

ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9110080317 DOC. DATE: 91/09/30 NOTARIZED: NO DOCKET #
 FACIL: 50-387 Susquehanna Steam Electric Station, Unit 1, Pennsylv 05000387
 50-388 Susquehanna Steam Electric Station, Unit 2, Pennsylv 05000388
 AUTH. NAME AUTHOR AFFILIATION
 FIELDS, J.S. Pennsylvania Power & Light Co.
 RECIP. NAME RECIPIENT AFFILIATION
 SWERDON, P.M. Pennsylvania, Commonwealth of

SUBJECT: Requests approval for replacement of several water conditioning chemicals used at facility w/equivalent or similar chemicals. List of equivalent water conditioning chemicals encl.

DISTRIBUTION CODE: C001D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 76
 TITLE: Licensing Submittal: Environmental Rept Amdt & Related Correspondence

NOTES: LPDR 1 cy Transcripts. 05000387 A
 LPDR 1 cy Transcripts. 05000388 D

See Reports (Enviro)

RECIPIENT ID CODE/NAME	COPIES LTTR	ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR	ENCL
PD1-2 LA	3	3	PD1-2 PD	1	1
RALEIGH, J.	1	1			
INTERNAL: ACRS	6	6	NRR/DET/ESGB 8D	1	1
OC/LFMB	1	0	OGC/HDS2	1	0
REG FILE 01	1	1	RGN1 DRSS/RPB	1	1
EXTERNAL: EG&G SIMPSON, F	2	2	NRC PDR	1	1
NSIC	1	1			
NOTES:	2	2			

NOTE TO ALL "RIDS" RECIPIENTS:

PLEASE HELP US TO REDUCE WASTE! CONTACT THE DOCUMENT CONTROL DESK, ROOM P1-37 (EXT. 20079) TO ELIMINATE YOUR NAME FROM DISTRIBUTION LISTS FOR DOCUMENTS YOU DON'T NEED!

TOTAL NUMBER OF COPIES REQUIRED: LTTR 22 ENCL 20

EC
[Signature]



Pennsylvania Power & Light Company

September 30, 1991

Two North Ninth Street • Allentown, PA 18101-1179 • 215/774-5151

Mr. Paul M. Swerdon
Chief, Facilities and Construction Grants Section
Water Quality Management
Pennsylvania Department of Environmental Resources
90 E. Union Street, 2nd Floor
Wilkes-Barre, PA 18701-3296

SUSQUEHANNA STEAM ELECTRIC STATION
NPDES PERMIT NO. PA 0047325
REQUEST FOR APPROVAL OF EQUIVALENT
WATER CONDITIONING CHEMICALS
CCN 741326 FILE R9-8A
PLE-14736

Dear Mr. Swerdon:

The Pennsylvania Power and Light Company (PP&L) requests approval for the replacement of several water conditioning chemicals used at the Susquehanna Steam Electric Station (SES) with equivalent or similar chemicals. Chemicals currently approved for use by the Pennsylvania Department of Environmental Resources (PaDER) are listed in Part C of NPDES permit no. PA 0047325. Specific chemicals, use rates, concentrations, and product facts are listed in Section VI of the June 23, 1989, NPDES permit application.

Selection of new water conditioning chemicals is a result of corporate requirements for rebidding of major contracts along with the effort to select the best chemicals available to minimize pipe corrosion, scaling, and settling of river solids in the cooling system. Testing of these chemicals began in June 1991 and will be completed in October 1991. A letter was sent to Mr. Stanley J. Lehman of your office (PLE-14354, June 7, 1991) discussing the testing strategy for these chemicals. PP&L plans to select the successful bidder by mid-November and begin using the chemicals by the end of 1991.

As we discussed at our August 26, 1991 meeting, it was unclear if an amendment to the NPDES permit was required for use of these equivalent water conditioning chemicals. Certain corrosion inhibitors discussed at this meeting were included in the analytical data provided in Section V of the permit application and need not require additional approvals. For example, zinc-sulfate, a carbon steel corrosion inhibitor, has already been approved in this manner. Other water conditioning chemicals not specifically included in Section V sampling data were previously included in Section VI of the original application.

In telephone conversations with you and Mr. Stuart Gansell, Acting Chief, Division of Permits and Compliance, PaDER Harrisburg office on September 3, 1991, the question of whether or not an amendment is necessary every time an equivalent water conditioning chemical is to be used was addressed. Since

9110080317 910930
PDR ADOCK 05000387
P PDR

CSD 11

September 30, 1991

2

CCN 741326

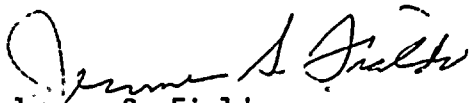
PLE-14736
FILE R9-8A

PP&L will continue to use chemicals with the same main chemical constituents to be discharged to permitted NPDES outfalls, in essence there is no change to the PaDER approved water conditioning chemicals listed in permit number PA 0047325. The only changes would be in manufacturer and trade names.

Based on our meeting and subsequent telephone conversations, PP&L is submitting a list of equivalent water conditioning chemicals following permit application Section VI format for your review and approval. Also, attached are Material Safety Data Sheets for these equivalent chemicals.

If you have any questions or comments, please call me at (215) 774-7889.

Sincerely,



Jerome S. Fields
Sr. Environmental Scientist-Nuclear

jsf/lti918c(25)

cc: S. Gansell- PaDER, Harrisburg
NRC Document Control Desk
NRC Region I
Mr. J. J. Raleigh, NRC Project Manager

VI. INFORMATION AND ANALYSIS OF EFFLUENT QUALITY FOR OTHER POTENTIALLY TOXIC POLLUTANTS KNOWN OR EXPECTED TO BE PRESENT IN THE DISCHARGE

..9110080317

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

Outfall	Chemical Substance or Compound	Reason for Presence in Discharge	Average Effluent Concentration (ug/l)	Analytical Detection Level (ug/l)
071	<p align="center">APPROVED</p> <p>Betz Powerline 3451</p> <p>Blend of the copolymer in Betz Powerline 3450 and a scale inhibitor phosphonic acid, (1-hydroxyethylidene), Bis-. The phosphonic acid is also known as HEDP.</p>	This product is used as an alternate calcium carbonate scale inhibitor and cooling water dispersant.	500 to 1500 ug/l as HEDP, 7000 to 20,000 ug/l As product	200 ug/l as HEDP using field test
071	<p align="center">EQUIVALENT CHEMICALS</p> <p>Calgon QCL-2000 (1-Hydroxyethylidene) Bisphosphonic Acid Cas #2809-21-4</p>	This product will be used as a calcium carbonate scale inhibitor.	1000 ug/l as HEDP, 8500 ug/l as product	200 ug/l as HEDP using field test
071	Drew WRICO CTP 888 (1-Hydroxyethylidene) Bisphosphonic Acid Cas #2809-21-4	This product will be used as a calcium carbonate scale inhibitor.	1000 ug/l as HEDP, 8300 ug/l as product	200 ug/l as HEDP using field test
071	Betz PPL09 (1-Hydroxyethylidene) Bisphosphonic Acid Cas #2809-21-4	This product will be used as a calcium carbonate scale inhibitor.	1000 ug/l as HEDP, 3200 ug/l as product	200 ug/l as HEDP using field test
071	Nalco DYNACOOOL 1383 Potassium Phosphonate and Polyacrylates	This product will be used as a calcium carbonate scale inhibitor.	600 ug/l as HEDP, 600 ug/l as polymer, 6000 ug/l as product	200 ug/l as HEDP using field test
NOTE: PaDER Form ER-BWG-288.10 (Rev. 12/82) was reproduced for this report.				

VI. INFORMATION AND ANALYSIS OF EFFLUENT QUALITY FOR OTHER POTENTIALLY TOXIC POLLUTANTS KNOWN OR EXPECTED TO BE PRESENT IN THE DISCHARGE

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

Outfall	Chemical Substance or Compound	Reason for Presence in Discharge	Average Effluent Concentration (ug/l)	Analytical Detection Level (ug/l)
071	APPROVED Betz Powerline PPL-04 Benzotriazole, Methyl, Sodium salt. Also known as TTA (tolyltriazole)	This product is used as a copper and copper alloy corrosion inhibitor	1200 to 2500 ug/l as TTA, 2800 to 5800 ug/l as product	200 ug/l as TTA using field test
071	EQUIVALENT CHEMICALS Calgon Triazole PCL-50 Sodium tolytriazole Cas #64665-57-2	This product is used as a copper and copper alloy corrosion inhibitor.	1000-1200 ug/l as TTA, 2600 ug/l as product.	200 ug/l as TTA using field test
071	Drew WPD11-166 Sodium tolytriazole Cas #64665-57-2	This product is used as a copper and copper alloy corrosion inhibitor.	1000-1500 ug/l as TTA, 2300 ug/l-3500 ug/l as product	200 ug/l as TTA using field test
071	Nalco 1326 Sodium tolytriazole Cas #64665-57-2	This product is used as a copper and copper alloy corrosion inhibitor.	1000-1200 ug/l as TTA, 2500 ug/l as product	200 ug/l as TTA using field test

VI. INFORMATION AND ANALYSIS OF EFFLUENT QUALITY FOR OTHER POTENTIALLY TOXIC POLLUTANTS KNOWN OR EXPECTED TO BE PRESENT IN THE DISCHARGE

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

Outfall	Chemical Substance or Compound	Reason for Presence in Discharge	Average Effluent Concentration (ug/l)	Analytical Detection Level (ug/l)
071	APPROVED Betz Powerline 3450 Copolymer of 2-propenoic acid and 1,2-propanediol mono 2-proenoate and water	This product is used as a cooling water dispersant for the maintenance of clean heat transfer surfaces.	1250-5000 ug/l as polymer, 7000 to 20,000 ug/l as product	1250 ug/l as polymer
071	EQUIVALENT CHEMICALS Betz PPL08 Polymer	This product is used to facilitate silt, sediment, iron and magnesium dispersion.	2200-3000 ug/l as polymer, 7300-10,000 ug/l as product	1750 ug/l as polymer
071	Calgon PCL-401 Polymer	This product is used to facilitate silt, sediment, iron, and magnesium dispersion.	2000-2500 ug/l as polymer, 8000 ug/l as product	1750 ug/l as polymer
071	Nalco 8356D Dispersant Acrylate Polymer Cas #7631-90-5	This product is used to facilitate silt, sediment, iron and magnesium dispersion.	3400 ug/l as polymer, 10000 ug/l as product	1750 ug/l as polymer
071	Drew WPD 11-136 Antiscalant Sodium Polyacrylate Cas #9003-04-7	This product is used to facilitate silt, sediment, iron and magnesium dispersion.	2000 ug/l as polymer, 5600 ug/l as product	1750 ug/l as polymer
071	J-POLY 101C Sodium Polyacrylate Cas #9003-04-7	This product is used to facilitate silt, sediment, iron and magnesium dispersion.	500-1000 ug/l as polymer, 1000-2000 ug/l as product	200 ug/l as polymer

VI. INFORMATION AND ANALYSIS OF EFFLUENT QUALITY FOR OTHER POTENTIALLY TOXIC POLLUTANTS KNOWN OR EXPECTED TO BE PRESENT IN THE DISCHARGE

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

Outfall	Chemical Substance or Compound	Reason for Presence in Discharge	Average Effluent Concentration (ug/l)	Analytical Detection Level (ug/l)
071	<p align="center">APPROVED</p> Betz Clam-Trol CT 1 Alkyl dimethyl benzylammonium chloride Cas #68424-85-1 Isopropyl Alcohol Cas #67-63-0 Dodecylguanide Hydrochloride Cas #13590-97-1 Ethyl Alcohol Cas #64-17-5	Molluscide used for Asiatic Clam control and as a cooling tower biocide.	<200 ug/l as biocide, 10,000-50,000 ug/l as product	200 ug/l as biocide using field test
071	<p align="center">EQUIVALENT CHEMICALS</p> Calgon H-130 Microbiocide Didecyl Dimenthyl Ammonium Chloride Cas #7173-51-5 Ethyl Alcohol Cas #64-17-5	Molluscide used for Asiatic Clam control and as a cooling tower biocide.	<200 ug/l as biocide, 2500 ug/l as product	200 ug/l as biocide using field test
071	Drew Biospherse 3204 Quaternary Ammonium Compd Polyethoxylate	Molluscide used for Asiatic Clam control and as a cooling tower biocide	<200 ug/l as biocide, 8000-80,000 ug/l as product	200 ug/l as biocide using field test

BETZ LABORATORIES, INC.
4636 SOMERTON ROAD, TREVOSE, PA. 19047
BETZ MATERIAL SAFETY DATA SHEET
24 HOUR EMERGENCY TELEPHONE (HEALTH OR ACCIDENT) 215/355-3300

PRODUCT : POWERLINE 3451

(PAGE 1 OF 3)
EFFECTIVE DATE 04-27-89
PRINTED: 28-Apr-1989
REV: SEC.1

PRODUCT APPLICATION : WATER-BASED DEPOSIT CONTROL AGENT.

-----SECTION 1-----HAZARDOUS INGREDIENTS-----

INFORMATION ON PHYSICAL HAZARDS, HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC PRODUCT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD ARE LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE AND CHRONIC HAZARDS OF THIS FORMULATION. THIS PRODUCT IS SUBJECT TO THE PENNSYLVANIA WORKER AND COMMUNITY RIGHT TO KNOW LAW.

PHOSPHONIC ACID, (1-HYDROXYETHYLIDINE) BIS-***HEDP; CAS#2809-21-4; EYE IRRITANT; PEL: NONE; TLV: NONE.

NONHAZARD INGREDIENTS: WATER; 2-PROPENOIC ACID, POLYMER WITH 1,2-PROPANEDIOL MONO-2-PROPENOATE (39373-34-7)

-----SECTION 2-----TYPICAL PHYSICAL DATA-----

PH: AS IS	(APPROX.) 5.5	ODOR: NONE
FL. PT. (DEG. F): >200	SETA (CC)	SP. GR. (70F) OR DENSITY: 1.177
VAPOR PRESSURE (MMHG): 18		VAPOR DENSITY (AIR=1): <1
VISC cps 70F: 40		SOLUBILITY (WATER): 100
EVAP. RATE: <1	ETHER=1	APPEARANCE: YELLOW
PHYSICAL STATE: LIQUID		FREEZE POINT (DEG. F): 25

-----SECTION 3-----REACTIVITY DATA-----

STABLE

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

PRODUCT: POWERLINE 3451

EFFECTIVE DATE 04-27-89

-----SECTION 4-----HEALTH HAZARD EFFECTS-----

ACUTE SKIN EFFECTS *** PRIMARY ROUTE OF EXPOSURE

SLIGHTLY IRRITATING TO THE SKIN

ACUTE EYE EFFECTS ***

MODERATELY IRRITATING TO THE EYES

ACUTE RESPIRATORY EFFECTS ***

MISTS/AEROSOLS MAY CAUSE IRRITATION TO UPPER RESPIRATORY TRACT

CHRONIC EFFECTS OF OVEREXPOSURE***

NO EVIDENCE OF POTENTIAL CHRONIC EFFECTS.

MEDICAL CONDITIONS AGGRAVATED ***

NOT KNOWN

SYMPTOMS OF EXPOSURE ***

MAY CAUSE REDNESS OR ITCHING OF SKIN.

-----SECTION 5-----FIRST AID INSTRUCTIONS-----

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 EXPOSURE***

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. DILUTE CONTENTS OF STOMACH. INDUCE VOMITING BY ONE OF THE STANDARD METHODS. IMMEDIATELY CONTACT A PHYSICIAN

-----SECTION 6-----SPILL, DISPOSAL AND FIRE INSTRUCTIONS-----

SPILL INSTRUCTIONS***

VENTILATE AREA, USE SPECIFIED PROTECTIVE EQUIPMENT. CONTAIN AND ABSORB ON ABSORBENT MATERIAL. PLACE IN WASTE DISPOSAL CONTAINER. THE WASTE CHARACTERISTICS OF THE ABSORBED MATERIAL, OR ANY CONTAMINATED SOIL, SHOULD BE DETERMINED IN ACCORDANCE WITH RCRA REGULATIONS.

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 NPDES PERMIT PRODUCT (AS IS) -

INCINERATE OR BURY IN APPROVED LANDFILL

FIRE EXTINGUISHING INSTRUCTIONS***

FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS (FULL FACE-PIECE TYPE).

DRY CHEMICAL, CARBON DIOXIDE, FOAM OR WATER

MATERIAL SAFETY DATA SHEET (PAGE 3 OF 3)

PRODUCT: POWERLINE 3451

EFFECTIVE DATE 10-31-88

-----SECTION 7-----SPECIAL PROTECTIVE EQUIPMENT-----
USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134. USE
RESPIRATORS WITHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS.
VENTILATION PROTECTION***

ADEQUATE VENTILATION

RECOMMENDED RESPIRATORY PROTECTION***

IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY,
USE A RESPIRATOR WITH DUST/MIST FILTERS.

RECOMMENDED SKIN PROTECTION***

RUBBER GLOVES

WASH OFF AFTER EACH USE. REPLACE AS NECESSARY

RECOMMENDED EYE PROTECTION***

SPLASH PROOF CHEMICAL GOGGLES

-----SECTION 8-----STORAGE AND HANDLING PRECAUTIONS-----
STORAGE INSTRUCTIONS***

KEEP DRUMS & PAILS CLOSED WHEN NOT IN USE.

PROTECT FROM FREEZING

HANDLING INSTRUCTIONS***

IMMEDIATELY REMOVE CONTAMINATED CLOTHING, WASH BEFORE REUSE

NORMAL CHEMICAL HANDLING

THIS MSDS COMPLIES WITH THE OSHA HAZARD COMMUNICATION STANDARD
HAROLD M. HERSH (ENVIRONMENTAL INFORMATION COORDINATOR)

APPENDIX: REGULATORY INFORMATION

THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE
EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE.
ANY CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

...TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED IN THE TSCA INVENTORY
...REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:
NOT APPLICABLE

...RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE, THE RCRA HAZARDOUS WASTE
IDENTIFICATION NUMBER IS: NOT APPLICABLE

...DOT HAZARD CLASSIFICATION: NOT APPLICABLE

...DOT SHIPPING DESIGNATION IS: NOT APPLICABLE

...THIS PRODUCT CONTAINS THESE CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO
CAUSE CANCER OR REPRODUCTIVE TOXICITY: NONE PRESENT IN SIGNIFICANT AMOUNTS

...SARA SECTION 302 CHEMICALS: NONE PRESENT IN SIGNIFICANT AMOUNTS

...SARA SECTION 313 CHEMICALS: NONE PRESENT IN SIGNIFICANT AMOUNTS

...SARA SECTION 312 HAZARD CLASS: IMMEDIATE(ACUTE)

...MICHIGAN CRITICAL MATERIALS: NONE PRESENT IN SIGNIFICANT AMOUNTS

NIHA/EMIS : HEALTH - 1 ; FIRE - 1 ; REACTIVITY - 0 ; SPECIAL - NONE ; PE - B

BETZ LABORATORIES, INC.
4636 SOMERTON ROAD, TREVOSE, PA. 19047

2/22/89

PRODUCT: POWERLINE 3451

AQUATIC TOXICOLOGY

DAPHNIA MAGNA

0% MORTALITY: >1000 MG/L
48 HR. SCR.

RAINBOW TROUT

0% MORTALITY: >1000 MG/L
48 HR. SCR.

2/22/89

MAMMALIAN TOXICOLOGY

ORAL LD50 -NO DATA

DERMAL LD50 -NO DATA

SKIN IRRITATION SCORE-NO DATA

EYE IRRITATION SCORE-NO DATA

INHALATION-NO DATA

MATERIAL SAFETY DATA SHEET

6380-12-12-83-514

DATE March 8, 1989

PRODUCT NAME

QCL-2000



SUBSIDIARY OF MERCK & CO., INC.

SECTION I

MANUFACTURER'S NAME

Calgon Corporation

EMERGENCY
TELEPHONE NO.

412/777-8000

ADDRESS

P. O. Box 1346, Pittsburgh, Pennsylvania 15230

CHEMICAL NAME
AND SYNONYMS

FORMULA

Multicomponent Liquid

SECTION II - HAZARDOUS INGREDIENTS

PRINCIPAL HAZARDOUS COMPONENT (S)	CAS #	% BY WEIGHT	ORAL LD ₅₀	DERMAL LD ₅₀	TLV (Units)		
					ACGIH	OSHA	OTHER
Chemical Name 1-Hydroxyethylidene-1,1-Diphosphonic Acid (HEDP)	2809-21-4	~ 12	> 2400 mg/kg	> 7940 mg/kg	Not Listed	Not Listed	Not Listed
Common Name							
Chemical Name							
Common Name							
Chemical Name							
Common Name							
Chemical Name							
Common Name							
Chemical Name							
Common Name							

SECTION III - PHYSICAL DATA

BOILING POINT (° F)	Similar to Water	SPECIFIC GRAVITY (H ₂ O=1)	1.062 - 1.072
VAPOR PRESSURE (mmHg.)	Similar to Water	PERCENT VOLATILE BY VOLUME (%)	~ 88
VAPOR DENSITY (AIR=1)	Similar to Water	pH	1.10
SOLUBILITY IN WATER	Complete	OTHER	N/A

APPEARANCE AND ODOR

Clear pale yellow liquid

N/A = Not applicable

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.

SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method Used)

This product is not flammable or combustible.

EXTINGUISHING MEDIA

This product is not flammable or combustible.

SPECIAL FIRE FIGHTING PROCEDURES

Exercise caution when fighting any chemical fire.
A self-contained breathing apparatus and protective clothing are essential.

UNUSUAL FIRE AND EXPLOSION HAZARDS

None known.

SECTION V HEALTH HAZARD DATA

EFFECT OF OVEREXPOSURE

A. ACUTE

1. INGESTION

Based on the oral LD50 of the principal hazardous component, this product would be expected to be practically non-toxic if swallowed.

2. INHALATION

This product is not expected to present an inhalation hazard.

3. DERMAL EXPOSURE

a. TOXIC

This product is not expected to be absorbed through the skin in harmful amounts.

b. IRRITATION

This product is not expected to cause irritation to the skin.

c. SENSITIZATION

No data were available to suggest that this product may produce an allergic skin reaction.

4. EYE IRRITATION.

This product may produce eye irritation upon contact with the eye.

B. SUBCHRONIC, CHRONIC, OTHER

No applicable information was found regarding any adverse health effects resulting from subchronic or chronic exposure to this product.

FIRST AID

A. EYE

In case of contact, flush immediately with plenty of water for at least 15 minutes. Seek medical aid.

B. SKIN

Not Applicable.

C. INGESTION

Not Applicable.

D. INHALATION

Not Applicable.

SECTION VI REACTIVITY DATA

STABILITY	<div style="display: flex; justify-content: space-between;"> STABLE X </div>	CONDITIONS TO AVOID	Unknown
UNSTABLE			

INCOMPATIBILITY (Materials to Avoid) Bases and strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS Unknown

SECTION VII SPILL OR LEAK PROCEDURES

REPORTABLE QUANTITIES (RQ) IN LBS OF EPA HAZARDOUS SUBSTANCES IN PRODUCT	1. <u>N/A</u>	NOTIFY EPA OF PRODUCT SPILLS EQUAL TO OR EXCEEDING
	2. _____	<u>N/A</u> LBS.
	3. _____	

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED Dispose of in accordance with local, state and federal regulations. Dike area to contain as much spilled material as possible. Remove any remaining material by absorbing on vermiculite or other suitable absorbing material and place in a sealed container for disposal.

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

SECTION VIII HANDLING/STORAGE

PROTECTIVE GLOVES	EYE PROTECTION
Not required	Chemical splash goggles

OTHER PROTECTIVE CLOTHING Not required

RESPIRATORY PROTECTION Not required

VENTILATION	LOCAL EXHAUST	OTHER
	Not required	
	MECHANICAL (General)	
	Not required	N/A

STORAGE & HANDLING

WARNING!

May cause eye irritation.
 Avoid contact with eyes.
 Wear chemical splash goggles when handling.
 Wash thoroughly after handling.
 Keep container closed when not in use.

OTHER PRECAUTIONS

None

N/A = Not applicable

MATERIAL SAFETY
DATA SHEET

Drew Industrial Division

ASHLAND CHEMICAL INC.
One Drew Plaza, Boonton, New Jersey 07005
Phone (201) 263-7600/Telex 13844424-HOUR
Emergency
Telephone
1(800) 274-5263 or
1(800) ASHLAND

008372

WRICO CTP 888 CORROSION INHIBITOR

Page: 2

SECTION V-HEALTH HAZARD DATA (Continued)

CONTAMINATED CLOTHING. LAUNDRY CONTAMINATED CLOTHING BEFORE RE-USE.

REMOVE CONTAMINATED SHOES PROMPTLY. DISCARD SHOES SATURATED WITH THIS PRODUCT.

IF IN EYES: IMMEDIATELY FLUSH WITH LARGE AMOUNTS OF WATER FOR AT LEAST 15 MINUTES, LIFTING UPPER AND LOWER LIDS OCCASIONALLY. GET IMMEDIATE MEDICAL ATTENTION.

IF PHYSICIAN IS NOT IMMEDIATELY AVAILABLE. CONTINUE FLUSHING WITH WATER.

DO NOT USE CHEMICAL ANTIDOTE.

IF SWALLOWED: DO NOT INDUCE VOMITING. VOMITING WILL CAUSE FURTHER DAMAGE TO THE THROAT. DILUTE BY GIVING WATER. GIVE MILK OF MAGNESIA. KEEP WARM, QUIET. GET MEDICAL ATTENTION IMMEDIATELY.

IF BREATHED: IF AFFECTED, REMOVE INDIVIDUAL TO FRESH AIR. IF BREATHING IS DIFFICULT, ADMINISTER OXYGEN. IF BREATHING HAS STOPPED, GIVE ARTIFICIAL RESPIRATION. KEEP PERSON WARM, QUIET, AND GET MEDICAL ATTENTION.

PRIMARY ROUTE(S) OF ENTRY:

INHALATION, SKIN CONTACT

EFFECTS OF CHRONIC OVEREXPOSURE:

OVEREXPOSURE TO THIS MATERIAL (OR ITS COMPONENTS) HAS APPARENTLY BEEN FOUND TO CAUSE THE FOLLOWING EFFECTS IN LABORATORY ANIMALS: BLOOD ABNORMALITIES

SECTION VI-REACTIVITY DATA

HAZARDOUS POLYMERIZATION: CANNOT OCCUR

STABILITY: STABLE

INCOMPATIBILITY: AVOID CONTACT WITH: STRONG ALKALIES, STRONG OXIDIZING AGENTS.

SECTION VII-SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

L SPILL: COVER THE CONTAMINATED SURFACE WITH SODIUM BICARBONATE OR A SODA ASH/SKAKED LIME MIXTURE (50-50). MIX AND ADD WATER IF NECESSARY TO FORM A SLURRY. SCOOP UP SLURRY AND WASH SITE WITH SODA ASH SOLUTION.

LARGE SPILL: PERSONS NOT WEARING PROTECTIVE EQUIPMENT SHOULD BE EXCLUDED FROM AREA OF SPILL. STOP SPILL AT SOURCE. DIKE TO PREVENT SPREADING. CAREFULLY ADD LIME OR SODIUM CARBONATE TO NEUTRALIZE ACID. CONTAINERIZE RESIDUES FOR DISPOSAL.

WASTE DISPOSAL METHOD:

SMALL SPILL: DISPOSE OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

LARGE SPILL: DISPOSE OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

SECTION VIII-PROTECTIVE EQUIPMENT TO BE USED

RESPIRATORY PROTECTION: IF WORKPLACE EXPOSURE LIMIT(S) OF PRODUCT OR ANY COMPONENT IS EXCEEDED (SEE SECTION II), A NIOSH/MSHA APPROVED AIR SUPPLIED RESPIRATOR IS ADVISED IN ABSENCE OF PROPER ENVIRONMENTAL CONTROL. OSHA REGULATIONS ALSO PERMIT OTHER NIOSH/MSHA RESPIRATORS (NEGATIVE PRESSURE TYPE) UNDER SPECIFIED CONDITIONS (SEE YOUR SAFETY EQUIPMENT SUPPLIER). ENGINEERING OR ADMINISTRATIVE CONTROLS SHOULD BE IMPLEMENTED TO REDUCE EXPOSURE.

VENTILATION: PROVIDE SUFFICIENT MECHANICAL (GENERAL AND/OR LOCAL EXHAUST) VENTILATION TO MAINTAIN EXPOSURE BELOW LEVEL OF OVEREXPOSURE (FROM KNOWN, SUSPECTED OR APPARENT ADVERSE EFFECTS).

PROTECTIVE GLOVES: WEAR RESISTANT GLOVES SUCH AS: NEOPRENE

EYE PROTECTION: CHEMICAL SPLASH GOGGLES AND FACE SHIELD (8" MIN.) IN COMPLIANCE WITH OSHA REGULATIONS ARE ADVISED; HOWEVER, OSHA REGULATIONS ALSO PERMIT OTHER TYPE SAFETY GLASSES. (CONSULT YOUR SAFETY EQUIPMENT SUPPLIER)

OTHER PROTECTIVE EQUIPMENT, TO PREVENT SKIN CONTACT, WEAR IMPERVIOUS CLOTHING AND BOOTS.

SECTION IX-SPECIAL PRECAUTIONS OR OTHER COMMENTS

CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTIED SINCE EMPTIED CONTAINERS RETAIN PRODUCT RESIDUES (VAPOR, LIQUID, AND/OR SOLID). ALL HAZARD PRECAUTIONS GIVEN IN THE DATA SHEET MUST BE OBSERVED.

THE INFORMATION ACCUMULATED HEREIN IS BELIEVED TO BE ACCURATE BUT IS NOT WARRANTED TO BE WHETHER ORIGINATING WITH THE COMPANY OR NOT. RECIPIENTS ARE ADVISED TO CONFIRM IN ADVANCE OF NEED THAT THE INFORMATION IS CURRENT, APPLICABLE, AND SUITABLE TO THEIR CIRCUMSTANCES.

MATERIAL SAFETY
DATA SHEET**Drew Industrial Division**
ASHLAND CHEMICAL INC.
One Drew Plaza, Boonton, New Jersey 07005
Phone (201) 263-7600/Telex 13644424-HOUR
Emergency
Telephone
1(800) 274-5263 or
1(800) ASHLAND

008372

WRICO CTP 888 CORROSION INHIBITOR

Page:

THIS MSDS COMPLIES WITH 29 CFR 1910.1200 (THE HAZARD COMMUNICATION STANDARD)

Product Name: WRICO CTP 888 CORROSION INHIBITOR

OLIN WATER SERVICES DIVISION
DREW INDUSTRIAL DIVISION
ONE DREW PLAZA
BOONTON

NJ 07005

DISTRICT MANAGER

00 10 966

Data Sheet No: 0218590-002
Prepared: 06/05/90
Supersedes: 08/18/88

PRODUCT: 8200008

INVOICE:

INVOICE DATE:

TO: OLIN WATER SERVICES DIVISION
DREW INDUSTRIAL DIVISION
BOONTON

NJ 07005

SECTION I - PRODUCT IDENTIFICATION

General or Generic ID: CORROSION INHIBITOR

DOT Hazard Classification: CORROSIVE MATERIAL (173.240)

SECTION II - COMPONENTSIF PRESENT, IARC, NTP AND OSHA CARCINOGENS AND CHEMICALS SUBJECT TO THE REPORTING REQUIREMENTS OF SARA TITLE III, SECTION 313 ARE IDENTIFIED IN THIS SECTION.
SEE DEFINITION PAGE FOR CLARIFICATION

INGREDIENT	% (by WT)	PEL	TLV	Note
(1-HYDROXYETHYLIDENE)BISPHOSPHONIC ACID CAS #: 2809-21-4	10-25			(1)

Notes:

(1) PEL/TLV NOT ESTABLISHED FOR THIS MATERIAL

SECTION III - PHYSICAL DATA

Boiling Point	for COMPONENT(85-100%)	212.00 Deg F 100.00 Deg C 760.00 mm Hg
Vapor Pressure	for COMPONENT(85-100%)	17.50 mm Hg 68.00 Deg F 20.00 Deg C
Specific Vapor Density	NOT APPLICABLE	
Specific Gravity		1.071 77.00 Deg F 25.00 Deg C
Percent Volatiles		85-100%
Evaporation Rate		SLOWER THAN ETHER
pH		1.0 - 2.0
Appearance		CLEAR, COLORLESS
State		LIQUID

SECTION IV - FIRE AND EXPLOSION INFORMATION

FLASH POINT NOT APPLICABLE

EXPLOSIVE LIMIT NOT APPLICABLE

EXTINGUISHING MEDIA: CARBON DIOXIDE OR DRY CHEMICAL

HAZARDOUS DECOMPOSITION PRODUCTS: MAY FORM TOXIC MATERIALS: PHOSPHINE, CARBON DIOXIDE AND CARBON MONOXIDE, NITROGEN COMPOUNDS, ACID VAPORS

FIREFIGHTING PROCEDURES: WEAR SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN THE POSITIVE PRESSURE DEMAND MODE AND FULL BODY PROTECTION WHEN FIGHTING FIRES.

WATER OR FOAM MAY CAUSE FROTHING WHICH CAN BE VIOLENT AND POSSIBLY ENDANGER THE LIFE OF THE FIREFIGHTER, ESPECIALLY IF SPRAYED INTO CONTAINERS OF HOT, BURNING LIQUID.

WATER MAY BE USED TO KEEP FIRE-EXPOSED CONTAINERS COOL UNTIL FIRE IS OUT.

SECTION V - HEALTH HAZARD DATA

PERMISSIBLE EXPOSURE LEVEL: NOT ESTABLISHED FOR PRODUCT. SEE SECTION II.

EFFECTS OF ACUTE OVEREXPOSURE:

EYES - CAUSES BURNS.

SKIN - CAUSES BURNS.

BREATHING - MIST CAN CAUSE DAMAGE TO NASAL AND RESPIRATORY PASSAGES.

SWALLOWING - CAN RESULT IN DAMAGE TO THROAT AND ESOPHAGUS.

FIRST AID:

IF ON SKIN: IMMEDIATELY FLUSH EXPOSED AREA WITH WATER FOR AT LEAST 15 MINUTES. GET MEDICAL ATTENTION. REMOVE

BETZ LABORATORIES, INC.
4636 SOMERTON ROAD, TREVOSE, PA. 19053
BETZ MATERIAL SAFETY DATA SHEET
EMERGENCY TELEPHONE (HEALTH/ACCIDENT) 800-877-1940

PRODUCT : POWERLINE PPL09

(PAGE 1 OF 3)
EFFECTIVE DATE 05-16-91
PRINTED: 3-Jun-1991

REVISIONS TO SECTIONS: 1,4,7,APP/9;ED:5,8

PRODUCT APPLICATION : WATER-BASED DEPOSIT CONTROL AGENT.

-----SECTION 1-----HAZARDOUS INGREDIENTS-----
INFORMATION ON PHYSICAL HAZARDS, HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC
PRODUCT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD IS
LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE
AND CHRONIC HAZARDS OF THIS FORMULATION.

PHOSPHONIC ACID, (1-HYDROXYETHYLIDINE) BIS- (HEDP) ***CAS#2809-21-4; EYE
IRRITANT; PEL: NONE; TLV: NONE.

-----SECTION 2-----TYPICAL PHYSICAL DATA-----

PH: AS IS	(APPROX.)	2.0	ODOR: SLIGHT
FL.PT. (DEG.F):	>200 P-M(CC)		SP.GR. (70F) OR DENSITY: 1.219
VAPOR PRESSURE (mmHG):	18		VAPOR DENSITY (AIR=1): <1
VISC cps70F:	19		%SOLUBILITY (WATER): 100
EVAP.RATE: ND WATER=1			APPEARANCE: COLORLESS
PHYSICAL STATE: LIQUID			FREEZE POINT (DEG.F): 20

-----SECTION 3-----REACTIVITY DATA-----

STABLE. MAY REACT WITH STRONG OXIDIZERS. DO NOT CONTAMINATE. BETZ TANK
CLEAN-OUT CATEGORY 'B'

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

BETZ MATERIAL SAFETY DATA SHEET (PAGE 2 OF 3)

PRODUCT: POWERLINE PPL09

-----SECTION 4-----HEALTH HAZARD EFFECTS-----

ACUTE SKIN EFFECTS *** PRIMARY ROUTE OF EXPOSURE

MODERATELY IRRITATING TO THE SKIN

ACUTE EYE EFFECTS ***

SEVERE IRRITANT TO THE EYES

ACUTE RESPIRATORY EFFECTS ***

MISTS/AEROSOLS MAY CAUSE IRRITATION TO UPPER RESPIRATORY TRACT

CHRONIC EFFECTS OF OVEREXPOSURE***

NO EVIDENCE OF POTENTIAL CHRONIC EFFECTS.

MEDICAL CONDITIONS AGGRAVATED ***

NOT KNOWN

SYMPTOMS OF EXPOSURE ***

MAY CAUSE REDNESS OR ITCHING OF SKIN, IRRITATION AND/OR TEARING OF EYES (DIRECT CONTACT).

-----SECTION 5-----FIRST AID INSTRUCTIONS-----

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 EXPOSURE***

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. DILUTE CONTENTS OF STOMACH. INDUCE VOMITING BY ONE OF THE STANDARD METHODS. IMMEDIATELY CONTACT A PHYSICIAN

-----SECTION 6-----SPILL, DISPOSAL AND FIRE INSTRUCTIONS-----

SPILL INSTRUCTIONS***

VENTILATE AREA, USE SPECIFIED PROTECTIVE EQUIPMENT. CONTAIN AND ABSORB ON ABSORBENT MATERIAL. PLACE IN WASTE DISPOSAL CONTAINER. THE WASTE CHARACTERISTICS OF THE ABSORBED MATERIAL, OR ANY CONTAMINATED SOIL, SHOULD BE DETERMINED IN ACCORDANCE WITH RCRA REGULATIONS. 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 NPDES PERMIT PRODUCT (AS IS) -

INCINERATE OR BURY IN APPROVED LANDFILL

FIRE EXTINGUISHING INSTRUCTIONS***

FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS (FULL FACE-PIECE TYPE). PROPER FIRE EXTINGUISHING MEDIA: FOAM OR WATER. CREATE A SLIPPERY CONDITION. SPREAD SAND OR GRIT.

BETZ MATERIAL SAFETY DATA SHEET (PAGE 3 OF 3)

PRODUCT: POWERLINE PPL09

-----SECTION 7-----SPECIAL PROTECTIVE EQUIPMENT-----

USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134. USE
RESPIRATORS WITHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS.
VENTILATION PROTECTION***

ADEQUATE VENTILATION

RECOMMENDED RESPIRATORY PROTECTION***

IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY,
USE A RESPIRATOR WITH DUST/MIST FILTERS.

RECOMMENDED SKIN PROTECTION***

RUBBER GLOVES

WASH OFF AFTER EACH USE.REPLACE AS NECESSARY

RECOMMENDED EYE PROTECTION***

SPLASH PROOF CHEMICAL GOGGLES

-----SECTION 8-----STORAGE AND HANDLING PRECAUTIONS-----

STORAGE INSTRUCTIONS***

KEEP DRUMS & PAILS CLOSED WHEN NOT IN USE.

REASONABLE AND SAFE CHEMICAL STORAGE

HANDLING INSTRUCTIONS***

ACIDIC.DO NOT MIX WITH ALKALINE MATERIAL.

THIS MSDS WAS WRITTEN TO COMPLY WITH THE OSHA HAZARD COMMUNICATION STANDARD

APPENDIX: REGULATORY INFORMATION

THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE
EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE.
ANY CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

...TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED ON THE TSCA INVENTORY
...REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:
NOT APPLICABLE

...RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE,THE RCRA HAZARDOUS WASTE
IDENTIFICATION NUMBER IS: D002=CORROSIVE(PH)

...DOT HAZARD/UN#/ER GUIDE# IS: NOT APPLICABLE

...CALIFORNIA SAFE DRINKING WATER ACT (PROPOSITION 65) MATERIALS: NONE

...SARA SECTION 302 CHEMICALS: NONE

...SARA SECTION 313 CHEMICALS: NONE

...SARA SECTION 312 HAZARD CLASS: IMMEDIATE(ACUTE) AND DELAYED(CHRONIC)

...MICHIGAN CRITICAL MATERIALS: NONE

NFPA/HMIS : HEALTH - 2 ; FIRE - 1 ; REACTIVITY - 0 ; SPECIAL - ACID ; PE - B



MATERIAL SAFETY DATA SHEET

PRODUCT DYNACCOOL 1383 SCALE INHIBITOR

Emergency Telephone Number
Medical (708) 920-1510 (24 hours)

SECTION 1 PRODUCT IDENTIFICATION

TRADE NAME: DYNACCOOL 1383 SCALE INHIBITOR

DESCRIPTION: An aqueous solution of potassium phosphonate and polyacrylates

NFPA 704M/HMIS RATING: 1/1 HEALTH 1/1 FLAMMABILITY 0/0 REACTIVITY 0 OTHER
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

SECTION 2 HAZARDOUS INGREDIENTS

Our hazard evaluation of the ingredient(s) under OSHA's Hazard Communication Rule, 29 CFR 1910.1200 has found none of the ingredient(s) hazardous.

SECTION 3 PRECAUTIONARY LABEL INFORMATION

CAUTION: May cause irritation to skin and eyes. Avoid contact with skin, eyes and clothing. Do not take internally.

Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

SECTION 4 FIRST AID INFORMATION

EYES: Flush with water for 15 minutes. Call a physician.
SKIN: Wash thoroughly with soap and rinse with water. Call a physician.
INGESTION: Do not induce vomiting. Give water. Call a physician.
INHALATION: Remove to fresh air. Treat symptoms. Call a physician.

NOTE TO PHYSICIAN: No specific antidote is known. Based on the individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical condition.

CAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.

SECTION 5 HEALTH EFFECTS INFORMATION

PRIMARY ROUTE(S) OF EXPOSURE: Eye, Skin

EYE CONTACT: Can cause transient irritation.
SKIN CONTACT: May cause irritation with prolonged contact.

SYMPTOMS OF EXPOSURE: A review of available data does not identify any symptoms from exposure.



MATERIAL SAFETY DATA SHEET

PRODUCT DYNACOOOL 1383 SCALE INHIBITOR

Emergency Telephone Number
Medical (708) 920-1510 (24 hours)

SECTION 5 HEALTH EFFECTS INFORMATION

(CONTINUED)

AGGRAVATION OF EXISTING CONDITIONS: A review of available data does not identify any worsening of existing conditions.

SECTION 6 TOXICOLOGY INFORMATION

ACUTE TOXICITY STUDIES: No toxicity studies have been conducted on this product.

SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Clear	FORM: Liquid	
SOLUBILITY IN WATER: Completely		
SPECIFIC GRAVITY: 1.17 @ 68 Degrees F		ASTM D-1298
pH (NEAT) = 3.6 - 4.5		ASTM E-70
FREEZE POINT: 25 Degrees F		ASTM D-1177
FLASH POINT: None (FMCC)		ASTM D-93

NOTE: These physical properties are typical values for this product.

SECTION 8 FIRE AND EXPLOSION INFORMATION

FLASH POINT: None (FMCC) ASTM D-93

EXTINGUISHING MEDIA: Not applicable

UNUSUAL FIRE AND EXPLOSION HAZARD: Not applicable

SECTION 9 REACTIVITY INFORMATION

INCOMPATIBILITY: Avoid contact with strong acids (eg. sulfuric, phosphoric, nitric, hydrochloric, chromic, sulfonic) which can generate heat, splattering or boiling and the release of toxic fumes.

THERMAL DECOMPOSITION PRODUCTS: In the event of combustion CO, CO2 may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.

SECTION 10 PERSONAL PROTECTION EQUIPMENT

RESPIRATORY PROTECTION: Respiratory protection is not normally needed.

For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a pressure-demand, self-contained breathing apparatus is recommended.



MATERIAL SAFETY DATA SHEET

PRODUCT DYNACOL 1383 SCALE INHIBITOR

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 10 PERSONAL PROTECTION EQUIPMENT

(CONTINUED)

VENTILATION: General ventilation is recommended.

PROTECTIVE EQUIPMENT: Use impermeable gloves and chemical splash goggles (ANSI Z 87.1 requirements and selection of gloves, goggles, shoes, etc.) when attaching feeding equipment, doing maintenance or handling product.

The availability of an eye wash fountain and safety shower is recommended.

If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

SECTION 11 SPILL AND DISPOSAL INFORMATION

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (708-920-1510)

SPILL CONTROL AND RECOVERY:

Small liquid spills: Contain with absorbent material, such as clay, soil or any commercially available absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCLA in Section 14.

Large liquid spills: Dike to prevent further movement and reclaim into recovery or salvage drums or tank truck for disposal. Refer to CERCLA in Section 14.

DISPOSAL: If this product becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, (i.e. D001 through D017) nor is it listed under Subpart D.

As a non-hazardous liquid waste, it should be solidified with stabilizing agents (such as sand, fly ash, or cement) so that no free liquid remains before disposal to an industrial waste landfill. A non-hazardous liquid waste can also be deep-well injected in accordance with local, state and federal regulations.

SECTION 12 ENVIRONMENTAL INFORMATION

AQUATIC DATA:

96 hour static acute LC50 to Rainbow Trout = Greater than 1,000 ppm

96 hour no observed effect concentration is 1,000 ppm based on no mortality



MATERIAL SAFETY DATA SHEET

PRODUCT DYNACCOOL 1383 SCALE INHIBITOR

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 12 ENVIRONMENTAL INFORMATION

(CONTINUED)

or abnormal effects.

96 hour static acute LC50 to Sheepshead Minnow = Greater than 1,000 ppm

96 hour no observed effect concentration is 1,000 ppm based on no mortality or abnormal effects.

48 hour static acute LC50 to Daphnia Magna = Greater than 1,000 ppm

48 hour no observed effect concentration is 1,000 ppm based on no mortality or abnormal effects.

If released into the environment, see CERCLA in Section 14.

SECTION 13 TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME/HAZARD CODE - PRODUCT IS NOT REGULATED
DURING TRANSPORTATION

SECTION 14 REGULATORY INFORMATION

The following regulations apply to this product.

FEDERAL REGULATIONS:

OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200:

Based on our hazard evaluation, this product is not hazardous.

CERCLA/SUPERFUND, 40 CFR 117, 302:

Notification of spills of this product is not required.

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986

(TITLE III) - SECTIONS 302, 311, 312 AND 313:

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):

This product does not contain ingredients listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 and 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370):

Our hazard evaluation has found that this product is not hazardous under 29 CFR 1910.1200.

Under Section 311, submittal of MSDS's or a list of product names to the local emergency planning commission, state emergency response commission and local



MATERIAL SAFETY DATA SHEET

PRODUCT DYNACOOOL 1383 SCALE INHIBITOR

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 14 REGULATORY INFORMATION

(CONTINUED)

fire department is required after October 17, 1987 if you have:

- 10,000 pounds or more of a hazardous substance, or
- 500 pounds or the threshold planning quantity, whichever is less, of an extremely hazardous substance.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372):

This product does not contain ingredients (at a level of 1% or greater) on the List of Toxic Chemicals.

TOXIC SUBSTANCES CONTROL ACT (TSCA):

The chemical ingredients in this product are on the 8(b) Inventory List (40 CFR 710).

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D:

If this product becomes a waste, it does not meet the criteria of a hazardous waste.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15/

formerly Sec. 307, 40 CFR 116/formerly Sec. 311:

None of the ingredients are specifically listed.

CLEAN AIR ACT, 40 CFR 60, SECTION 111, 40 CFR 61, SECTION 112:

This product does not contain ingredients covered by the Clean Air Act.

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:

None of the chemicals on the current Proposition 65 list are known to be present in this product.

MICHIGAN CRITICAL MATERIALS:

This product does not contain ingredients listed on the Michigan Critical Materials Register.

STATE RIGHT TO KNOW LAWS:

This product does not contain ingredients listed by State Right To Know Laws.

INTERNATIONAL REGULATIONS:

This is not a WHMIS controlled product under The House of Commons of Canada Bill C-70.



MATERIAL SAFETY DATA SHEET

PRODUCT DYNACOL 1383 SCALE INHIBITOR

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 15 ADDITIONAL INFORMATION

None

SECTION 16 USER'S RESPONSIBILITY

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to ensure safe workplace operations. Please consult your local sales representative for any further information.

SECTION 17 BIBLIOGRAPHY

ANNUAL REPORT ON CARCINOGENS, U.S. Department of Health and Human Services, Public Health Service, PB 33-135855, 1983.

CASARETT AND DOULL'S TOXICOLOGY, THE BASIC SCIENCE OF POISONS, Doull, J., Klaassen, C. D., and Admur, M. O., eds., Macmillan Publishing Company, Inc., N. Y., 2nd edition, 1980.

CHEMICAL HAZARDS OF THE WORKPLACE, Proctor, N. H., and Hughes, J. P., eds., J. P. Lipincott Company, N.Y., 1981.

DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS, Sax, N. Irving, ed., Van Nostrand Reinhold Company, N.Y., 6th edition, 1984.

IARC MONOGRAPHS ON THE EVALUATION OF THE CARCINOGENIC RISK OF CHEMICALS TO MAN, Geneva: World Health Organization, International Agency for Research on Cancer, 1972-1977.

PATY'S INDUSTRIAL HYGIENE AND TOXICOLOGY, Clayton, G. D., Clayton, F. E., eds., John Wiley and Sons, N. Y., 3rd edition, Vol. 2 A-C, 1981.

REGISTRY OF TOXIC EFFECTS ON CHEMICAL SUBSTANCES, U.S. Department of Health and Human Services, Public Health Service, Center for Disease Control, National Institute for Occupational Safety and Health, 1983 supplement of 1981-1982 edition, Vol. 1-3, OH, 1984.

Title 29 Code of Federal Regulations Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA).

THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS IN THE



Product Facts

BETZ POWERLINE PPL04

Copper Corrosion Inhibitor

- Inhibits corrosion of copper alloys
- Effectiveness is not impaired by chlorination
- Extends condenser service life

DESCRIPTION AND USE

POWERLINE PPL04 is a specially formulated corrosion inhibitor which is designed to establish a protective film on copper alloy condensers in the Power Industry. POWERLINE PPL04 effectively inhibits the corrosion of copper alloy surfaces. Indirectly, it also reduces the corrosion of steel surfaces when the corrosion is the result of a galvanic reaction between the steel surface and the products of copper corrosion which have been deposited on the steel.

TREATMENT AND FEEDING REQUIREMENTS

The normal treatment level for POWERLINE PPL04 ranges from 1 to 5 ppm. However, the amount required will depend on many factors such as operating characteristics of the system and severity of the problem. Therefore, this product should be used in accordance with control parameters BETZ establishes for a specific application.

POWERLINE PPL04 should be fed to a point in the cooling system where turbulence and flow patterns will ensure adequate mixing of the product with the cooling water. In recirculating cooling systems the product should be fed continuously to maintain consistent residuals in the cooling water. Intermittent product feed is applicable in certain once-through cooling systems.

This product is stable under normal chlorination practices. It will not be adversely affected by systems employing either intermittent or continuous chlorination for the control of microorganisms.

POWERLINE PPL04 may be fed directly from the shipping container or diluted with water, to any convenient feeding strength.

Mild steel tanks, pumps, and piping are satisfactory for use with POWERLINE PPL04.

GENERAL PROPERTIES

Appearancelight to dark brown liquid
Density 9.9 lbs/gal
Flash Point (closed cup) >200F
Freeze Point -25F
Pour Point -20F
Brookfield Viscosity (70F) 80cps
pH (undiluted) 13.0
 (5% solution) 11.3

Protect from freezing. If this product is frozen during shipment or storage, mix until homogeneous prior to use.

SAFETY PRECAUTIONS

A Material Safety Data Sheet containing detailed information relative to this product is available upon request.

PACKAGING INFORMATION

POWERLINE PPL04 is blended as a liquid, and is supplied in 55-gallon bung-type nonreturnable steel drums. Approximate net weight - 535 pounds per drum. In addition, POWERLINE PPL04 is available under the BETZ Point Of Feed Service Program for contracted quantities in certain geographic areas.

BETZ INDUSTRIAL

4636 SOMERTON ROAD TREVOSE, PA. 19047

BETZ MATERIAL SAFETY DATA SHEET

24 HOUR EMERGENCY TELEPHONE (HEALTH OR ACCIDENT) 215/355-3300

PRODUCT : POWERLINE

PPL04

EFFECTIVE DATE 10-31-88

PRINTED: 12/15/8

PRODUCT APPLICATION : WATER-BASED CORROSION INHIBITOR.

-----SECTION 1-----HAZARDOUS INGREDIENTS-----

INFORMATION ON PHYSICAL HAZARDS, HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC PRODUCT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD ARE LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE AND CHRONIC HAZARDS OF THIS FORMULATION. THIS PRODUCT IS SUBJECT TO THE PENNSYLVANIA WORKER AND COMMUNITY RIGHT TO KNOW LAW.

BENZOTRIAZOLE, METHYL, SODIUM SALT***CAS#64665-57-2; CORROSIVE TO EYES AND SKIN; TOXIC (ORAL INGESTION); PEL: NONE; TVL: NONE.

NONHAZARDOUS INGREDIENTS: WATER

-----SECTION 2-----TYPICAL PHYSICAL DATA-----

PH: AS IS	(APPROX.) 13.0	ODOR: MILD
FL. PT. (DEG. F): 200	SETA (CC):	SP. GR. (70F) OR DENSITY: 1.191
VAPOR PRESSURE (MM HG): MD		VAPOR DENSITY (AIR=1): MD
VISC cps 70F: 78		SOLUBILITY (WATER): 100
EVAP. RATE: 1	ETHER=1	APPEARANCE: DARK BROWN
PHYSICAL STATE: LIQUID		FREEZE POINT (DEG. F): 3.0

-----SECTION 3-----REACTIVITY DATA-----

STABLE

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

MATERIAL SAFETY DATA SHEET (PAGE 2 OF 3)

PRODUCT: POWERLINE

PPL04

EFFECTIVE DATE 10-31-88

-----SECTION 4-----HEALTH HAZARD EFFECTS-----

ACUTE SKIN EFFECTS *** PRIMARY ROUTE OF EXPOSURE

CORROSIVE TO SKIN

ACUTE EYE EFFECTS ***

CORROSIVE TO THE EYES

ACUTE RESPIRATORY EFFECTS ***

MISTS/AEROSOLS CAUSE IRRITATION TO UPPER RESPIRATORY TRACT

CHRONIC EFFECTS OF OVEREXPOSURE***

PROLONGED OR REPEATED CONTACT MAY CAUSE TISSUE NECROSIS.

MEDICAL CONDITIONS AGGRAVATED ***

NOT KNOWN

SYMPTOMS OF EXPOSURE ***

CAUSES REDNESS OR ITCHING OF SKIN, POSSIBLY LEADING TO BURNS, DEPENDENT ON LENGTH OF EXPOSURE.

PRECAUTIONARY STATEMENT BASED ON TESTING RESULTS ***

MAY BE TOXIC IF ORALLY INGESTED.

-----SECTION 5-----FIRST AID INSTRUCTIONS-----

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 EXPOSURE***

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
DO NOT INDUCE VOMITING. IMMEDIATELY CONTACT PHYSICIAN. DILUTE CONTENTS OF STOMACH USING 3-4 GLASSES MILK OR WATER

-----SECTION 6-----SPILL, DISPOSAL AND FIRE INSTRUCTIONS-----

SPILL INSTRUCTIONS***

VENTILATE AREA, USE SPECIFIED PROTECTIVE EQUIPMENT. CONTAIN AND ABSORB ON ABSORBENT MATERIAL. PLACE IN WASTE DISPOSAL CONTAINER. THE WASTE CHARACTERISTICS OF THE ABSORBED MATERIAL, OR ANY CONTAMINATED SOIL, SHOULD BE DETERMINED IN ACCORDANCE WITH RCRA REGULATIONS.
FLUSH AREA WITH WATER. WET AREA MAY BE SLIPPERY. IF SO, 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 NPDES PERMIT PRODUCT (AS IS)-

INCINERATE OR BURY IN APPROVED LANDFILL

FIRE EXTINGUISHING INSTRUCTIONS***

FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS (FULL FACE-PIECE TYPE).

DRY CHEMICAL, CARBON DIOXIDE, FOAM OR WATER

MATERIAL SAFETY DATA SHEET (PAGE 3 OF 3)

PRODUCT: POWERLINE PPL04 EFFECTIVE DATE 10-31-88

-----SECTION 7-----SPECIAL PROTECTIVE EQUIPMENT-----

USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134. USE RESPIRATORS WITHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS. VENTILATION PROTECTION***

ADEQUATE VENTILATION

RECOMMENDED RESPIRATORY PROTECTION***

IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY, USE A RESPIRATOR WITH DUST/MIST FILTERS.

RECOMMENDED SKIN PROTECTION***

GAUNTLET-TYPE RUBBER GLOVES, CHEMICAL RESISTANT APRON

WASH OFF AFTER EACH USE. REPLACE AS NECESSARY

RECOMMENDED EYE PROTECTION***

SPLASH PROOF CHEMICAL GOGGLES. FACE SHIELD

-----SECTION 8-----STORAGE AND HANDLING PRECAUTIONS-----

STORAGE INSTRUCTIONS***

KEEP DRUMS & PAILS CLOSED WHEN NOT IN USE.

REASONABLE AND SAFE CHEMICAL STORAGE

HANDLING INSTRUCTIONS***

IMMEDIATELY REMOVE CONTAMINATED CLOTHING, WASH BEFORE REUSE
ALKALINE. CORROSIVE TO SKIN AND EYES. DO NOT MIX WITH ACIDIC MATERIAL.

THIS MSDS COMPLIES WITH THE OSHA HAZARD COMMUNICATION STANDARD
HAROLD M. HERSH (ENVIRONMENTAL INFORMATION COORDINATOR)

APPENDIX: REGULATORY INFORMATION

THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE. ANY CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

...TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED IN THE TSCA INVENTORY

...REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:

NOT APPLICABLE

...RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE, THE RCRA HAZARDOUS WASTE IDENTIFICATION NUMBER IS: D002-CORROSIVE

...DOT HAZARD CLASSIFICATION: CORROSIVE TO SKIN

...DOT SHIPPING DESIGNATION IS: UN1760 CORROSIVE LIQUID, N.O.S.

...THIS PRODUCT CONTAINS THESE CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER OR REPRODUCTIVE TOXICITY: NONE PRESENT IN SIGNIFICANT AMOUNTS

...SARA SECTION 302 CHEMICALS: NONE PRESENT IN SIGNIFICANT AMOUNTS

...SARA SECTION 313 CHEMICALS: NONE PRESENT IN SIGNIFICANT AMOUNTS

...SARA SECTION 312 HAZARD CLASS: IMMEDIATE(ACUTE) AND DELAYED(CHRONIC)

...MICHIGAN CRITICAL MATERIALS: NONE PRESENT IN SIGNIFICANT AMOUNTS

NFPA/HMIS : HEALTH - 3 ; FIRE - 1 ; REACTIVITY - 0 ; SPECIAL - CORR ; PE - D

MATERIAL SAFETY DATA SHEET

DATE October 17, 1988

6D32-02-18-86-643

PRODUCT NAME

PCL-50



SECTION I

MANUFACTURER'S NAME

Calgon Corporation

EMERGENCY

TELEPHONE NO. (412) 777-8000

ADDRESS

P. O. Box 1346, Pittsburgh, Pennsylvania 15230

CHEMICAL NAME
AND SYNONYMS

Triazole

FORMULA

 $C_7H_6N_3Na$

SECTION II HAZARDOUS INGREDIENTS

PRINCIPAL HAZARDOUS COMPONENT (S)	%	ORAL LD ₅₀	DERMAL LD ₅₀	TLV (Units)
Sodium tolyltriazole (CAS No. 64665-57-2)	50	675 mg/kg	Unknown	Unknown

SECTION III PHYSICAL DATA

BOILING POINT (°F)	> 212	SPECIFIC GRAVITY (H ₂ O=1)	1.18
VAPOR PRESSURE (mmHg.)	Unknown	PERCENT VOLATILE BY VOLUME (%)	508
VAPOR DENSITY (AIR=1)	Unknown	pH	12.3
SOLUBILITY IN WATER	Miscible		

APPEARANCE AND ODOR

Dark red solution with slight aromatic odor

SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method Used)	Not Flammable	FLAMMABLE LIMITS	LeI	UeI
		Not Applicable		
EXTINGUISHING MEDIA	Product is not flammable.			
SPECIAL FIRE FIGHTING PROCEDURES	None			
UNUSUAL FIRE AND EXPLOSION HAZARDS	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.

10-11-14

1

2

3

4

5

6

7

8

9



N/A = Not Applicable

SECTION V HEALTH HAZARD DATA**EFFECTS OF OVEREXPOSURE**

Causes burns. Harmful if swallowed.

EMERGENCY AND FIRST AID PROCEDURES**EYE:** In case of contact, immediately flush with plenty of water for at least 15 minutes. Call a physician.**SKIN:** In case of contact, immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing. If irritation develops, call a physician. Wash clothing before reuse.**INTERNAL:** If swallowed, do not induce vomiting. Give large quantities of water. Give at least one ounce of vinegar in an equal amount of water. Never give anything by mouth to an unconscious person. Call a physician.**SECTION VI REACTIVITY DATA**

STABILITY	STABLE	X	CONDITIONS TO AVOID	Unknown
	UNSTABLE			
INCOMPATIBILITY (Materials to Avoid)			Strong oxidizers	
HAZARDOUS DECOMPOSITION PRODUCTS			When heated to over 200° C., degassing will be observed. Carbon dioxide, carbon monoxide nitrogen oxides and hydrogen cyanide can be given off.	
HAZARDOUS POLYMERIZATION			CONDITIONS TO AVOID	Unknown
MAY OCCUR		NO		

SECTION VII SPILL OR LEAK PROCEDURESREPORTABLE QUANTITIES (RQ)
IN LBS. OF EPA HAZARDOUS
SUBSTANCES IN PRODUCT

1. N/A
- 2.
- 3.

NOTIFY EPA OF PRODUCT SPILLS
EQUAL TO OR EXCEEDING
N/A LBS.STEPS TO BE TAKEN IN CASE
MATERIAL IS RELEASED
OR SPILLED

Dispose of in accordance with local, state and federal regulations. Dike area to contain as much spilled material as possible. Remove any remaining material by absorbing on vermiculite or other suitable absorbing material and place in a sealed metal container for disposal.

WASTE DISPOSAL METHODDilute with water and neutralize with 6M-HCl. Flush with water to discharge.
Dispose of in accordance with local, state and federal regulations.**SECTION VIII SPECIAL PROTECTION INFORMATION**RESPIRATORY PROTECTION
(Specify Type)

A NIOSH-approved respirator for sodium hydroxide is recommended only if exposed to excessive mists.

VENTILATION	LOCAL EXHAUST	Adequate	SPECIAL	Not Required
Normal	MECHANICAL (General)	Not Required	OTHER	Not Required
PROTECTIVE GLOVES		Rubber	EYE PROTECTION	
			Eye goggles or full-face shield	
OTHER PROTECTIVE EQUIPMENT		Protective clothing		

SECTION IX SPECIAL PRECAUTIONSCAUTIONS TO BE TAKEN IN
HANDLING AND STORINGDo not get in eyes, on skin or on clothing. Keep container closed.
Wash thoroughly after handling.**OTHER PRECAUTIONS**

None

72-62-7830-01

MATERIAL SAFETY
DATA SHEET

Drew Industrial Division

 ASHLAND CHEMICAL, INC.
 One Drew Plaza, Boonton, New Jersey 07005
 Phone (201) 203-7600, Telex 136444
Emergency
Telephone1 (800) 274-5203 or
1-800-ASHLAND

000067

WPD 11-166(TM) CORROSION INHIBITOR

Page: 1

THIS MSDS COMPLIES WITH 29 CFR 1910.1200 (THE HAZARD COMMUNICATION STANDARD)

 Product Name: WPD 11-166(TM) CORROSION INHIBITOR
 CAS NUMBER: 64665-57-2

OD 10 014

 Data Sheet No: 0065195-003
 Prepared: 08/16/89
 Supersedes: 03/02/87

 DREW CHEMICAL CORPORATION
 ONE DREW CHEMICAL PLAZA

BOONTON

NJ07005

 PRODUCT: D1597295
 INVOICE:
 INVOICE DATE:
 TO:

MARKETING

SECTION I - PRODUCT IDENTIFICATION

General or Generic ID: CORROSION INHIBITOR

DOT Hazard Classification: CORROSIVE MATERIAL (173.240)

SECTION II - COMPONENTS

 IF PRESENT, IARC, NTP AND OSHA CARCINOGENS AND CHEMICALS SUBJECT TO THE REPORT-
 ING REQUIREMENTS OF SARA TITLE III SECTION 313 ARE IDENTIFIED IN THIS SECTION.
 SEE DEFINITION PAGE FOR CLARIFICATION

INGREDIENT

% (by WT)

PEL

TLV

Note

 SODIUM TOLYLTRIAZOLE
 CAS #: 64665-57-2

50

(1)

Notes:

(1) PEL/TLV NOT ESTABLISHED FOR THIS MATERIAL

SECTION III - PHYSICAL DATA

Boiling Point	for PRODUCT	> 212.00 Deg F (100.00 Deg C) > 760.00 mm Hg
Vapor Pressure	for PRODUCT	< 17.50 mm Hg (68.00 Deg F) (20.00 Deg C)
Specific Vapor Density	UNAVAILABLE	
Specific Gravity		1.190 (77.00 Deg F) (25.00 Deg C)
Percent Volatiles		50.00%
Evaporation Rate		SLOWER THAN ETHER
pH		13.5
Appearance		CLEAR, YELLOW TO AMBER
State		LIQUID
Form		HOMOG SOLN

SECTION IV - FIRE AND EXPLOSION INFORMATION

FLASH POINT NOT APPLICABLE

EXPLOSIVE LIMIT NOT APPLICABLE

EXTINGUISHING MEDIA: NOT APPLICABLE

HAZARDOUS DECOMPOSITION PRODUCTS: THERMAL DECOMPOSITION OR COMBUSTION MAY PRODUCE: CARBON DIOXIDE, CARBON MONOXIDE, OXIDES OF NITROGEN, HYDROGEN CYANIDE IN REDUCING ATMOSPHERES

FIREFIGHTING PROCEDURES: WEAR SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN THE POSITIVE PRESSURE DEMAND MODE AND FULL BODY PROTECTION WHEN FIGHTING FIRES.

WATER MAY BE USED TO KEEP FIRE-EXPOSED CONTAINERS COOL UNTIL FIRE IS OUT.

NFPA CODES: HEALTH- 3 FLAMMABILITY- 0 REACTIVITY- 0

CLOSED CONTAINERS MAY RUPTURE OR EXPLODE DUE TO PRESSURE BUILD-UP WHEN EXPOSED TO EXTREME HEAT

SECTION V - HEALTH HAZARD DATA

PERMISSIBLE EXPOSURE LEVEL: NOT ESTABLISHED.

EFFECTS OF ACUTE OVEREXPOSURE: FOR PRODUCT

EYES - CAUSES SEVERE DAMAGE.

SKIN - CAUSES BURNS.

SWALLOWING - RESULTS IN SEVERE DAMAGE TO MUCOUS MEMBRANES AND DEEP TISSUES.

BREATHING: MAY CAUSE DISCOMFORT OR IRRITATION TO NASAL AND RESPIRATORY PASSAGES.

72-62-7830-01

MATERIAL SAFETY
DATA SHEET

Drew Industrial Division

ASHLAND CHEMICAL, INC.

One Drew Plaza, Boonton, New Jersey 07005
Phone (201) 263-7600, Telex 136444Emergency
Telephone1 (800) 274-5263 or
1-800-ASHLAND

000067

WPD 11-166(TM) CORROSION INHIBITOR

Page: 2

~~SECTION V - HEALTH HAZARD DATA (Continued)~~FIRST AID:

IF ON SKIN: IMMEDIATELY FLUSH WITH WATER FOR AT LEAST 15 MINUTES. REMOVE CONTAMINATED CLOTHING. LAUNDRY CONTAMINATED CLOTHING BEFORE RE-USE.

IF IN EYES: FLUSH WITH LARGE AMOUNTS OF WATER, LIFTING UPPER AND LOWER LIDS OCCASIONALLY. GET MEDICAL ATTENTION, IF IRRITATION PERSISTS.

IF SWALLOWED: DO NOT INDUCE VOMITING. VOMITING WILL CAUSE FURTHER DAMAGE TO THE THROAT. DILUTE BY GIVING WATER. GIVE MILK OF MAGNESIA. KEEP WARM, QUIET. GET MEDICAL ATTENTION IMMEDIATELY.

IF BREATHED: REMOVE INDIVIDUAL TO FRESH AIR.

PRIMARY ROUTE(S) OF ENTRY:

SKIN CONTACT

~~SECTION VI - REACTIVITY DATA~~

HAZARDOUS POLYMERIZATION: CANNOT OCCUR

STABILITY: STABLE

INCOMPATIBILITY: AVOID CONTACT WITH: STRONG OXIDIZING AGENTS., STRONG MINERAL ACIDS.

~~SECTION VII - SPILL OR LEAK PROCEDURES~~STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

SMALL SPILL: ABSORB LIQUID ON PAPER, VERMICULITE, FLOOR ABSORBENT OR OTHER ABSORBENT MATERIAL.

LARGE SPILL: PERSONS NOT WEARING PROTECTIVE EQUIPMENT SHOULD BE EXCLUDED FROM AREA OF SPILL UNTIL CLEAN-UP HAS BEEN COMPLETED. STOP SPILL AT SOURCE, DIKE AREA OF SPILL TO PREVENT SPREADING, PUMP LIQUID TO SALVAGE TANK. REMAINING LIQUID MAY BE TAKEN UP ON SAND, CLAY, EARTH, FLOOR ABSORBENT, OR OTHER ABSORBENT MATERIAL AND SHOVELED INTO CONTAINERS.

WASTE DISPOSAL METHOD:

SMALL SPILL: DISPOSE OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

LARGE SPILL: DISPOSE OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

~~SECTION VIII - PROTECTIVE EQUIPMENT TO BE USED~~

RESPIRATORY PROTECTION: IF OVEREXPOSURE HAS BEEN DETERMINED OR DOCUMENTED, A NIOSH/MSHA JOINTLY APPROVED AIR SUPPLIED RESPIRATOR IS ADVISED IN ABSENCE OF PROPER ENVIRONMENTAL CONTROL. OSHA REGULATIONS ALSO PERMIT OTHER NIOSH/MSHA RESPIRATORS UNDER SPECIFIED CONDITIONS. (SEE YOUR SAFETY EQUIPMENT SUPPLIER). ENGINEERING OR ADMINISTRATIVE CONTROLS SHOULD BE IMPLEMENTED TO REDUCE EXPOSURE.

VENTILATION: PROVIDE SUFFICIENT MECHANICAL (GENERAL AND/OR LOCAL EXHAUST) VENTILATION TO MAINTAIN EXPOSURE BELOW LEVEL OF OVEREXPOSURE (FROM KNOWN, SUSPECTED OR APPARENT ADVERSE EFFECTS).

PROTECTIVE GLOVES: NATURAL RUBBER

EYE PROTECTION: CHEMICAL SPLASH GOGGLES AND FACE SHIELD (8" MIN.) IN COMPLIANCE WITH OSHA REGULATIONS ARE ADVISED; HOWEVER, OSHA REGULATIONS ALSO PERMIT OTHER TYPE SAFETY GLASSES. (CONSULT YOUR SAFETY EQUIPMENT SUPPLIER)

OTHER PROTECTIVE EQUIPMENT: TO PREVENT SKIN CONTACT, WEAR IMPERVIOUS CLOTHING AND BOOTS.

~~SECTION IX - SPECIAL PRECAUTIONS OR OTHER COMMENTS~~



MATERIAL SAFETY DATA SHEET

PRODUCT NALCO 1326 CORROSION INHIBITOR

Emergency Telephone Number
Medical (708) 920-1510 (24 hours)

SECTION 1 PRODUCT IDENTIFICATION

TRADE NAME: NALCO 1326 CORROSION INHIBITOR

DESCRIPTION: An aqueous solution of sodium tolyltriazole

NFPA 704M/HMIS RATING: 2/3 HEALTH 0/0 FLAMMABILITY 0/0 REACTIVITY 0 OTHER
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

SECTION 2 HAZARDOUS INGREDIENTS

Our hazard evaluation has identified the following chemical ingredient(s) as hazardous under OSHA's Hazard Communication Rule, 29 CFR 1910.1200. Consult Section 14 for the nature of the hazard(s).

INGREDIENT(S)	CAS #	APPROX. %
Sodium tolyltriazole	64665-57-2	40-70

SECTION 3 PRECAUTIONARY LABEL INFORMATION

WARNING: Causes burns to skin and eyes. Do not get in eyes, on skin, or on clothing. Wear goggles or face shield when handling. Do not take internally.

Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

SECTION 4 FIRST AID INFORMATION

EYES: Immediately flush for at least 15 minutes while holding eyelids open. Call a physician at once.

SKIN: Immediately flush with water for at least 15 minutes. For a large splash, flood body under a shower. Call a physician at once.

INGESTION: Do not induce vomiting. Give water. Call a physician.

NOTE TO PHYSICIAN: No specific antidote is known. Based on the individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical condition.

CAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.

SECTION 5 HEALTH EFFECTS INFORMATION

PRIMARY ROUTE(S) OF EXPOSURE: Eye, Skin



MATERIAL SAFETY DATA SHEET

PRODUCT NALCO 1326 CORROSION INHIBITOR

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 5 HEALTH EFFECTS INFORMATION

(CONTINUED)

EYE CONTACT: Corrosive to the eyes with possible permanent damage depending on the length of exposure and on the first aid action given.

SKIN CONTACT: Can cause severe irritation. Corrosive to the skin, possibly resulting in third degree burns depending on the length of exposure and on the first aid action given.

INGESTION: Can be harmful.

SYMPTOMS OF EXPOSURE: A review of available data does not identify any symptoms from exposure not previously mentioned, or identified in Section 6 or 14.

AGGRAVATION OF EXISTING CONDITIONS: A review of available data does not identify any worsening of existing conditions.

SECTION 6 TOXICOLOGY INFORMATION

ACUTE TOXICITY STUDIES: Acute toxicity studies have not been conducted on this product, but acute studies have been conducted on a similar product. The results are shown below.

ACUTE ORAL TOXICITY (ALBINO RATS): LD50 = 675 mg/kg

ACUTE DERMAL TOXICITY (ALBINO RABBITS): LD50 = Greater than 2 gm/kg

ACUTE INHALATION TOXICITY (ALBINO RATS): LC50 = Greater than 1.73 mg/L for 1 hour exposure

PRIMARY SKIN IRRITATION TEST (ALBINO RABBITS):
SKIN IRRITATION INDEX DRAIZE RATING: Severely irritating

PRIMARY EYE IRRITATION TEST (ALBINO RABBITS):
EYE IRRITATION INDEX DRAIZE RATING: Severely irritating (corrosive)

SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Deep brown/black	FORM: Liquid	ODOR: Slight
DENSITY: 9.9 lbs/gal.		
SOLUBILITY IN WATER: Completely		
SPECIFIC GRAVITY: 1.19 @ 60 Degrees F		ASTM D-1298
pH (NEAT) = 13.5		ASTM E-70
FREEZE POINT: -22 Degrees F		ASTM D-1177
BOILING POINT: 212 Degrees F @ 760 mm Hg		ASTM D-86
FLASH POINT: Greater than 225 Degrees F (PMCC)		ASTM D-93



MATERIAL SAFETY DATA SHEET

PRODUCT NALCO 1326 CORROSION INHIBITOR

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

(CONTINUED)

NOTE: These physical properties are typical values for this product.

SECTION 8 FIRE AND EXPLOSION INFORMATION

FLASH POINT: Greater than 225 Degrees F (FMOC) ASTM D-93

EXTINGUISHING MEDIA: Not applicable

UNUSUAL FIRE AND EXPLOSION HAZARD: May evolve NOx under fire conditions.

Containers exposed in a fire should be cooled with water to prevent vapor pressure buildup leading to a rupture.

SECTION 9 REACTIVITY INFORMATION

INCOMPATIBILITY: Avoid contact with strong acids (eg. sulfuric, phosphoric, nitric, hydrochloric, chromic, sulfonic) which can generate heat, splattering or boiling and the release of toxic fumes.

THERMAL DECOMPOSITION PRODUCTS: In the event of combustion CO, CO2, NOx may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.

SECTION 10 PERSONAL PROTECTION EQUIPMENT

RESPIRATORY PROTECTION: Respiratory protection is not normally needed since the volatility and toxicity are low. If significant vapors, mists or aerosols are generated, wear a NIOSH approved or equivalent respirator, (ANSI Z 88.2, 1980 for requirements and selection).

For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a pressure-demand, self-contained breathing apparatus is recommended.

VENTILATION: General ventilation is recommended. Additionally, local exhaust ventilation is recommended where vapors, mists or aerosols may be released.

PROTECTIVE EQUIPMENT: Wear gloves, boots, apron and a face shield with chemical splash goggles (ANSI Z 87.1 requirements and selection of gloves, goggles, shoes, etc.). A full slicker suit is recommended if gross exposure is possible.

The availability of an eye wash fountain and safety shower is recommended.



MATERIAL SAFETY DATA SHEET

PRODUCT NALCO 1326 CORROSION INHIBITOR

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 10 PERSONAL PROTECTION EQUIPMENT

(CONTINUED)

If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

SECTION 11 SPILL AND DISPOSAL INFORMATION

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (708-920-1510)

SPILL CONTROL AND RECOVERY:

Small liquid spills: Contain with absorbent material, such as clay, soil or any commercially available absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCLA in Section 14.

Large liquid spills: Dike to prevent further movement and reclaim into recovery or salvage drums or tank truck for disposal. Refer to CERCLA in Section 14.

For large indoor spills, evacuate employees and ventilate area. Those responsible for control and recovery should wear the protective equipment specified in Section 10.

DISPOSAL: If this product becomes a waste, it meets the criteria of a hazardous waste as defined under the Resources Conservation and Recovery Act (RCRA) 40 CFR 261. Hazardous Waste D002.

As a hazardous liquid waste, it must be solidified with stabilizing agents (such as sand, fly ash, or cement) so that no free liquid remains before disposal to a licensed industrial waste landfill (Hazardous Waste Treatment, Storage and Disposal facility). A hazardous liquid waste can also be incinerated in accordance with local, state, and federal regulations.

SECTION 12 ENVIRONMENTAL INFORMATION

AQUATIC DATA:

96 hour static acute LC50 to Bluegill Sunfish = 150 mg/L

96 hour no observed effect concentration is 56 ppm based on no mortality or abnormal effects.

TOXICITY RATING: Slightly toxic

96 hour static acute LC50 to Rainbow Trout = 34 mg/L



MATERIAL SAFETY DATA SHEET

PRODUCT NALCO 1326 CORROSION INHIBITOR

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 12 ENVIRONMENTAL INFORMATION

(CONTINUED)

96 hour no observed effect concentration is 18 mg/L based on no mortality or abnormal effects.

TOXICITY RATING: Moderately toxic

96 hour static acute LC50 to Fathead Minnow = 130 mg/L

96 hour no observed effect concentration is 56 mg/L based on no mortality or abnormal effects.

TOXICITY RATING: Slightly toxic

48 hour static acute LC50 to Daphnia Magna = 420 mg/L

48 hour no observed effect concentration is 100 mg/L based on no mortality or abnormal effects.

TOXICITY RATING: Slightly toxic

If released into the environment, see CERCLA in Section 14.

SECTION 13 TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME/HAZARD CODE - CORROSIVE LIQUID, N.O.S.
CORROSIVE MATERIAL UN 1760
CONTAINS - SODIUM TOLYLTRIAZOLE

SECTION 14 REGULATORY INFORMATION

The following regulations apply to this product.

FEDERAL REGULATIONS:

OSHA'S HAZARD COMMUNICATION RULE, 29 CFR 1910.1200:

Based on our hazard evaluation, the following ingredient in this product is hazardous and the reason is shown below.

Sodium tolyltriazole - Eye/skin irritant

CERCLA/SUPERFUND, 40 CFR 117, 302:

Notification of spills of this product is not required.

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986

100

101

102

103

104

105

106

107

108



MATERIAL SAFETY DATA SHEET

PRODUCT NALCO 1326 CORROSION INHIBITOR

Emergency Telephone Number
Medical (708) 920-1510 (24 hours)

SECTION 14 REGULATORY INFORMATION

(CONTINUED)

(TITLE III) - SECTIONS 302, 311, 312 AND 313:

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):

This product does not contain ingredients listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 and 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370):

Our hazard evaluation has found this product to be hazardous. The product should be reported under the following EPA hazard categories:

- XX Immediate (acute) health hazard
- Delayed (chronic) health hazard
- Fire hazard
- Sudden release of pressure hazard
- Reactive hazard

Under Section 311, submittal of MSDS's or a list of product names to the local emergency planning commission, state emergency response commission and local fire department is required after October 17, 1987 if you have:

- 10,000 pounds or more of a hazardous substance, or
- 500 pounds or the threshold planning quantity, whichever is less, of an extremely hazardous substance.

After October 17, 1989, MSDS(s), or a list of product names for all hazardous substances between zero (0) and 10,000 pounds, not previously reported, must be submitted.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372):

This product does not contain ingredients (at a level of 1% or greater) on the List of Toxic Chemicals.

TOXIC SUBSTANCES CONTROL ACT (TSCA):

The chemical ingredients in this product are on the 8(b) Inventory List (40 CFR 710).

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D:

If this product becomes a waste, it does meet the criteria of a hazardous waste as defined under RCRA 40 CFR 261 (consult Section 11).

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15 (formerly Sec. 307), 40 CFR 116 (formerly Sec. 311):



MATERIAL SAFETY DATA SHEET

PRODUCT NALCO 1326 CORROSION INHIBITOR

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 14 REGULATORY INFORMATION

(CONTINUED)

None of the ingredients are specifically listed.

CLEAN AIR ACT, 40 CFR 60, SECTION 111, 40 CFR 61, SECTION 112:
This product does not contain ingredients covered by the Clean Air Act.

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:

None of the chemicals on the current Proposition 65 list are known to be present in this product.

MICHIGAN CRITICAL MATERIALS:

This product does not contain ingredients listed on the Michigan Critical Materials Register.

STATE RIGHT TO KNOW LAWS:

This product does not contain ingredients listed by State Right To Know Laws.

INTERNATIONAL REGULATIONS:

This is a WHMIS controlled product under The House of Commons of Canada Bill C-70. The product contains the following substance(s), from the Ingredient Disclosure List or has been evaluated based on its toxicological properties, to contain the following hazardous ingredient(s):

Chemical Name	CAS #	% Concentration Range
Sodium tolyltriazole	64665-57-2	40-70

SECTION 15 ADDITIONAL INFORMATION

None

SECTION 16 USER'S RESPONSIBILITY

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to ensure safe workplace operations. Please consult your local sales representative for any further information.



MATERIAL SAFETY DATA SHEET

PRODUCT NALCO 1326 CORROSION INHIBITOR

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 17 BIBLIOGRAPHY

ANNUAL REPORT ON CARCINOGENS, U.S. Department of Health and Human Services, Public Health Service, PB 33-135855, 1983.

CASARETT AND DOULL'S TOXICOLOGY, THE BASIC SCIENCE OF POISONS, Doull, J., Klaassen, C. D., and Admur, M. O., eds., Macmillan Publishing Company, Inc., N. Y., 2nd edition, 1980.

CHEMICAL HAZARDS OF THE WORKPLACE, Proctor, N. H., and Hughes, J. P., eds., J. P. Lipincott Company, N.Y., 1981.

DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS, Sax, N. Irving, ed., Van Nostrand Reinhold Company, N.Y., 6th edition, 1984.

IARC MONOGRAPHS ON THE EVALUATION OF THE CARCINOGENIC RISK OF CHEMICALS TO MAN; Geneva: World Health Organization, International Agency for Research on Cancer, 1972-1977.

PATTY'S INDUSTRIAL HYGIENE AND TOXICOLOGY, Clayton, G. D., Clayton, F. E., eds., John Wiley and Sons, N. Y., 3rd edition, Vol. 2 A-C, 1981.

REGISTRY OF TOXIC EFFECTS ON CHEMICAL SUBSTANCES, U.S. Department of Health and Human Services, Public Health Service, Center for Disease Control, National Institute for Occupational Safety and Health, 1983 supplement of 1981-1982 edition, Vol. 1-3, OH, 1984.

Title 29 Code of Federal Regulations Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA).

THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS IN THE WORKROOM ENVIRONMENT WITH INTENDED CHANGES, American Conference of Governmental Industrial Hygienists, OH.

PREPARED BY: Ricky A. Stackhouse PhD., Toxicologist

DATE CHANGED: 10/10/89

DATE PRINTED: 04/04/91

BETZ INDUSTRIAL

4636 SOMERTON ROAD TREVOSE, PA. 19047

BETZ MATERIAL SAFETY DATA SHEET

24 HOUR EMERGENCY TELEPHONE (HEALTH OR ACCIDENT) 215/355-3300

PRODUCT :POWERLINE 3450

EFFECTIVE DATE 10-31-88

PRINTED: 12/15/8

PRODUCT APPLICATION : WATER-BASED DEPOSIT CONTROL AGENT.

-----SECTION 1-----HAZARDOUS INGREDIENTS-----

INFORMATION ON PHYSICAL HAZARDS, HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC PRODUCT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD ARE LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE AND CHRONIC HAZARDS OF THIS FORMULATION. THIS PRODUCT IS SUBJECT TO THE PENNSYLVANIA WORKER AND COMMUNITY RIGHT TO KNOW LAW.

THIS PRODUCT IS NOT HAZARDOUS AS DEFINED BY OSHA REGULATIONS.

NONHAZARD INGREDIENTS: WATER AND COPOLYMER OF 2-PROPENOIC ACID AND
1,2,-PROPANEDIOL MONO-2- PROPENOATE
(39373-34-7)

-----SECTION 2-----TYPICAL PHYSICAL DATA-----

PH: AS IS (APPROX.) 5.3	ODOR: MILD
FL.PT.(DEG.F): 200 SETA(CC)	SP.GR.(70F)OR DENSITY: 1.123
VAPOR PRESSURE(mmHG): 20	VAPOR DENSITY(AIR=1): 1
VISC cps70F: 19.5	SOLUBILITY(WATER): 100
EVAP.RATE: 1 ETHER=1	APPEARANCE: COLORLESS TO LIGHT BROWN
PHYSICAL STATE: LIQUID	FREEZE POINT(DEG.F): 26

-----SECTION 3-----REACTIVITY DATA-----

STABLE

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

MATERIAL SAFETY DATA SHEET (PAGE 2 OF 3)

PRODUCT: POWERLINE 3450

EFFECTIVE DATE 10-31-88

-----SECTION 4-----HEALTH HAZARD EFFECTS-----

ACUTE SKIN EFFECTS *** PRIMARY ROUTE OF EXPOSURE

SLIGHTLY IRRITATING TO THE SKIN

ACUTE EYE EFFECTS ***

SLIGHTLY IRRITATING TO THE EYES

ACUTE RESPIRATORY EFFECTS ***

MISTS/AEROSOLS MAY CAUSE IRRITATION TO UPPER RESPIRATORY TRACT

CHRONIC EFFECTS OF OVEREXPOSURE***

NO EVIDENCE OF POTENTIAL CHRONIC EFFECTS.

MEDICAL CONDITIONS AGGRAVATED ***

NOT KNOWN

SYMPTOMS OF EXPOSURE ***

MAY CAUSE REDNESS OR ITCHING OF SKIN, IRRITATION AND/OR TEARING OF EYES(DIRECT CONTACT).

-----SECTION 5-----FIRST AID INSTRUCTIONS-----

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 EXPOSURE***

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
DILUTE CONTENTS OF STOMACH. INDUCE VOMITING BY ONE OF THE STANDARD METHODS. IMMEDIATELY CONTACT A PHYSICIAN

-----SECTION 6-----SPILL, DISPOSAL AND FIRE INSTRUCTIONS-----

SPILL INSTRUCTIONS***

VENTILATE AREA, USE SPECIFIED PROTECTIVE EQUIPMENT. CONTAIN AND ABSORB ON ABSORBENT MATERIAL. PLACE IN WASTE DISPOSAL CONTAINER. THE WASTE CHARACTERISTICS OF THE ABSORBED MATERIAL, OR ANY CONTAMINATED SOIL, SHOULD BE DETERMINED IN ACCORDANCE WITH RCRA REGULATIONS.

FLUSH AREA WITH WATER. WET AREA MAY BE SLIPPERY. IF SO, 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 NPDES PERMIT PRODUCT(AS IS)-

INCINERATE OR BURY IN APPROVED LANDFILL

FIRE EXTINGUISHING INSTRUCTIONS***

FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS(FULL FACE-PIECE TYPE).

DRY CHEMICAL, CARBON DIOXIDE, FOAM OR WATER. FOAM OR WATER CREATE A SLIPPERY CONDITION. SPREAD SAND OR GRIT

MATERIAL SAFETY DATA SHEET (PAGE 3 OF 3)

PRODUCT: POWERLINE 3450

EFFECTIVE DATE 10-31-88

-----SECTION 7-----SPECIAL PROTECTIVE EQUIPMENT-----

USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134. USE RESPIRATORS WITHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS. VENTILATION PROTECTION***

ADEQUATE VENTILATION
RECOMMENDED RESPIRATORY PROTECTION***

IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY, USE A RESPIRATOR WITH DUST/MIST FILTERS.

RECOMMENDED SKIN PROTECTION***

RUBBER GLOVES

WASH OFF AFTER EACH USE.REPLACE AS NECESSARY

RECOMMENDED EYE PROTECTION***

SPLASH PROOF CHEMICAL GOGGLES

-----SECTION 8-----STORAGE AND HANDLING PRECAUTIONS-----

STORAGE INSTRUCTIONS***

KEEP DRUMS & PAILS CLOSED WHEN NOT IN USE.

PROTECT FROM FREEZING

HANDLING INSTRUCTIONS***

IMMEDIATELY REMOVE CONTAMINATED CLOTHING,WASH BEFORE REUSE

NORMAL CHEMICAL HANDLING

THIS MSDS COMPLIES WITH THE OSHA HAZARD COMMUNICATION STANDARD
HAROLD M. HERSH (ENVIRONMENTAL INFORMATION COORDINATOR)

APPENDIX: REGULATORY INFORMATION

THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE. ANY CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

...TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED IN THE TSCA INVENTORY
...REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:
NOT APPLICABLE

...RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE,THE RCRA HAZARDOUS WASTE IDENTIFICATION NUMBER IS: NOT APPLICABLE

...DOT HAZARD CLASSIFICATION: NOT APPLICABLE
...DOT SHIPPING DESIGNATION IS: NOT APPLICABLE

...THIS PRODUCT CONTAINS THESE CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER OR REPRODUCTIVE TOXICITY: NONE PRESENT IN SIGNIFICANT AMOUNTS
...SARA SECTION 302 CHEMICALS: NONE PRESENT IN SIGNIFICANT AMOUNTS
...SARA SECTION 313 CHEMICALS: NONE PRESENT IN SIGNIFICANT AMOUNTS
...SARA SECTION 312 HAZARD CLASS: PRODUCT IS NONHAZARDOUS UNDER SECTION 311/312
...MICHIGAN CRITICAL MATERIALS: NONE PRESENT IN SIGNIFICANT AMOUNTS
NFPA/EMIS : HEALTH - 1 ; FIRE - 1 ; REACTIVITY - 0 ; SPECIAL - NONE ; PE - B

BETZ LABORATORIES, INC.
4636 SOMERTON ROAD, TREVOSE, PA. 19047

2/22/89

PRODUCT: POWERLINE 3450

AQUATIC TOXICOLOGY

DAPHNIA MAGNA

0% MORTALITY: <2400 MG/L
48 HR. LC50: 3558.0 MG/L

FATHEAD MINNOW

0% MORTALITY: <8700 MG/L
96 HR. LC50: 19062.0 MG/L

BLUEGILL SUNFISH

0% MORTALITY: 4000 MG/L
48 HR. SCR.

2/22/89

MAMMALIAN TOXICOLOGY

ORAL LD50 - RAT : 16000 MG/KG

DERMAL LD50 - RABBIT : 2000.00 MG/KG

SKIN IRRITATION SCORE-NO DATA

EYE IRRITATION SCORE-NO DATA

INHALATION-NO DATA

PRODUCT CONCENTRATION (ppm)	OXYGEN DEMAND (ppm)		
	BOD	COD	TOC
1000	10	312	113

BETZ LABORATORIES, INC.
4636 SOMERTON ROAD, TREVOSE, PA. 19053
BETZ MATERIAL SAFETY DATA SHEET
EMERGENCY TELEPHONE (HEALTH/ACCIDENT) 800-877-1940

PRODUCT : POWERLINE PPL08

(PAGE 1 OF 3)

EFFECTIVE DATE 02-16-91

PRINTED: 8-Apr-1991

REVISIONS TO SECTIONS: -;EDIT:APPENDIX

PRODUCT APPLICATION : WATER-BASED CORROSION INHIBITOR/DEPOSIT CONTROL AGENT.

-----SECTION 1-----HAZARDOUS INGREDIENTS-----

INFORMATION ON PHYSICAL HAZARDS, HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC PRODUCT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD IS LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE AND CHRONIC HAZARDS OF THIS FORMULATION.

THIS PRODUCT IS NOT HAZARDOUS AS DEFINED BY OSHA REGULATIONS.

-----SECTION 2-----TYPICAL PHYSICAL DATA-----

PH: AS IS	(APPROX.) 5.2	ODOR: SLIGHT
FL.PT.(DEG.F): >200 P-M(CC)		SP.GR.(70F)OR DENSITY: 1.169
VAPOR PRESSURE(mmHG): 18		VAPOR DENSITY(AIR=1): <1
VISC cps70F: 42		SOLUBILITY(WATER): 100
EVAP.RATE: NO WATER=1		APPEARANCE: YELLOW
PHYSICAL STATE: LIQUID		FREEZE POINT(DEG.F): 25

-----SECTION 3-----REACTIVITY DATA-----

STABLE.MAY REACT WITH STRONG OXIDIZERS.DO NOT CONTAMINATE.BETZ TANK
CLEAN-OUT CATEGORY 'B'

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

BETZ MATERIAL SAFETY DATA SHEET (PAGE 2 OF 3)

PRODUCT: POWERLINE PPLO8

---SECTION 4-----HEALTH HAZARD EFFECTS-----

THE SKIN EFFECTS *** PRIMARY ROUTE OF EXPOSURE

SLIGHTLY IRRITATING TO THE SKIN

ACUTE EYE EFFECTS ***

SLIGHTLY IRRITATING TO THE EYES

ACUTE RESPIRATORY EFFECTS ***

MISTS/AEROSOLS MAY CAUSE IRRITATION TO UPPER RESPIRATORY TRACT

CHRONIC EFFECTS OF OVEREXPOSURE***

NO EVIDENCE OF POTENTIAL CHRONIC EFFECTS.

MEDICAL CONDITIONS AGGRAVATED ***

NOT KNOWN

SYMPTOMS OF EXPOSURE ***

MAY CAUSE REDNESS OR ITCHING OF SKIN.

-----SECTION 5-----FIRST AID INSTRUCTIONS-----

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 EXPOSURE***

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. DILUTE CONTENTS OF STOMACH. INDUCE VOMITING BY ONE OF THE STANDARD METHODS. IMMEDIATELY CONTACT A PHYSICIAN

-----SECTION 6-----SPILL, DISPOSAL AND FIRE INSTRUCTIONS-----

SPILL INSTRUCTIONS***

VENTILATE AREA, USE SPECIFIED PROTECTIVE EQUIPMENT. CONTAIN AND ABSORB ON ABSORBENT MATERIAL. PLACE IN WASTE DISPOSAL CONTAINER. THE WASTE CHARACTERISTICS OF THE ABSORBED MATERIAL, OR ANY CONTAMINATED SOIL, SHOULD BE DETERMINED IN ACCORDANCE WITH RCRA REGULATIONS.

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 NPDES PERMIT. PRODUCT (AS IS) -

INCINERATE OR BURY IN APPROVED LANDFILL

FIRE EXTINGUISHING INSTRUCTIONS***

FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS (FULL FACE-PIECE TYPE). PROPER FIRE EXTINGUISHING MEDIA: DRY CHEMICAL, CARBON DIOXIDE, FOAM OR WATER

BETZ MATERIAL SAFETY DATA SHEET (PAGE 3 OF 3)

PRODUCT: POWERLINE PPL08

---SECTION 7-----SPECIAL PROTECTIVE EQUIPMENT-----

USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134. USE RESPIRATORS WITHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS.

VENTILATION PROTECTION***

ADEQUATE VENTILATION

RECOMMENDED RESPIRATORY PROTECTION***

IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY, USE A RESPIRATOR WITH DUST/MIST FILTERS.

RECOMMENDED SKIN PROTECTION***

RUBBER GLOVES

WASH OFF AFTER EACH USE. REPLACE AS NECESSARY

RECOMMENDED EYE PROTECTION***

SPLASH PROOF CHEMICAL GOGGLES

-----SECTION 8-----STORAGE AND HANDLING PRECAUTIONS-----

STORAGE INSTRUCTIONS***

KEEP DRUMS & PAILS CLOSED WHEN NOT IN USE.

STORE IN COOL VENTILATED LOCATION. STORE AWAY FROM OXIDIZERS

HANDLING INSTRUCTIONS***

NORMAL CHEMICAL HANDLING

THIS MSDS WAS WRITTEN TO COMPLY WITH THE OSHA HAZARD COMMUNICATION STANDARD

APPENDIX: REGULATORY INFORMATION

THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE.

CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

...TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED ON THE TSCA INVENTORY

...REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:

NOT APPLICABLE

...RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE, THE RCRA HAZARDOUS WASTE IDENTIFICATION NUMBER IS: NOT APPLICABLE

...DOT HAZARD/UN#/ER GUIDE# IS: NOT APPLICABLE

...CALIFORNIA SAFE DRINKING WATER ACT (PROPOSITION 65) MATERIALS: NONE

...SARA SECTION 302 CHEMICALS: NONE

...SARA SECTION 313 CHEMICALS: NONE

...SARA SECTION 312 HAZARD CLASS: PRODUCT IS NONHAZARDOUS UNDER SECTION 311/312

...MICHIGAN CRITICAL MATERIALS: NONE

NFPA/HMIS : HEALTH - 1 ; FIRE - 1 ; REACTIVITY - 0 ; SPECIAL - NONE ; PE - B

MATERIAL SAFETY DATA SHEET

6D25-01-07-85-544

DATE July 17, 1985

PRODUCT NAME

PCL-401



SUBSIDIARY OF MERCK & CO., INC.

SECTION I - IDENTIFICATION

MANUFACTURER'S NAME

Calgon Corporation

EMERGENCY
TELEPHONE NO.

(412) 777-8000

ADDRESS

P.O. Box 1346, Pittsburgh, Pennsylvania 15230

CHEMICAL NAME
AND SYNONYMS

Anionic Polymer

FORMULA

Multicomponent Liquid

SECTION II - HAZARDOUS INGREDIENTS

PRINCIPAL HAZARDOUS COMPONENT (S)	CAS #	% BY WEIGHT	ORAL LD ₅₀	DERMAL LD ₅₀	TLV (Units)		
					ACGIH	OSHA	OTHER
Chemical Name None							
Common Name							
Chemical Name							
Common Name							
Chemical Name							
Common Name							
Chemical Name							
Common Name							
Chemical Name							
Common Name							

SECTION III - PHYSICAL DATA

BOILING POINT (°F)	> 212	SPECIFIC GRAVITY (H ₂ O=1)	1.16 - 1.20
VAPOR PRESSURE (mmHg.)	Similar to Water	PERCENT VOLATILE BY VOLUME (%)	~ 70
VAPOR DENSITY (AIR=1)	Similar to Water	pH	4.6 ± 0.2
SOLUBILITY IN WATER	Complete	OTHER	

APPEARANCE AND ODOR

Clear, slightly viscous solution

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.

SECTION IV. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method Used)

Not Flammable

EXTINGUISHING MEDIA

Product is not flammable.

SPECIAL FIRE FIGHTING
PROCEDURES

Exercise caution when fighting any chemical fire.
A self-contained breathing apparatus is essential.

UNUSUAL FIRE AND
EXPLOSION HAZARDS

None

SECTION V. HEALTH HAZARD DATA

EFFECT OF OVEREXPOSURE

A. ACUTE

1. INGESTION

According to testing on the product, it would not be considered hazardous through ingestion. The acute oral LD₅₀ (rats) is > 5 g/kg.

2. INHALATION

LC₅₀ value - not available. The product is an aqueous solution which would not be considered hazardous through inhalation.

3. DERMAL EXPOSURE

a. TOXIC

According to testing on the product, it would not be considered hazardous through dermal absorption. The acute dermal LD₅₀ (rabbits) is > 2 g/kg.

b. IRRITATION

Testing on the product has shown that it is not a primary skin irritant. The primary skin irritation index (rabbits) is 0.09/8 and would be considered practically nonirritating.

c. SENSITIZATION

No cases of skin sensitization have been reported as a result of using the product.

4. EYE IRRITATION

The product would not be considered an eye irritant. Testing on a 28% solution of the anionic polymer in the product produced no irritation when instilled in rabbit eyes (unwashed).

B. SUBCHRONIC, CHRONIC, OTHER

No applicable information was found concerning adverse health effects resulting from subchronic and chronic exposure to the product.

FIRST AID

A. EYE

Good First Aid should be followed in all cases of exposure. In case of eye contact, flush with plenty of water for at least 15 minutes. If irritation develops, call a physician.

B. SKIN

Not Applicable

C. INGESTION

Not Applicable

D. INHALATION

Not Applicable

2

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

31

32

33

34

35

36

37

38

39

40

41

42

43

44

45

46

47

48

49

50

51

52

53

54

55

56

57

58

59

60

61

62

63

64

65

66

67

68

69

70

71

72

73

74

75

76

77

78

79

80

81

82

83

84

85

86

87

88

89

90

91

92

93

94

95

96

97

98

99

100

101

102

103

104

105

106

107

108

109

110

111

112

113

114

115

116

117

118

119

120

121

122

123

124

125

126

127

128

129

130

131

132

133

134

135

136

137

138

139

140

141

142

143

144

145

146

147

148

149

150

151

152

153

154

155

156

157

158

159

160

161

162

163

164

165

166

167

168

169

170

171

172

173

174

175

176

177

178

179

180

181

182

183

184

185

186

187

188

189

190

191

192

193

194

195

196

197

198

199

200

201

202

203

204

205

206

207

208

209

210

211

212

213

214

215

216

217

218

219

220

221

222

223

224

225

226

227

228

229

230

231

232

233

234

235

236

237

238

239

240

241

242

243

244

245

246

247

248

249

250

251

252

253

254

255

256

257

258

259

260

261

262

263

264

265

266

267

268

269

270

271

272

273

274

275

276

277

278

279

280

281

282

283

284

285

286

287

288

289

290

291

292

293

294

295

296

297

298

299

300

301

302

303

304

305

306

307

308

309

310

311

312

313

314

315

316

317

318

319

320

321

322

323

324

325

326

327

328

329

SECTION VI REACTIVITY DATA

STABILITY	STABLE	<input checked="" type="checkbox"/>	CONDITIONS TO AVOID
	UNSTABLE		

COMPATABILITY
(Materials to Avoid)

Strong oxidizers

HAZARDOUS DECOMPOSITION
PRODUCTS

Oxides of nitrogen

SECTION VII SPILL OR LEAK PROCEDURES

REPORTABLE QUANTITIES (RQ)
IN LBS OF EPA HAZARDOUS
SUBSTANCES IN PRODUCT

1. N/A

2.

3.

NOTIFY EPA OF PRODUCT SPILLS
EQUAL TO OR EXCEEDING

N/A LBS.

STEPS TO BE TAKEN IN CASE
MATERIAL IS RELEASED
OR SPILLED

Dispose of in accordance with local, state and federal regulations. Dike area to contain as much spilled material as possible. Remove any remaining material by absorbing on vermiculite or other suitable absorbing material and place in a sealed metal container for disposal. Hose spill area well since product can make floors slippery.

WASTE DISPOSAL METHOD

Dispose of in a landfill in accordance with local, state and federal regulations.

SECTION VIII HANDLING

PROTECTIVE GLOVES

Not Required

EYE PROTECTION

Not Required

OTHER PROTECTIVE
CLOTHING

Not Required

RESPIRATORY PROTECTION

Not Required

VENTILATION

Normal

LOCAL EXHAUST

Not Required

MECHANICAL
(General)

Not Required

OTHER

None

STORAGE & HANDLING

Wash thoroughly after handling.

Keep container closed.

Exercise caution in the storage and handling of all chemical substances.

OTHER PRECAUTIONS

MATERIAL SAFETY
DATA SHEET

Drew Industrial Division

ASHLAND CHEMICAL INC.

One Drew Plaza, Boonton, New Jersey 07005
Phone (201) 263-7600/Telex 13644424-HOUR
Emergency
Telephone1 (800) 274-5263
1 (800) ASHLAND

008362

WPD 11-136(TM) ANTISCALANT

Page:

THIS MSDS COMPLIES WITH 29 CFR 1910.1200 (THE HAZARD COMMUNICATION STANDARD)

Product Name: WPD 11-136(TM) ANTISCALANT
CAS NUMBER: 9003-04-7

00 10 966

Data Sheet No: 0175928-002
Prepared: 03/03/87
Supersedes: 09/12/85OLIN WATER SERVICES DIVISION
DREW INDUSTRIAL DIVISION
ONE DREW PLAZA
BOONTON

NJ 07005

PRODUCT: 5520003
INVOICE:
INVOICE DATE:
TO: OLIN WATER SERVICES DIVISION
DREW INDUSTRIAL DIVISION
BOONTON
NJ 07005

DISTRICT MANAGER

SECTION I-PRODUCT IDENTIFICATION

General or Generic ID: ANTISCALANT

DOT Hazard Classification: NOT APPLICABLE

SECTION II-COMPONENTS

IF PRESENT, IARC, NTP AND OSHA CARCINOGENS AND CHEMICALS SUBJECT TO THE REPORT-
ING REQUIREMENTS OF SARA TITLE III SECTION 313 ARE IDENTIFIED IN THIS SECTION.
SEE DEFINITION PAGE FOR CLARIFICATION

INGREDIENT	% (by WT)	PEL	TLV	Note
SODIUM POLYACRYLATE CAS #: 9003-04-7	25-40			(1)

Notes:

(1) PEL/TLV NOT ESTABLISHED FOR THIS MATERIAL

SECTION III-PHYSICAL DATA

Boiling Point	for PRODUCT	212.00 Deg F 100.00 Deg C 760.00 mm Hg
Vapor Pressure	for PRODUCT	17.50 mm Hg 68.00 Deg F 20.00 Deg C
Specific Vapor Density		LIGHTER THAN AIR
Specific Gravity		1.150 - 1.290 77.00 Deg F 25.00 Deg C
Percent Volatiles		55-70%
Evaporation Rate		SLOWER THAN ETHER
pH		5.3 - 5.7
Appearance		CLEAR, COLORLESS TO PALE STRAW
State		LIQUID
Form		HOMOGENEOUS SOLUTION

SECTION IV-FIRE AND EXPLOSION INFORMATION

FLASH POINT: NOT APPLICABLE

EXPLOSIVE LIMIT: NOT APPLICABLE

EXTINGUISHING MEDIA:

HAZARDOUS DECOMPOSITION PRODUCTS: NOT APPLICABLE

FIREFIGHTING PROCEDURES: NOT APPLICABLE

SPECIAL FIRE & EXPLOSION HAZARDS: NOT APPLICABLE

NFPA CODES: HEALTH-1 FLAMMABILITY-0 REACTIVITY-0

SECTION V-HEALTH HAZARD DATA

PERMISSIBLE EXPOSURE LEVEL: NOT ESTABLISHED; SEE SECTION VIII.

EFFECTS OF ACUTE OVEREXPOSURE:

EYES - CAN CAUSE IRRITATION.
SKIN - CAN CAUSE SLIGHT IRRITATION.
SWALLOWING - CAN CAUSE GASTROINTESTINAL IRRITATION, NAUSEA, VOMITING, AND DIARRHEA.
BREATHING: MAY CAUSE DISCOMFORT OR IRRITATION TO NASAL AND RESPIRATORY PASSAGES.

FIRST AID:

IF ON SKIN: THOROUGHLY WASH EXPOSED AREA WITH SOAP AND WATER. REMOVE CONTAMINATED CLOTHING. LAUNDRY
CONTAMINATED CLOTHING BEFORE RE-USE.

2-1-7

42

2

4 4 4 4 1

4

4

4 4 4

4

4 4 4

4

MATERIAL SAFETY
DATA SHEET**Drew Industrial Division**
ASHLAND CHEMICAL INC.
One Drew Plaza, Boonton, New Jersey 07005
Phone (201) 263-7600/Telex 13644424-HOUR
Emergency
Telephone
1(800) 274-5263 or
1(800) ASHLAND

008362

WPD 11-136(TM) ANTISCALANT

Page: 2

SECTION V-HEALTH HAZARD DATA (Continued)

IF IN EYES: FLUSH WITH LARGE AMOUNTS OF WATER, LIFTING UPPER AND LOWER LIDS OCCASIONALLY.

IF SWALLOWED: IMMEDIATELY DRINK TWO GLASSES OF WATER AND INDUCE VOMITING BY EITHER GIVING IPECAC SYRUP OR BY PLACING FINGER AT BACK OF THROAT. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. GET MEDICAL ATTENTION IMMEDIATELY.

IF BREATHED: REMOVE INDIVIDUAL TO FRESH AIR.

PRIMARY ROUTE(S) OF ENTRY:

SKIN CONTACT

SECTION VI-REACTIVITY DATA

HAZARDOUS POLYMERIZATION: CANNOT OCCUR

STABILITY: STABLE

INCOMPATIBILITY: AVOID CONTACT WITH: STRONG MINERAL ACIDS.

SECTION VII-SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

SMALL SPILL: ABSORB LIQUID ON PAPER, VERMICULITE, FLOOR ABSORBENT OR OTHER ABSORBENT MATERIAL.

LARGE SPILL: PERSONS NOT WEARING PROTECTIVE EQUIPMENT SHOULD BE EXCLUDED FROM AREA OF SPILL UNTIL CLEAN-UP HAS BEEN COMPLETED. STOP SPILL AT SOURCE, DIKE AREA OF SPILL TO PREVENT SPREADING. PUMP LIQUID TO SALVAGE TANK. REMAINING LIQUID MAY BE TAKEN UP ON SAND, CLAY, EARTH, FLOOR ABSORBENT, OR OTHER ABSORBENT MATERIAL AND SHOVELED INTO CONTAINERS.

WASTE DISPOSAL METHOD:

SMALL SPILL: DISPOSE OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

LARGE SPILL: DISPOSE OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

SECTION VIII-PROTECTIVE EQUIPMENT TO BE USED

RESPIRATORY PROTECTION: NOT REQUIRED UNDER NORMAL CONDITIONS OF USE.

VENTILATION: NOT REQUIRED UNDER NORMAL CONDITIONS OF USE.

PROTECTIVE GLOVES: WEAR RESISTANT GLOVES (CONSULT YOUR SAFETY EQUIPMENT SUPPLIER).

EYE PROTECTION: WEAR SAFETY GLASSES IN COMPLIANCE WITH OSHA REGULATIONS. (CONSULT YOUR SAFETY EQUIPMENT SUPPLIER)

OTHER PROTECTIVE EQUIPMENT: NORMAL WORK CLOTHING COVERING ARMS AND LEGS.

SECTION IX-SPECIAL PRECAUTIONS OR OTHER COMMENTS

CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTIED. SINCE EMPTIED CONTAINERS RETAIN PRODUCT RESIDUES (VAPOR, LIQUID, AND/OR SOLID), ALL HAZARD PRECAUTIONS GIVEN IN THIS DATASHEET MUST BE OBSERVED.

THE INFORMATION ACCUMULATED HEREIN IS BELIEVED TO BE ACCURATE BUT IS NOT WARRANTED TO BE WHETHER ORIGINATING WITH THE COMPANY OR NOT. RECIPIENTS ARE ADVISED TO CONFIRM IN ADVANCE OF NEED THAT THE INFORMATION IS CURRENT, APPLICABLE, AND SUITABLE TO THEIR CIRCUMSTANCES.



MATERIAL SAFETY DATA SHEET

PRODUCT NALCO 8356D DISPERSANT

Emergency Telephone Number
Medical (708) 920-1510 (24 hours)

SECTION 1 PRODUCT IDENTIFICATION

TRADE NAME: NALCO 8356D DISPERSANT

DESCRIPTION: Aqueous solution of an acrylate polymer

NFPA 704M/HMIS RATING: 1/1 HEALTH 1/1 FLAMMABILITY 0/0 REACTIVITY 0 OTHER
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

SECTION 2 HAZARDOUS INGREDIENTS

Our hazard evaluation has identified the following chemical ingredient(s) as hazardous under OSHA's Hazard Communication Rule, 29 CFR 1910.1200. Consult Section 14 for the nature of the hazard(s).

INGREDIENT(S)	CAS #	APPROX. %
Sodium bisulfite	7631-90-5	1-5

SECTION 3 PRECAUTIONARY LABEL INFORMATION

CAUTION: May cause irritation to skin and eyes. Avoid contact with skin, eyes and clothing. Do not take internally.

Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

SECTION 4 FIRST AID INFORMATION

EYES: Flush with water for 15 minutes. Call a physician.
SKIN: Flush with water for 15 minutes.
INGESTION: Do not induce vomiting. Give water. Call a physician.
INHALATION: Remove to fresh air. Treat symptoms. Call a physician.

NOTE TO PHYSICIAN: No specific antidote is known. Based on the individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical condition.

CAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.

SECTION 5 HEALTH EFFECTS INFORMATION

PRIMARY ROUTE(S) OF EXPOSURE: Eye, Skin

EYE CONTACT: May cause irritation with prolonged contact.
SKIN CONTACT: May cause irritation with prolonged contact.



MATERIAL SAFETY DATA SHEET

PRODUCT NALCO 8356D DISPERSANT

Emergency Telephone Number
Medical (708) 920-1510 (24 hours)

SECTION 5 HEALTH EFFECTS INFORMATION

(CONTINUED)

SYMPTOMS OF EXPOSURE: A review of available data does not identify any symptoms from exposure.

AGGRAVATION OF EXISTING CONDITIONS: A review of available data does not identify any worsening of existing conditions.

SECTION 6 TOXICOLOGY INFORMATION

ACUTE TOXICITY STUDIES: Acute toxicity studies have been conducted on this product. The results are shown below.

ACUTE ORAL TOXICITY (ALBINO RATS): LD50 = Greater than 5,000 mg/kg

SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

COLOR:	Clear light green	FORM:	Liquid	ODOR:	None
DENSITY:	9.6 lbs/gal.				
SOLUBILITY IN WATER:	Completely				
SPECIFIC GRAVITY:	1.16 @ 76 Degrees F			ASTM D-1298	
pH (NEAT) =	5.7			ASTM E-70	
VISCOSITY:	65 cps @ 76 Degrees F			ASTM D-2983	
FREEZE POINT:	5 Degrees F			ASTM D-1177	
FLASH POINT:	None				

NOTE: These physical properties are typical values for this product.

SECTION 8 FIRE AND EXPLOSION INFORMATION

FLASH POINT: None

EXTINGUISHING MEDIA: This product would not be expected to burn unless all the water is boiled away. The remaining organics may be ignitable. Use water to cool containers exposed to fire.

UNUSUAL FIRE AND EXPLOSION HAZARD: May evolve NOx or SOx under fire conditions.

SECTION 9 REACTIVITY INFORMATION

INCOMPATIBILITY: Avoid contact with strong oxidizers (eg. chlorine, peroxides, chromates, nitric acid, perchlorates, concentrated oxygen, permanganates) which can generate heat, fires, explosions and the release of toxic fumes.

THERMAL DECOMPOSITION PRODUCTS: In the event of combustion CO, CO2, NOx, SOx



MATERIAL SAFETY DATA SHEET

PRODUCT NALCO 8356D DISPERSANT

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 9 REACTIVITY INFORMATION

(CONTINUED)

may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.

SECTION 10 PERSONAL PROTECTION EQUIPMENT

RESPIRATORY PROTECTION: Respiratory protection is not normally needed since the volatility and toxicity are low. If significant mists or aerosols are generated, wear a NIOSH approved or equivalent respirator.

For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a pressure-demand, self-contained breathing apparatus is recommended.

VENTILATION: General ventilation is recommended.

PROTECTIVE EQUIPMENT: Use impermeable gloves and chemical splash goggles when attaching feeding equipment, doing maintenance or handling product.

If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

SECTION 11 SPILL AND DISPOSAL INFORMATION

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (708-920-1510).

SPILL CONTROL AND RECOVERY:

Small liquid spills: Contain with absorbent material, such as clay, soil or any commercially available absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCIA in Section 14.

Large liquid spills: Dike to prevent further movement and reclaim into recovery or salvage drums or tank truck for disposal. Refer to CERCIA in Section 14.

DISPOSAL: If this product becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.

As a non-hazardous liquid waste, it should be solidified with stabilizing agents (such as sand, fly ash, or cement) so that no free liquid remains before disposal to an industrial waste landfill. A non-hazardous liquid waste can also be deep-well injected in accordance with local, state and



MATERIAL SAFETY DATA SHEET

PRODUCT NALCO 8356D DISPERSANT

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 11 SPILL AND DISPOSAL INFORMATION

(CONTINUED)

federal regulations.

SECTION 12 ENVIRONMENTAL INFORMATION

If released into the environment, see CERCLA in Section 14.

SECTION 13 TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME/HAZARD CODE - PRODUCT IS NOT REGULATED
DURING TRANSPORTATION

SECTION 14 REGULATORY INFORMATION

The following regulations apply to this product.

FEDERAL REGULATIONS:

OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200:

Based on our hazard evaluation, the following ingredient in this product is hazardous and the reason is shown below.

Sodium bisulfite = TWA 5 mg/m3 ACGIH/TLV

Sodium bisulfite = TWA 5 mg/m3 OSHA/PEL

CERCLA/SUPERFUND, 40 CFR 117, 302:

Notification of spills of this product is not required.

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986
(TITLE III) - SECTIONS 302, 311, 312 AND 313:

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):

This product does not contain ingredients listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 and 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370):

Our hazard evaluation has found that this product is not hazardous under 29 CFR 1910.1200.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372):

This product does not contain ingredients (at a level of 1% or greater) on the List of Toxic Chemicals.



MATERIAL SAFETY DATA SHEET

PRODUCT NALCO 8356D DISPERSANT

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 14 REGULATORY INFORMATION

(CONTINUED)

TOXIC SUBSTANCES CONTROL ACT (TSCA):

The chemical ingredients in this product are on the 8(b) Inventory List (40 CFR 710).

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D:
Consult Section 11 for RCRA classification.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15/
formerly Sec. 307, 40 CFR 116/formerly Sec. 311:
This product contains the following ingredients covered by the Clean Water Act:

Sodium bisulfite - Section 311

CLEAN AIR ACT, 40 CFR 60, SECTION 111, 40 CFR 61, SECTION 112:
This product does not contain ingredients covered by the Clean Air Act.

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:

None of the chemicals on the current Proposition 65 list are known to be present in this product.

MICHIGAN CRITICAL MATERIALS:

This product does not contain ingredients listed on the Michigan Critical Materials Register.

STATE RIGHT TO KNOW LAWS:

The following ingredient(s) are disclosed for compliance with State Right To Know Laws:

Acrylate polymer	Trade secret
Sodium bisulfite	7631-90-5
Water	7732-18-5

INTERNATIONAL REGULATIONS:

This is not a WHMIS controlled product under The House of Commons of Canada Bill C-70.

SECTION 15 ADDITIONAL INFORMATION

Nalco internal number F 100309



MATERIAL SAFETY DATA SHEET

PRODUCT NALCO 8356D DISPERSANT

Emergency Telephone Number
Medical (708) 920-1510 (24 hours)

SECTION 16 USER'S RESPONSIBILITY

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to ensure safe workplace operations. Please consult your local sales representative for any further information.

SECTION 17 BIBLIOGRAPHY

ANNUAL REPORT ON CARCINOGENS, U.S. Department of Health and Human Services, Public Health Service, PB 33-135855, 1983.

CASARETT AND DOULL'S TOXICOLOGY, THE BASIC SCIENCE OF POISONS, Doull, J., Klaassen, C. D., and Admur, M. O., eds., Macmillan Publishing Company, Inc., N. Y., 2nd edition, 1980.

CHEMICAL HAZARDS OF THE WORKPLACE, Proctor, N. H., and Hughes, J. P., eds., J. P. Lipincott Company, N.Y., 1981.

DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS, Sax, N. Irving, ed., Van Nostrand Reinhold Company, N.Y., 6th edition, 1984.

IARC MONOGRAPHS ON THE EVALUATION OF THE CARCINOGENIC RISK OF CHEMICALS TO MAN, Geneva: World Health Organization, International Agency for Research on Cancer, 1972-1977.

PATTY'S INDUSTRIAL HYGIENE AND TOXICOLOGY, Clayton, G. D., Clayton, F. E., eds., John Wiley and Sons, N. Y., 3rd edition, Vol. 2 A-C, 1981.

REGISTRY OF TOXIC EFFECTS ON CHEMICAL SUBSTANCES, U.S. Department of Health and Human Services, Public Health Service, Center for Disease Control, National Institute for Occupational Safety and Health, 1983 supplement of 1981-1982 edition, Vol. 1-3, OH, 1984.

Title 29 Code of Federal Regulations Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA).

THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS IN THE WORKROOM ENVIRONMENT WITH INTENDED CHANGES, American Conference of Governmental Industrial Hygienists, OH.

JOHNSTON POLYMER COMPANY, INC.

P.O. Box 88 • Manvel, Texas 77578 • Phone (713) 489-9528

MATERIAL SAFETY DATA SHEET

SECTION I: PRODUCT INFORMATION

PRODUCT NAME: J-POLY 101C
CHEMICAL FAMILY: Sodium Polyacrylate
CAS NUMBER: 9003-04-7
EMERGENCY TELEPHONE NUMBER: 713-489-9528 or 713-980-7524
CHEMTREC (for emergency involving chemicals): 800-424-9300
EPA HOTLINE: 800-535-0202

SECTION II: HAZARDOUS INGREDIENTS

HAZARDOUS COMPONENTS: None

SECTION III: PHYSICAL DATA

MOLECULAR WEIGHT: 1000	pH (as is): 7.0
PERCENT SOLIDS: 50	VISCOSITY, Cp at 77 F: 1200
PERCENT VOLATILE (Water): 50	SP. G. at 77 F: 1.36
SOLUBILITY IN WATER: Complete	
APPEARANCE AND ODOR: Viscous liquid; clear to hazy	
No characteristic odor	

SECTION IV: FIRE AND EXPLOSION HAZARDS

FLASH POINT: None
EXPLOSIVE LIMITS: None
EXTINGUISHING MEDIA: Not applicable; product will not burn.
NFPA CODES: HEALTH - 0, FLAMMABILITY - 0, REACTIVITY - 0

SECTION V: HEALTH HAZARD DATA

Toxicological Information (Range Finding Studies):

Rat, Acute oral LD50	greater than 5g/kg
Rabbit, Acute dermal LD50	greater than 5g/kg
Rabbit, Eye irritation	slight
Rabbit, Skin irritation	none
Daphnia, 48 hour LC50	greater than 1000 ppm
Sunfish, 96 hour LC 50	greater than 1000 ppm
Trout, 96 hour LC50	greater than 1000 ppm

Product does not contain carcinogens subject to the reporting requirements of SARA TITLE III.

May cause irritation of skin and eyes. For eye contact, flush with water for 15 minutes; get medical attention if irritation persists. Wash skin with soap and water.

HMIS RATING HEALTH - 0, FLAMMABILITY - 0, REACTIVITY - 0

SECTION VI: REACTIVITY DATA

Product is stable; will not undergo hazardous polymerization.

SECTION VII: SPILL OR LEAK PROCEDURES

Dilute spill with small amount of water and use absorbent. Land fill in incinerate contaminated absorbent. Carry out disposal in accordance with federal, state and local regulations.

SECTION VIII: PROTECTIVE EQUIPMENT REQUIRED

Respiratory protection is not required. Use rubber gloves, boots and apron for direct handling. Use face shield or goggles for eye protection.

SECTION IX: SHIPPING INFORMATION/OTHER COMMENTS

DOT IDENTIFICATION NUMBER: N/A

DOT LABELS REQUIRED: None

REPORTABLE QUANTITY: N/A

BILL OF LADING DESCRIPTION: Cleaning/Washing Compound, NOI

PRECAUTIONARY MEASURES: Keep away from heat or open flame. Use with adequate ventilation. Do not breath vapors. Avoid prolonged or repeated contact with skin.

DEFINITIONS

NEPA RATING: System adopted by National Fire Protection Association to identify hazards in a fire situation:

0 = No known hazard

3 = Severe hazard

1 = Slight hazard

4 = Extreme hazard

2 = Moderate hazard

HMIS RATING: Hazardous Materials Identification System adopted by the National Paint & Coatings Association:

0 = Minimal hazard

3 = Serious hazard

1 = Slight hazard

4 = Severe hazard

2 = Moderate hazard

* = May be chronic

CAS NUMBER: Chemical Abstracts Service Number

SARA: Superfund Amendments Reauthorization Act of 1986 (also referred to as the "Emergency Planning and Community Right To Know Law of 1986")

DOT: Department of Transportation

Revised Feb. 1, 1990

Supercedes May, 1985

BETZ INDUSTRIAL

4636 SOMERTON ROAD TREVOSE, PA. 19047

BETZ MATERIAL SAFETY DATA SHEET

24 HOUR EMERGENCY TELEPHONE (HEALTH OR ACCIDENT) 215/355-3300

PRODUCT : CLAM'TROL CT1

EFFECTIVE DATE 10-31-88
PRINTED: 12/28/88

PRODUCT APPLICATION : WATER-BASED MICROBIAL CONTROL AGENT.

-----SECTION 1-----HAZARDOUS INGREDIENTS-----

INFORMATION ON PHYSICAL HAZARDS, HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC PRODUCT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD ARE LISTED REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE AND CHRONIC HAZARDS OF THIS FORMULATION.

ETHYLENE GLYCOL***CAS#107-21-1; LIVER, KIDNEY AND BLOOD TOXIN; CNS DEPRESSANT; ANIMAL TERATOGEN(HIGH ORAL DOSES); PEL: NONE; TLV: 50PPM(CEILING).

ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE***CAS#68424-85-1; CORROSIVE(EYES); PEL: NONE; TLV: NONE.

ISOPROPYL ALCOHOL*** (IPA); CAS#67-63-0; FLAMMABLE LIQUID; CHRONIC OVEREXPOSURE MAY CAUSE LIVER AND KIDNEY TOXICITY; PEL/TLV: 400PPM.

DODECYLGUANIDINE HYDROCHLORIDE*** (DGH); CAS#13590-97-1; CORROSIVE; PEL: NONE; TLV: NONE.

-----SECTION 2-----TYPICAL PHYSICAL DATA-----

PH: AS IS	(APPROX.) 5.3	ODOR: MILD
FL.PT. (DEG.F): 116	SETA(CC)	SP.GR.(70F)OR DENSITY: 1.022
VAPOR PRESSURE(mmHG): 23		VAPOR DENSITY(AIR=1): >1
VISC cps70F: 23		%SOLUBILITY(WATER): 100
EVAP.RATE: (1 ETHER=1		APPEARANCE: COLORLESS
PHYSICAL STATE: LIQUID		FREEZE POINT(DEG.F): <-30

-----SECTION 3-----REACTIVITY DATA-----

STABLE

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

MATERIAL SAFETY DATA SHEET (PAGE 2 OF 3)

PRODUCT: CLAM'TROL CT1

EFFECTIVE DATE 10-31-

-----SECTION 4-----HEALTH HAZARD EFFECTS-----

CUTE SKIN EFFECTS *** PRIMARY ROUTE OF EXPOSURE

CORROSIVE TO SKIN. POTENTIAL SKIN SENSITIZER

CUTE EYE EFFECTS ***

CORROSIVE TO THE EYES

CUTE RESPIRATORY EFFECTS *** PRIMARY ROUTE OF EXPOSURE

VAPORS, GASES, MISTS AND/OR AEROSOLS CAUSE IRRITATION TO UPPER
RESPIRATORY TRACT

CHRONIC EFFECTS OF OVEREXPOSURE***

PROLONGED OR REPEATED OVEREXPOSURES MAY CAUSE: TISSUE NECROSIS; BLOOD CELL
DAMAGE OR IMPAIR BLOOD CELL FUNCTION; REPRODUCTIVE SYSTEM TOXICITY; SKIN
SENSITIZATION.

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.

PRECAUTIONARY STATEMENT BASED ON TESTING RESULTS ***

MAY BE TOXIC IF ORALLY INGESTED.

-----SECTION 5-----FIRST AID INSTRUCTIONS-----

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 EXPOSURE***

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
DO NOT INDUCE VOMITING. IMMEDIATELY CONTACT PHYSICIAN. DILUTE CONTENTS OF
STOMACH USING 3-4 GLASSES MILK OR WATER

-----SECTION 6-----SPILL, DISPOSAL AND FIRE INSTRUCTIONS-----

PILL INSTRUCTIONS***

VENTILATE AREA. USE SPECIFIED PROTECTIVE EQUIPMENT. CONTAIN AND
ABSORB ON ABSORBENT MATERIAL. PLACE IN WASTE DISPOSAL CONTAINER. THE
CONTAMINATED ABSORBENT SHOULD BE CONSIDERED A PESTICIDE AND
DISPOSED OF IN AN APPROVED PESTICIDE LANDFILL. SEE PRODUCT LABEL
STORAGE AND DISPOSAL INSTRUCTIONS.

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 NPDES PERMIT
PRODUCT (AS IS) -

BURY IN AN APPROVED PESTICIDE FACILITY OR DISPOSE OF IN
ACCORDANCE WITH LABEL INSTRUCTIONS

FIRE EXTINGUISHING INSTRUCTIONS***

FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING
APPARATUS (FULL FACE-PIECE TYPE).

DRY CHEMICAL, CARBON DIOXIDE, FOAM OR WATER

MATERIAL SAFETY DATA SHEET (PAGE 3 OF 3)

PRODUCT: CLAM'TROL CT1

EFFECTIVE DATE 10-31-88

-----SECTION 7-----SPECIAL PROTECTIVE EQUIPMENT-----

USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134. USE RESPIRATORS WITHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS.

VENTILATION PROTECTION***

ADEQUATE VENTILATION TO MAINTAIN AIR CONTAMINANTS BELOW EXPOSURE LIMITS
RECOMMENDED RESPIRATORY PROTECTION***

IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY,
USE A RESPIRATOR WITH ORGANIC VAPOR CARTRIDGES AND DUST/MIST PREFILTERS.

RECOMMENDED SKIN PROTECTION***

GAUNTLET-TYPE RUBBER GLOVES, CHEMICAL RESISTANT APRON

WASH OFF AFTER EACH USE. REPLACE AS NECESSARY

RECOMMENDED EYE PROTECTION***

SPLASH PROOF CHEMICAL GOGGLES. FACE SHIELD

-----SECTION 8-----STORAGE AND HANDLING PRECAUTIONS-----

STORAGE INSTRUCTIONS***

KEEP DRUMS & PAILS CLOSED WHEN NOT IN USE.

STORE IN COOL VENTILATED LOCATION. STORE AWAY FROM OXIDIZERS

HANDLING INSTRUCTIONS***

IMMEDIATELY REMOVE CONTAMINATED CLOTHING, WASH BEFORE REUSE
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.

THIS MSDS COMPLIES WITH THE OSHA HAZARD COMMUNICATION STANDARD
HAROLD M. HERSH (ENVIRONMENTAL INFORMATION COORDINATOR)

APPENDIX: REGULATORY INFORMATION

THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE
EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE.
ANY CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

...TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED IN THE TSCA INVENTORY

...FIFRA(40CFR):EPA REG.NO. 3876- 145

...REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:

NOT APPLICABLE

...RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE, THE RCRA HAZARDOUS WASTE

IDENTIFICATION NUMBER IS: D001=IGNITABLE; D002=CORROSIVE

...DOT HAZARD CLASSIFICATION: CORROSIVE TO SKIN, COMBUSTIBLE

...DOT SHIPPING DESIGNATION IS: UN1760 CORROSIVE LIQUID, N.O.S.

... THIS PRODUCT CONTAINS THESE CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO
CAUSE CANCER OR REPRODUCTIVE TOXICITY: NONE PRESENT IN SIGNIFICANT AMOUNTS

...SARA SECTION 302 CHEMICALS: NONE PRESENT IN SIGNIFICANT AMOUNTS

...SARA SECTION 313 CHEMICALS: ETHYLENE GLYCOL(107-21-1) , 21.0-30.0% ;

...SARA SECTION 312 HAZARD CLASS: IMMEDIATE(ACUTE), DELAYED(CHRONIC) AND FIRE

...MICHIGAN CRITICAL MATERIALS: NONE PRESENT IN SIGNIFICANT AMOUNTS

...NFPA/HMIS : HEALTH - 3 ; FIRE - 2 ; REACTIVITY - 0 ; SPECIAL - CORR ; PE - D

BETZ LABORATORIES, INC.
4636 SOMERTON ROAD, TREVOSE, PA. 19047

2/22/89

PRODUCT: CLAM-TROL CT-1

AQUATIC TOXICOLOGY

RAINBOW TROUT

0% MORTALITY: 10 MG/L
96 HR. LC50: 14.7 MG/L

DAPHNIA MAGNA

0% MORTALITY: 0.16 MG/L
48 HR. LC50: 0.4 MG/L

FATHEAD MINNOW

0% MORTALITY: 1.55 MG/L
96 HR. LC50: 3.0 MG/L

2/22/89

MAMMALIAN TOXICOLOGY

ORAL LD50 -NO DATA

DERMAL LD50 -NO DATA

SKIN IRRITATION SCORE-NO DATA

EYE IRRITATION SCORE-NO DATA

INHALATION-NO DATA

MATERIAL SAFETY DATA SHEET

DATE March 13, 1990

PRODUCT NAME

H-130 Microbiocide



SUBSIDIARY OF MERCK & CO., INC.

SECTION I

MANUFACTURER'S NAME

Calgon Corporation

EMERGENCY
TELEPHONE NO. (412) 777-8000

ADDRESS

P.O. Box 1346, Pittsburgh, Pennsylvania 15230

CHEMICAL NAME
AND SYNONYMS

Microbiocide

FORMULA

Multicomponent Liquid

SECTION II HAZARDOUS INGREDIENTS

PRINCIPAL HAZARDOUS COMPONENT (S)		CAS #	% BY WEIGHT	ORAL LD ₅₀	DERMAL LD ₅₀	TLV (Units)		
						ACGIH	OSHA	OTHER
Chemical Name	Didecyl Dimethyl Ammonium Chloride	7173-51-5	50	450 mg/kg	Not Available	Not Listed	Not Listed	N/A
Common Name								
Chemical Name	Ethanol	64-17-5	10	14 g/kg	Not Available	TWA - 1000 ppm	PEL - 1000 ppm	N/A
Common Name	Ethyl Alcohol							
Chemical Name								
Common Name								
Chemical Name								
Common Name								
Chemical Name								
Common Name								

SECTION III PHYSICAL DATA

BOILING POINT (° F)	212	SPECIFIC GRAVITY (H ₂ O=1)	0.9
VAPOR PRESSURE (mmHg.)	Unknown	PERCENT VOLATILE BY VOLUME (%)	50
VAPOR DENSITY (AIR=1)	Unknown	pH	7.3 - 9.0
SOLUBILITY IN WATER	Complete	OTHER	N/A

APPEARANCE AND ODOR

Colorless to yellow, slightly viscous liquid

N/A = Not applicable

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.

SECTION IV. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method Used)

115°F (C.O.C); This product is combustible.

EXTINGUISHING MEDIA

Use dry chemical, foam, CO₂

SPECIAL FIRE FIGHTING PROCEDURES

Exercise caution when fighting any chemical fire. A self-contained breathing apparatus and protective clothing are essential.

UNUSUAL FIRE AND EXPLOSION HAZARDS

None

SECTION V. HEALTH HAZARD DATA

EFFECT OF OVEREXPOSURE

A. ACUTE

1. INGESTION

This product may be expected to be harmful or fatal if swallowed.

2. INHALATION

This product is expected to present a low potential inhalation hazard.

3. DERMAL EXPOSURE

a. TOXIC

This product would not be expected to produce systemic toxicity if it is absorbed through the skin.

b. IRRITATION

This product may be expected to cause burns upon contact with the skin. The severity of the burn is generally determined by the concentration of the solution and the duration of the exposure.

c. SENSITIZATION

No data were available to suggest that this product may produce an allergic skin reaction.

4. EYE IRRITATION

This product may be expected to cause burns to the eye.

B. SUBCHRONIC, CHRONIC, OTHER

No data were available to indicate that this product may produce adverse health effects following subchronic or chronic exposure.

FIRST AID

A. EYE

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Seek medical aid.

B. SKIN

In case of contact, immediately wash with soap and plenty of water for at least 15 minutes. Seek medical aid. Remove and wash contaminated clothing before reuse.

C. INGESTION

If swallowed, drink promptly a large quantity of milk, egg whites, gelatin solution; or if these are not available, drink large quantities of water. Avoid alcohol. Call physician immediately.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, respiratory depression and convulsions may be needed.

D. INHALATION

Not applicable

SECTION VI: REACTIVITY DATA

STABILITY	STABLE	X	CONDITIONS TO AVOID	Store away from heat and flame. Do not contaminate water, food or feed by storage or disposal.
	UNSTABLE			
<hr/>				
INSTABILITY				
(Materials to Avoid)				
Strong oxidizers				

HAZARDOUS DECOMPOSITION PRODUCTS

During decomposition, NH₃ may be released.

SECTION VII: SPILL OR LEAK PROCEDURES

REPORTABLE QUANTITIES (RQ)
IN LBS OF EPA HAZARDOUS
SUBSTANCES IN PRODUCT

1. N/A

2.

3.

NOTIFY EPA OF PRODUCT SPILLS
EQUAL TO OR EXCEEDING

N/A LBS.

STEPS TO BE TAKEN IN CASE
MATERIAL IS RELEASED
OR SPILLED

Dispose of in accordance with local, state and federal regulations. Pesticides are acutely hazardous.
Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law.

WASTE DISPOSAL METHOD Dispose of in a landfill or incinerate in accordance with local, state and federal regulations. This product is toxic to fish. Do not discharge into lakes, streams, ponds, estuaries, oceans, or public waters unless in accordance with NPDES permit. Do not discharge effluent containing this product to sewer systems without previously notifying the sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency or hazardous waste representative at the nearest EPA Regional Office for guidance.

SECTION VIII: HANDLING/STORAGE

PROTECTIVE GLOVES

Rubber

EYE PROTECTION

Chemical splash goggles or face shield

OTHER PROTECTIVE
CLOTHING

Not required

RESPIRATORY PROTECTION Not required, however if the recommended ACGIH-TLV or OSHA-PEL for ethyl alcohol is exceeded, then a NIOSH/MSHA approved respirator should be used. (See Section II)

VENTILATION

LOCAL EXHAUST

Recommended

MECHANICAL
(General)

Recommended

OTHER

Use only in well-ventilated areas that will maintain air levels below limits established by local, state and federal regulations.

STORAGE & HANDLING

DANGER!

Corrosive.

Causes severe eye and skin damage.

Harmful or fatal if swallowed.

Do not get in eyes, on skin or clothing.

Wear chemical splash goggles or face shield and rubber gloves when handling.

Avoid contamination with food.

OTHER PRECAUTIONS

For container disposal, triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other approved state and local procedures.

MATERIAL SAFETY
DATA SHEET

Drew Industrial Division

ASHLAND CHEMICAL INC.

One Drew Plaza, Boonton, New Jersey 07005

Phone (201) 263-7800/Telex 138444

24-HOUR
Emergency
Telephone1 (800) 274-5263
1 (800) ASHLAND

000034

OLIN 3204 ALGICIDE

Page:

THIS MSDS COMPLIES WITH 29 CFR 1910.1200 (THE HAZARD COMMUNICATION STANDARD)

Product Name: OLIN 3204 ALGICIDE

DREW INDUSTRIAL DIV.
8717 W. 110TH ST., #100
OVERLAND PARK, KS 66210

OD 91 013, 0093553-494

Data Sheet No: 0245064-002
Prepared: 01/18/91
Supersedes: 11/08/90PRODUCT:
INVOICE: REQST
INVOICE DATE: 01/30/91
TO:

SECTION I PRODUCT IDENTIFICATION

General or Generic ID: ALGICIDE

DOT Hazard Classification: NOT APPLICABLE

SECTION II COMPONENTS

IF PRESENT, IARC, NTP AND OSHA CARCINOGENS AND CHEMICALS SUBJECT TO THE REPORT-
ING REQUIREMENTS OF SARA TITLE III SECTION 313 ARE IDENTIFIED IN THIS SECTION.
SEE DEFINITION PAGE FOR CLARIFICATION

INGREDIENT	% (by WT)	PEL	TLV	Note
QUATERNARY AMMONIUM COMPO POLYETHOXYLATE	10-25			(1)

Notes:

(1) PEL/TLV NOT ESTABLISHED FOR THIS MATERIAL

SECTION III PHYSICAL DATA

Boiling Point	for COMPONENT(70-85%)	212.00 Deg F 100.00 Deg C 760.00 mm Hg
Vapor Pressure	for COMPONENT(%)	17.80 mm Hg 68.00 Deg F 20.00 Deg C
Specific Vapor Density	AIR = 1	> 1.0
Specific Gravity		1.030 77.00 Deg F 25.00 Deg C
Percent Volatiles		77.00%
Evaporation Rate		SLOWER THAN ETHER
Appearance		CLEAR LIGHT YELLOW
State		LIQUID

SECTION IV FIRE AND EXPLOSION INFORMATION

FLASH POINT NOT APPLICABLE

EXPLOSIVE LIMIT NOT APPLICABLE

EXTINGUISHING MEDIA: WATER FOG

HAZARDOUS DECOMPOSITION PRODUCTS: THERMAL DECOMPOSITION OR COMBUSTION MAY PRODUCE: CARBON DIOXIDE AND CARBON MONOXIDE, AMMONIA, OXIDES OF NITROGEN, AND/OR, HYDROGEN CHLORIDE

FIREFIGHTING PROCEDURES: WEAR SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN THE POSITIVE PRESSURE DEMAND MODE AND FULL BODY PROTECTION WHEN FIGHTING FIRES.

WATER MAY BE USED TO EXTINGUISH FIRE BY COOLING, AND DILUTING LIQUID WITH WATER.

SPECIAL FIRE & EXPLOSION HAZARDS: NOT APPLICABLE

NFPA CODES: HEALTH- 1 FLAMMABILITY- 1 REACTIVITY- 0

SECTION V HEALTH HAZARD DATA

PERMISSIBLE EXPOSURE LEVEL: NOT ESTABLISHED.

EFFECTS OF ACUTE OVEREXPOSURE:

EYES - MAY CAUSE IRRITATION.
SKIN - CAN CAUSE SLIGHT IRRITATION.
BREATHING - EXCESSIVE INHALATION OF VAPORS CAN CAUSE NASAL AND RESPIRATORY IRRITATION.
SWALLOWING - CAN CAUSE GASTROINTESTINAL IRRITATION, NAUSEA, VOMITING, AND DIARRHEA.

FIRST AID:

IF ON SKIN: THOROUGHLY WASH EXPOSED AREA WITH SOAP AND WATER. REMOVE CONTAMINATED CLOTHING. LAUNDRY CONTAMINATED CLOTHING BEFORE RE-USE.

MATERIAL SAFETY
DATA SHEET**Drew Industrial Division**ASHLAND CHEMICAL INC.
One Drew Plaza, Boonton, New Jersey 07005
Phone (201) 283-7800/Telex 13844424-HOUR
Emergency
Telephone1 (800) 274-5263 or
1 (800) ASHLAND

000034

OLIN 3204 ALGICIDE

Page: 2

SECTION V-HEALTH HAZARD DATA (Continued)

ATTENTION, IF IRRITATION PERSISTS.

IF SWALLOWED: DO NOT INDUCE VOMITING. IMMEDIATELY DRINK TWO GLASSES OF WATER. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. CALL PHYSICIAN OR TRANSPORT TO AN EMERGENCY FACILITY.

IF BREATHED: IF AFFECTED, REMOVE INDIVIDUAL TO FRESH AIR. IF BREATHING IS DIFFICULT, ADMINISTER OXYGEN. IF BREATHING HAS STOPPED GIVE ARTIFICIAL RESPIRATION. KEEP PERSON WARM, QUIET AND GET MEDICAL ATTENTION.

PRIMARY ROUTE(S) OF ENTRY:

INHALATION, SKIN CONTACT

SECTION VI REACTIVITY DATA

HAZARDOUS POLYMERIZATION: CANNOT OCCUR

STABILITY: STABLE

INCOMPATIBILITY: AVOID CONTACT WITH: EXCESSIVE HEAT, STRONG OXIDIZING AGENTS.

SECTION VII SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

SMALL SPILL: PERSONS NOT WEARING PROPER PERSONAL PROTECTIVE EQUIPMENT SHOULD BE EXCLUDED FROM AREA OF SPILL.

ABSORB LIQUID ON PAPER, VERMICULITE, FLOOR ABSORBENT OR OTHER ABSORBENT MATERIAL.

LARGE SPILL: PERSONS NOT WEARING PROTECTIVE EQUIPMENT SHOULD BE EXCLUDED FROM AREA OF SPILL UNTIL CLEAN-UP HAS BEEN COMPLETED. STOP SPILL AT SOURCE. DIKE AREA OF SPILL TO PREVENT SPREADING. PUMP LIQUID TO SALVAGE TANK. REMAINING LIQUID MAY BE TAKEN UP ON SAND, CLAY, EARTH, FLOOR ABSORBENT, OR OTHER ABSORBENT MATERIAL AND SHOVELED INTO CONTAINERS.

PREVENT RUN-OFF TO SEWERS, STREAMS OR OTHER BODIES OF WATER. IF RUN-OFF OCCURS, NOTIFY PROPER AUTHORITIES AS REQUIRED, THAT A SPILL HAS OCCURED.

WASTE DISPOSAL METHOD:

SMALL SPILL: DISPOSE OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

LARGE SPILL: DISPOSE OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

SECTION VIII PROTECTIVE EQUIPMENT TO BE USED

RESPIRATORY PROTECTION: IF OVEREXPOSURE HAS BEEN DETERMINED OR DOCUMENTED, A NIOSH/MSHA JOINTLY APPROVED AIR SUPPLIED RESPIRATOR IS ADVISED IN ABSENCE OF PROPER ENVIRONMENTAL CONTROL. OSHA REGULATIONS ALSO PERMIT OTHER NIOSH/MSHA RESPIRATORS UNDER SPECIFIED CONDITIONS. (SEE YOUR SAFETY EQUIPMENT SUPPLIER). ENGINEERING OR ADMINISTRATIVE CONTROLS SHOULD BE IMPLEMENTED TO REDUCE EXPOSURE.

VENTILATION: PROVIDE SUFFICIENT MECHANICAL (GENERAL AND/OR LOCAL EXHAUST) VENTILATION TO MAINTAIN EXPOSURE BELOW LEVEL OF OVEREXPOSURE (FROM KNOWN, SUSPECTED OR APPARENT ADVERSE EFFECTS).

PROTECTIVE GLOVES: WEAR RESISTANT GLOVES SUCH AS: NATURAL RUBBER

EYE PROTECTION: CHEMICAL SPLASH GOGGLES IN COMPLIANCE WITH OSHA REGULATIONS ARE ADVISED. HOWEVER, OSHA REGULATIONS ALSO PERMIT OTHER TYPE SAFETY GLASSES. (CONSULT YOUR SAFETY EQUIPMENT SUPPLIER)

OTHER PROTECTIVE EQUIPMENT: TO PREVENT SKIN CONTACT, WEAR IMPERVIOUS CLOTHING AND BOOTS.

EYEWASH STATION, EMERGENCY SHOWER.

SECTION IX SPECIAL PRECAUTIONS OR OTHER COMMENTS

CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTIED. SINCE EMPTIED CONTAINERS RETAIN PRODUCT RESIDUES (VAPOR, LIQUID, AND/OR SOLID), ALL HAZARD PRECAUTIONS GIVEN IN THIS DATASHEET MUST BE OBSERVED.

KEEP FROM FREEZING.

THE INFORMATION ACCUMULATED HEREIN IS BELIEVED TO BE ACCURATE BUT IS NOT WARRANTED TO BE WHETHER ORIGINATING WITH THE COMPANY OR NOT. RECIPIENTS ARE ADVISED TO CONFIRM IN ADVANCE OF NEED THAT THE INFORMATION IS CURRENT, APPLICABLE, AND SUITABLE TO THEIR CIRCUMSTANCES.

72-62-7930-01

Material Safety Data Sheet

TO VALLEY FORGE
DREW INDUSTRIAL DIVISION
 ASHLAND CHEMICAL COMPANY DIV. ASHLAND OIL, INC.
 One Drew Plaza, Boonton, New Jersey 07005
 Phone (201) 263-7800/Telex 138444
 24-HOUR EMERGENCY TELEPHONE 606/324-1133

P.06

DEFINITIONS

This definition page is intended for use with Material Safety Data Sheets supplied by the Drew Chemical Corporation. Recipients of these data sheets should consult the OSHA Safety and Health Standards (29 CFR 1910), particularly subpart G - Occupational Health and Environmental Control, and subpart I - Personal Protective Equipment, for general guidance on control of potential Occupational Health and Safety Hazards.

SECTION I
PRODUCT IDENTIFICATION

GENERAL OR GENERIC ID: Chemical family or product description.

DOT HAZARD CLASSIFICATION: Product meets DOT criteria for hazards listed.

SECTION II
COMPONENTS

Components are listed in this section if they present a physical or health hazard and are present at or above 1% in the mixture. If a component is identified as a CARCINOGEN by NTP, IARC or OSHA as of the date on the MSDS, it will be listed and footnoted in this section when present at or above 0.1% in the product. Negative conclusions concerning carcinogenicity are not reported. Additional health information may be found in Section V. Components subject to the reporting requirements of Section 313 of SARA Title III are identified in the footnotes in this section, along with typical percentages. Other components may be listed if deemed appropriate.

Exposure recommendations are for components. OSHA Permissible Exposure Limits (PELs) and American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) appear on the line with the component identification. Other recommendations appear as footnotes.

SECTION III
PHYSICAL DATA

BOILING POINT: Of product if known. The lowest value of the components is listed for mixtures.

VAPOR PRESSURE: Of product if known. The highest value of the components is listed for mixtures.

SPECIFIC VAPOR DENSITY: Compared to AIR = 1. If Specific Vapor Density of product is not known, the value is expressed as lighter or heavier than air.

SPECIFIC GRAVITY: Compared to WATER = 1. If Specific Gravity of product is not known, the value is expressed as less than or greater than water.

pH: If applicable.

PERCENT VOLATILES: Percentage of material with initial boiling point below 425 degrees Fahrenheit.

EVAPORATION RATE: Indicated as faster or slower than ETHYL ETHER, unless otherwise stated.

SECTION IV
FIRE AND EXPLOSION DATA

FLASH POINT: Method identified.

EXPLOSION LIMITS: For product if known. The lowest value of the components is listed for mixtures.

HAZARDOUS DECOMPOSITION PRODUCTS: Known or expected hazardous products resulting from heating, burning or other reactions.

SECTION IV (cont.)

EXTINGUISHING MEDIA: Following National Fire Protection Association criteria.

FIREFIGHTING PROCEDURES: Minimum equipment to protect firefighters from toxic products of vaporization, combustion or decomposition in fire situations. Other firefighting hazards may also be indicated.

SPECIAL FIRE AND EXPLOSION HAZARDS: States hazards not covered by other sections.

NFPA CODES: Hazard ratings assigned by the National Fire Protection Association.

SECTION V
HEALTH HAZARD DATA

PERMISSIBLE EXPOSURE LIMIT: For product.

THRESHOLD LIMIT VALUE: For product.

EFFECTS OF ACUTE OVEREXPOSURE: Potential local and systemic effects due to single or short term overexposure to the eyes and skin or through inhalation or ingestion.

EFFECTS OF CHRONIC OVEREXPOSURE: Potential local and systemic effects due to repeated or long term overexposure to the eyes and skin or through inhalation or ingestion.

FIRST AID: Procedures to be followed when dealing with accidental overexposure.

PRIMARY ROUTE OF ENTRY: Based on properties and expected use.

SECTION VI
REACTIVITY DATA

HAZARDOUS POLYMERIZATION: Conditions to avoid to prevent hazardous polymerization resulting in a large release of energy.

STABILITY: Conditions to avoid to prevent hazardous or violent decomposition.

INCOMPATIBILITY: Materials and conditions to avoid to prevent hazardous reactions.

SECTION VII
SPILL OR LEAK PROCEDURES

Reasonable precautions to be taken and methods of containment, clean-up and disposal. Consult federal, state and local regulations for accepted procedures and any reporting or notification requirements.

SECTION VIII
PROTECTIVE EQUIPMENT TO BE USED

Protective equipment which may be needed when handling the product.

SECTION IX
SPECIAL PRECAUTIONS OR OTHER COMMENTS

Covers any relevant points not previously mentioned.

ADDITIONAL COMMENTS

Containers should be either reconditioned by CERTIFIED firms or properly disposed of by APPROVED firms. Disposal of containers should be in accordance with applicable laws and regulations. "EMPTY" drums should not be given to individuals. Serious accidents have resulted from the misuse of "EMPTIED" containers (drums, pails, etc.). Refer to Sections IV and IX.

