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MAY 18 2001

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station OP1-17
Washington, D. C. 20555


**SUSQUEHANNA STEAM ELECTRIC STATION
PROPOSED CHANGE TO WATER TREATMENT
INFORMATION CONTAINED IN THE RENEWAL
APPLICATION FOR THE SSES NPDES PERMIT
PLA-5310**

**Docket Nos. 50-387
and 50-388**

Attached is a copy of a proposed change to water treatment information contained in the renewal application for the Susquehanna Steam Electric Station (SSES) NPDES Permit No. PA 0047325. The proposed change was submitted to the Pennsylvania Department of Environmental Protection (PA DEP) for their approval. It is being submitted to the NRC, for your information, in accordance with section 3.2 of the Environmental Protection Plan.

Please contact Mr. R. D. Kichline at 610-774-7705, if there are any questions concerning this letter.

Sincerely,

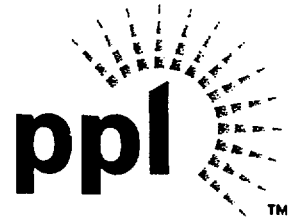

R. G. Byram

Copy: NRC Region I
Mr. S. L. Hansell, NRC Sr. Resident Inspector
Mr. R. G. Schaaf, NRC Project Manager

COOL

Jerome S. Fields
Sr. Environmental Scientist - Nuclear

PPL Susquehanna, LLC
Two North Ninth Street
Allentown, PA 18101-1179
Tel. 610.774.7889 Fax 610.774.7205
jsfields@pplweb.com



April 25, 2001

Mr. Paul M. Swerdon
Chief, Facilities and Construction Grants Section
Bureau of Water Quality Management
Pennsylvania Department of Environmental Protection
Two Public Square
Wilkes-Barre, PA 18711-0790

SUSQUEHANNA STEAM ELECTRIC STATION
WATER TREATMENT CHEMICAL UPDATE
NPDES PERMIT NO. PA 0047325
CCN 741326 FILE R9-8A
PLE-0022311

Dear Mr. Swerdon:

PPL Susquehanna, LLC is updating water treatment information previously submitted to the Pennsylvania Department of Environmental Protection (PaDEP) for the Susquehanna Steam Electric Station. This information is provided in response to requirements of "Permitting Guidance on Conditioned Water Discharges and Use of Chemical Additives, Revised July 24, 1992".

Two BetzDearborn chemicals Spectrus CT1300 and Spectrus DT1400 are equivalent to chemicals previously listed in NPDES Permit PA 0047325 application, Section C, IV, December 6, 1999. Spectrus CT1300 a nonoxidizing biocide replaces Calgon H-130M and Spectrus DT1400 aluminum silicate (clay) replaces Calgon Coagulant Aid 35. The Spectrus DT1400 is used to detoxify the nonoxidizing biocide.

Because of biofouling concerns, the Susquehanna Steam Electric Station's water treatment consultant recommended that nonoxidizing biocide usage increase from 10,000 lbs. to approximately 160,000 lbs. per year and detoxifying chemical usage increase from 10,000 lbs. to about 350,000 lbs. per year. The concentrations of these chemicals in NPDES Outfall 071, Cooling Tower Blowdown will remain well below aquatic whole product toxicity limits.

Enclosed for you review are the following documents for your review:

- Attachment 1, Data for Chemical Additive Spectrus CT1300

April 25, 2001

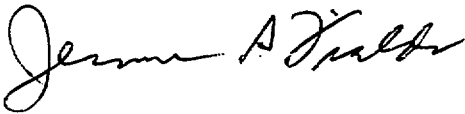
2

To: Mr. Paul M. Swerdon
PLE- 0022311

- Attachment 2, Data for Chemical Additive Spectrus DT1400
- Figure 1, Water Flow Diagram
- NPDES Permit Application Section C, IV, Information and Analysis of Effluent Quality for Other Potentially Toxic Pollutants (Revised April 2001)
- Material Safety Data Sheets
 - Spectrus CT1300 – Alkyl benzyl ammonium chloride
 - Spectrus DT1400 – Crystalline silica

If you have any questions please contact Jim Wolfer at (570) 542-3981 or me.

Sincerely,



Jerome S. Fields
Sr. Environmental Scientist-Nuclear

Enclosure (in triplicate)

bcc:

T. D. Belles	NUCSA1
R. E. Doebler	NUCSA1
R. L. Doty	GENA93
N. A. Evans	GENTW8
L. J. Humpf	NUCPT
R. D. Kichline	GENA62
J. L. McCormick	GENA93
D. J. Morgan	GENA93
R. W. Osborne	Allegheny
C. H. Saxton	NUCSA1
R. R. Schecterly	NUCSA3
J. R. Wolfer	NUCSA1
NR File	GENA62

jsf/ltd5589c(26)

ATTACHMENT 1
DATA FOR CHEMICAL ADDITIVE SPECTRUS CT1300

1. TRADE NAME OF ADDITIVE

Spectrus CT1300

2. NAME AND ADDRESS OF ADDITIVE MANUFACTURER

BetzDearborn Inc.
4636 Somerton Road
Trevose, PA 19053

3. MATERIAL SAFETY DATA SHEET (MSDS) OR AVAILABLE INFORMATION ON MAMMALIAN OR AQUATIC TOXICOLOGICAL EFFECTS

MSDS is attached and includes aquatic toxicological data.

4. BIOASSAY DATA INCLUDING THE 96-HOUR LC50 ON THE WHOLE PRODUCT

The 96-hour LC50 for Fathead Minnows is 0.72 mg/l and the 48-hour LC50 for Daphnia Magna is 0.04 mg/l as product.

5. PROPOSED AVERAGE AND MAXIMUM ADDITIVE RATES IN LBS/DAY

Average usage rate – 800 lbs./day

Maximum usage rate – 2,000 lbs./day

Annual usage rate will change from 10,000 lbs./year to approximately 160,000 lbs./year.

6. A FLOW DIAGRAM SHOWING THE POINT OF CHEMICAL ADDITION AND AFFECTED OUTFALLS

See Figure 1, Flow Diagram for location of chemical addition and discharge through Outfall 071, Cooling Tower Blowdown

7. THE EXPECTED CONCENTRATION OF PRODUCT AT THE FINAL OUTFALL

The expected concentration of Spectrus CT1300 at the final outfall is less than 0.1 mg/l. This product will be treated with a detoxifying agent Spectrus DT1400.

See Attachment 2. BetzDearborn Spectrus CT1300 is equivalent to Calgon H-130M included in the Susquehanna Steam Electric Station's NPDES permit application PA0047325, December 6, 1999.

8. THE PRODUCT DENSITY FOR LIQUIDS (lb./gal) USED TO CONVERT USAGE RATE (gpd) TO IN-SYSTEM CONCENTRATIONS (mg/l)

Spectrus CT1300, Density = 0.965

Product density (0.965) x Wt. Water/gal (8.33 lb./gal) x Gallons product = Wt.

For example:

Product used 0.965 x 8.33 lb./gal x 99.52 gal = 800 lbs. (Average)

Product used 0.965 x 8.33 lb./gal x 248.8 gal = 2,000 lbs. (Max)

Volume of system (gal) x Wt. Water/gal (8.33 lb./gal) = Weight of water in system

9.1E6 gal x 8.33 lb./gal = 7.58E7 lbs. Water in system

Average and Maximum In-system Concentrations

- $\frac{\text{Wt. Product}}{\text{Wt. Water}} = \text{ppm} \quad \frac{800 \times 1\text{E}6}{7.58\text{E}7} = 10.6 \text{ ppm}$

10.6 ppm = 10.6 mg/l = 10,600 ug/l (Average)

- $\frac{\text{Wt. Product}}{\text{Wt. Water}} = \text{ppm} \quad \frac{2,000 \times 1\text{E}6}{7.58\text{E}7} = 26.38 \text{ ppm}$

26.38 ppm = 26.38 mg/l = 26,380 ug/l (Max)

9. THE ANALYTICAL TEST METHOD THAT COULD BE USED TO VERIFY FINAL DISCHARGE CONCENTRATIONS WHEN THE PRODUCT IS IN USE AND THE FINAL ASSOCIATED MINIMUM ANALYTICAL DETECTION LEVEL (mg/l)

The Methyl Orange Method will be used. It has a minimum limit of detection of 0.100 mg/l (100ug/l).

10. CONDITIONED WATER DISCHARGE RATE (BLOWDOWN RATE) AND DURATION (HOURS)

The blowdown rate will be approximately 3,500 to 6,000 gpm per unit for a combined rate of 7,000 to 12,000 gpm. The concentration of the product in-system will range from 26 to 0.1 mg/l and once treated in the outfall by detoxifying chemical Spectrus DT1400 will be less than 0.1 mg/l.

The biocide will be added to the system in a one-hour period and will take approximately three days to flush from the system.

11. AVAILABLE DATA ON THE DEGRADATION OR DECOMPOSITION OF THE ADDITIVE IN THE AQUATIC ENVIRONMENT

The following biodegradation data is available for this additive Spectrus CT1300:

COD (mg/gm)	=	1,470
TOC (mg/gm)	=	380
BOD-5 (mg/gm)	=	43
BOD-28 (mg/gm)	=	156

12. ANY OTHER DATA OR INFORMATION THE PERMITTEE BELIEVES WOULD BE HELPFUL TO THE DEPARTMENT IN COMPLETING ITS REVIEW

The station's water treatment consultant recommended treatment concentrations for use of CT1300 a non-oxidizing biocide at the Susquehanna SES. The maximum allowable concentration in the Circulating Water System is limited by the capacity of the detoxification (blowdown treatment) system.

jsf/atd5587c(26)

ATTACHMENT 2
DATA FOR CHEMICAL ADDITIVE SPECTRUS DT1400

1. TRADE NAME OF ADDITIVE

Spectrus DT1400

2. NAME AND ADDRESS OF ADDITIVE MANUFACTURER

BetzDearborn Inc.
4636 Somerton Road
Trevose, PA 19053

3. MATERIAL SAFETY DATA SHEET (MSDS) OR AVAILABLE INFORMATION ON MAMMALIAN OR AQUATIC TOXICOLOGICAL EFFECTS

MSDS is attached and includes aquatic toxicological data.

4. BIOASSAY DATA INCLUDING THE 96-HOUR LC50 ON THE WHOLE PRODUCT

The static screen 0% mortality concentration of Spectrus DT1400 for Fathead Minnows is 435 mg/l (96 hours) and for Daphnia Magna is 435 mg/l (48 hours) as product.

5. PROPOSED AVERAGE AND MAXIMUM ADDITIVE RATES IN LBS/DAY

Average usage rate – 2,000 lbs./day

Maximum usage rate – 8,000 lbs./day

Annual usage rate will change from 10,000 lbs./year to approximately 350,000 lbs./year.

6. A FLOW DIAGRAM SHOWING THE POINT OF CHEMICAL ADDITION AND AFFECTED OUTFALLS

See Figure 1, Flow Diagram for location of chemical addition and discharge through Outfall 071, Cooling Tower Blowdown

7. THE EXPECTED CONCENTRATION OF PRODUCT AT THE FINAL OUTFALL

The expected concentration of Spectrus DT1400 at the final outfall will range from 330 mg/l to 1.7 mg/l. Spectrus DT1400 is equivalent to Calgon Coagulant Aid 35 included in the Susquehanna Steam Electric Station's NPDES permit application PA0047325, December 6, 1999.

8. THE PRODUCT DENSITY FOR LIQUIDS (lb./gal) USED TO CONVERT USAGE RATE (gpd) TO IN-SYSTEM CONCENTRATIONS (mg/l)

Spectrus DT1400 is added to the blowdown prior to discharge to the Susquehanna River to detoxify the non-oxidizing biocide. In this case Spectrus CT1300. See Attachment 1. Spectrus DT1400 is not used in the station's Circulating Water System.

9. THE ANALYTICAL TEST METHOD THAT COULD BE USED TO VERIFY FINAL DISCHARGE CONCENTRATIONS WHEN THE PRODUCT IS IN USE AND THE FINAL ASSOCIATED MINIMUM ANALYTICAL DETECTION LEVEL (mg/l)

The Total Suspended Solids analysis could be performed; however, the decrease in the storage tank level per application is a more direct method.

10. CONDITIONED WATER DISCHARGE RATE (BLOWDOWN RATE) AND DURATION (HOURS)

The conditioned water blowdown rate will be approximately 3,500 to 6,000 gpm per unit for a combined rate of 7,000 to 12,000 gpm. The concentration of the product in the blowdown range from 330 mg/l to 1.7 mg/l over an approximate three-day period per biocide treatment.

11. AVAILABLE DATA ON THE DEGRADATION OR DECOMPOSITION OF THE ADDITIVE IN THE AQUATIC ENVIRONMENT

The following biodegradation data is available for this additive Spectrus DT1400:

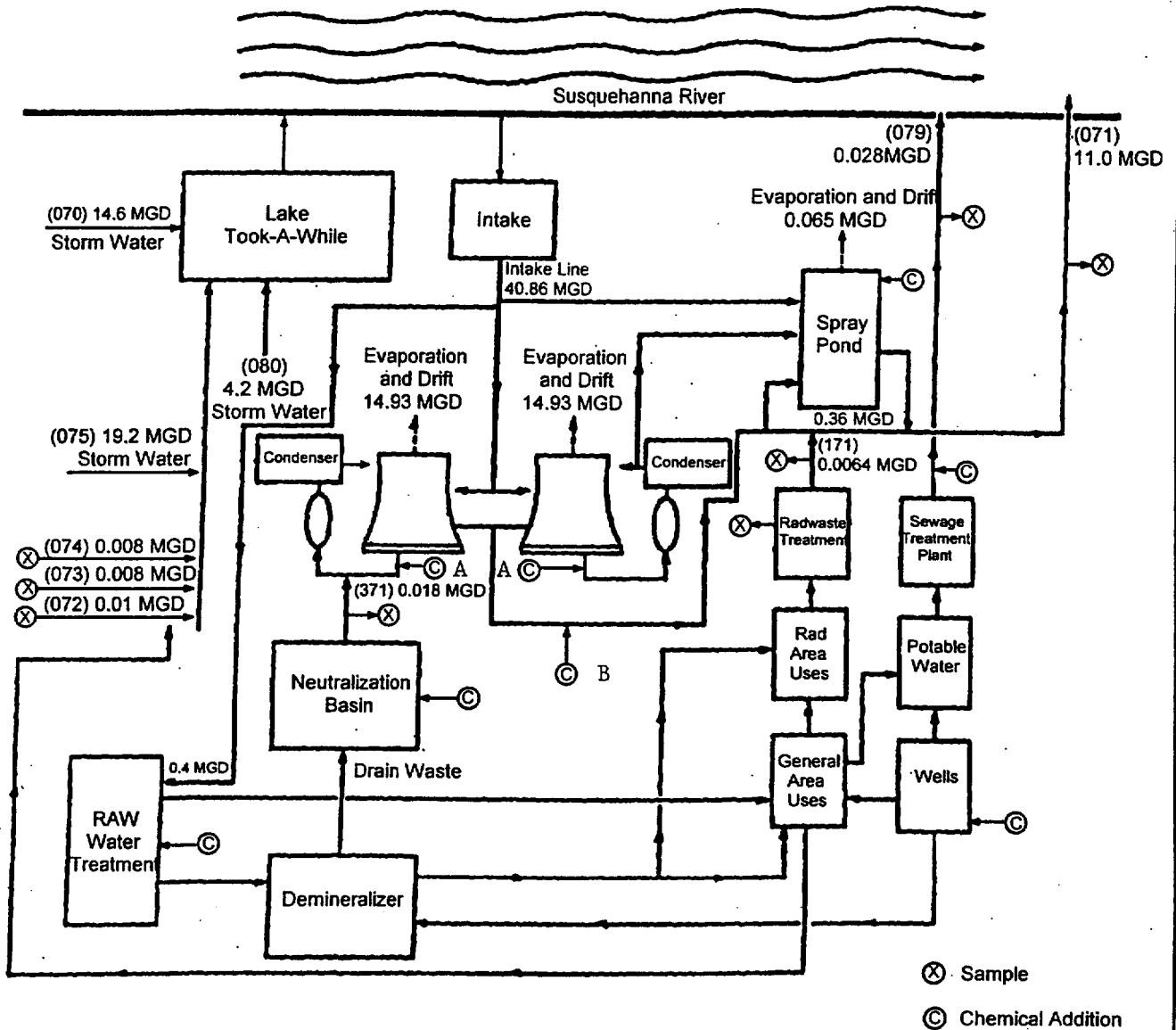
COD (mg/gm)	=	64
TOC (mg/gm)	=	26
BOD-5 (mg/gm)	=	0
BOD-28 (mg/gm)	=	2

**12. ANY OTHER DATA OR INFORMATION THE PERMITTEE BELIEVES
WOULD BE HELPFUL TO THE DEPARTMENT IN COMPLETING ITS
REVIEW**

The station's water treatment consultant recommended treatment concentrations for use of Spectrus DT1400 a detoxifying agent to treat a Spectrus CT1300 non-oxidizing biocide.

SECTION B - (continued)

7. Line Drawing. See instructions



Notes:

Data averaged over years 1996, 1997 and 1998 were used to determine river water withdrawal, consumptive use, and blowdown back to the river.

Outfalls 077 and 078 have not been included in this line drawing or permit renewal application since they do not discharge to the stormdrains.

A Spectrus CT1300 Injection
 B Spectrus DT1400 Injection

SECTION C (continued)NPDES Number PA 0047325**IV. INFORMATION AND ANALYSIS OF EFFLUENT QUALITY FOR OTHER POTENTIALLY TOXICS POLLUTANTS**1. Information on Chemical Additives Known or Expected to be Present in the Discharge

(Notes 2-9 attached) Revision 1 April 2000

(Read instructions carefully and use the tabular format and additional pages, where necessary, to present the required information)

Outfall	Chemical substance or compound Trade Names or Specific Ingredients ⁽²⁾	Manufacturer Name and Address	Average & Maximum USAGE RATE lbs/day	CONCENTRATION			Lowest Possible Analytical Detection Level (µg/l)	Whole product 96 Hr LC50 (mg/l) and species ⁽¹⁾	Whole product 48 Hr LC50 (mg/l) and species ⁽¹⁾
				In-System	Effluent	Units			
071	Acrylic Acid Sulfonated Acrylic Acid Copolymer Dispersant, 32.125	Calgon Corp. P.O. Box 1346 Pittsburgh, PA 15230-1346	Avg. 950 Max 2,000 (180,000 lbs./yr)	2,400	2,400	µg/l	1,500	Rainbow Trout (4,900 mg/l)	Daphnia Magna (2,800 mg/l)
071	Hydroxy ethylidene disphosponic acid (HEDP), 32.127	"	Avg. 750 Max 1,500 (90,000 lbs./yr)	4,000	4,000	µg/l	83	Rainbow Trout (368 mg/l)	Daphnia Magna (527 mg/l)
071	Solution of Quaternary Alkyl Ammonium Compound Molluscide and General Biocide, 32.126	"	Avg. 800 Max 1,200 (10,000 lbs./yr.)	10,600	100	µg/l	100 µg/l	Bluegill Sunfish (0.32-0.59 mg/l)	Daphnia Magna (0.094 mg/l)
071	Alkyl Dimethyl Benzyl Ammonium Chloride (ADBAC) (Spectrus CT1300)	Betz Dearborn Inc. 4636 Somerton Road Trevose, PA 19053	Avg - 800 Max 2,000 (160,000 lb/yr)	10,600	100	µg/l	100	Fathead Minnow (0.72 mg/l)	Daphnia Magna (0.04 mg/l)
071	Sodium Bromide, 32.114	"	Avg. 500 Max 1,000	3,300	3,300	µg/l	125	Rainbow Trout ⁽³⁾ (0.23 mg/l)	Daphnia Magna (0.71 mg/l)
071/072	Magnesium Nitrate and 5-chloro-2-methyl-4-isothiazolin-1, 32.53	BetzDearborn Inc. 4636 Somerton Road Trevose, PA 19057	See Note 4	---	---	---	---	Rainbow Trout (8.7 mg/l)	Daphnia Magna (2.9 mg/l)

(1) If LC50 Data for whole product is not available, data for the individual active ingredients may be provided.

SECTION C (continued)NPDES Number PA 0047325**IV. INFORMATION AND ANALYSIS OF EFFLUENT QUALITY FOR OTHER POTENTIALLY TOXICS POLLUTANTS**1. Information on Chemical Additives Known or Expected to be Present in the Discharge

(Notes 2-9 attached) Revision 1 April 2000

(Read instructions carefully and use the tabular format and additional pages, where necessary, to present the required information)

Outfall	Chemical substance or compound Trade Names or Specific Ingredients	Manufacturer Name and Address	Average & Maximum USAGE RATE lbs/day	CONCENTRATION			Lowest Possible Analytical Detection Level (µg/l)	Whole product 96 Hr LC50 (mg/l) and species ⁽¹⁾	Whole product 48 Hr LC50 (mg/l) and species ⁽¹⁾
				In-System	Effluent	Units			
071/072	Glutaraldehyde 40%-70%, 32.70	Calgon Corp P.O. Box 1346 Pittsburgh, PA 15230-1346	See Note 5	---	---	---	---	Fathead Minnow (12 mg/l)	Daphnia Magna (12 mg/l)
071	Proprietary Descaling Agent	BetzDearborn, Inc. 4636 Somerton Rd Trevose, PA 19053	See Note 6	---	---	---	---	---	---
071	Bentonite Clay Slurry, 32.128	Calgon Corp. P.O. Box 1346 Pittsburgh, PA 15230-1346	Avg - 1,400 Max - 4,000 (8,000 lbs./yr)	0	8,000	µg/l	100	---	---
				(Replaced by Spectrus DT 1400)					
071	Crystalline Silica (Spectrus DT 1400)	BetzDearborn, Inc. 4636 Somerton Rd Trevose, PA 19053	Avg - 2,000 Max - 8,000 (350,000 lbs/yr)	0	17,000 - 330,000	µg/l	100	Fathead Minnow (435 mg/l)* *0% Mortality	Daphnia Magna (435 mg/l)* *0% Mortality
071	Alkyl Dimethyl Benzyl Ammonium Chloride (ADBAC) and Dodecyl Guanidine Hydrochloride (DGH), 32.69	BetzDearborn, Inc. 4636 Somerton Rd Trevose, PA 19053	Avg - 770 Max -10,000	15,000	<200	µg/l	200	Fathead Minnow (2.9 mg/l)	Daphnia Magna (0.2 mg/l)
				(Plan on using Spectrus CT 1300)					
071/079	Sodium Hypochlorite, 15%, 32.63	Manley-Regan Chemicals 532 East Emaus Street P.O. Box 280 Middletown, PA 17057	Avg - 5,000 Max -10,000	33,000	33,000	µg/l	400	Ceriodaphnia Dubia (1.23 mg/l)	---

(1) If LC50 Data for whole product is not available, data for the individual active ingredients may be provided.

SECTION C (continued)

NPDES Number PA 0047325

IV. INFORMATION AND ANALYSIS OF EFFLUENT QUALITY FOR OTHER POTENTIALLY TOXICS POLLUTANTS

1. Information on Chemical Additives Known or Expected to be Present in the Discharge

(Notes 2-9 attached) Revision 1 April 2000

(Read instructions carefully and use the tabular format and additional pages, where necessary, to present the required information)

Outfall	Chemical substance or compound Trade Names or Specific Ingredients	Manufacturer Name and Address	Average & Maximum USAGE RATE lbs/day	CONCENTRATION			Lowest Possible Analytical Detection Level (µg/l)	Whole product 96 Hr LC50 (mg/l) and species ⁽¹⁾	Whole product 48 Hr LC50 (mg/l) and species ⁽¹⁾	
				In-System	Effluent	Units				
071	Rotenone, 32.15	AgroEvo Environmental Health 95 Chestnut Ridge Rd Montvale, NJ 07645	See Note 7	---	---	---	---	---	---	
071	Fluridone, 32.46	SePro 11550 N. Meridian Carmel IN 46032	See Note 7	---	---	---	---	---	---	
071/079	Sodium Bisulfite, 32.113	Allied Corp. Chemical Sector P. O. Box 1139R Morristown NJ 07960	Avg - 183 Max - 400	0	500	µg/l	125	Mosquito Fish (240 mg/l)	Mosquito Fish (240 mg/l)	
071	Sodiumdichloro-S-triazinetriiron and Sodium Bromide, 32.115	Calgon Corp. P.O. Box 1346 Pittsburgh PA 15230-1346	Avg. - 70 Max - 300	200-500	<200	µg/l	50	Sheephead Minnow (3.42 mg/l)	Fathead Minnow (0.7 mg/l)	
				(As free available chlorine)						
071	Sulfuric Acid, 32.57	Allied Corp. P.O. Box 2064R Morristown, NJ 07960	(≈435,000 lbs./yr.)	---	---	---	---	---	---	
071	2-(Tert-butylamino)-4-Chloro-6-(Ethylamino)-s-Triazine; Terbutylazine(Algicide)	FMC Corp. Process Additives Division 1735 Market Street Philadelphia, PA 19103	(13,800 lbs. twice a year)	67,000	2,200	µg/l	---	Rainbow Trout (3.8 mg/l)	Daphnia Magna (39 mg/l)	

(1) If LC50 Data for whole product is not available, data for the individual active ingredients may be provided.

SECTION C (continued)NPDES Number PA 0047325**IV. INFORMATION AND ANALYSIS OF EFFLUENT QUALITY FOR OTHER POTENTIALLY TOXICS POLLUTANTS**1. Information on Chemical Additives Known or Expected to be Present in the Discharge

(Notes 2-9 attached) Revision 1 April 2000

(Read instructions carefully and use the tabular format and additional pages, where necessary, to present the required information)

Outfall	Chemical substance or compound Trade Names or Specific Ingredients	Manufacturer Name and Address	Average & Maximum USAGE RATE lbs/day	CONCENTRATION			Lowest Possible Analytical Detection Level (µg/l)	Whole product 96 Hr LC50 (mg/l) and species ⁽¹⁾	Whole product 48 Hr LC50 (mg/l) and species ⁽¹⁾
				In-System	Effluent	Units			
071	2-phosphono-1,2,4-butanetricarboxylic acid aqueous solution (corrosion inhibitor)	Bayer Corp. Product Safety & Reg. Affairs 100 Bayer Road Pittsburgh, PA 15205-9741	(864 lbs. four times a year)	4,000	131	µg/l	---	---	Rainbow Trout (5,300 mg/l)
071	Depositrol PY5206	BetzDearborn, Inc. 4636 Somerton Road Trevose, PA 19053	Avg. - 96 lbs./day Max. - 385 lbs./day	32,000	1,140	µg/l	12,000	Fathead Minnow (1,680 mg/l)	Daphnia Magna (1,635 mg/l)
072	Sodium Chromate	Mallinckrodt Baker Inc. 222 Red School Lane Phillipsburg, NJ 08865	See Note 8	---	---	---	---	---	---
071/072/079	Miscellaneous	Various	See Note 9	---	---	---	---	---	---

(1) If LC50 Data for whole product is not available, data for the individual active ingredients may be provided.

There are 9 notes attached, not 11 as previously listed.

SECTION C-IV NOTES

- Note (2) Equivalent chemicals from other suppliers may be purchased. Product concentrations may change; however, the concentration of active ingredients discharged should remain about the same. Approval numbers are included for those chemicals listed in the Susquehanna Approved Materials Manual. Other chemicals will be approved prior to their use onsite.
- Note (3) Toxicity of hypobromous acid is expressed as bromine.
- Note (4) Approximately 25 gallons/year of this biocide is injected into the closed system cooling water to a maximum average effluent concentration of 330 mg/l of product or 5.0 mg/l as active isothiazolin. Occasionally these systems are drained to the Cooling Tower basin. This product would not be expected to be detected in the Cooling Tower blowdown.
- Note (5) Glutaraldehyde is added to closed cooling water systems to maintain microbiological control. A maximum concentration of 300 mg/l active or 600 mg/l product is used. Occasionally these systems are drained to the Cooling Tower blowdown. This product would not be expected to be detected in the Cooling Tower blowdown.
- Note (6) The Cooling Tower blowdown is isolated when this descaling agent is used in Circulating Water System (4,000 gal/treatment). Treatment has been very infrequent.
- Note (7) Rotenone and Fluridone are products used in the Emergency Spray Pond that has been permitted for use by the Pa Fish and Boat Commission and the PaDEP.

The Emergency Spray Pond is treated when needed with 1,000 lbs. of Rotenone to a level of 5 mg/l; however, it is detoxified with potassium permanganate at a rate equal to this concentration prior to discharge and, therefore, is not expected to be present in Outfall 071. Also, 32 lbs. of Fluridone will be applied as necessary to an area of 8/10 surface acre along the pond's edge.

- Note (8) Sodium Chromate may be used as a corrosion inhibitor and biocide in the Emergency Diesel Generator Jacket Water (DGJW) Systems. Sodium Chromate addition of 4 lbs. to 710 gallons each of diesels A through D and 7.5 lbs. to 1480 gallons for the larger E diesel's DGJW system. Then systems will maintain a concentration of less than 500 mg/l as Chromate. If there is any leakage from these systems it would enter the Service and Administration Building sump (2-10,000 gallons lbs.), Outfall 072. This sump is manually discharged for 10,000 gallons

at any given time. Assuming leakage of 20 gallons into a 10,000-gallon sump, the effluent concentration is estimated to be ≤ 1.0 mg/l. This product will not be used unless other treatment strategies are unsuccessful at protecting the Emergency Diesel Generators from corrosion and biocide fouling.

Note (9) Miscellaneous chemicals used in very small quantities for cleaning surfaces, cooling coils, decontamination of floors, walls, and equipment, cleaning agents, liquid dye for flow tests, laboratory reagents and standards, etc. The following are some of these chemicals:

<u>Chemical/SAMM #</u>	<u>Est. gal/yr.</u>
Coil Rite, C-10.384	a
Acti-Klean, C-10.326	a
By-Pas, E-10.11	220
Organic Orange, E-10.35	110
Citirikleen, E-10.29	a
MSA/Cleaner/Sanitizer II, E-10.8	288, b
Rhodamine WT Dye, 32.68	a
Spartan SD-20, C-10.167	a
Touch It Up, E-10.4	a
601-Nami-Lo, C-10.74	a
Powerline PPL10, 32.90	50
Cobratec TT-50-S, 32.87	a
Yellow/Green liquid dye, 32.42	a
Clarifloc C-9490 polymer, 32.109	10-15, c
Nalco 9905, 32.81	220, c
Ethylene Glycol mixture, 16.20	d
Iron Oxalate, 32.129	500 lbs./yr.
Polyfloc CP1160, 32.130	20 lbs./yr.
Polyfloc AP1100, 32.131	20 lbs./yr.
Propylene Glycol Mixture, 16.36	a, d
EPA 2000 WCI-140, B-10.27	a
Trisodium Phosphate, A-20.24	a
Sodium Hydroxide, 32.59	500

Key

- a. Not available
- b. Ounces
- c. Flocculent aid used infrequently for dewatering sludge
- d. Present in equipment onsite and has potential for entering storm drains. Preventative maintenance and analysis of replacement chemicals such as Propylene Glycol will minimize any adverse impacts to the environment.

Some of these chemicals may be discharged to the Cooling Tower Basins/ Blowdown, Sewage Treatment Plant, or storm drains in accordance with their Material Safety Data Sheet recommendations.

jsf/99123.doc(lmc)

000154

**BETZDEARBORN MATERIAL
SAFETY DATA SHEET**



BetzDearborn

EFFECTIVE DATE: 03-MAY-2000
PRINTED DATE: 12-JUL-2000

1) CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : SPECTRUS CT1300

PRODUCT APPLICATION AREA: WATER-BASED MICROBIAL CONTROL AGENT.

COMPANY ADDRESS:

BetzDearborn Inc.
4636 Somerton Road, Trevoise, PA 19053
Information phone number: 215 355-3300

EMERGENCY TELEPHONE (HEALTH/ACCIDENT): (800)-877-1940 (USA)

2) COMPOSITION / INFORMATION ON INGREDIENTS

Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this MSDS for our assessment of the potential hazards of this formulation.

HAZARDOUS INGREDIENTS:

CAS#	CHEMICAL NAME
68424-85-1	(C12-16)ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE Corrosive (eyes and skin);toxic (by ingestion)
64-17-5	ETHYL ALCOHOL (ETHANOL) Flammable liquid; irritant (eyes); potential liver and kidney toxin; may cause CNS depression

No component is considered to be a carcinogen by the National Toxicology Program, the International Agency for Research on Cancer, or the Occupational Safety and Health Administration at OSHA thresholds for carcinogens.

PRODUCT NAME : SPECTRUS CT1300
EFFECTIVE DATE: 03-MAY-2000

3) HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER

Severe irritant to the skin. Potential skin sensitizer. Corrosive to the eyes. Vapors, gases, mists and/or aerosols may cause irritation to upper respiratory tract.

DOT hazard: Combustible liquid
Emergency Response Guide #27
Odor: Mild; Appearance: Colorless To Yellow, Liquid

Fire fighters should wear positive pressure self-contained breathing apparatus(full face-piece type). Proper fire-extinguishing media: dry chemical, carbon dioxide, foam or water

POTENTIAL HEALTH EFFECTS

ACUTE SKIN EFFECTS:

Primary route of exposure; Severe irritant to the skin. Potential skin sensitizer.

ACUTE EYE EFFECTS:

Corrosive to the eyes.

ACUTE RESPIRATORY EFFECTS:

Vapors, gases, mists and/or aerosols may cause irritation to upper respiratory tract.

INGESTION EFFECTS:

Toxic;
May cause severe irritation or burning of mouth, throat, and gastrointestinal tract with severe chest and abdominal pain, nausea, vomiting, diarrhea, lethargy and collapse. Possible death when ingested in very large doses.

TARGET ORGANS:

Prolonged or repeated exposures may cause CNS depression, skin sensitization, and/or toxicity to the liver and kidney.

MEDICAL CONDITIONS AGGRAVATED:

Not known.

SYMPTOMS OF EXPOSURE:

Inhalation of vapors/mists/aerosols may cause eye, nose, throat and lung irritation. Skin contact may cause severe irritation or burns.

PRODUCT NAME : SPECTRUS CT1300
EFFECTIVE DATE: 03-MAY-2000

4) FIRST AID MEASURES

SKIN CONTACT:

Remove clothing. Wash area with large amounts of soap solution or water for 15 min. Immediately contact physician.

EYE CONTACT:

Immediately flush eyes with water for 15 minutes. Immediately contact a physician for additional treatment.

INHALATION:

Remove victim from contaminated area. Apply necessary first aid treatment. Immediately contact a physician.

INGESTION:

Do not feed anything by mouth to an unconscious or convulsive victim. Dilute contents of stomach. Induce vomiting by one of the standard methods. Immediately contact a physician.

NOTES TO PHYSICIANS:

No special instructions

5) FIRE FIGHTING MEASURES

FIRE FIGHTING INSTRUCTIONS:

Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type).

EXTINGUISHING MEDIA:

dry chemical, carbon dioxide, foam or water

HAZARDOUS DECOMPOSITION PRODUCTS:

Thermal decomposition (destructive fires) yields elemental oxides.

FLASH POINT:

130F 54C P-M(CC)

MISCELLANEOUS:

Combustible liquid

NA1993;Emergency Response Guide #27

6) ACCIDENTAL RELEASE MEASURES

PROTECTION AND SPILL CONTAINMENT:

Ventilate area. Use specified protective equipment. Contain and absorb on absorbent material. Place in waste disposal container.

Remove ignition sources. Flush area with water. Spread sand/grit.

DISPOSAL INSTRUCTIONS:

Water contaminated with this product may be sent to a sanitary sewer treatment facility, in accordance with any local agreement, a permitted waste treatment facility or discharged under a permit. Product as is - Dispose of in approved pesticide facility or according to label instructions.

PRODUCT NAME : SPECTRUS CT1300
EFFECTIVE DATE: 03-MAY-2000

7) HANDLING AND STORAGE

HANDLING:

Combustible. Do not use around sparks or flames. Bond containers during filling or discharge when performed at temperatures at or above the product flash point.

STORAGE:

Keep containers closed when not in use. Reasonable and safe chemical storage. Protect from freezing.

8) EXPOSURE CONTROLS/PERSONAL PROTECTION

CHEMICAL NAME EXPOSURE LIMITS

(C12-16)ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE
PEL (OSHA): NOT DETERMINED
TLV (ACGIH): NOT DETERMINED

ETHYL ALCOHOL (ETHANOL)
PEL (OSHA): 1,000 PPM
TLV (ACGIH): 1,000 PPM

ENGINEERING CONTROLS:

Adequate ventilation to maintain air contaminants below exposure limits.

PERSONAL PROTECTIVE EQUIPMENT:

Use protective equipment in accordance with 29CFR 1910 Subpart I

RESPIRATORY PROTECTION:

A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE. USE AIR PURIFYING RESPIRATORS WITHIN USE LIMITATIONS ASSOCIATED WITH THE EQUIPMENT OR ELSE USE SUPPLIED AIR-RESPIRATORS.

If air-purifying respirator use is appropriate, use a respirator with organic vapor cartridges and dust/mist prefilters.

SKIN PROTECTION:

neoprene gloves-- Wash off after each use. Replace as necessary.

EYE PROTECTION:

splash proof chemical goggles

PRODUCT NAME : SPECTRUS CT1300
EFFECTIVE DATE: 03-MAY-2000

9) PHYSICAL AND CHEMICAL PROPERTIES

Specific Grav. (70F, 21C)	0.965	Vapor Pressure (mmHG)	44.0
Freeze Point (F)	-7	Vapor Density (air=1)	< 1.00
Freeze Point (C)	-22	% Solubility (water)	100.0
Viscosity(cps 70F, 21C)	73		
Odor		Mild	
Appearance		Colorless To Yellow	
Physical State		Liquid	
Flash Point	P-M(CC)	130F 54C	
pH As Is (approx.)		8.9	
Evaporation Rate (Ether=1)		< 1.00	

NA = not applicable ND = not determined

10) STABILITY AND REACTIVITY

STABILITY:

Stable under normal storage conditions.

HAZARDOUS POLYMERIZATION:

Will not occur.

INCOMPATIBILITIES:

May react with strong oxidizers.

DECOMPOSITION PRODUCTS:

Thermal decomposition (destructive fires) yields elemental oxides.

BETZDEARBORN INTERNAL PUMPOUT/CLEANOUT CATEGORIES:

"B"

11) TOXICOLOGICAL INFORMATION

Oral LD50 RAT:

445 mg/kg

Dermal LD50 RABBIT:

>1,800 mg/kg

Skin Sensitization G.PIG:

NEGATIVE

NOTE - Active component was neither a photoallergen nor a skin sensitizer

PRODUCT NAME : SPECTRUS CT1300
EFFECTIVE DATE: 03-MAY-2000

12) ECOLOGICAL INFORMATION

AQUATIC TOXICOLOGY

Fathead Minnow 96 Hour Flow-Thru Bioassay
Test concentrations were analytically verified.

LC50: .72 mg/L
No Effect Level: .41 mg/L

Daphnia magna 48 Hour Flow-Thru Bioassay
Test concentrations were analytically verified.

LC50: .04 mg/L
No Effect Level: .026 mg/L

Rainbow Trout 96 Hour Flow-Thru Bioassay
Test concentrations were analytically verified.

LC50: 2 mg/L
No Effect Level: 1.2 mg/L

Mysid Shrimp 96 Hour Flow-Thru Bioassay
Test concentrations were analytically verified.

LC50: .16 mg/L
No Effect Level: .03 mg/L

Sheepshead Minnow 96 Hour Flow-Thru Bioassay
Test concentrations were analytically verified.

LC50: 1.76 mg/L
No Effect Level: 1 mg/L

Menidia beryllina (Silversides) 96 Hour Flow-Thru Bioassay
Test concentrations were analytically verified.

LC50: .62 mg/L
No Effect Level: .35 mg/L

Ceriodaphnia 48 Hour Static Renewal Bioassay

LC50: .35 mg/L
No Effect Level: .15 mg/L

BIODEGRADATION

COD (mg/gm): 1470
TOC (mg/gm): 380
BOD-5 (mg/gm): 43
BOD-28 (mg/gm): 156

PRODUCT NAME : SPECTRUS CT1300
EFFECTIVE DATE: 03-MAY-2000

13) DISPOSAL CONSIDERATIONS

If this undiluted product is discarded as a waste, the US RCRA hazardous waste identification number is :
D001=Ignitable.

Please be advised; however, that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

14) TRANSPORT INFORMATION

DOT HAZARD: Combustible liquid
UN / NA NUMBER: NA1993
DOT EMERGENCY RESPONSE GUIDE #: 27

15) REGULATORY INFORMATION

TSCA:

This is an EPA registered biocide and is exempt from TSCA inventory requirements.

CERCLA AND/OR SARA REPORTABLE QUANTITY (RQ):

No regulated constituent present at OSHA thresholds

FIFRA REGISTRATION NUMBER:

3876-149

POTABLE WATER APPROVAL:

NSF Certified maximum use for disinfection and oxidation
3.5mg/L. Maximum use for reverse osmosis and distillation 10
mg/L.

FOOD AND DRUG ADMINISTRATION:

21 CFR 176.300 (slimicides for wet end use)

When used in this specified application, all ingredients comprising this product are authorized by FDA for the manufacture of paper and paperboard that may contact aqueous and fatty foods as per 21 CFR 176.170(a)(4).

USDA FEDERALLY INSPECTED MEAT AND POULTRY PLANTS:

SEC.G5,G7

SARA SECTION 312 HAZARD CLASS:

Immediate(acute);Delayed(Chronic);Fire

SARA SECTION 302 CHEMICALS:

No regulated constituent present at OSHA thresholds

SARA SECTION 313 CHEMICALS:

No regulated constituent present at OSHA thresholds

CALIFORNIA REGULATORY INFORMATION

**CALIFORNIA SAFE DRINKING WATER AND TOXIC
ENFORCEMENT ACT (PROPOSITION 65) CHEMICALS PRESENT:**

No regulated constituent present at OSHA thresholds

PRODUCT NAME : SPECTRUS CT1300
EFFECTIVE DATE: 03-MAY-2000

MICHIGAN REGULATORY INFORMATION

No regulated constituent present at OSHA thresholds

16) OTHER INFORMATION

NFPA/HMIS

CODE TRANSLATION

Health	3	Serious Hazard
Fire	2	Moderate Hazard
Reactivity	0	Minimal Hazard
Special	NONE	No special Hazard
(1) Protective Equipment	B	Goggles, Gloves

(1) refer to section 8 of MSDS for additional protective equipment recommendations.

CHANGE LOG

	EFFECTIVE DATE	REVISIONS TO SECTION:	SUPERCEDES
	-----	-----	-----
MSDS status:	18-NOV-1997		** NEW **
	27-FEB-1998	15	18-NOV-1997
	15-MAY-1998	2	27-FEB-1998
	20-MAY-1998	11	15-MAY-1998
	17-AUG-1998	15	20-MAY-1998
	27-OCT-1998	;EDIT:9	17-AUG-1998
	12-NOV-1998	;EDIT:9	27-OCT-1998
	03-MAY-2000	12	12-NOV-1998

**BETZDEARBORN MATERIAL
SAFETY DATA SHEET**

EFFECTIVE DATE: 28-JUL-1997
 PRINTED DATE: 12-JUL-2000

1) CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : SPECTRUS DT1400

PRODUCT APPLICATION AREA: A DETOXIFYING AGENT

COMPANY ADDRESS:

BetzDearborn Inc.
 4636 Somerton Road, Treviso, PA 19053
 Information phone number: 215 355-3300

EMERGENCY TELEPHONE (HEALTH/ACCIDENT): (800)-877-1940 (USA)

2) COMPOSITION / INFORMATION ON INGREDIENTS

Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this MSDS for our assessment of the potential hazards of this formulation.

HAZARDOUS INGREDIENTS:

CAS#	CHEMICAL NAME
14464-46-1	RESPIRABLE CRISTOBALITE (CRYSTALLINE SILICA) Irritant (respiratory); probable human carcinogen (IARC=2A; NTP=anticipated); may cause long term lung disease (silicosis)
14808-60-7	RESPIRABLE QUARTZ (CRYSTALLINE SILICA) Irritant (respiratory); probable human carcinogen (IARC=2A; NTP=anticipated); may cause long term lung disease (silicosis)
15468-32-3	RESPIRABLE TRIDYMITE (CRYSTALLINE SILICA) Irritant (respiratory); probable human carcinogen (IARC=2A; NTP=anticipated); may cause long term lung disease (silicosis)

PRODUCT NAME : SPECTRUS DT1400
EFFECTIVE DATE: 28-JUL-1997

3) HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

CAUTION

May cause slight irritation to the skin. May cause moderate irritation to the eyes. Mists/aerosols may cause irritation to upper respiratory tract.

DOT hazard is not applicable
Emergency Response Guide is not applicable
Odor: Slight; Appearance: Green-Brown, Dispersion

Fire fighters should wear positive pressure self-contained breathing apparatus(full face-piece type). Proper fire-extinguishing media: dry chemical, carbon dioxide, foam or water

POTENTIAL HEALTH EFFECTS

ACUTE SKIN EFFECTS:

Primary route of exposure; May cause slight irritation to the skin.

ACUTE EYE EFFECTS:

May cause moderate irritation to the eyes.

ACUTE RESPIRATORY EFFECTS:

Mists/aerosols may cause irritation to upper respiratory tract.

INGESTION EFFECTS:

May cause gastrointestinal irritation with possible nausea, vomiting, headache, dizziness, unconsciousness and injury to the kidneys and liver. Small amounts aspirated during ingestion/vomiting may cause lung injury, possibly death.

TARGET ORGANS:

Prolonged or repeated exposures may cause toxicity to the liver and/or kidney.

MEDICAL CONDITIONS AGGRAVATED:

Not known.

SYMPTOMS OF EXPOSURE:

May cause redness or itching of skin.

PRODUCT NAME : SPECTRUS DT1400
EFFECTIVE DATE: 28-JUL-1997

4) FIRST AID MEASURES

SKIN CONTACT:

Remove contaminated clothing. Wash exposed area with a large quantity of soap solution or water for 15 minutes.

EYE CONTACT:

Immediately flush eyes with water for 15 minutes. Immediately contact a physician for additional treatment.

INHALATION:

Remove victim from contaminated area to fresh air. Apply appropriate first aid treatment as necessary.

INGESTION:

Do not feed anything by mouth to an unconscious or convulsive victim. Do not induce vomiting. Immediately contact physician. Dilute contents of stomach using 3-4 glasses milk or water.

5) FIRE FIGHTING MEASURES

FIRE FIGHTING INSTRUCTIONS:

Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type).

EXTINGUISHING MEDIA:

dry chemical, carbon dioxide, foam or water

HAZARDOUS DECOMPOSITION PRODUCTS:

Thermal decomposition (destructive fires) yields elemental oxides.

FLASH POINT:

> 200F > 93C P-M(CC)

6) ACCIDENTAL RELEASE MEASURES

PROTECTION AND SPILL CONTAINMENT:

Ventilate area. Use specified protective equipment. Contain and absorb on absorbent material. Place in waste disposal container.

Flush area with water. Wet area may be slippery. Spread sand/grit.

DISPOSAL INSTRUCTIONS:

Water contaminated with this product may be sent to a sanitary sewer treatment facility, in accordance with any local agreement, a permitted waste treatment facility or discharged under a permit. Product as is - Incinerate or land dispose in an approved landfill.

7) HANDLING AND STORAGE

HANDLING:

Normal chemical handling.

STORAGE:

Keep containers closed when not in use. Do not freeze. If frozen, thaw and mix completely prior to use.

PRODUCT NAME : SPECTRUS DT1400
EFFECTIVE DATE: 28-JUL-1997

8) EXPOSURE CONTROLS/PERSONAL PROTECTION

CHEMICAL NAME EXPOSURE LIMITS

RESPIRABLE CRISTOBALITE (CRYSTALLINE SILICA)
PEL (OSHA): 0.05 MG/M3
TLV (ACGIH): 0.05 MG/M3

RESPIRABLE QUARTZ (CRYSTALLINE SILICA)
PEL (OSHA): 0.1 MG/M3
TLV (ACGIH): 0.1 MG/M3

RESPIRABLE TRIDYMIT (CRYSTALLINE SILICA)
PEL (OSHA): 0.05 MG/M3
TLV (ACGIH): 0.05 MG/M3

ENGINEERING CONTROLS:

Adequate ventilation to maintain air contaminants below exposure limits.

PERSONAL PROTECTIVE EQUIPMENT:

Use protective equipment in accordance with 29CFR 1910 Subpart I

RESPIRATORY PROTECTION:

A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE. USE AIR PURIFYING RESPIRATORS WITHIN USE LIMITATIONS ASSOCIATED WITH THE EQUIPMENT OR ELSE USE SUPPLIED AIR-RESPIRATORS.

If air-purifying respirator use is appropriate, use a respirator with dust/mist filters.

SKIN PROTECTION:

rubber gloves- Wash off after each use. Replace as necessary.

EYE PROTECTION:

splash proof chemical goggles

9) PHYSICAL AND CHEMICAL PROPERTIES

Specific Grav. (70F, 21C)	1.186	Vapor Pressure (mmHG)	~ 18.0
Freeze Point (F)	32	Vapor Density (air=1)	< 1.00
Freeze Point (C)	0	% Solubility (water)	0.0
Viscosity(cps 70F, 21C)	2900		
Odor			
Appearance		Slight	
Physical State		Green-Brown	
Flash Point	P-M(CC)	Dispersion	
pH As Is (approx.)		> 200F > 93C	
Evaporation Rate (Ether=1)		7.0	
		< 1.00	

NA = not applicable ND = not determined

PRODUCT NAME : SPECTRUS DT1400
EFFECTIVE DATE: 28-JUL-1997

10) STABILITY AND REACTIVITY

STABILITY:

Stable under normal storage conditions.

HAZARDOUS POLYMERIZATION:

Will not occur.

INCOMPATIBILITIES:

May react with strong oxidizers.

DECOMPOSITION PRODUCTS:

Thermal decomposition (destructive fires) yields elemental oxides.

BETZDEARBORN INTERNAL PUMPOUT/CLEANOUT CATEGORIES:
"B"

11) TOXICOLOGICAL INFORMATION

Oral LD50 RAT:

NOTE - Estimated value

>2,000 mg/kg

Dermal LD50 RABBIT:

NOTE - Estimated value

>2,000 mg/kg

12) ECOLOGICAL INFORMATION

AQUATIC TOXICOLOGY

Fathead Minnow 96 Hour Static Screen

0% Mortality: 435 mg/L

Daphnia magna 48 Hour Static Screen

0% Mortality: 435 mg/L

BIODEGRADATION

COD (mg/gm): 64 Calculated

TOC (mg/gm): 26 Calculated

BOD-5 (mg/gm): 0 Calculated

BOD-28 (mg/gm): 2 Calculated

13) DISPOSAL CONSIDERATIONS

If this undiluted product is discarded as a waste, the US RCRA hazardous waste identification number is :
Not applicable.

Please be advised; however, that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

PRODUCT NAME : SPECTRUS DT1400
EFFECTIVE DATE: 28-JUL-1997

14) TRANSPORT INFORMATION

DOT HAZARD: Not Applicable
UN / NA NUMBER: Not applicable
DOT EMERGENCY RESPONSE GUIDE #: Not applicable

15) REGULATORY INFORMATION

TSCA:

All components of this product are listed in the TSCA inventory.

CERCLA AND/OR SARA REPORTABLE QUANTITY (RQ):

Treat as oil spill

SARA SECTION 312 HAZARD CLASS:

Delayed(Chronic)

SARA SECTION 302 CHEMICALS:

No regulated constituent present at OSHA thresholds

SARA SECTION 313 CHEMICALS:

No regulated constituent present at OSHA thresholds

CALIFORNIA REGULATORY INFORMATION

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65) CHEMICALS PRESENT:

This product contains these chemicals known to the state of California to cause cancer or reproductive toxicity:

CAS#
14464-46-1

CHEMICAL NAME

RESPIRABLE CRISTOBALITE (CRYSTALLINE SILICA)

14808-60-7

RESPIRABLE QUARTZ (CRYSTALLINE SILICA)

15468-32-3

RESPIRABLE TRIDYMITE (CRYSTALLINE SILICA)

MICHIGAN REGULATORY INFORMATION

No regulated constituent present at OSHA thresholds

PRODUCT NAME : SPECTRUS DT1400
EFFECTIVE DATE: 28-JUL-1997

16) OTHER INFORMATION

NFPA/HMIS

CODE TRANSLATION

Health	1	Slight Hazard
Fire	1	Slight Hazard
Reactivity	0	Minimal Hazard
Special	NONE	No special Hazard
(1) Protective Equipment	B	Goggles, Gloves

(1) refer to section 8 of MSDS for additional protective equipment recommendations.

CHANGE LOG

EFFECTIVE DATE -----	REVISIONS TO SECTION: -----	SUPERCEDES -----
MSDS status: 28-JUL-1997		** NEW **