSTANCE GETS INTO THE EYES, IMMEDIATELY WASH THE EYES WITH LARGE AMOUNTS OF WATER OR EYEWASH SAFETY FLUID FOR 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER LIDS. IF THE EMPLOYEE IS WEARING CONTACT LENSES, IMMEDIATELY REMOVE THE CONTACT LENSES PRIOR TO FLUSHING THE EYES.

GET MEDICAL ATTENTION IMMEDIATELY.

SKIN: IF THIS PRODUCT OR SUBSTANCE GETS ON THE SKIN, FLUSH THE CONTAMINATED SKIN WITH WATER. IF THIS PRODUCT OR SUBSTANCE SOAKS THROUGH THE CLOTHING, IMMEDIATELY REMOVE THE CLOTHING AND FLUSH SKIN WITH WATER. IF IRRITATION PERSISTS AFTER WASHING, GET MEDICAL ATTENTION.

INHALATION: MANUFACTURER PROVIDES NO INFORMATION ON FIRST AID FOR INHALATION OF THIS PRODUCT. IF IRRITATION OR OTHER EFFECTS OCCUR THEN CONTACT A PHYSICIAN.

INGESTION: IF THIS PRODUCT OR SUBSTANCE HAS BEEN SWALLOWED AND THE PERSON IS CONSCIOUS, IMMEDIATELY GIVE THE PERSON LARGE QUANTITIES OF WATER. AFTER THE WATER HAS BEEN SWALLOWED, TRY TO GET THE PERSON TO VOMIT BY HAVING HIM TOUCH THE BACK OF THE THROAT WITH THE FINGER. DO NOT MAKE AN UNCONSCIOUS PERSON VOMIT. GET MEDICAL ATTENTION IMMEDIATELY.

-----  
04/27/90  
END OF MSDS



MATERIAL SAFETY DATA SHEET  
PUBLIC SERVICE COMPANY OF COLORADO  
POST OFFICE BOX 840  
DENVER CO 80201  
24 HOUR EMERGENCY NUMBER (800) 541-0918  
MSDS INFORMATION (303) 628-2828

PSCO MATERIAL SAFETY DATA SHEET NUMBER: 184  
THIS MSDS APPLIES TO IDENTIFICATION NUMBERS:  
09271720  
ORIGINAL ENTRY DATE: 120888 LAST REVISION DATE: 072589  
PRODUCT TRADE NAME:

CALGON CL-5 CORROSION INHIBITOR

---  
\*\* MANUFACTURER(S) \*\*  
CALGON CORPORATION  
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---  
\*\* HAZARDOUS COMPONENTS \*\*  
25 % SODIUM TOLYTRIAZOLE  
CAS: 64665-57-2

THIS IS NOT ON THE OSHA OR ACGIH LIST.

---  
\*\* DESCRIPTION \*\*  
CLEAR RED-BROWN SOLUTION  
---

---  
\*\* POTENTIAL HEALTH EFFECTS \*\*  
EYES: EYE CONTACT WITH THIS PRODUCT CAN CAUSE IRRITATION.  
SKIN: SHORT TERM SKIN CONTACT WITH SIGNIFICANT AMOUNTS  
OF THIS PRODUCT OR SUBSTANCE CAN CAUSE IRRITATION.  
INHALATION: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE  
HEALTH EFFECTS RESULTING FROM INHALATION OF THIS PRODUCT, OR HAS  
INDICATED NO HARMFUL EFFECTS RESULT FROM INHALATION.

INGESTION: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE  
HEALTH EFFECTS RESULTING FROM INGESTION OF THIS PRODUCT, OR HAS  
INDICATED NO HARMFUL EFFECTS RESULT FROM INGESTION OF THE PRODUCT.

NOTE: THE SEVERITY OF EFFECTS CAUSED BY EXPOSURE TO THIS PRODUCT OR  
SUBSTANCE DEPENDS ON CONCENTRATION, DURATION OF EXPOSURE AND  
EFFECTIVENESS OF ANY FIRST AID TREATMENT REQUIRED.

---  
\*\* FIRE/EXPLOSION HAZARDS \*\*  
NFPA HAZARD IDENTIFICATION - HEALTH: U  
FLAMMABILITY: U REACTIVITY: U OTHER: 0  
NOTE: U = UNKNOWN

THIS PRODUCT HAS NO FLASHPOINT.

---  
\*\* REACTIVITY \*\*  
THIS PRODUCT OR SUBSTANCE IS CONSIDERED TO BE STABLE. STABLE  
MATERIALS ARE THOSE THAT NORMALLY HAVE THE CAPACITY TO RESIST  
CHANGES IN THEIR CHEMICAL COMPOSITION.



MATERIALS NOT COMPATIBLE WITH THIS PRODUCT INCLUDE:  
INORGANIC ACIDS , ORGANIC ACIDS.  
WHEN THIS PRODUCT OR SUBSTANCE IS HEATED TO A LEVEL WHERE IT  
DECOMPOSES, THE FOLLOWING COMPOUNDS ARE PRODUCED:  
CARBON MONOXIDE, NITROGEN OXIDE, HYDROGEN CYANIDE.

WHEN LEFT ALONE, THIS PRODUCT WILL NOT REACT WITH ITSELF IN A  
HAZARDOUS MANNER.

-- -- -- -- --  
\*\* PERSONAL PROTECTIVE METHODS \*\*

EYES: IF THERE IS ANY POSSIBILITY OF EYE CONTACT WITH  
THIS PRODUCT OR SUBSTANCE, WEAR CHEMICAL SAFETY GOGGLES  
AND FULL-FACE SHIELD.

AN EYEWASH SHOULD BE PROVIDED IN THE IMMEDIATE WORK AREA.

SKIN: IF THERE IS ANY POSSIBILITY OF SKIN CONTACT  
WEAR IMPERVIOUS PANTS AND JACKET OR COVERALLS  
AND IMPERVIOUS GLOVES.

WASH IMMEDIATELY WHEN SKIN BECOMES CONTAMINATED.

INHALATION:

IF IT IS POSSIBLE TO GENERATE SIGNIFICANT LEVELS OF VAPORS,  
MISTS, OR DUSTS, A NIOSH APPROVED RESPIRATOR IS REQUIRED.

INGESTION: AVOID INGESTING THIS PRODUCT OR SUBSTANCE. WASH  
HANDS WITH SOAP AND WATER BEFORE EATING. ALSO WASH HANDS  
BEFORE SMOKING IN AREAS WHERE NO FIRE HAZARD EXISTS AND  
SMOKING IS PERMITTED.

PROMPTLY REMOVE NON-IMPERVIOUS CLOTHING THAT BECOMES  
CONTAMINATED.

WHEN HANDLING BULK QUANTITIES OF THIS PRODUCT OR SUBSTANCE,  
PROVIDE A QUICK-DRENCH FULL BODY SHOWER IN THE IMMEDIATE  
WORK AREA

CONTACT THE FACILITY HAZARDOUS MATERIALS/WASTE COORDINATOR AT  
YOUR FACILITY FOR INFORMATION AND INSTRUCTIONS ON WASHING AND  
DISPOSAL OF CLOTHING CONTAMINATED WITH HAZARDOUS MATERIALS.  
THE NATURE OF THE TASK AND AMOUNT OF PRODUCT INVOLVED MAY AFFECT  
THE AMOUNT OF PROTECTIVE CLOTHING REQUIRED, HOWEVER, ALWAYS  
DRESS PREPARED FOR THE MAXIMUM PROBABLE EXPOSURE. WEAR GLOVES,  
BOOTS, APRON AND A FACE SHIELD WITH CHEMICAL SPLASH GOGGLES IF  
EXPOSURE IS EXPECTED. A FULL SLICKER SUIT IS RECOMMENDED IF  
GROSS EXPOSURE IS POSSIBLE.

-- -- -- -- --  
\*\* FIRE CONTROL \*\*

THE MANUFACTURER HAS PROVIDED NO FIRE-FIGHTING INSTRUCTIONS.  
USE ADEQUATE PERSONAL PROTECTION AND FIRE-FIGHTING MEDIA  
APPROPRIATE FOR SURROUNDING FIRE.

-- -- -- -- --  
\*\* STORAGE REQUIREMENTS - POINT OF USE \*\*

THIS PRODUCT SHOULD BE STORED IN A CONTAINER THAT IS  
PROPERLY LABELED AND AS RECEIVED FROM THE MANUFACTURER.

\*\* STORAGE REQUIREMENTS - SITE STORAGE \*\*

THERE IS NO SARA THRESHOLD PLANNING QUANTITY FOR THIS PRODUCT.  
IT SHOULD BE STORED AWAY FROM NONCOMPATIBLE MATERIALS.  
KEEP CONTAINERS TIGHTLY SEALED WHEN NOT IN USE.

- - - - -

\*\* TRANSPORTATION REQUIREMENTS \*\*

THIS PRODUCT OR SUBSTANCE IS REGULATED. THE DOT SHIPPING  
NAME OF THE PRODUCT IS:

CORROSIVE LIQUID, N.O.S.

CONTAINS - SODIUM TOLYTRIAZOLE

THE UN/NA NUMBER OF THIS PRODUCT IS UN1760 .

THE HAZARD CLASS OF THIS PRODUCT IS:

CORROSIVE MATERIAL

CONTAINERS OF THIS PRODUCT MUST BE LABELLED: 'CORROSIVE'.

EACH PACKAGE OR CONTAINER MUST BE LABELED IN ACCORDANCE WITH  
APPLICABLE DEPARTMENT OF TRANSPORTATION REGULATIONS.

MOTOR VEHICLES CARRYING MORE THAN 1000 POUNDS OR MORE THAN  
110 GALLONS OF THIS SUBSTANCE MUST BE PLACARDED ON EACH SIDE  
AND END WITH PLACARDING THAT READS:

'CORROSIVE'.

IF THIS PRODUCT OR SUBSTANCE IS TRANSPORTED WITH OTHER MATERIALS  
(EXCEPT THOSE LABELED AS 'CLASS A' OR 'CLASS B EXPLOSIVES',  
'POISON GAS', 'DANGEROUS WHEN WET', OR 'RADIOACTIVE I, II  
OR III'), A 'DANGEROUS' PLACARD MAY BE SUBSTITUTED FOR  
INDIVIDUAL PLACARDS. OTHERWISE, INDIVIDUAL PLACARDS MUST BE  
USED ON THE VEHICLE.

A SHIPPING PAPER IS REQUIRED FOR TRANSPORT OF THIS MATERIAL.

- - - - -

\*\* SPILL CLEAN-UP / DISPOSAL METHODS \*\*

SMALL SPILLS:

ABSORB WITH ABSORBENT, SAND OR DIRT.

NEUTRALIZE WITH THE REQUIRED AMOUNT OF ACID.

SWEEP UP PRODUCT OR SUBSTANCE. CONTAINERIZE WASTE PRODUCT.

LARGE SPILLS:

DIKE OFF SPILL WITH EARTH, SAND, ETC.

NEUTRALIZE WITH REQUIRED AMOUNT OF ACID.

ABSORB WITH APPROPRIATE ABSORBENT, SAND, OR DIRT.

SWEEP UP PRODUCT OR SUBSTANCE. CONTAINERIZE WASTE PRODUCT.

DON'T FLUSH TO A SEWER OR WATER SUPPLY.

NOTIFY ENVIRONMENTAL AFFAIRS IN CASE OF A LARGE SPILL  
(571-7655).

IF THIS PRODUCT OR SUBSTANCE BECOMES A WASTE, IT IS CLASSIFIED  
AS A HAZARDOUS WASTE ACCORDING TO EPA REGULATION, AND MUST  
BE RECYCLED OR DISPOSED OF AS A HAZARDOUS WASTE.

FOR THE ORIGINAL, UNDILUTED PRODUCT THE FOLLOWING IS TRUE:

THE EPA WASTE NUMBER OF THIS SUBSTANCE IS : D002 .

THE CATEGORY OF THIS SUBSTANCE IS : CORROSIVE .

THERE IS NO REPORTABLE QUANTITY FOR THIS PRODUCT.

NOTE: BEFORE DISPOSING OF EMPTY CONTAINERS, ENSURE COMPLIANCE WITH  
THE RCRA EMPTY RULE (HAZARDOUS MATERIALS AND WASTE MANAGEMENT  
MANUAL, SECTION 7.6.1).

-----  
\*\* FIRST AID \*\*

EYES: IF THIS PRODUCT OR SUBSTANCE GETS INTO THE EYES, IMMEDIATELY WASH THE EYES WITH LARGE AMOUNTS OF WATER OR EYEWASH SAFETY FLUID FOR 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER LIDS. IF THE EMPLOYEE IS WEARING CONTACT LENSES, IMMEDIATELY REMOVE THE CONTACT LENSES PRIOR TO FLUSHING THE EYES. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN: IF THIS PRODUCT OR SUBSTANCE GETS ON THE SKIN, IMMEDIATELY FLUSH THE CONTAMINATED SKIN WITH WATER. IF THIS PRODUCT OR SUBSTANCE PENETRATES THROUGH CLOTHING, IMMEDIATELY REMOVE THE CLOTHING AND FLUSH THE SKIN WITH WATER. GET MEDICAL ATTENTION PROMPTLY.

INHALATION: IF A PERSON BREATHES IN LARGE AMOUNTS OF THIS PRODUCT OR SUBSTANCE, MOVE THE EXPOSED PERSON TO FRESH AIR AT ONCE. IF BREATHING HAS STOPPED, PERFORM ARTIFICIAL RESPIRATION. KEEP THE AFFECTED PERSON WARM AND AT REST. GET MEDICAL ATTENTION AS SOON POSSIBLE.

INGESTION: IF THIS PRODUCT OR SUBSTANCE HAS BEEN SWALLOWED, GET MEDICAL ATTENTION.

-----  
04/27/90  
END OF MSDS

MATERIAL SAFETY DATA SHEET  
PUBLIC SERVICE COMPANY OF COLORADO  
POST OFFICE BOX 840  
DENVER CO 80201  
24 HOUR EMERGENCY NUMBER (800) 541-0918  
MSDS INFORMATION (303) 628-2828

PSCO MATERIAL SAFETY DATA SHEET NUMBER: 183  
THIS MSDS APPLIES TO IDENTIFICATION NUMBERS:  
09242698  
ORIGINAL ENTRY DATE: 050589                      LAST REVISION DATE: 081589  
PRODUCT TRADE NAME:  
PCL-711

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\*\* MANUFACTURER(S) \*\*  
CALGON CORPORATION  
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\*\* HAZARDOUS COMPONENTS \*\*  
THE MANUFACTURER(S) OF THIS PRODUCT HAVE DETERMINED THAT IT  
CONTAINS NO HAZARDOUS INGREDIENTS UNDER THE OSHA HAZARD  
COMMUNICATION RULE, 29 CFR 1910.1200. FOR MORE INFORMATION  
CALL THE MSDS INFORMATION HOTLINE AT 628-2828.  
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\*\* DESCRIPTION \*\*  
CLEAR PALE YELLOW LIQUID  
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\*\* POTENTIAL HEALTH EFFECTS \*\*  
EYES: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE  
HEALTH EFFECTS RESULTING FROM EYE EXPOSURE TO THIS PRODUCT, OR  
HAS INDICATED NO HARMFUL EFFECTS RESULT FROM EYE EXPOSURE.

SKIN: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE HEALTH  
EFFECTS RESULTING FROM SKIN EXPOSURE TO THIS PRODUCT, OR HAS  
INDICATED NO HARMFUL EFFECTS RESULT FROM SKIN EXPOSURE.

INHALATION: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE  
HEALTH EFFECTS RESULTING FROM INHALATION OF THIS PRODUCT, OR HAS  
INDICATED NO HARMFUL EFFECTS RESULT FROM INHALATION.

INGESTION: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE  
HEALTH EFFECTS RESULTING FROM INGESTION OF THIS PRODUCT, OR HAS  
INDICATED NO HARMFUL EFFECTS RESULT FROM INGESTION OF THE PRODUCT.

NOTE: THE SEVERITY OF EFFECTS CAUSED BY EXPOSURE TO THIS PRODUCT OR  
SUBSTANCE DEPENDS ON CONCENTRATION, DURATION OF EXPOSURE AND  
EFFECTIVENESS OF ANY FIRST AID TREATMENT REQUIRED.

-----  
\*\* FIRE/EXPLOSION HAZARDS \*\*  
NFPA HAZARD IDENTIFICATION - HEALTH: U  
FLAMMABILITY: U    REACTIVITY: U    OTHER: 0  
NOTE: U = UNKNOWN



THIS PRODUCT HAS NO FLASHPOINT.  
NO SPECIAL PRECAUTIONS ARE REQUIRED.

---  
\*\* REACTIVITY \*\*

THIS PRODUCT OR SUBSTANCE IS CONSIDERED TO BE STABLE. STABLE MATERIALS ARE THOSE THAT NORMALLY HAVE THE CAPACITY TO RESIST CHANGES IN THEIR CHEMICAL COMPOSITION.

MATERIALS NOT COMPATIBLE WITH THIS PRODUCT INCLUDE:

OXIDIZING AGENTS.

WHEN LEFT ALONE, THIS PRODUCT WILL NOT REACT WITH ITSELF IN A HAZARDOUS MANNER.

---  
\*\* PERSONAL PROTECTIVE METHODS \*\*

SKIN:

WASH PROMPTLY WHEN SKIN BECOMES CONTAMINATED.

INHALATION:

IF IT IS POSSIBLE TO GENERATE SIGNIFICANT LEVELS OF VAPORS, MISTS, OR DUSTS, A NIOSH APPROVED RESPIRATOR IS REQUIRED.

INGESTION: AVOID INGESTING THIS PRODUCT OR SUBSTANCE. WASH HANDS WITH SOAP AND WATER BEFORE EATING. ALSO WASH HANDS BEFORE SMOKING IN AREAS WHERE NO FIRE HAZARD EXISTS AND SMOKING IS PERMITTED.

CONTACT THE FACILITY HAZARDOUS MATERIALS/WASTE COORDINATOR AT YOUR FACILITY FOR INFORMATION AND INSTRUCTIONS ON WASHING AND DISPOSAL OF CLOTHING CONTAMINATED WITH HAZARDOUS MATERIALS. THE NATURE OF THE TASK AND AMOUNT OF PRODUCT INVOLVED MAY AFFECT THE AMOUNT OF PROTECTIVE CLOTHING REQUIRED, HOWEVER, ALWAYS DRESS PREPARED FOR THE MAXIMUM PROBABLE EXPOSURE. WEAR GLOVES, BOOTS, APRON AND A FACE SHIELD WITH CHEMICAL SPLASH GOGGLES IF EXPOSURE IS EXPECTED. A FULL SLICKER SUIT IS RECOMMENDED IF GROSS EXPOSURE IS POSSIBLE.

---  
\*\* FIRE CONTROL \*\*

THE MANUFACTURER HAS PROVIDED NO FIRE-FIGHTING INSTRUCTIONS. USE ADEQUATE PERSONAL PROTECTION AND FIRE-FIGHTING MEDIA APPROPRIATE FOR SURROUNDING FIRE.

---  
\*\* STORAGE REQUIREMENTS - POINT OF USE \*\*

THIS PRODUCT SHOULD BE STORED IN A CONTAINER THAT IS PROPERLY LABELED AND AS RECEIVED FROM THE MANUFACTURER.

---  
\*\* STORAGE REQUIREMENTS - SITE STORAGE \*\*

THERE IS NO SAFETY THRESHOLD PLANNING QUANTITY FOR THIS PRODUCT. KEEP CONTAINERS TIGHTLY SEALED WHEN NOT IN USE.

---  
\*\* TRANSPORTATION REQUIREMENTS \*\*

THIS PRODUCT IS NOT REGULATED BY THE DEPARTMENT OF TRANSPORTATION. IT HAS NO SHIPPING NAME, HAZARD CLASS, OR



UN/NA NUMBER. FOR MORE INFORMATION REFER TO 49 CFR 100-177 OR  
CONSULT YOUR SITE COORDINATOR.  
EACH PACKAGE OR CONTAINER MUST BE LABELED IN ACCORDANCE WITH  
APPLICABLE DEPARTMENT OF TRANSPORTATION REGULATIONS.

---  
\*\* SPILL CLEAN-UP / DISPOSAL METHODS \*\*

SMALL SPILLS:

SAME PROCEDURE AS LARGE SPILLS.

LARGE SPILLS:

DIKE OFF SPILL WITH EARTH, SAND, ETC.

ABSORB WITH APPROPRIATE ABSORBENT, SAND, OR DIRT.

CONTAINERIZE WASTE PRODUCT.

ANY PRODUCT MAY BE A HAZARDOUS WASTE. CONTACT THE SITE  
COORDINATOR AT YOUR FACILITY FOR INFORMATION ON PROPER  
DISPOSAL OF WASTE. WASTE MANAGEMENT IS A SHARED  
RESPONSIBILITY FOR ALL EMPLOYEES. EVERY EFFORT SHOULD  
BE MADE TO MINIMIZE HAZARDOUS WASTE.

THERE IS NO REPORTABLE QUANTITY FOR THIS PRODUCT.

NOTE: BEFORE DISPOSING OF EMPTY CONTAINERS, ENSURE COMPLIANCE WITH  
THE RCRA EMPTY RULE (HAZARDOUS MATERIALS AND WASTE MANAGEMENT  
MANUAL, SECTION 7.6.1).

---  
\*\* FIRST AID \*\*

EYES: IF THIS PRODUCT OR SUBSTANCE GETS INTO THE EYES,  
IMMEDIATELY WASH THE EYES WITH LARGE AMOUNTS OF WATER OR EYEWASH  
SAFETY FLUID FOR 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER  
LIDS. IF THE EMPLOYEE IS WEARING CONTACT LENSES, IMMEDIATELY  
REMOVE THE CONTACT LENSES PRIOR TO FLUSHING THE EYES.

GET MEDICAL ATTENTION PROMPTLY IF DISCOMFORT PERSISTS.

SKIN: THE MANUFACTURER PROVIDES NO INFORMATION ON FIRST AID  
FOR SKIN CONTACT WITH THIS PRODUCT. IF IRRITATION OR OTHER  
EFFECTS OCCUR THEN CONTACT A PHYSICIAN.

INHALATION: MANUFACTURER PROVIDES NO INFORMATION ON FIRST AID  
FOR INHALATION OF THIS PRODUCT. IF IRRITATION OR OTHER  
EFFECTS OCCUR THEN CONTACT A PHYSICIAN.

INGESTION: MANUFACTURER PROVIDES NO INFORMATION ON FIRST AID  
FOR INGESTION OF THIS PRODUCT. IF IRRITATION OR OTHER  
EFFECTS OCCUR THEN CONTACT A PHYSICIAN.  
---

8/23/90  
MATERIAL SAFETY DATA SHEET

2061

CALGON CORPORATION  
P.O. Box 1346  
Pittsburgh, PA 15230-1346

24 Hour Emergency Telephone -- (412) 777-8000



## I. PRODUCT IDENTIFICATION

PRODUCT NAME: CL-381

CHEMICAL DESCRIPTION: Aqueous solution

PRODUCT CLASS: Surfactant

## II. HAZARDOUS INGREDIENTS AND EXPOSURE LIMITS

CHEMICAL NAME	CAS No.	% by Weight	Oral LD50 (rat)	Dermal LD50 (rabbit)	ACGIH TLV OSHA PEL
Polyoxyethylene-polyoxypropylene copolymer	9003-11-8	15	2300 mg/kg	> 10.2 g/kg	Not listed
Ethoxylated nonylphenol	9016-65-9	10	1310 mg/kg	1780 mg/kg	Not listed

## III. TYPICAL PHYSICAL PROPERTIES

BOILING POINT:  $\approx 212^{\circ}\text{F}$

SOLUBILITY IN WATER: Complete

VAPOR PRESSURE: Similar to water

SPECIFIC GRAVITY: 1.01 - 1.03

VAPOR DENSITY (air=1): Similar to water

pH: 5.0 - 5.5

% VOLATILE BY WEIGHT: 74

APPEARANCE AND ODOR: Clear, colorless liquid with a very mild organic odor.

## IV. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: This product is not flammable or combustible.

EXTINGUISHING MEDIA: Use any means suitable for extinguishing the surrounding fire.

SPECIAL FIREFIGHTING PROCEDURES: Exercise caution when fighting any chemical fire. A self-contained breathing apparatus and protective clothing are essential. Use water to keep fire-exposed containers cool.

INITIAL FIRE AND EXPLOSION HAZARDS: Emits toxic gases under fire conditions.

NIHA RATINGS: Health = 1      Flammability = 0      Reactivity = 0      Special Hazard = NONE

While this information and recommendations set forth herein are believed to be accurate as of the date hereof, CALGON CORPORATION MAKES NO WARRANTY WITH RESPECT HERETO AND DISCLAIMS ALL LIABILITY FROM RELIANCE THEREON.

MSDS No.: 8816-06-29-89-578

Page 1 of 4

Date: 8/8/90

## V. REACTIVITY DATA

CHEMICAL STABILITY: Stable

HAZARDOUS POLYMERIZATION: Will not occur.

INCOMPATIBILITY: Strong oxidizing or reducing materials.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide and carbon dioxide.

## VI. HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY: Eye and skin contact

TARGET ORGANS: Skin, eye

### WARNING!

May cause skin and eye irritation.

### EFFECTS OF OVEREXPOSURE:

#### ACUTE

**EYE CONTACT:** This product would be expected to be minimally irritating upon contact with the eye. During testing, the product produced only slight temporary conjunctival irritation in rabbit eyes.

**SKIN CONTACT:** This product may produce irritation upon contact with the skin. The Primary Irritation Index is 2.0+/8. Available data indicates that this product will not produce an allergic skin reaction or be absorbed through the skin in harmful amounts.

**INGESTION:** This product would be considered practically non-toxic by ingestion.

**INHALATION:** This product is not expected to present an inhalation hazard.

#### SUBCHRONIC/CHRONIC

No applicable information was found concerning any potential health effects resulting from subchronic or chronic exposure to the product.

#### CARCINOGENICITY:

HTF: No

IARC: No

OSMA: No

HAZARD RATINGS: Health = 1      Flammability = 0      Reactivity = 0  
Personal Protective Equipment = to be supplied by user depending on use conditions

## VII. APPLICABLE CONTROL MEASURES

APPROPRIATE HYGIENIC PRACTICES: Avoid contact with eyes, skin and clothing.

### PERSONAL PROTECTIVE EQUIPMENT:

EYE PROTECTION: Chemical splash goggles

SKIN PROTECTION: Chemical resistant gloves

RESPIRATORY PROTECTION: Normally not required.

HANDLING AND STORAGE PRECAUTIONS: Use with adequate ventilation, especially where drums are being opened since traces of ethylene oxide could accumulate in headspace of storage vessels.  
Wash thoroughly after handling.  
Keep container closed when not in use.

ENGINEERING CONTROLS: Use local exhaust at elevated temperatures or if mists are generated.

## VIII. FIRST AID

EYE CONTACT: In case of contact, immediately flush eyes with plenty of water. Seek medical aid if irritation persists.

SKIN CONTACT: In case of contact, flush skin with plenty of water. Remove contaminated clothing. Seek medical aid if irritation persists. Wash clothing before reuse.

INGESTION: Not an expected route of overexposure.

INHALATION: Not an expected route of overexposure.

## IX. SPILL OR LEAK PROCEDURES/WASTE DISPOSAL

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Wearing appropriate personal protective equipment, contain spill, collect onto inert absorbent and place into suitable container.

WASTE DISPOSAL: Dispose of in accordance with local, state and federal regulations.

### AQUATIC TOXICITY DATA:

	48-hr. LC50	96-hr. LC50
Bluegill	2900 mg/l	2500 mg/l
Rainbow trout	1500 mg/l	1100 mg/l
Daphnia magna	8600 mg/l	---

## X. REGULATORY STATUS

TSCA STATUS: The ingredients of this product are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory.

RCRA STATUS: This product as sold would not be considered a RCRA Hazardous Waste.

CMR/CLP reportable quantity of EPA hazardous substances in product: None

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## X. REGULATORY STATUS (continued)

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### SARA TITLE III:

Section 302 Extremely Hazardous Substances: None

Section 311 and 312 Health and Physical Hazards:

Immediate (yes)	Delayed (no)	Fire (no)	Pressure (no)	Reactivity (no)
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Section 313 Toxic Chemicals: None

DOT CLASSIFICATION: Not restricted

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PREPARED BY: P.J. Maloney

IMP-0576/V



MATERIAL SAFETY DATA SHEET  
PUBLIC SERVICE COMPANY OF COLORADO  
POST OFFICE BOX 840  
DENVER CO 80201  
24 HOUR EMERGENCY NUMBER (800) 541-0918  
MSDS INFORMATION (303) 628-2828

PSCO MATERIAL SAFETY DATA SHEET NUMBER: 2061  
THIS MSDS APPLIES TO IDENTIFICATION NUMBERS:  
09270939

ORIGINAL ENTRY DATE: 040689  
PRODUCT TRADE NAME:  
CL-361

LAST REVISION DATE: 060189

---  
\*\* MANUFACTURER(S) \*\*  
CALGON CORPORATION

---  
\*\* HAZARDOUS COMPONENTS \*\*  
THE MANUFACTURER(S) OF THIS PRODUCT HAVE DETERMINED THAT IT  
CONTAINS NO HAZARDOUS INGREDIENTS UNDER THE OSHA HAZARD  
COMMUNICATION RULE, 29 CFR 1910.1200. FOR MORE INFORMATION  
CALL THE MSDS INFORMATION HOTLINE AT 628-2828.

---  
\*\* DESCRIPTION \*\*  
CLEAR COLORLESS LIQUID WITH A MILD ORGANIC ODOR.

---  
\*\* POTENTIAL HEALTH EFFECTS \*\*  
EYES: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE  
HEALTH EFFECTS RESULTING FROM EYE EXPOSURE TO THIS PRODUCT, OR  
HAS INDICATED NO HARMFUL EFFECTS RESULT FROM EYE EXPOSURE.

SKIN: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE HEALTH  
EFFECTS RESULTING FROM SKIN EXPOSURE TO THIS PRODUCT, OR HAS  
INDICATED NO HARMFUL EFFECTS RESULT FROM SKIN EXPOSURE.

INHALATION: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE  
HEALTH EFFECTS RESULTING FROM INHALATION OF THIS PRODUCT, OR HAS  
INDICATED NO HARMFUL EFFECTS RESULT FROM INHALATION.

INGESTION: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE  
HEALTH EFFECTS RESULTING FROM INGESTION OF THIS PRODUCT, OR HAS  
INDICATED NO HARMFUL EFFECTS RESULT FROM INGESTION OF THE PRODUCT.

NOTE: THE SEVERITY OF EFFECTS CAUSED BY EXPOSURE TO THIS PRODUCT OR  
SUBSTANCE DEPENDS ON CONCENTRATION, DURATION OF EXPOSURE AND  
EFFECTIVENESS OF ANY FIRST AID TREATMENT REQUIRED.

---  
\*\* FIRE/EXPLOSION HAZARDS \*\*  
NFPA HAZARD IDENTIFICATION - HEALTH: U  
FLAMMABILITY: U REACTIVITY: U OTHER: 0  
NOTE: U = UNKNOWN

THIS PRODUCT HAS NO FLASHPOINT.  
NO SPECIAL PRECAUTIONS ARE REQUIRED.

---  
\*\* REACTIVITY \*\*

THIS PRODUCT OR SUBSTANCE IS CONSIDERED TO BE STABLE. STABLE MATERIALS ARE THOSE THAT NORMALLY HAVE THE CAPACITY TO RESIST CHANGES IN THEIR CHEMICAL COMPOSITION.

MATERIALS NOT COMPATIBLE WITH THIS PRODUCT INCLUDE:

STRONG BASES

WHEN LEFT ALONE, THIS PRODUCT WILL NOT REACT WITH ITSELF IN A HAZARDOUS MANNER.

---  
\*\* PERSONAL PROTECTIVE METHODS \*\*

SKIN:

WASH PROMPTLY WHEN SKIN BECOMES CONTAMINATED.

INHALATION:

IF IT IS POSSIBLE TO GENERATE SIGNIFICANT LEVELS OF VAPORS, MISTS, OR DUSTS, A NIOSH APPROVED RESPIRATOR IS REQUIRED.

INGESTION: AVOID INGESTING THIS PRODUCT OR SUBSTANCE. WASH HANDS WITH SOAP AND WATER BEFORE EATING. ALSO WASH HANDS BEFORE SMOKING IN AREAS WHERE NO FIRE HAZARD EXISTS AND SMOKING IS PERMITTED.

CONTACT THE FACILITY HAZARDOUS MATERIALS/WASTE COORDINATOR AT YOUR FACILITY FOR INFORMATION AND INSTRUCTIONS ON WASHING AND DISPOSAL OF CLOTHING CONTAMINATED WITH HAZARDOUS MATERIALS. THE NATURE OF THE TASK AND AMOUNT OF PRODUCT INVOLVED MAY AFFECT THE AMOUNT OF PROTECTIVE CLOTHING REQUIRED, HOWEVER, ALWAYS DRESS PREPARED FOR THE MAXIMUM PROBABLE EXPOSURE. WEAR GLOVES, BOOTS, APRON AND A FACE SHIELD WITH CHEMICAL SPLASH GOGGLES IF EXPOSURE IS EXPECTED. A FULL SLICKER SUIT IS RECOMMENDED IF GROSS EXPOSURE IS POSSIBLE.

---  
\*\* FIRE CONTROL \*\*

THE MANUFACTURER HAS PROVIDED NO FIRE-FIGHTING INSTRUCTIONS. USE ADEQUATE PERSONAL PROTECTION AND FIRE-FIGHTING MEDIA APPROPRIATE FOR SURROUNDING FIRE.

---  
\*\* STORAGE REQUIREMENTS - POINT OF USE \*\*

THIS PRODUCT SHOULD BE STORED IN A CONTAINER THAT IS PROPERLY LABELED AND AS RECEIVED FROM THE MANUFACTURER.

---  
\*\* STORAGE REQUIREMENTS - SITE STORAGE \*\*

THERE IS NO SARA THRESHOLD PLANNING QUANTITY FOR THIS PRODUCT. KEEP CONTAINERS TIGHTLY SEALED WHEN NOT IN USE.

---  
\*\* TRANSPORTATION REQUIREMENTS \*\*

THIS PRODUCT IS NOT REGULATED BY THE DEPARTMENT OF TRANSPORTATION. IT HAS NO SHIPPING NAME, HAZARD CLASS, OR

UN/NA NUMBER. FOR MORE INFORMATION REFER TO 49 CFR 100-177 OR  
CONSULT YOUR SITE COORDINATOR.  
EACH PACKAGE OR CONTAINER MUST BE LABELED IN ACCORDANCE WITH  
APPLICABLE DEPARTMENT OF TRANSPORTATION REGULATIONS.

---  
\*\* SPILL CLEAN-UP / DISPOSAL METHODS \*\*

SMALL SPILLS:

SAME PROCEDURE AS LARGE SPILLS.

LARGE SPILLS:

DIKE OFF SPILL WITH EARTH, SAND, ETC.

ABSORB WITH APPROPRIATE ABSORBENT, SAND, OR DIRT.

CONTAINERIZE WASTE PRODUCT.

ANY PRODUCT MAY BE A HAZARDOUS WASTE. CONTACT THE SITE  
COORDINATOR AT YOUR FACILITY FOR INFORMATION ON PROPER  
DISPOSAL OF WASTE. WASTE MANAGEMENT IS A SHARED  
RESPONSIBILITY FOR ALL EMPLOYEES. EVERY EFFORT SHOULD  
BE MADE TO MINIMIZE HAZARDOUS WASTE.

THERE IS NO REPORTABLE QUANTITY FOR THIS PRODUCT.

NOTE: BEFORE DISPOSING OF EMPTY CONTAINERS, ENSURE COMPLIANCE WITH  
THE RCRA EMPTY RULE (HAZARDOUS MATERIALS AND WASTE MANAGEMENT  
MANUAL, SECTION 7.6.1).

---  
\*\* FIRST AID \*\*

EYES: IF THIS PRODUCT OR SUBSTANCE GETS INTO THE EYES,  
IMMEDIATELY WASH THE EYES WITH LARGE AMOUNTS OF WATER OR EYE WASH  
SAFETY FLUID FOR 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER  
LIDS. IF THE EMPLOYEE IS WEARING CONTACT LENSES, IMMEDIATELY  
REMOVE THE CONTACT LENSES PRIOR TO FLUSHING THE EYES.  
GET MEDICAL ATTENTION PROMPTLY IF DISCOMFORT PERSISTS.

SKIN: THE MANUFACTURER PROVIDES NO INFORMATION ON FIRST AID  
FOR SKIN CONTACT WITH THIS PRODUCT. IF IRRITATION OR OTHER  
EFFECTS OCCUR THEN CONTACT A PHYSICIAN.

INHALATION: MANUFACTURER PROVIDES NO INFORMATION ON FIRST AID  
FOR INHALATION OF THIS PRODUCT. IF IRRITATION OR OTHER  
EFFECTS OCCUR THEN CONTACT A PHYSICIAN.

INGESTION: MANUFACTURER PROVIDES NO INFORMATION ON FIRST AID  
FOR INGESTION OF THIS PRODUCT. IF IRRITATION OR OTHER  
EFFECTS OCCUR THEN CONTACT A PHYSICIAN.

---  
04/27/90  
END OF MSDS

MATERIAL SAFETY DATA SHEET  
PUBLIC SERVICE COMPANY OF COLORADO  
POST OFFICE BOX 840  
DENVER CO 80201  
24 HOUR EMERGENCY NUMBER (800) 541-0918  
MSDS INFORMATION (303) 628-2828

PSCO MATERIAL SAFETY DATA SHEET NUMBER: 1393  
THIS MSDS APPLIES TO IDENTIFICATION NUMBERS:  
09211592 09212800

ORIGINAL ENTRY DATE: 121288

LAST REVISION DATE: 072790

PRODUCT TRADE NAME:

SODIUM SULFITE, ANHYDROUS

---  
\*\* MANUFACTURER(S) \*\*

GENERAL CHEMICAL CORPORATION  
ALLIED CORPORATION, CHEMICAL SECTOR  
THOMPSON-HAYWORD CHEMICAL CO.  
VIRGINIA CHEMICALS INC.

---  
\*\* HAZARDOUS COMPONENTS \*\*

100 % SODIUM SULFITE

CAS: 7757-83-7

THIS IS NOT ON THE OSHA OR ACGIH LIST.

---  
\*\* DESCRIPTION \*\*

WHITE GRANULAR CRYSTALS OR POWDER WITH NO ODOR.

---  
\*\* POTENTIAL HEALTH EFFECTS \*\*

EYES: EYE CONTACT WITH THIS PRODUCT CAN CAUSE IRRITATION.  
MAY CAUSE BURNS. SOLUTIONS OF THIS PRODUCT MAY IRRITATE OR  
CAUSE BURNS.

SKIN: SHORT TERM SKIN CONTACT WITH SIGNIFICANT AMOUNTS  
OF THIS PRODUCT OR SUBSTANCE CAN CAUSE IRRITATION.  
SOLUTIONS OF THIS PRODUCT WILL IRRITATE SKIN.

INHALATION: BREATHING SIGNIFICANT CONCENTRATIONS OF DUSTS,  
MISTS, FUMES, VAPORS, OR GASEOUS FORMS OF PRODUCT, EVEN  
BRIEFLY, CAN CAUSE IRRITATION.

HYPERSENSITIVE INDIVIDUALS, PARTICULARLY ASTHMATICS, MAY  
EXPERIENCE ALLERGIC REACTIONS, INCLUDING RESPIRATORY DISTRESS

INGESTION: INGESTION OF THIS PRODUCT CAN PRODUCE  
IRRITATION AND/OR AN ALLERGIC REACTION.

ESTIMATED TO BE MODERATELY TOXIC. LARGE DOSES MAY CAUSE  
COLIC, DIARRHEA, CIRCULATORY DISTURBANCES, CNS DEPRESSION.

INGESTION OF THIS PRODUCT OR SUBSTANCE CAN BE FATAL.  
INGESTION MAY CAUSE SEVERE ALLERGIC REACTIONS IN SOME  
ASTHMATICS AND IN SULFITE-SENSITIVE INDIVIDUALS.

NOTE: THE SEVERITY OF EFFECTS CAUSED BY EXPOSURE TO THIS PRODUCT OR  
SUBSTANCE DEPENDS ON CONCENTRATION, DURATION OF EXPOSURE AND  
EFFECTIVENESS OF ANY FIRST AID TREATMENT REQUIRED.



SHEET NUMBER: 1393  
SODIUM SULFITE, ANHYDROUS

PAGE

\*\* FIRE/EXPLOSION HAZARDS \*\*  
NFPA HAZARD IDENTIFICATION - HEALTH: 3  
FLAMMABILITY: 0 REACTIVITY: 0 OTHER: 0

THIS PRODUCT HAS NO FLASHPOINT.  
PRODUCT DECOMPOSES BEFORE MELTING. HIGH TEMPERATURES YIELD  
SULFUR DIOXIDE GAS AND A HAZARDOUS RESIDUE WHICH IS NOT  
COMPATIBLE WITH ACIDS. TLV FOR SO<sub>2</sub> IS 5 MG/M<sup>3</sup>.

---  
\*\* REACTIVITY \*\*

THIS PRODUCT OR SUBSTANCE IS CONSIDERED TO BE STABLE. STABLE  
MATERIALS ARE THOSE THAT NORMALLY HAVE THE CAPACITY TO RESIST  
CHANGES IN THEIR CHEMICAL COMPOSITION.

CONDITIONS TO AVOID DURING USE:

HIGH TEMPERATURES

MATERIALS NOT COMPATIBLE WITH THIS PRODUCT INCLUDE:

INORGANIC ACIDS, ORGANIC ACIDS, OXIDIZING AGENTS.

WHEN THIS PRODUCT OR SUBSTANCE IS HEATED TO A LEVEL WHERE IT  
DECOMPOSES, THE FOLLOWING COMPOUNDS ARE PRODUCED:

SULFUR DIOXIDE GAS AND HAZARDOUS RESIDUE.

WHEN LEFT ALONE, THIS PRODUCT WILL NOT REACT WITH ITSELF IN A  
HAZARDOUS MANNER.

---  
\*\* PERSONAL PROTECTIVE METHODS \*\*

EYES: IF THERE IS ANY POSSIBILITY OF EYE CONTACT WITH  
THIS PRODUCT OR SUBSTANCE, WEAR CHEMICAL SAFETY GOGGLES  
AND DO NOT WEAR CONTACT LENSES WHEN USING THIS PRODUCT.  
AN EYEWASH SHOULD BE PROVIDED IN THE IMMEDIATE WORK AREA.

SKIN: IF THERE IS ANY POSSIBILITY OF SKIN CONTACT  
WEAR LONG-SLEEVE WORK CLOTHING AND IMPERVIOUS GLOVES.  
FOR SOLUTIONS WEAR IMPERVIOUS GLOVES AND APRON. IF CONTACT IS  
REPEATED OR PROLONGED WEAR FULL IMPERVIOUS CLOTHING.  
WASH IMMEDIATELY WHEN SKIN BECOMES CONTAMINATED  
AND AT THE END OF EACH WORK SHIFT.

INHALATION: PROVIDE ADEQUATE LOCAL EXHAUST VENTILATION.  
IF IT IS POSSIBLE TO GENERATE SIGNIFICANT LEVELS OF VAPORS,  
MISTS, OR DUSTS, A NIOSH APPROVED RESPIRATOR IS REQUIRED.

INGESTION: AVOID INGESTING THIS PRODUCT OR SUBSTANCE. WASH  
HANDS WITH SOAP AND WATER BEFORE EATING. ALSO WASH HANDS  
BEFORE SMOKING IN AREAS WHERE NO FIRE HAZARD EXISTS AND  
SMOKING IS PERMITTED.

IMMEDIATELY REMOVE ANY CLOTHING THAT BECOMES CONTAMINATED.

WORK CLOTHING SHOULD BE CHANGED DAILY AFTER WORK IF THERE IS  
ANY POSSIBILITY THAT THE CLOTHING IS CONTAMINATED.

CONTACT THE FACILITY HAZARDOUS MATERIALS/WASTE COORDINATOR AT  
YOUR FACILITY FOR INFORMATION AND INSTRUCTIONS ON WASHING AND  
DISPOSAL OF CLOTHING CONTAMINATED WITH HAZARDOUS MATERIALS.  
THE NATURE OF THE TASK AND AMOUNT OF PRODUCT INVOLVED MAY AFFECT  
THE AMOUNT OF PROTECTIVE CLOTHING REQUIRED, HOWEVER, ALWAYS



DRESS PREPARED FOR THE MAXIMUM PROBABLE EXPOSURE. WEAR GLOVES, BOOTS, APRON AND A FACE SHIELD WITH CHEMICAL SPLASH GOGGLES IF EXPOSURE IS EXPECTED. A FULL SLICKER SUIT IS RECOMMENDED IF GROSS EXPOSURE IS POSSIBLE.

---  
\*\* FIRE CONTROL \*\*

WEAR SELF CONTAINED BREATHING APPARATUS (SCBA),  
USE WATER SPRAY TO COOL CONTAINER AND DISPERSE VAPORS.  
USE MEDIA APPROPRIATE FOR SURROUNDING FIRE.

---  
\*\* STORAGE REQUIREMENTS - POINT OF USE \*\*

THIS PRODUCT SHOULD BE STORED IN A CONTAINER THAT IS PROPERLY LABELED AND AS RECEIVED FROM THE MANUFACTURER.

---  
\*\* STORAGE REQUIREMENTS - SITE STORAGE \*\*

THERE IS NO SARA THRESHOLD PLANNING QUANTITY FOR THIS PRODUCT. THE CONTAINER SHOULD BE STORED IN A PLACE THAT IS COOL AND DRY. IT SHOULD BE STORED AWAY FROM NONCOMPATIBLE MATERIALS. ALSO PROTECT FROM PHYSICAL DAMAGE.  
KEEP CONTAINERS TIGHTLY SEALED WHEN NOT IN USE.

---  
\*\* TRANSPORTATION REQUIREMENTS \*\*

THIS PRODUCT IS NOT REGULATED BY THE DEPARTMENT OF TRANSPORTATION. IT HAS NO SHIPPING NAME, HAZARD CLASS, OR UN/NA NUMBER. FOR MORE INFORMATION REFER TO 49 CFR 100-177 OR CONSULT YOUR SITE COORDINATOR.  
EACH PACKAGE OR CONTAINER MUST BE LABELED IN ACCORDANCE WITH APPLICABLE DEPARTMENT OF TRANSPORTATION REGULATIONS.

---  
\*\* SPILL CLEAN-UP / DISPOSAL METHODS \*\*

SMALL SPILLS:

SWEEP UP PRODUCT OR SUBSTANCE. CONTAINERIZE WASTE PRODUCT.

LARGE SPILLS:

SWEEP UP PRODUCT OR SUBSTANCE. CONTAINERIZE WASTE PRODUCT.

ANY PRODUCT MAY BE A HAZARDOUS WASTE. CONTACT THE SITE COORDINATOR AT YOUR FACILITY FOR INFORMATION ON PROPER DISPOSAL OF WASTE. WASTE MANAGEMENT IS A SHARED RESPONSIBILITY FOR ALL EMPLOYEES. EVERY EFFORT SHOULD BE MADE TO MINIMIZE HAZARDOUS WASTE.

THERE IS NO REPORTABLE QUANTITY FOR THIS PRODUCT.

NOTE: BEFORE DISPOSING OF EMPTY CONTAINERS, ENSURE COMPLIANCE WITH THE RCRA EMPTY RULE (HAZARDOUS MATERIALS AND WASTE MANAGEMENT MANUAL, SECTION 7.6.1).

---  
\*\* FIRST AID \*\*

EYES: IF THIS PRODUCT OR SUBSTANCE GETS INTO THE EYES, IMMEDIATELY WASH THE EYES WITH LARGE AMOUNTS OF WATER OR EYEWASH SAFETY FLUID FOR 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER LIDS. IF THE EMPLOYEE IS WEARING CONTACT LENSES, IMMEDIATELY REMOVE THE CONTACT LENSES PRIOR TO FLUSHING THE EYES.

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SODIUM SULFITE, ANHYDROUS

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GET MEDICAL ATTENTION IMMEDIATELY.

SKIN: IF THIS PRODUCT OR SUBSTANCE GETS ON THE SKIN, IMMEDIATELY WASH THE CONTAMINATED SKIN WITH SOAP OR MILD DETERGENT AND WATER. IF THIS PRODUCT OR SUBSTANCE SOAKS THROUGH THE CLOTHING, IMMEDIATELY REMOVE CLOTHING AND WASH THE SKIN WITH SOAP OR MILD DETERGENT AND WATER. GET MEDICAL ATTENTION PROMPTLY.

INHALATION: IF A PERSON BREATHES IN LARGE AMOUNTS OF THIS PRODUCT OR SUBSTANCE, MOVE THE EXPOSED PERSON TO FRESH AIR AT ONCE. IF SYMPTOMS PERSIST, SEEK MEDICAL ATTENTION.

INGESTION: IF THIS PRODUCT OR SUBSTANCE HAS BEEN SWALLOWED AND THE PERSON IS CONSCIOUS, IMMEDIATELY GIVE THE PERSON LARGE QUANTITIES OF WATER. AFTER THE WATER HAS BEEN SWALLOWED, TRY TO GET THE PERSON TO VOMIT BY HAVING HIM TOUCH THE BACK OF THE THROAT WITH THE FINGER. DO NOT MAKE AN UNCONSCIOUS PERSON VOMIT. GET MEDICAL ATTENTION IMMEDIATELY. MILK MAY BE SUBSTITUTED FOR WATER.

-----  
07/31/90  
END OF MSDS

MATERIAL SAFETY DATA SHEET  
PUBLIC SERVICE COMPANY OF COLORADO  
POST OFFICE BOX 840  
DENVER CO 80201  
24 HOUR EMERGENCY NUMBER (800) 541-0918  
MSDS INFORMATION (303) 628-2828

PSCO MATERIAL SAFETY DATA SHEET NUMBER: 181  
THIS MSDS APPLIES TO IDENTIFICATION NUMBERS:  
09250452

ORIGINAL ENTRY DATE: 050589

LAST REVISION DATE: 062689

PRODUCT TRADE NAME:

CALGON CL-37

---  
\*\* MANUFACTURER(S) \*\*

CALGON CORPORATION

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\*\* HAZARDOUS COMPONENTS \*\*

THE MANUFACTURER(S) OF THIS PRODUCT HAVE DETERMINED THAT IT  
CONTAINS NO HAZARDOUS INGREDIENTS UNDER THE OSHA HAZARD  
COMMUNICATION RULE, 29 CFR 1910.1200. FOR MORE INFORMATION  
CALL THE MSDS INFORMATION HOTLINE AT 628-2828.

---  
\*\* DESCRIPTION \*\*

WHITE OPAQUE EMULSION

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\*\* POTENTIAL HEALTH EFFECTS \*\*

EYES: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE  
HEALTH EFFECTS RESULTING FROM EYE EXPOSURE TO THIS PRODUCT, OR  
HAS INDICATED NO HARMFUL EFFECTS RESULT FROM EYE EXPOSURE.

SKIN: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE HEALTH  
EFFECTS RESULTING FROM SKIN EXPOSURE TO THIS PRODUCT, OR HAS  
INDICATED NO HARMFUL EFFECTS RESULT FROM SKIN EXPOSURE.

INHALATION: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE  
HEALTH EFFECTS RESULTING FROM INHALATION OF THIS PRODUCT, OR HAS  
INDICATED NO HARMFUL EFFECTS RESULT FROM INHALATION.

INGESTION: MANUFACTURER HAS PROVIDED NO INFORMATION ON ADVERSE  
HEALTH EFFECTS RESULTING FROM INGESTION OF THIS PRODUCT, OR HAS  
INDICATED NO HARMFUL EFFECTS RESULT FROM INGESTION OF THE PRODUCT.

THIS PRODUCT IS PRACTICALLY NON-TOXIC THROUGH INGESTION AND  
DERMAL ABSORPTION. THE PRODUCT IS NOT A PRIMARY SKIN OR EYE  
IRRITANT.

NOTE: THE SEVERITY OF EFFECTS CAUSED BY EXPOSURE TO THIS PRODUCT OR  
SUBSTANCE DEPENDS ON CONCENTRATION, DURATION OF EXPOSURE AND  
EFFECTIVENESS OF ANY FIRST AID TREATMENT REQUIRED.

---  
\*\* FIRE/EXPLOSION HAZARDS \*\*

NFPA HAZARD IDENTIFICATION - HEALTH: U

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CALGON CL-37

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FLAMMABILITY: U    REACTIVITY: U    OTHER: O  
NOTE: U = UNKNOWN

THIS PRODUCT HAS NO FLASHPOINT.

---  
\*\* REACTIVITY \*\*

THIS PRODUCT OR SUBSTANCE IS CONSIDERED TO BE STABLE. STABLE MATERIALS ARE THOSE THAT NORMALLY HAVE THE CAPACITY TO RESIST CHANGES IN THEIR CHEMICAL COMPOSITION.

MATERIALS NOT COMPATIBLE WITH THIS PRODUCT INCLUDE:  
OXIDIZING AGENTS.

WHEN THIS PRODUCT OR SUBSTANCE IS HEATED TO A LEVEL WHERE IT DECOMPOSES, THE FOLLOWING COMPOUNDS ARE PRODUCED:  
CARBON MONOXIDE, CARBON DIOXIDE, OXIDES OF SILICONE

WHEN LEFT ALONE, THIS PRODUCT WILL NOT REACT WITH ITSELF IN A HAZARDOUS MANNER.

---  
\*\* PERSONAL PROTECTIVE METHODS \*\*

SKIN:

WASH PROMPTLY WHEN SKIN BECOMES CONTAMINATED.

INHALATION:

IF IT IS POSSIBLE TO GENERATE SIGNIFICANT LEVELS OF VAPORS, MISTS, OR DUSTS, A NIOSH APPROVED RESPIRATOR IS REQUIRED.

INGESTION: AVOID INGESTING THIS PRODUCT OR SUBSTANCE. WASH HANDS WITH SOAP AND WATER BEFORE EATING. ALSO WASH HANDS BEFORE SMOKING IN AREAS WHERE NO FIRE HAZARD EXISTS AND SMOKING IS PERMITTED.

CONTACT THE FACILITY HAZARDOUS MATERIALS/WASTE COORDINATOR AT YOUR FACILITY FOR INFORMATION AND INSTRUCTIONS ON WASHING AND DISPOSAL OF CLOTHING CONTAMINATED WITH HAZARDOUS MATERIALS. THE NATURE OF THE TASK AND AMOUNT OF PRODUCT INVOLVED MAY AFFECT THE AMOUNT OF PROTECTIVE CLOTHING REQUIRED, HOWEVER, ALWAYS DRESS PREPARED FOR THE MAXIMUM PROBABLE EXPOSURE. WEAR GLOVES, BOOTS, APRON AND A FACE SHIELD WITH CHEMICAL SPLASH GOGGLES IF EXPOSURE IS EXPECTED. A FULL SLICKER SUIT IS RECOMMENDED IF GROSS EXPOSURE IS POSSIBLE.

---  
\*\* FIRE CONTROL \*\*

THE MANUFACTURER HAS PROVIDED NO FIRE-FIGHTING INSTRUCTIONS. USE ADEQUATE PERSONAL PROTECTION AND FIRE-FIGHTING MEDIA APPROPRIATE FOR SURROUNDING FIRE.

---  
\*\* STORAGE REQUIREMENTS - POINT OF USE \*\*

THIS PRODUCT SHOULD BE STORED IN A CONTAINER THAT IS PROPERLY LABELED.

---  
\*\* STORAGE REQUIREMENTS - SITE STORAGE \*\*



THERE IS NO SARA THRESHOLD PLANNING QUANTITY FOR THIS PRODUCT.  
KEEP CONTAINERS TIGHTLY SEALED WHEN NOT IN USE.

\*\*\*  
\*\* TRANSPORTATION REQUIREMENTS \*\*

THIS PRODUCT IS NOT REGULATED BY THE DEPARTMENT OF  
TRANSPORTATION. IT HAS NO SHIPPING NAME, HAZARD CLASS, OR  
UN/NA NUMBER. FOR MORE INFORMATION REFER TO 49 CFR 100-177 OR  
CONSULT YOUR SITE COORDINATOR.  
EACH PACKAGE OR CONTAINER MUST BE LABELED IN ACCORDANCE WITH  
APPLICABLE DEPARTMENT OF TRANSPORTATION REGULATIONS.

\*\*\*  
\*\* SPILL CLEAN-UP / DISPOSAL METHODS \*\*

SMALL SPILLS:

ABSORB WITH ABSORBENT, SAND OR DIRT.  
CONTAINERIZE WASTE PRODUCT.

LARGE SPILLS:

ABSORB WITH APPROPRIATE ABSORBENT, SAND, OR DIRT.  
CONTAINERIZE WASTE PRODUCT.

ANY PRODUCT MAY BE A HAZARDOUS WASTE. CONTACT THE SITE  
COORDINATOR AT YOUR FACILITY FOR INFORMATION ON PROPER  
DISPOSAL OF WASTE. WASTE MANAGEMENT IS A SHARED  
RESPONSIBILITY FOR ALL EMPLOYEES. EVERY EFFORT SHOULD  
BE MADE TO MINIMIZE HAZARDOUS WASTE.

THERE IS NO REPORTABLE QUANTITY FOR THIS PRODUCT.

NOTE: BEFORE DISPOSING OF EMPTY CONTAINERS, ENSURE COMPLIANCE WITH  
THE RCRA EMPTY RULE (HAZARDOUS MATERIALS AND WASTE MANAGEMENT  
MANUAL, SECTION 7.6.1).

\*\*\*  
\*\* FIRST AID \*\*

EYES: IF THIS PRODUCT OR SUBSTANCE GETS INTO THE EYES,  
IMMEDIATELY WASH THE EYES WITH LARGE AMOUNTS OF WATER OR EYEWASH  
SAFETY FLUID FOR 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER  
LIDS. IF THE EMPLOYEE IS WEARING CONTACT LENSES, IMMEDIATELY  
REMOVE THE CONTACT LENSES PRIOR TO FLUSHING THE EYES.  
GET MEDICAL ATTENTION PROMPTLY IF DISCOMFORT PERSISTS.

SKIN: IF THIS PRODUCT OR SUBSTANCE GETS ON THE SKIN, PROMPTLY  
WASH THE CONTAMINATED SKIN WITH WATER. IF THIS PRODUCT  
OR SUBSTANCE SOAKS THROUGH THE CLOTHING, PROMPTLY REMOVE THE  
CLOTHING AND WASH THE AREA WITH WATER. IF IRRITATION PERSISTS  
AFTER WASHING, GET MEDICAL ATTENTION.

INHALATION: MANUFACTURER PROVIDES NO INFORMATION ON FIRST AID  
FOR INHALATION OF THIS PRODUCT. IF IRRITATION OR OTHER  
EFFECTS OCCUR THEN CONTACT A PHYSICIAN.

INGESTION: MANUFACTURER PROVIDES NO INFORMATION ON FIRST AID  
FOR INGESTION OF THIS PRODUCT. IF IRRITATION OR OTHER  
EFFECTS OCCUR THEN CONTACT A PHYSICIAN.



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CALGON CL-37

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END OF MSDS

MATERIAL SAFETY DATA SHEET  
PUBLIC SERVICE COMPANY OF COLORADO  
POST OFFICE BOX 840  
DENVER CO 80201  
24 HOUR EMERGENCY NUMBER (800) 541-0918  
MSDS INFORMATION (303) 628-2828

PSCO MATERIAL SAFETY DATA SHEET NUMBER: 1518  
THIS MSDS APPLIES TO IDENTIFICATION NUMBERS:  
09212210 09212202  
ORIGINAL ENTRY DATE: 091588 LAST REVISION DATE: 062089  
PRODUCT TRADE NAME:  
SODA ASH

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\*\* MANUFACTURER(S) \*\*  
STAUFFER CHEMICAL COMPANY  
GENERAL CHEMICAL COMPANY  
FMC CORPORATION, ALKALI CHEMICAL DIVISION  
THOMPSON-HAYWARD CHEMICAL COMPANY  
EM SCIENCE

-----  
\*\* SYNONYMS \*\*  
DISODIUM CARBONATE, CARBONIC ACID DISODIUM SALT

-----  
\*\* HAZARDOUS COMPONENTS \*\*  
100 % SODIUM CARBONATE, ANHYDROUS  
CAS: 497-19-8  
THIS IS NOT ON THE OSHA OR ACGIH LIST.

-----  
\*\* DESCRIPTION \*\*  
WHITE GRANULAR ODORLESS SOLID

-----  
\*\* POTENTIAL HEALTH EFFECTS \*\*  
EYES: EYE CONTACT WITH THIS PRODUCT CAN CAUSE SEVERE IRRITATION.  
CONTACT WITH THIS PRODUCT MAY RESULT IN CORNEAL OPACITIES OR  
BURNS.  
SKIN: SHORT TERM SKIN CONTACT WITH SIGNIFICANT AMOUNTS  
OF THIS PRODUCT OR SUBSTANCE CAN CAUSE IRRITATION.  
REPEATED CONTACT MAY CAUSE INFLAMMATION AND DRY CRACKED SKIN.  
REPEATED OR PROLONGED SKIN CONTACT CAN PRODUCE DRYING OF THE SKIN.  
INHALATION: BREATHING SIGNIFICANT CONCENTRATIONS OF DUSTS,  
MISTS, FUMES, VAPORS, OR GASEOUS FORMS OF PRODUCT, EVEN  
BRIEFLY, CAN CAUSE IRRITATION.  
INGESTION: INGESTION OF THIS PRODUCT CAN PRODUCE  
IRRITATION.  
INGESTION OF LARGE QUANTITIES MAY PRODUCE CORROSION OF THE  
GASTROINTESTINAL TRACT, VOMITING AND DIARRHEA  
NOTE: THE SEVERITY OF EFFECTS CAUSED BY EXPOSURE TO THIS PRODUCT OR  
SUBSTANCE DEPENDS ON CONCENTRATION, DURATION OF EXPOSURE AND  
EFFECTIVENESS OF ANY FIRST AID TREATMENT REQUIRED.

-----  
\*\* FIRE/EXPLOSION HAZARDS \*\*

SHEET NUMBER: 1518  
SODA ASH

PAGE

NFPA HAZARD IDENTIFICATION - HEALTH: 2  
FLAMMABILITY: 0 REACTIVITY: 1 OTHER: 0

THIS PRODUCT HAS NO FLASHPOINT.

\*\*\*  
\*\* REACTIVITY \*\*

THIS PRODUCT OR SUBSTANCE IS CONSIDERED TO BE STABLE. STABLE MATERIALS ARE THOSE THAT NORMALLY HAVE THE CAPACITY TO RESIST CHANGES IN THEIR CHEMICAL COMPOSITION.

CONDITIONS TO AVOID DURING USE:

AVOID SIMULTANEOUS EXPOSURE TO SODA ASH AND LIME DUST. IN THE PRESENCE OF MOISTURE, THE TWO MATERIALS COMBINE TO FORM CAUSTIC SODA, WHICH MAY CAUSE BURNS.

MATERIALS NOT COMPATIBLE WITH THIS PRODUCT INCLUDE:  
INORGANIC ACIDS, ORGANIC ACIDS, ORGANIC COMPOUNDS.

ALSO NOT COMPATIBLE WITH:

AVOID CONTACT WITH REDUCING SUGARS

DURING USE OF THIS PRODUCT AVOID:

AVOID CONTACT WITH LIME DUST, ALUMINUM METAL, PHOSPHOROUS PENTOXIDE.

WHEN THIS PRODUCT OR SUBSTANCE IS HEATED TO A LEVEL WHERE IT DECOMPOSES, THE FOLLOWING COMPOUNDS ARE PRODUCED:  
CARBON DIOXIDE

WHEN LEFT ALONE, THIS PRODUCT WILL NOT REACT WITH ITSELF IN A HAZARDOUS MANNER.

\*\*\*  
\*\* PERSONAL PROTECTIVE METHODS \*\*

EYES: IF THERE IS ANY POSSIBILITY OF EYE CONTACT WITH THIS PRODUCT OR SUBSTANCE, WEAR CHEMICAL SAFETY GOGGLES.

SKIN: IF THERE IS ANY POSSIBILITY OF SKIN CONTACT WEAR LONG-SLEEVE WORK CLOTHING AND COTTON WORKGLOVES.

WASH PROMPTLY WHEN SKIN BECOMES CONTAMINATED.

INHALATION: PROVIDE ADEQUATE LOCAL EXHAUST VENTILATION.

IF IT IS POSSIBLE TO GENERATE SIGNIFICANT LEVELS OF VAPORS, MISTS, OR DUSTS, A NIOSH APPROVED RESPIRATOR IS REQUIRED.

INGESTION: AVOID INGESTING THIS PRODUCT OR SUBSTANCE. WASH HANDS WITH SOAP AND WATER BEFORE EATING. ALSO WASH HANDS BEFORE SMOKING IN AREAS WHERE NO FIRE HAZARD EXISTS AND SMOKING IS PERMITTED.

CONTACT THE FACILITY HAZARDOUS MATERIALS/WASTE COORDINATOR AT YOUR FACILITY FOR INFORMATION AND INSTRUCTIONS ON WASHING AND DISPOSAL OF CLOTHING CONTAMINATED WITH HAZARDOUS MATERIALS. THE NATURE OF THE TASK AND AMOUNT OF PRODUCT INVOLVED MAY AFFECT THE AMOUNT OF PROTECTIVE CLOTHING REQUIRED, HOWEVER, ALWAYS DRESS PREPARED FOR THE MAXIMUM PROBABLE EXPOSURE. WEAR GLOVES, BOOTS, APRON AND A FACE SHIELD WITH CHEMICAL SPLASH GOGGLES IF EXPOSURE IS EXPECTED. A FULL SLICKER SUIT IS RECOMMENDED IF

SHEET NUMBER: 1518  
SODA ASH

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GROSS EXPOSURE IS POSSIBLE.

\*\*\*  
\*\* FIRE CONTROL \*\*

WEAR SELF CONTAINED BREATHING APPARATUS (SCBA) AND FULL PROTECTIVE CLOTHING.

USE CLASS "A" EXTINGUISHING MEDIA.

USE CLASS "B" EXTINGUISHING MEDIA.

\*\*\*  
\*\* STORAGE REQUIREMENTS - POINT OF USE \*\*

THIS PRODUCT SHOULD BE STORED IN A CONTAINER THAT IS PROPERLY LABELED AND AS RECEIVED FROM THE MANUFACTURER.

\*\*\*  
\*\* STORAGE REQUIREMENTS - SITE STORAGE \*\*

THERE IS NO SARA THRESHOLD QUANTITY FOR THIS PRODUCT. THE CONTAINER SHOULD BE STORED IN A PLACE THAT IS COOL AND DRY. IT SHOULD BE STORED AWAY FROM INCOMPATIBLE MATERIALS, SOURCES OF IGNITION AND SOURCES OF HEAT. KEEP CONTAINERS TIGHTLY SEALED WHEN NOT IN USE.

\*\*\*  
\*\* TRANSPORTATION REQUIREMENTS \*\*

THIS PRODUCT IS NOT REGULATED BY THE DEPARTMENT OF TRANSPORTATION. IT HAS NO SHIPPING NAME, HAZARD CLASS, OR UN/NA NUMBER. FOR MORE INFORMATION REFER TO 49 CFR 100-177 OR CONSULT YOUR SITE COORDINATOR.

EACH PACKAGE OR CONTAINER MUST BE LABELED IN ACCORDANCE WITH APPLICABLE DEPARTMENT OF TRANSPORTATION REGULATIONS.

\*\*\*  
\*\* SPILL CLEAN-UP / DISPOSAL METHODS \*\*

SMALL SPILLS:

VENTILATE COMPLETELY OR USE AN APPROPRIATE RESPIRATOR. SWEEP UP PRODUCT OR SUBSTANCE. CONTAINERIZE WASTE PRODUCT.

LARGE SPILLS:

VENTILATE COMPLETELY OR USE AN APPROPRIATE RESPIRATOR. SWEEP UP PRODUCT OR SUBSTANCE. CONTAINERIZE WASTE PRODUCT. DON'T FLUSH TO A SEWER OR WATER SUPPLY.

ANY PRODUCT MAY BE A HAZARDOUS WASTE. CONTACT THE SITE COORDINATOR AT YOUR FACILITY FOR INFORMATION ON PROPER DISPOSAL OF WASTE. WASTE MANAGEMENT IS A SHARED RESPONSIBILITY FOR ALL EMPLOYEES. EVERY EFFORT SHOULD BE MADE TO MINIMIZE HAZARDOUS WASTE.

THERE IS NO REPORTABLE QUANTITY FOR THIS PRODUCT.

NOTE: BEFORE DISPOSING OF EMPTY CONTAINERS, ENSURE COMPLIANCE WITH THE RCRA EMPTY RULE (HAZARDOUS MATERIALS AND WASTE MANAGEMENT MANUAL, SECTION 7.6.1).

\*\*\*  
\*\* FIRST AID \*\*

EYES: IF THIS PRODUCT OR SUBSTANCE GETS INTO THE EYES, IMMEDIATELY WASH THE EYES WITH LARGE AMOUNTS OF WATER OR EYEWASH SAFETY FLUID FOR 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER LIDS. IF THE EMPLOYEE IS WEARING CONTACT LENSES, IMMEDIATELY

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SODA ASH

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REMOVE THE CONTACT LENSES PRIOR TO FLUSHING THE EYES.  
GET MEDICAL ATTENTION PROMPTLY IF DISCOMFORT PERSISTS.  
SKIN: IF THIS PRODUCT OR SUBSTANCE GETS ON THE SKIN, PROMPTLY  
WASH THE CONTAMINATED SKIN WITH WATER. IF THIS PRODUCT  
OR SUBSTANCE SOAKS THROUGH THE CLOTHING, PROMPTLY REMOVE THE  
CLOTHING AND WASH THE AREA WITH WATER. IF IRRITATION PERSISTS  
AFTER WASHING, GET MEDICAL ATTENTION.  
INHALATION: IF A PERSON BREATHES IN LARGE AMOUNTS OF THIS PRODUCT  
OR SUBSTANCE, MOVE THE EXPOSED PERSON TO FRESH AIR AT ONCE. IF  
SYMPTOMS PERSIST, SEEK MEDICAL ATTENTION.  
INGESTION: IF THIS PRODUCT OR SUBSTANCE HAS BEEN SWALLOWED, AND  
THE PERSON IS CONSCIOUS, IMMEDIATELY GIVE THE PERSON LARGE  
QUANTITIES OF WATER TO DILUTE THE PRODUCT OR SUBSTANCE.  
DO NOT ATTEMPT TO MAKE THE PERSON VOMIT. GET MEDICAL ATTENTION  
IMMEDIATELY.

- - - - -

04/27/90  
END OF MSDS



MATERIAL SAFETY DATA SHEET  
PUBLIC SERVICE COMPANY OF COLORADO  
POST OFFICE BOX 840  
DENVER CO 80201  
24 HOUR EMERGENCY NUMBER (800) 541-0918  
MSDS INFORMATION (303) 628-2828

PSCO MATERIAL SAFETY DATA SHEET NUMBER: 1163  
THIS MSDS APPLIES TO IDENTIFICATION NUMBERS:  
09250225

ORIGINAL ENTRY DATE: 062088

LAST REVISION DATE: 060789

PRODUCT TRADE NAME:

CITRIC ACID, ANHYDROUS

\*\*\*  
\*\* MANUFACTURER(S) \*\*

MILES LABORATORIES

JOH. A. BENCKISER

MALLINCRODT CHEMICAL

HARCROS CHEMICALS

\*\*\*  
\*\* SYNONYMS \*\*

2-HYDROXY-1,2,3,PROPANETRICARBOXYLIC ACID

\*\*\*  
\*\* HAZARDOUS COMPONENTS \*\*

100 % CITRIC ACID

CAS: 77-92-9

THIS IS NOT ON THE OSHA OR ACGIH LIST.

\*\*\*  
\*\* DESCRIPTION \*\*

ODORLESS, FREE FLOWING, WHITE CRYSTALLINE MATERIAL, WITH  
A STRONG ACID TASTE.

\*\*\*  
\*\* POTENTIAL HEALTH EFFECTS \*\*

EYES: EYE CONTACT WITH THIS PRODUCT CAN CAUSE SEVERE IRRITATION.

SKIN: SHORT TERM SKIN CONTACT WITH SIGNIFICANT AMOUNTS

OF THIS PRODUCT OR SUBSTANCE CAN CAUSE IRRITATION.

INHALATION: BREATHING SIGNIFICANT CONCENTRATIONS OF DUSTS,

MISTS, FUMES, VAPORS, OR GASEOUS FORMS OF PRODUCT, EVEN

BRIEFLY, CAN CAUSE IRRITATION.

INGESTION: INGESTION OF THIS PRODUCT CAN PRODUCE

IRRITATION, HEADACHE AND/OR NAUSEA OR VOMITING.

NOTE: THE SEVERITY OF EFFECTS CAUSED BY EXPOSURE TO THIS PRODUCT OR  
SUBSTANCE DEPENDS ON CONCENTRATION, DURATION OF EXPOSURE AND  
EFFECTIVENESS OF ANY FIRST AID TREATMENT REQUIRED.

\*\*\*  
\*\* FIRE/EXPLOSION HAZARDS \*\*

NFPA HAZARD IDENTIFICATION - HEALTH: 1

FLAMMABILITY: 0 REACTIVITY: 0 OTHER: 0

THIS PRODUCT HAS NO FLASHPOINT.

\*\*\*  
\*\* REACTIVITY \*\*

SHEET NUMBER: 1163  
CITRIC ACID, ANHYDROUS

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THIS PRODUCT OR SUBSTANCE IS CONSIDERED TO BE STABLE. STABLE MATERIALS ARE THOSE THAT NORMALLY HAVE THE CAPACITY TO RESIST CHANGES IN THEIR CHEMICAL COMPOSITION.

DURING USE OF THIS PRODUCT AVOID:

AQUEOUS REACTION WITH CAUSTIC CAN CREATE HEAT (STRONG EXOTHERM). INCOMPATIBLE WITH POTASSIUM TARTRATE, ACETATES, METAL NITRATES, AND SULFIDES.

WHEN THIS PRODUCT OR SUBSTANCE IS HEATED TO A LEVEL WHERE IT DECOMPOSES, THE FOLLOWING COMPOUNDS ARE PRODUCED:  
TOXIC OXIDES OF CARBON

WHEN LEFT ALONE, THIS PRODUCT WILL NOT REACT WITH ITSELF IN A HAZARDOUS MANNER.

-- -- -- -- --  
\*\* PERSONAL PROTECTIVE METHODS \*\*

EYES: IF THERE IS ANY POSSIBILITY OF EYE CONTACT WITH THIS PRODUCT OR SUBSTANCE, WEAR CHEMICAL SAFETY GOGGLES AND FULL-FACE SHIELD.

AN EYEWASH SHOULD BE PROVIDED IN THE IMMEDIATE WORK AREA.

SKIN: IF THERE IS A REASONABLE PROBABILITY OF SKIN CONTACT WEAR IMPERVIOUS PANTS AND JACKET OR COVERALLS AND IMPERVIOUS GLOVES.

EYES, NOSE, MOUTH, AND EXPOSED SKIN AREAS SHOULD BE COVERED AS NEEDED TO HELP PREVENT IRRITATION.

INHALATION: PROVIDE ADEQUATE LOCAL EXHAUST VENTILATION. IF IT IS POSSIBLE TO GENERATE SIGNIFICANT LEVELS OF VAPORS, MISTS, OR DUSTS, A NIOSH APPROVED RESPIRATOR IS REQUIRED.

INGESTION: AVOID INGESTING THIS PRODUCT OR SUBSTANCE. WASH HANDS WITH SOAP AND WATER BEFORE EATING. ALSO WASH HANDS BEFORE SMOKING IN AREAS WHERE NO FIRE HAZARD EXISTS AND SMOKING IS PERMITTED.

PROMPTLY REMOVE NON-IMPERVIOUS CLOTHING THAT BECOMES CONTAMINATED.

WORK CLOTHING SHOULD BE CHANGED DAILY AFTER WORK IF THERE IS ANY POSSIBILITY THAT THE CLOTHING IS CONTAMINATED.

CONTACT THE FACILITY HAZARDOUS MATERIALS/WASTE COORDINATOR AT YOUR FACILITY FOR INFORMATION AND INSTRUCTIONS ON WASHING AND DISPOSAL OF CLOTHING CONTAMINATED WITH HAZARDOUS MATERIALS. THE NATURE OF THE TASK AND AMOUNT OF PRODUCT INVOLVED MAY AFFECT THE AMOUNT OF PROTECTIVE CLOTHING REQUIRED, HOWEVER, ALWAYS DRESS PREPARED FOR THE MAXIMUM PROBABLE EXPOSURE. WEAR GLOVES, BOOTS, APRON AND A FACE SHIELD WITH CHEMICAL SPLASH GOGGLES IF EXPOSURE IS EXPECTED. A FULL SLICKER SUIT IS RECOMMENDED IF GROSS EXPOSURE IS POSSIBLE.

-- -- -- -- --  
\*\* FIRE CONTROL \*\*

WEAR SELF CONTAINED BREATHING APPARATUS (SCBA) AND FULL PROTECTIVE CLOTHING.

-- -- -- -- --  
\*\* STORAGE REQUIREMENTS - POINT OF USE \*\*

SHEET NUMBER: 1163  
CITRIC ACID, ANHYDROUS

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THIS PRODUCT SHOULD BE STORED IN A CONTAINER THAT IS PROPERLY LABELED AND APPROVED.

\*\*\*  
\*\* STORAGE REQUIREMENTS - SITE STORAGE \*\*

THERE IS NO SARA THRESHOLD PLANNING QUANTITY FOR THIS PRODUCT. THE CONTAINER SHOULD BE STORED IN A PLACE THAT IS DRY. IT SHOULD BE STORED AWAY FROM NONCOMPATIBLE MATERIALS. KEEP CONTAINERS TIGHTLY SEALED WHEN NOT IN USE.

\*\*\*  
\*\* TRANSPORTATION REQUIREMENTS \*\*

THIS PRODUCT IS NOT REGULATED BY THE DEPARTMENT OF TRANSPORTATION. IT HAS NO SHIPPING NAME, HAZARD CLASS, OR UN/NA NUMBER. FOR MORE INFORMATION REFER TO 49 CFR 100-177 OR CONSULT YOUR SITE COORDINATOR. EACH PACKAGE OR CONTAINER MUST BE LABELED IN ACCORDANCE WITH APPLICABLE DEPARTMENT OF TRANSPORTATION REGULATIONS.

\*\*\*  
\*\* SPILL CLEAN-UP / DISPOSAL METHODS \*\*

SMALL SPILLS:

SWEEP UP PRODUCT OR SUBSTANCE. CONTAINERIZE WASTE PRODUCT.

LARGE SPILLS:

SWEEP UP PRODUCT OR SUBSTANCE. CONTAINERIZE WASTE PRODUCT.

ANY PRODUCT MAY BE A HAZARDOUS WASTE. CONTACT THE SITE COORDINATOR AT YOUR FACILITY FOR INFORMATION ON PROPER DISPOSAL OF WASTE. WASTE MANAGEMENT IS A SHARED RESPONSIBILITY FOR ALL EMPLOYEES. EVERY EFFORT SHOULD BE MADE TO MINIMIZE HAZARDOUS WASTE.

THERE IS NO REPORTABLE QUANTITY FOR THIS PRODUCT.

NOTE: BEFORE DISPOSING OF EMPTY CONTAINERS, ENSURE COMPLIANCE WITH THE RCRA EMPTY RULE (HAZARDOUS MATERIALS AND WASTE MANAGEMENT MANUAL, SECTION 7.6.1).

\*\*\*  
\*\* FIRST AID \*\*

EYES: IF THIS PRODUCT OR SUBSTANCE GETS INTO THE EYES, IMMEDIATELY WASH THE EYES WITH LARGE AMOUNTS OF WATER OR EYEWASH SAFETY FLUID FOR 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER LIDS. IF THE EMPLOYEE IS WEARING CONTACT LENSES, IMMEDIATELY REMOVE THE CONTACT LENSES PRIOR TO FLUSHING THE EYES. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN: IF THIS PRODUCT OR SUBSTANCE GETS ON THE SKIN, FLUSH THE CONTAMINATED SKIN WITH WATER. IF THIS PRODUCT OR SUBSTANCE SOAKS THROUGH THE CLOTHING, IMMEDIATELY REMOVE THE CLOTHING AND FLUSH SKIN WITH WATER. IF IRRITATION PERSISTS AFTER WASHING, GET MEDICAL ATTENTION.

INHALATION: MANUFACTURER PROVIDES NO INFORMATION ON FIRST AID FOR INHALATION OF THIS PRODUCT. IF IRRITATION OR OTHER EFFECTS OCCUR THEN CONTACT A PHYSICIAN.

INGESTION: MANUFACTURER PROVIDES NO INFORMATION ON FIRST AID FOR INGESTION OF THIS PRODUCT. IF IRRITATION OR OTHER

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CITRIC ACID, ANHYDROUS

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EFFECTS OCCUR THEN CONTACT A PHYSICIAN.

- - - - -

04/27/90  
END OF MSDS

# MATERIAL SAFETY DATA SHEET

SUMMIT LABORATORIES, INC.  
1771 EAST 58TH AVENUE UNIT E  
DENVER, CO 80216

PHONE: (303) 293-9862  
CHEMICAL EMERGENCIES ONLY: CHEMTREC  
1-800-424-9300

## SECTION 1 - IDENTITY INFORMATION

TRADENAME: FORMULA 756B

DESCRIPTION: BOILER FEEDWATER TREATMENT

PRODUCT TYPE: OXYGEN SCAVENGER

HAZARD STATEMENT:

THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD 29 CFR 1910.1200.

## HAZARDOUS INGREDIENTS:

INGREDIENTS	CAS #	% (APPROX)
SODIUM METABISULFITE	7681-57-4	12-13
SODIUM SULFITE	7757-83-7	4 - 5
COLBALY SULFATE	13455-34-0	.0018

NOTE REGARDING REGULATORY STATUS SODIUM METABISULFITE/SODIUM BISULFITE: SODIUM METABISULFITE AND SODIUM SULFITE DO NOT APPEAR IN THE "CONSOLIDATED LIST OF CHEMICALS" SUBJECT TO REPORTING UNDER EPCRA. IN SOLUTION, HOWEVER SODIUM METABISULFITE WILL FORM SODIUM BISULFITE (CAS # 7631-90-5). SODIUM BISULFITE IS NOT LISTED AS AN EXTREMELY HAZARDOUS SUBSTANCE UNDER SARA SECTION 302. IT IS NOT LISTED UNDER SARA SECTION 313 AND IS NOT SUBJECT TO THOSE REPORTING REQUIREMENTS FOR TOXIC CHEMICALS. SODIUM BISULFITE IS ALSO NOT LISTED AS A RCRA HAZARDOUS WASTE. SODIUM BISULFITE IS LISTED AS A CERCLA HAZARDOUS SUBSTANCE WITH A REPORTABLE QUANTITY OF 5000 POUNDS. 5000 POUNDS OF SODIUM BISULFITE WOULD BE CONTAINED IN 25,000 POUNDS OF THIS PRODUCT.



**NOTE CONT:**

WHEN THIS PRODUCT IS APPLIED, THE AMOUNT OF BISULFITE PRESENT IS DEPENDENT UPON pH. AS pH RISES SODIUM BISULFITE CONVERTS TO SODIUM SULFITE. AS BISULFITE AND SULFITE REACT WITH OXIDIZERS (INCLUDING OXYGEN) THEY ARE CONVERTED TO SULFATE.

**SECTION 2 - PHYSICAL CHARACTERISTICS**

**APPEARANCE:** SLIGHTLY HAZY - LIGHT STRAW LIQUID  
**ODOR:** SLIGHT ACID SULFUR  
**BOILING POINT:** 200 - 210 F  
**FREEZING POINT:** 10 - 20 F  
**FLASH POINT:** NONE  
**EVAPORATION RATE:** EQUIVALENT TO WATER  
**PERCENT VOLATILE:** APPROX. 75 PERCENT (WATER)  
**VAPOR DENSITY:** EQUIVALENT TO WATER  
**VAPOR PRESSURE:** EST. 9 (SO<sub>2</sub>)  
**SOLUBILITY IN WATER:** COMPLETE  
**pH:** 5.4 TO 5.8  
**SPECIFIC GRAVITY:** 1.22  
**POUNDS PER GALLON:** 10.2

**SECTION 3 - FIRST AID INFORMATION**

**EYES:** FLUSH WITH WATER FOR 15 MINUTES. CALL A PHYSICIAN.  
**SKIN:** FLUSH WITH WATER FOR 15 MINUTES.  
**INGESTION:** INDUCE VOMITING. GIVE WATER. CALL A PHYSICIAN IMMEDIATELY.  
**INHALATION:** REMOVE TO FRESH AIR. CALL A PHYSICIAN.

**SECTION 4 - HEALTH EFFECTS INFORMATION**

**PRIMARY ROUTES OF EXPOSURE:** EYE, SKIN, INHALATION

**EYES:** CAN CAUSE TRANSIENT IRRITATION.

**SKIN:** CAN CAUSE TRANSIENT IRRITATION.

**INHALATION:**

THIS PRODUCT CAN EVOLVE SULFUR DIOXIDE WHEN OPEN TO ATMOSPHERE. THE RATE OF SO<sub>2</sub> EVOLUTION INCREASES WITH TEMPERATURE AND WITH DECREASING PH. IF SIGNIFICANT LEVELS OF VAPORS AND MISTS ARE INHALED, TREAT ACCORDING TO CONTACT WITH SULFUR DIOXIDE.

INHALATION OF MISTS AND VAPORS CAN CAUSE IRRITATION OF NOSE, THROAT, AND LUNGS.

**INGESTION:**

INGESTION OF SULFITE CAN CAUSE AN ALLERGIC REACTION IN SENSITIVE INDIVIDUALS. THE RESULTANT SYMPTOMS CAN INCLUDE DIFFICULTY IN BREATHING, FLUSHED SKIN, AND A RASH.

### SECTION 5 - FIRE AND EXPLOSION INFORMATION

**FLASH POINT:** NONE

**EXTINGUISHING MEDIA:** MATERIAL IS NOT COMBUSTIBLE. USE EXTINGUISHING MEDIA APPROPRIATE FOR SURROUNDING FIRE.

### SECTION 6 - REACTIVITY DATA

**STABILITY:** STABLE

**INCOMPATIBILITY:** AVOID CONTACT WITH OXIDIZING AGENTS AND ACIDS. CONTACT WITH ACIDS RELEASES IRRITATING SULFUR DIOXIDE GAS.

**HAZARDOUS DECOMPOSITION PRODUCTS:** CAN LIBERATE OXIDES OF SULFUR, HYDROGEN SULFIDE, CARBON MONOXIDE AND DIOXIDE. **DO NOT BREATHE SMOKE OR FUMES.**

**STORAGE:** EVOLVES SULFUR DIOXIDE WHEN OPEN TO ATMOSPHERE.

### SECTION 7 - SPILL OR LEAK PROCEDURES

**SMALL SPILLS:** CONTAIN WITH ABSORBENT MATERIAL.

**LARGE SPILLS:** EVACUATE EMPLOYEES AND VENTILATE AREA. IF SIGNIFICANT MISTS OR VAPORS ARE PRESENT, WEAR AT LEAST A NIOSH APPROVED RESPIRATOR FOR RESPIRATORY PROTECTION.

RECLAIM MATERIAL IN SALVAGE DRUMS OR TANK TRUCK FOR PROPER DISPOSAL.

### SECTION 8 - SPECIAL PROTECTION INFORMATION

**RESPIRATORY PROTECTION:** IF SIGNIFICANT LEVELS OF MISTS OR VAPORS ARE GENERATED, WEAR A NIOSH APPROVED, OR EQUIVALENT, RESPIRATOR. NONE REQUIRED FOR NORMAL CONDITIONS.

**VENTILATION:** GENERALLY VENTILATION IS RECOMMENDED. LOCAL EXHAUST VENTILATION IS RECOMMENDED WHERE MISTS OR VAPORS MAY BE RELEASED.

**PROTECTIVE GLOVES:** IMPERVIOUS GLOVES

**EYE PROTECTION:** SAFETY GLASSES OR CHEMICAL GOGGLES. DO NOT WEAR CONTACT LENSES WHEN WORKING THIS CHEMICALS.

SECTION 9 - REGULATORY INFORMATION

DOT PROPER SHIPPING NAME: SODIUM HYDROGEN SULFITE, SOLUTION

DOT CLASS: CORROSIVE MATERIAL

DOT NUMBER: NA2693

RCRA STATUS: IS NOT CONSIDERED HAZARDOUS WASTE UNDER RCRA (40 CFR 261.22)

CERCLA STATUS: HAS A RQ OF 25,000 LBS AS BLENDED PRODUCT

SARA TITLE III - CERCLA LIST: THIS PRODUCT IS OR CONTAINS A "CERCLA" LISTED

HAZARDOUS SUBSTANCE FOR EMERGENCY RELEASE NOTIFICATION UNDER SECTION 304 (40 CFR 302)

SODIUM BISULFITE CAS # 7631-90-5; 12%

SARA TITLE III - TOXIC CHEMICALS LIST: THIS PRODUCT IS OR CONTAINS A TOXIC CHEMICAL  
FOR ROUTINE ANNUAL "TOXIC CHEMICAL RELEASE REPORTING" UNDER SECTION 313 (40 CFR 372)

"COBALT COMPOUNDS"; .0018

ISSUE DATE: 5/6/91

THE INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE BASED UPON DATA BELIEVED TO BE  
CORRECT. HOWEVER, NO GUARANTEE OR WARRANTY OF ANY KIND EXPRESSED OR IMPLIED IS MADE  
WITH RESPECT TO THE INFORMATION CONTAINED HEREIN.

Page 1

## MATERIAL SAFETY DATA SHEET

BLUMIT LABORATORIES, INC.  
1771 EAST 58TH AVENUE UNIT E  
DENVER, CO 80216

PHONE NUMBER:  
(303) 292-9862

## SECTION I - IDENTITY INFORMATION

TRADE NAME: FORMULA 713  
DESCRIPTION: BOILER TREATMENT COMPOUND  
PRODUCT TYPE: CORROSION INHIBITOR AND DISPERSANT

## HAZARD STATEMENT:

THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD 29 CFR 1910.1200.

## HAZARDOUS INGREDIENTS:

INGREDIENTS	%	TLV LIMITS	CAS NO.
POTASSIUM HYDROXIDE	10	2 MG / M3	001-510-583
SODIUM POLYMETHACRYLATE	2		9003-04-7
POLYACRYLIC COPOLYMER	1	NF	TRADE SECRET

## SECTION II PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT: 212 - 215 F  
VAPOR PRESSURE (mm Hg) @ 20 degrees C: N.A.  
VAPOR DENSITY (AIR = 1): EQUIVALENT TO WATER  
SOLUBILITY IN WATER: COMPLETE  
APPEARANCE & ODOR: LIGHT STRAW COLOR; NO DISTINCTIVE ODOR.  
SPECIFIC GRAVITY (H2O = 1): 1.11 (9.26 LBS/OAL)  
pH: 14  
EVAPORATION RATE: EQUIVALENT TO WATER

## SECTION III FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: NONFLAMMABLE  
FLAMMABLE LIMITS: NONFLAMMABLE

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**SPECIAL FIRE FIGHTING PROCEDURES:** WEAR SELF CONTAINED BREATHING APPARATUS AND FULL PROTECTIVE GEAR.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** NONE. PRODUCT MAY SPATTER IF TEMPERATURE EXCEEDS BOILING POINT (APPROX 212°).

**STABILITY:** STABLE

**INCOMPATIBILITY:** AVOID CONTACT WITH ACIDS AND METALS SUCH AS ALUMINUM, ZINC, AND TIN.

**HAZARDOUS DECOMPOSITION OR BYPRODUCTS:** AFTER EVAPORATION OF WATER SOLIDS ARE CAPABLE OF BURNING. IN THIS CASE COMBUSTION PRODUCTS WILL INCLUDE OXIDES OF SULFUR.

**HAZARDOUS POLYMERIZATION:** MATERIAL IS NOT KNOWN TO POLYMERIZE.

#### SECTION IV - HEALTH HAZARD DATA

##### EFFECTS OF EXPOSURE - EMERGENCY FIRST AID

**EYES:** CONTACT MAY CAUSE SEVERE INJURY. FLUSH EYES WITH WATER FOR 15 MINUTES. GET MEDICAL ATTENTION IF IRRITATION PERSISTS.

**SKIN:** CONTACT MAY CAUSE SKIN IRRITATION. FLUSH CONTACTED AREA WITH WATER. LAUNDER CLOTHING BEFORE REUSE.

**INHALATION:** INHALATION OF MISTS CAN CAUSE IRRITATION TO ENTIRE RESPIRATORY TRACT. REMOVE TO FRESH AIR. GET MEDICAL ASSISTANCE.

**INGESTION:** INGESTION CAN DAMAGE THROAT AREA AND GASTRO-RESPIRATORY TRACT. DRINK PLENTY OF WATER. DO NOT INDUCE VOMITING. GET MEDICAL ASSISTANCE.

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

**SPILL PROCEDURES:** CONTAIN SPILL IN SUITABLE CONTAINER OR HOLDING AREA. DO NOT ALLOW DRAINAGE TO SEWERS, STREAMS, OR STORM CONDUITS. RECOVER WITH VACUUM EQUIPMENT OR NEUTRALIZE WITH WEAK ACID SOLUTIONS AND FLUSH WITH WATER. AVOID SPLASHING OR MISTING.

**WASTE DISPOSAL METHOD:** DISPOSE OF SPILLAGE WASTE PER COMPANY CONTINGENCY PLAN AND IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS. IF ANY QUESTION EXISTS, CONTACT THE APPROPRIATE AGENCY TO ASSURE PROPER ACTION.

**VENTILATION:** WHERE MIST OR SPRAY MAY BE GENERATED, USE LOCAL EXHAUST VENTILATION.

#### SPECIAL PROTECTION INFORMATION

**PROTECTIVE GLOVES:** IMPERVIOUS GLOVES.

**RESPIRATORY PROTECTION:** NONE REQUIRED FOR NORMAL CONDITIONS.

**EYE PROTECTION:** SAFETY GLASSES OR FACE SHIELD. DO NOT WEAR CONTACT LENSES WHEN WORKING WITH CHEMICALS.



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**OTHER PRECAUTIONS**

KEEP CONTAINERS CLOSED WHEN NOT IN USE.

AVOID EXCESSIVE HEAT AND COLD.

DO NOT GET IN EYES, ON SKIN, OR ON CLOTHING. DO NOT TAKE INTERNALLY.

WASH THOROUGHLY AFTER HANDLING.

**FOR INDUSTRIAL USE ONLY**

PREPARED: AUGUST 1990

MATERIAL SAFETY DATA SHEET  
PUBLIC SERVICE COMPANY OF COLORADO  
POST OFFICE BOX 840  
DENVER CO 80201  
24 HOUR EMERGENCY NUMBER (800) 541-0918  
MSDS INFORMATION (303) 628-2828

PSCO MATERIAL SAFETY DATA SHEET NUMBER: 397

ORIGINAL ENTRY DATE: 010989 LAST REVISION DATE: 062891

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\*\* PRODUCT TRADE NAME & SYNONYMS \*\*  
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PRODUCT TRADE NAME:  
TRISODIUM PHOSPHATE -CRYSTALLINE

SYNONYMS:  
TSP

---  
\*\* MSD IDENTIFICATION NUMBER \*\*  
---

THIS MSDS APPLIES TO IDENTIFICATION NUMBERS:  
09212405

---  
\*\* MANUFACTURER(S) \*\*  
---

FMC CORPORATION  
OLIN CORPORATION  
ASHLAND CHEMICAL COMPANY  
HARCROS CHEMICALS

---  
\*\* HAZARDOUS COMPONENTS \*\*  
---

100 % TRISODIUM PHOSPHATE  
CAS: 7601-54-9  
THIS IS NOT ON THE OSHA LIST.  
THIS IS NOT ON THE ACGIH LIST.

A PEL OF 5 MG/M3 FOR RESPIRABLE DUST APPLIES TO  
THIS PRODUCT.

---  
\*\* DESCRIPTION \*\*  
---

WHITE, CRYSTALLINE, ODORLESS SOLID

-----  
\*\* POTENTIAL HEALTH EFFECTS \*\*  
-----

EYES: EYE CONTACT WITH THIS PRODUCT CAN CAUSE IRRITATION,  
INFLAMMATION AND/OR CORNEAL DAMAGE.  
MAY CAUSE TEARING, BLURRED VISION, AND POSSIBLE BURNS.

SKIN: SHORT TERM SKIN CONTACT WITH SIGNIFICANT AMOUNTS  
OF THIS PRODUCT OR SUBSTANCE CAN CAUSE IRRITATION,  
DRYING OF THE SKIN AND/OR BURNS.

INHALATION: BREATHING SIGNIFICANT CONCENTRATIONS OF DUSTS,  
MISTS, FUMES, VAPORS, OR GASEOUS FORMS OF PRODUCT, EVEN  
BRIEFLY, CAN CAUSE SEVERE IRRITATION AND/OR SEVERE TISSUE DAMAGE.  
REPEATED OR PROLONGED INHALATION CAN RESULT IN  
THE SAME HARMFUL EFFECTS AS BRIEF EXPOSURES.

INGESTION: INGESTION OF THIS PRODUCT CAN PRODUCE  
SEVERE IRRITATION, SEVERE TISSUE DAMAGE AND/OR NAUSEA OR VOMITING.  
CAN CAUSE DIARRHEA, CHEMICAL BURNS, AND PERFORATION OF THE  
ESOPHAGUS OR GASTROINTESTINAL TRACT.

NOTE: THE SEVERITY OF EFFECTS CAUSED BY EXPOSURE TO THIS PRODUCT OR  
SUBSTANCE DEPENDS ON CONCENTRATION, DURATION OF EXPOSURE AND  
EFFECTIVENESS OF ANY FIRST AID TREATMENT REQUIRED.

-----  
\*\* FIRE/EXPLOSION HAZARDS \*\*  
-----

NFPA HAZARD IDENTIFICATION - HEALTH: 2  
FLAMMABILITY: 0 REACTIVITY: 0 OTHER: 0

THIS PRODUCT HAS NO FLASHPOINT.

-----  
\*\* FIRE CONTROL \*\*  
-----

WEAR SELF CONTAINED BREATHING APPARATUS (SCBA).  
USE EXTINGUISHING MEDIA SUITABLE FOR SURROUNDING FIRE.

-----  
\*\* REACTIVITY \*\*  
-----

THIS PRODUCT OR SUBSTANCE IS CONSIDERED TO BE STABLE. STABLE

MATERIALS ARE THO. THAT NORMALLY HAVE THE CAPACITY TO RESIST  
CHANGES IN THEIR CHEMICAL COMPOSITION.

MATERIALS NOT COMPATIBLE WITH THIS PRODUCT INCLUDE:  
INORGANIC ACIDS, ORGANIC ACIDS, METALS, OXIDIZER.

WHEN THIS PRODUCT OR SUBSTANCE IS HEATED TO A LEVEL WHERE IT  
DECOMPOSES, THE FOLLOWING COMPOUNDS ARE PRODUCED:  
SODIUM OXIDE AND OXIDES OF PHOSPHORUS.

WHEN LEFT ALONE, THIS PRODUCT WILL NOT REACT WITH ITSELF IN A  
HAZARDOUS MANNER.

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\*\* PERSONAL PROTECTIVE METHODS \*\*  
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EYES: IF THERE IS ANY POSSIBILITY OF EYE CONTACT WITH  
THIS PRODUCT OR SUBSTANCE, WEAR CHEMICAL SAFETY GOGGLES.

AN EYEWASH SHOULD BE PROVIDED IN THE IMMEDIATE WORK AREA.

SKIN: IF THERE IS ANY POSSIBILITY OF SKIN CONTACT  
WEAR IMPERVIOUS GLOVES.  
WASH PROMPTLY WHEN SKIN BECOMES CONTAMINATED.

INHALATION: PROVIDE ADEQUATE LOCAL EXHAUST AND/OR GENERAL  
MECHANICAL VENTILATION.

IF THE POSSIBILITY EXISTS OF GENERATING LEVELS OF VAPORS,  
MISTS, OR DUSTS ABOVE THE PEL OR LEVELS THAT WOULD CAUSE A  
HEALTH HAZARD TO USER, AN APPROPRIATE NIOSH APPROVED  
RESPIRATOR IS REQUIRED.

INGESTION: AVOID INGESTING THIS PRODUCT OR SUBSTANCE. WASH  
HANDS WITH SOAP AND WATER BEFORE EATING. ALSO WASH HANDS  
BEFORE SMOKING IN AREAS WHERE NO FIRE HAZARD EXISTS AND  
SMOKING IS PERMITTED.

CONTACT THE FACILITY HAZARDOUS MATERIALS/WASTE COORDINATOR AT  
YOUR FACILITY FOR INFORMATION AND INSTRUCTIONS ON WASHING AND  
DISPOSAL OF CLOTHING CONTAMINATED WITH HAZARDOUS MATERIALS.

THE NATURE OF THE TASK AND AMOUNT OF PRODUCT INVOLVED MAY AFFECT  
THE AMOUNT OF PROTECTIVE CLOTHING REQUIRED, HOWEVER, ALWAYS  
DRESS PREPARED FOR THE MAXIMUM PROBABLE EXPOSURE. WEAR GLOVES,  
BOOTS, APRON AND A FACE SHIELD WITH CHEMICAL SPLASH GOGGLES IF  
EXPOSURE IS EXPECTED. A FULL SLICKER SUIT IS RECOMMENDED IF  
GROSS EXPOSURE IS POSSIBLE.

\*\*\*\*\*  
\*\* STORAGE REQUIREMENTS AND HANDLING PROCEDURES - POINT OF USE \*\*  
\*\*\*\*\*

THIS PRODUCT SHOULD BE STORED IN A CONTAINER THAT IS  
PROPERLY LABELED AND AS RECEIVED FROM THE MANUFACTURER.  
EMPTY CONTAINERS MAY BE HAZARDOUS DUE TO PRODUCT RESIDUE.

\*\*\*\*\*  
\*\* STORAGE REQUIREMENTS - SITE STORAGE \*\*  
\*\*\*\*\*

THERE IS NO SARA THRESHOLD PLANNING QUANTITY FOR THIS PRODUCT.

THE CONTAINER SHOULD BE STORED IN A PLACE THAT IS DRY.  
KEEP CONTAINERS TIGHTLY SEALED WHEN NOT IN USE.

\*\*\*\*\*  
\*\* TRANSPORTATION REQUIREMENTS \*\*  
\*\*\*\*\*

THIS PRODUCT IS REGULATED IF THE CONTAINER IT IS CARRIED IN IS  
5000 POUNDS OR GREATER. IF IT IS PACKAGED IN THIS AMOUNT THE  
SHIPPING NAME IS: HAZARDOUS SUBSTANCE, LIQUID OR SOLID, N.O.S.  
THE HAZARD CLASS IS: ORM-F, AND THE ID NUMBER IS: NA9108.

EACH PACKAGE OR CONTAINER MUST BE LABELED IN ACCORDANCE WITH  
APPLICABLE DEPARTMENT OF TRANSPORTATION REGULATIONS.

\*\*\*\*\*  
\*\* SPILL CLEAN-UP / DISPOSAL METHODS \*\*  
\*\*\*\*\*

SMALL SPILLS:  
SWEEP UP PRODUCT OR SUBSTANCE. CONTAINERIZE WASTE PRODUCT.

LARGE SPILLS:  
REENTER ONLY WITH PERSONAL PROTECTIVE EQUIPMENT.  
SWEEP UP PRODUCT OR SUBSTANCE. CONTAINERIZE WASTE PRODUCT.  
DON'T FLUSH TO A SEWER OR WATER SUPPLY.

IF THIS PRODUCT OR SUBSTANCE BECOMES A WASTE, IT IS CLASSIFIED  
AS A HAZARDOUS WASTE ACCORDING TO EPA REGULATION, AND MUST  
BE RECYCLED OR DISPOSED OF AS A HAZARDOUS WASTE.

FOR THE ORIGINAL, UNDILUTED PRODUCT THE FOLLOWING IS TRUE:  
THE REPORTABLE QUANTITY OF THIS SUBSTANCE IS 5000 LBS.



SHEET NUMBER: 397  
TRISODIUM PHOSPHATE -CRYSTALLINE

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NOTE: BEFORE DISPOSING OF EMPTY CONTAINERS, ENSURE COMPLIANCE WITH THE RCRA EMPTY RULE (ENVIRONMENTAL PROTECTION AND OCCUPATIONAL HEALTH MANUAL, VOLUME IV, CHAPTER 1 SECTION 4.2.1).

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\*\* FIRST AID \*\*  
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EYES: IF THIS PRODUCT OR SUBSTANCE GETS INTO THE EYES, IMMEDIATELY WASH THE EYES WITH LARGE AMOUNTS OF WATER OR EYEWASH SAFETY FLUID FOR 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER LIDS. IF THE EMPLOYEE IS WEARING CONTACT LENSES, IMMEDIATELY REMOVE THE CONTACT LENSES PRIOR TO FLUSHING THE EYES. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN: IF THIS PRODUCT OR SUBSTANCE GETS ON THE SKIN, FLUSH THE CONTAMINATED SKIN WITH WATER. IF THIS PRODUCT OR SUBSTANCE SOAKS THROUGH THE CLOTHING, IMMEDIATELY REMOVE THE CLOTHING AND FLUSH SKIN WITH WATER. IF IRRITATION PERSISTS AFTER WASHING, GET MEDICAL ATTENTION.

INHALATION: IF A PERSON BREATHES IN LARGE AMOUNTS OF THIS PRODUCT OR SUBSTANCE, MOVE THE EXPOSED PERSON TO FRESH AIR AT ONCE. IF BREATHING HAS STOPPED, PERFORM ARTIFICIAL RESPIRATION. KEEP THE AFFECTED PERSON WARM AND AT REST. GET MEDICAL ATTENTION AS SOON POSSIBLE.

INGESTION: IF THIS PRODUCT OR SUBSTANCE HAS BEEN SWALLOWED AND THE PERSON IS CONSCIOUS, IMMEDIATELY GIVE THE PERSON LARGE QUANTITIES OF WATER. AFTER THE WATER HAS BEEN SWALLOWED, TRY TO GET THE PERSON TO VOMIT BY HAVING HIM TOUCH THE BACK OF THE THROAT WITH THE FINGER. DO NOT MAKE AN UNCONSCIOUS PERSON VOMIT. GET MEDICAL ATTENTION IMMEDIATELY.

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01/11/92  
END OF MSDS