

COOLING TOWER TREATMENT

① PREVENTION OF CORROSION

- ☐ Sodium chromate, sodium dichromate
- ☐ Phosphates and polyphosphates
- ☐ Zinc chromates and arsenates
- ☐ Potassium ferrocyanide (potassium ferricyanate)

② PREVENTION OF BIOLOGICAL FOULING

- ☐ Chlorine and compounds
- ☐ Methylene bithiocyanate
and chloroethylene bithiocyanate
- ☐ Acrolein
- ☐ Distannoxane (bis(tri-n-butyltin)oxide)
- ☐ Dodecylguanidine hydrochloride
- ☐ Chlorophenols
- ☐ Quaternary ammonium salts
- ☐ Dithiocarbamates
- ☐ Alkylamines
- ☐ 2-Mercaptobenzothiazole

③ CONTROL OF DISEASE:

- ☐ Chlorination

Material Safety Data Sheet



ASHLAND CHEMICAL COMPANY, DIV. ASHLAND OIL INC.
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001144

PERFORMAX(TM) 400 COOLING WATER TREATMNT

Page: 1

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

Product Name: PERFORMAX(TM) 400 COOLING WATER TREATMNT

DREW CHEMICAL CORPORATION
110 GENESSEE STREET
SUITE 360
AUBURN

NY13021

OD 10 023

PRODUCT: 4658003
INVOICE:
INVOICE DATE:
TO:

Data Sheet No: 0197352-003
Prepared: 07/12/88
Supersedes: 07/20/87

DISTRICT MANAGER

SECTION II - PRODUCT IDENTIFICATION

General or Generic ID: COOLING WATER TREATMENT

DOT Hazard Classification: CORROSIVE MATERIAL (173.240)

SECTION III - COMPONENTS

IF PRESENT, IARC, NTP AND OSHA CARCINOGENS ARE IDENTIFIED IN THIS SECTION
SEE DEFINITION PAGE FOR CLARIFICATION

INGREDIENT	% (bv WT)	PEL	TLV	Note
POTASSIUM PHOSPHATE CAS #: 7778-55-2	10-25			(1)
ACRYLIC POLYMER *	1-10			(2)
INORGANIC SALT *	1-10			(3)
POTASSIUM HYDROXIDE CAS #: 1310-58-3	1-10		2 MG/M3 - CEILING	(4)
TRIAZOLE *	1-10			(5)
PHOSPHONIC ACID DERIVATIVE *	1-10			(6)

Notes:

- (1) PEL/TLV NOT ESTABLISHED FOR THIS MATERIAL
(2) PEL/TLV NOT ESTABLISHED FOR THIS MATERIAL
(3) PEL/TLV NOT ESTABLISHED FOR THIS MATERIAL
(4) PEL NOT ESTABLISHED FOR THIS MATERIAL
(5) PEL/TLV NOT ESTABLISHED FOR THIS MATERIAL
(6) PEL/TLV NOT ESTABLISHED FOR THIS MATERIAL

* THE SPECIFIC CHEMICAL IDENTITY HAS BEEN WITHHELD AS A TRADE SECRET.

SECTION IV - PHYSICAL DATA

Boiling Point	for COMPONENT(55-70%)	212.00 Deg F (100.00 Deg C) 760.00 mm Hg
Vapor Pressure	for COMPONENT(55-70%)	17.50 mm Hg 68.00 Deg F 20.00 Deg C
Specific Vapor Density	UNAVAILABLE	
Specific Gravity		1.260 - 1.280 77.00 Deg F 25.00 Deg C
Percent Volatiles		55-70%
Evaporation Rate	UNAVAILABLE	
pH		12.5 - 13.1
Appearance		CLEAR, YELLOW
State		LIQUID

SECTION V - FIRE AND EXPLOSION INFORMATION

FLASH POINT NOT APPLICABLE

EXPLOSIVE LIMIT UNAVAILABLE

EXTINGUISHING MEDIA: REGULAR FOAM OR WATER FOG OR CARBON DIOXIDE OR DRY CHEMICAL

Material Safety Data Sheet



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PERFORMAX(TM) 400 COOLING WATER TREATMNT

Page: 2

~~SECTION IV - FIRE AND EXPLOSION INFORMATION (Continued)~~

HAZARDOUS DECOMPOSITION PRODUCTS: THERMAL DECOMPOSITION OR COMBUSTION MAY PRODUCE: NITROGEN COMPOUNDS, PHOSPHOROUS COMPOUNDS, CARBON DIOXIDE AND CARBON MONOXIDE, VARIOUS HYDROCARBONS

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.

SPECIAL FIRE & EXPLOSION HAZARDS: NEVER USE WELDING OR CUTTING TORCH ON OR NEAR DRUM (EVEN EMPTY) BECAUSE PRODUCT (EVEN JUST RESIDUE) CAN IGNITE EXPLOSIVELY.

~~SECTION V - HEALTH HAZARD DATA~~

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

EFFECTS OF ACUTE OVEREXPOSURE: FOR PRODUCT

SKIN - CAUSES BURNS.

EYES - CAUSES BURNS.

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

BREATHING - CAN CAUSE DAMAGE TO NASAL AND RESPIRATORY PASSAGES.

FIRST AID:

IF ON SKIN: IMMEDIATELY FLUSH EXPOSED AREA WITH WATER FOR AT LEAST 15 MINUTES, GET MEDICAL ATTENTION. REMOVE CONTAMINATED CLOTHING. LAUNDRY CONTAMINATED CLOTHING BEFORE RE-USE.

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.

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

~~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 AND TRANSFER TO HOOD.

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 OCCURRED.

WASTE DISPOSAL METHOD:

SMALL SPILL: FLUSH DOWN DRAIN WITH LARGE AMOUNTS OF WATER IN ACCORDANCE WITH APPLICABLE 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 TLV(S).

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 THIS DATASHEET MUST BE OBSERVED.

KEEP FROM FREEZING.



001144

PERFORMAX(TM) 400 COOLING WATER TREATMENT

Page: 3

~~SECTION SIX SPECIAL PRECAUTIONS OR OTHER COMMENTS (Continued)~~

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.

Toxicity of Selected Microbicides

<i>Microbicide</i>	<i>Usual Concentration (%)</i>	<i>Absorbed Through Skin</i>	<i>Causes Conjunctivitis</i>	<i>Causes Corneal Damage</i>	<i>Skin Burns</i>	<i>Oral LD₅₀ mg/kg</i>
Acrolein	90	+		+	+	40
Bis(tri- <i>n</i> -butyltin)oxide	5	+	+	+	+	190
Chlorine	100			+		—
Chlorine Dioxide (stabilized)	6		+	+	+	—
2,2-Dibromo-3-nitropropionamide	20		+		+	130
Dodecylguanidine hydrochloride	35	+	+			700
Methylene bithiocyanate	10	+	+	+	+	230
Pentachlorophenol	100	+	+	+	+	200
Quaternary Ammonium Salts	50	+	+			2000
Sodium Dimethyldithiocarbamate	30	+	+			500

Material Safety Data Sheet



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Page: 1

001166

BIOSPERSE(R) 250 MICROBIOCIDAL

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

Product Name: BIOSPERSE(R) 250 MICROBIOCIDAL

DREW CHEMICAL CORPORATION
110 GENESSEE STREET
SUITE 360
AUBURN
NY13021

00 10 023

PRODUCT: D1551002
INVOICE:
INVOICE DATE:
TO:

Data Sheet No: 0137221-003
Prepared: 05/31/88
Supersedes: 09/10/86

DISTRICT MANAGER

SECTION I - PRODUCT IDENTIFICATION

General or Generic ID: MICROBIOCIDAL

DOT Hazard Classification: CORROSIVE MATERIAL (173.240)

SECTION II - COMPONENTS

IF PRESENT, IARC, NTP AND OSHA CARCINOGENS ARE IDENTIFIED IN THIS SECTION
SEE DEFINITION PAGE FOR CLARIFICATION

INGREDIENT	% (by WT)	PEL	TLV	Note
	1-10			(1)
MAGNESIUM NITRATE CAS #: 10377-60-3				(2)
5-CHLORO-2-METHYL-4-ISOTHIAZOLIN-3-ONE	1.15-1.42			(3)
CUPRIC NITRATE CAS #: 3251-23-8	<1	1 MG/M3	1 MG/M3	(4)
MAGNESIUM CHLORIDE CAS #: 7786-30-3	1-10			(5)
2-METHYL-4-ISOTHIAZOLIN-3-ONE	0.35-0.47			

Notes:

- (1) PEL/TLV NOT ESTABLISHED FOR THIS MATERIAL
- (2) SUPPLIER RECOMMENDS A TWA OF 0.1MG/M3 AND A STEL OF 0.3MG/M3 FOR TOTAL ISOTHIAZOLONES.
(5-CHLORO-2-METHYL-4-ISOTHIAZOLIN-3-ONE, 2-METHYL-4-ISOTHIAZOLIN-3-ONE.
- (3) PEL/TLV NOT ESTABLISHED FOR THIS MATERIAL
- (4) PEL/TLV NOT ESTABLISHED FOR THIS MATERIAL
- (5) SUPPLIER RECOMMENDS A TWA OF 0.1MG/M3 AND A STEL OF 0.3MG/M3 FOR TOTAL ISOTHIAZOLONES.
(5-CHLORO-2-METHYL-4-ISOTHIAZOLIN-3-ONE, 2-METHYL-4-ISOTHIAZOLIN-3-ONE.

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		1.010 - 1.030
Specific Gravity		77.00 Deg F 25.00 Deg C
Percent Volatiles		85-100%
Evaporation Rate		SLOWER THAN ETHER
pH		2.0 - 5.0
Appearance		CLEAR, LIGHT GREEN YELLOW
State		LIQUID
Form		HOMOGENEOUS 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: OXIDES OF SULFUR, HYDROGEN

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CONTINUED ON PAGE: 2

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Page: 2

BIOSPERSE(R) 250 MICROBIOCIDES

701166

~~SECTION IV - FIRE AND EXPLOSION INFORMATION (Continued)~~

CHLORIDE

FIREFIGHTING PROCEDURES: NOT APPLICABLE

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.

~~SECTION V - HEALTH HAZARD DATA~~

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

EFFECTS OF ACUTE OVEREXPOSURE: FOR PRODUCT

CAUSES SEVERE IRRITATION AND CORNEAL INJURY.

SKIN - CAUSES SEVERE IRRITATION.

SKIN - REPEATED CONTACT MAY CAUSE SENSITIZATION.

CAN BE ABSORBED IN TOXIC AMOUNTS, ESPECIALLY FROM PROLONGED OR REPEATED EXPOSURE.

BREATHING - OF MIST CAN CAUSE IRRITATION OF NASAL AND RESPIRATORY PASSAGES.

SWALLOWING - CAN CAUSE DEATH

FIRST AID:

IF ON SKIN: IMMEDIATELY FLUSH EXPOSED AREA WITH WATER FOR AT LEAST 15 MINUTES, GET MEDICAL ATTENTION. REMOVE CONTAMINATED CLOTHING. LAUNDRY CONTAMINATED CLOTHING BEFORE RE-USE.

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 SWALLOWED: DO NOT INDUCE VOMITING. DRINK PROMPTLY A LARGE QUANTITY OF MILK, EGG WHITES, GELATIN SOLUTIONS OR IF THESE ARE NOT AVAILABLE, DRINK LARGE QUANTITIES OF WATER. AVOID ALCOHOL. CALL A 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.

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 ABSORPTION, SKIN CONTACT

~~SECTION VI - REACTIVITY DATA~~

HAZARDOUS POLYMERIZATION: CANNOT OCCUR

STABILITY: STABLE

INCOMPATIBILITY: NOT APPLICABLE

~~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 TO PREVENT SPREADING. ABSORB WITH INERT MATERIAL. THE ABSORBENT AND SURFACE SOIL TO A DEPTH SUFFICIENT TO REMOVE ALL MICROBIOCIDES IS THEN SHOVELED INTO A PAIL OR DRUM AND TREATED WITH ENOUGH DECONTAMINANT SOLUTION TO WET THE SOLID THOROUGHLY. LET THESE CONTAINERS STAND OPEN FOR 48 HOURS TO AVOID THE BUILDUP OF PRESSURE, THEN SEAL AND DISPOSE OF BY BURYING AS LANDFILL. THE DECONTAMINATED AREA IS WASHED WITH ADDITIONAL DECONTAMINANT SOLUTION AND THEN FLUSHED INTO A CHEMICAL OR MUNICIPAL SEWER. DO NOT DISCHARGE SPILLS AND CLEANING RUNOFFS INTO OPEN BODIES OF WATER. REMOVE CLOTHING PROMPTLY; LAUNDRY BEFORE REUSE. WASH SKIN WITH SOAP AND WATER.

DECONTAMINANT SOLUTION: SODIUM BISULFITE SOLUTIONS (ABOUT 11% SOLIDS CONTENT) DECOMPOSE BIOSPERSE 250 RAPIDLY. LABORATORY TESTS INDICATE THAT THE MICROBIOCIDES IS ALMOST COMPLETELY DEACTIVATED WITHIN 30 MINUTES WHEN TREATED WITH AT LEAST 4 EQUIVALENTS OF DECONTAMINATING SOLUTION. A VOLUME RATIO OF 20/1 DECONTAMINANT/ACTIVE MICROBIOCIDES IS RECOMMENDED. THE FOLLOWING SOLUTIONS ARE ACCEPTABLE DECONTAMINANTS:

INGREDIENT: SODIUM METABISULFITE (WEIGHT = 1 POUND) + WATER (WEIGHT = 8 POUNDS). TOTAL 9 POUNDS. SOLIDS CONTENT = 11.1%. PH = 4.2. INGREDIENT: SODIUM BISULFITE (WEIGHT 1 POUND + WATER (WEIGHT 8.5 POUNDS). TOTAL 9.5 POUNDS. SOLIDS CONTENT = 10.7%. PH = 4.2. INGREDIENT: SODIUM SULFITE (WEIGHT = 1 POUND) + WATER (WEIGHT = 7 POUNDS) + HYDROCHLORIC ACID (37%) (WEIGHT = 0.67 POUNDS). TOTAL 8.67 POUNDS. SOLIDS CONTENT = 9.5%. PH = 5-5.5.

NOTE: DECONTAMINANT SOLUTION MUST HAVE PH ON THE ACID SIDE, SINCE IT IS MUCH LESS EFFECTIVE WHEN ALKALINE. IN CONVERTING SODIUM SULFITE TO THE BISULFITE, DISSOLVE THE SALT IN WATER AND SLOWLY ADD THE ACID WITH GOOD AGITATION TO PREVENT LIBERATION OF SULFUR DIOXIDE CAUSED BY LOCAL EXCESS OF ACID. KEEP CONTAINERS OF DECONTAMINANT SOLUTION CLOSED OR COVERED TO REDUCE ACCUMULATION OF SULFUR DIOXIDE IN THE WORKPLACE (THRESHOLD LIMIT VALUE (ACGIH) 2 PPM). THE SOLUTIONS SHOULD BE MADE FRESH AS NEEDED. PERSONNEL MAKING UP OR HANDLING DECONTAMINANT SOLUTIONS SHOULD WEAR GOGGLES OR FACE SHIELD AND RUBBER GLOVES.

WASTE DISPOSAL METHOD:

SMALL SPILL: DEPOSIT IN A LANDFILL IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

LARGE SPILL: DEPOSIT IN A LANDFILL IN ACCORDANCE WITH 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.

Material Safety Data Sheet



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BIOSPERSE(R) 250 MICROBIOCIDES

Page: 3

001166

~~SECTION V - PROTECTIVE EQUIPMENT TO BE USED (Continued)~~

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

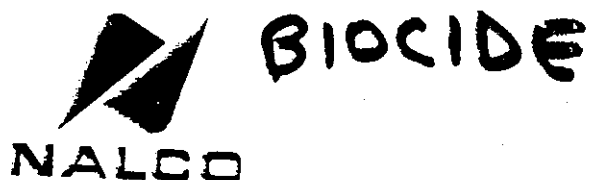
EYE PROTECTION: CHEMICAL SPLASH GOGGLES AND FACE SHIELD (8" MIN.) IN COMPLIANCE WITH OSHA REGULATIONS ARE ADVISED; HOWEVER, OSHA REGULATIONS ALSO PERMIT OTHER TYPE SAFETY GLASSES. (CONSULT YOUR SAFETY EQUIPMENT SUPPLIER)

OTHER PROTECTIVE EQUIPMENT: TO PREVENT SKIN CONTACT, WEAR IMPERVIOUS CLOTHING AND BOOTS.
EYEWASH STATION, EMERGENCY SHOWER.

~~SECTION VI - 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 7343 TAB

Emergency Telephone Number
Medical (312) 920-1510 (24 hours)

SECTION 1 PRODUCT IDENTIFICATION

TRADE NAME: NALCO 7343 TAB

DESCRIPTION: Bromochlorodimethylhydantoin

NFPA 704M/HMIS RATING: 3/3 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. %
1-bromo-3-chloro-5,5-dimethylhydantoin	16079-88-2	92.5

SECTION 3 PRECAUTIONARY LABEL INFORMATION

DANGER: Corrosive. Causes eye and skin damage. May be harmful or fatal if swallowed. Do not get in eyes, on skin or on clothing. Wear goggles or face shield and rubber gloves when handling. Irritating to nose and throat. Avoid breathing dust. Remove and wash contaminated clothing before reuse.

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:	Brush off and immediately flush with water for at least 15 minutes. Call a physician at once.
INGESTION:	Feed bread soaked in milk, followed by olive oil or cooking oil. Do not induce vomiting. Call a physician at once.
INHALATION:	Remove to fresh air. Treat symptoms. Call a physician at once.

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.



MATERIAL SAFETY DATA SHEET

PRODUCT

NALCO 7343 TAB

Emergency Telephone Number

Medical (312) 920-1510 (24 hours)

SECTION 4 FIRST AID INFORMATION

(CONTINUED)

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

SECTION 5 HEALTH EFFECTS INFORMATION

PRIMARY ROUTE(S) OF EXPOSURE: Eye, Skin, Inhalation

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: Causes burns if skin is wet.

INGESTION: Can be fatal.

INHALATION: Irritating to nose and throat.

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 been conducted on this product along with one of its decomposition products. The results are shown below.

ACUTE ORAL TOXICITY (ALBINO RATS):

1-bromo-3-chloro-5,5-dimethylhydantoin LD50 = 1.39 g/kg

5,5-dimethylhydantoin LD50 = Greater than 5,000 mg/kg

ACUTE DERMAL TOXICITY (ALBINO RABBITS):

1-bromo-3-chloro-5,5-dimethylhydantoin LD50 = Greater than 2.0 g/kg

5,5-dimethylhydantoin LD50 = Greater than 3,000 mg/kg

PRIMARY SKIN IRRITATION TEST (ALBINO RABBITS):

SKIN IRRITATION INDEX DRAIZE RATING: 6.1/8.0 Corrosive -

1-bromo-3-chloro-5,5-dimethylhydantoin

COMMENTS: Prolonged or repeated skin contact produced severe redness and superficial, focal necrosis with the development of excessive exfoliation due to the corrosive action of the compound.



MATERIAL SAFETY DATA SHEET

PRODUCT

NALCO 7343 TAB

Emergency Telephone Number

Medical (312) 920-1510 (24 hours)


SECTION 6 TOXICOLOGY INFORMATION

(CONTINUED)

PRIMARY SKIN IRRITATION TEST (ALBINO RABBITS):
SKIN IRRITATION INDEX DRAIZE RATING: 0.8/8.0 Slightly irritating -
5,5-dimethylhydantoin

COMMENTS: The application of 500 mg of 5,5-dimethylhydantoin produced slight redness and swelling after 24 hours of occluded contact with rabbit skin. All application sites appeared normal within 72 hours.

PRIMARY EYE IRRITATION TEST (ALBINO RABBITS):
1-bromo-3-chloro-5,5-dimethylhydantoin

COMMENTS: Eye contact with the powdered material produced severe persistent conjunctival irritation with slowly developing corneal involvement. Immediate rinsing of the eyes with water decreased ocular injury. Diluted solutions (less than 1,000 ppm) produced essentially no irritation. 

PRIMARY EYE IRRITATION TEST (ALBINO RABBITS):
EYE IRRITATION INDEX DRAIZE RATING: 12.8/110.0 unrinsed, 20.0/110.0 rinsed Mild irritant - 5,5-dimethylhydantoin

COMMENTS: Instillation of 100 mg produced moderate redness and swelling of the conjunctiva after one hour. Small focal corneal opacities and slight iritis were observed in one of the test rabbits. Irritation decreased over the following 48 hours and had completely resolved by the end of 7 days. Rinsing the affected eyes with water 30 seconds after contact with the test material resulted in only a slight reduction in irritation.

SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

COLOR: White	FORM: Tablets	ODOR: Halogen
SOLUBILITY IN WATER:	Completely	
MELTING POINT:	293 - 302 Degrees F	ASTM D-2117
FLASH POINT:	Not applicable	

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

SECTION 8 FIRE AND EXPLOSION INFORMATION

FLASH POINT: Not applicable

EXTINGUISHING MEDIA: Water. Do not use ammonium phosphate fire



MATERIAL SAFETY DATA SHEET

PRODUCT NALCO 7343 TAB

Emergency Telephone Number
Medical (312) 920-1510 (24 hours)

SECTION 8 FIRE AND EXPLOSION INFORMATION

(CONTINUED)

extinguishers.

UNUSUAL FIRE AND EXPLOSION HAZARD: Will evolve hydrogen bromide or bromine under fire conditions.

SECTION 9 REACTIVITY INFORMATION

INCOMPATIBILITY: Avoid contact with organic materials. Mix only with water. Use clean, dry utensils and equipment. Do not add this product to any dispensing device containing remnants of any other product. Such use may cause a violent reaction leading to fire and explosion. Contamination with moisture, organic matter or other chemicals may start a chemical reaction with generation of heat, hazardous gases and possible fire and explosion. In cases of contamination or decomposition, do not reseal container. If possible, isolate container in open air or well ventilated area. If necessary, flood with large volumes of water.

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

SECTION 10 PERSONAL PROTECTION EQUIPMENT

RESPIRATORY PROTECTION: If it is possible to generate significant levels of dust, a NIOSH approved or equivalent self-contained or supplied air respirator is recommended.

VENTILATION: General ventilation is recommended.

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.).

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 (312-920-1510)



MATERIAL SAFETY DATA SHEET

PRODUCT

NALCO 7343 TAB

Emergency Telephone Number

Medical (312) 920-1510 (24 hours)

SECTION 11 SPILL AND DISPOSAL INFORMATION

(CONTINUED)

SPILL CONTROL AND RECOVERY:

Solid spills: Sweep or vacuum up and reclaim into recovery or salvage drums for disposal. Wear the protective equipment specified in Section 10. Refer to CERCLA in Section 14.

This product is toxic to fish. It should not be directly discharged into lakes, ponds, streams, waterways or public water supplies.

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 D001.

As a hazardous solid waste, it must be disposed of in a Hazardous Waste Treatment, Storage and Disposal facility in accordance with local, state and federal regulations.

SECTION 12 ENVIRONMENTAL INFORMATION

This product is toxic to fish. Do not discharge into lakes, streams, ponds or public water unless in accordance with an NPDES permit. For guidance, contact your regional office of the EPA.

Aquatic toxicity studies were run on 1-bromo-3-chloro-5,5-dimethylhydantoin the results are below:

Fresh Water Species:

96 hour static acute LC50 to Rainbow Trout = 0.87 ppm
48 hour static acute LC50 to Water Flea = 0.47 ppm
96 hour static acute LC50 to Fathead Minnow = 2.25 ppm

Salt Water Species:

96 hour static acute LC50 to Sheepshead Minnow = 20 ppm
96 hour static acute LC50 to Grass Shrimp = 13 ppm
96 hour static acute LC50 to American Oyster = Greater than 640 ppm

Aquatic toxicity studies were also run on 5,5-dimethylhydantoin the dehalogenated byproduct:

96 hour static acute LC50 to Rainbow Trout = 6,100 ppm
48 hour static acute LC50 to Water Flea = 1,300 ppm
96 hour static acute LC50 to Fathead Minnow = 8,100 ppm
96 hour static acute LC50 to Sheepshead Minnow = 13,300 ppm



MATERIAL SAFETY DATA SHEET

PRODUCT NALCO 7343 TAB

Emergency Telephone Number
Medical (312) 920-1510 (24 hours)

SECTION 12 ENVIRONMENTAL INFORMATION

(CONTINUED)

96 hour static acute LC50 to Grass Shrimp = 12,000 ppm
96 hour static acute LC50 to American Oyster = 14,200 ppm

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

SECTION 13 TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME/HAZARD CODE - OXIDIZER, N.O.S.
OXIDIZER UN 1479
CONTAINS - HALOGENATED HYDANTOIN

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.

1-arcino-3-chloro-5,5-dimethylhydantoin - Corrosive, oxidizer

Nuisance dust = TWA 5 mg/m3 ACGIH/TLV

Nuisance dust = PEL 15 mg/m3 OSHA/TLV

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

XX Immediate (acute) health hazard



MATERIAL SAFETY DATA SHEET

PRODUCT

NALCO 7343 TAB

Emergency Telephone Number

Medical (312) 920-1510 (24 hours)

SECTION 14 REGULATORY INFORMATION

(CONTINUED)

- Delayed (chronic) health hazard
- XX 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):

This product is a biocide exempted under TSCA and regulated under FIFRA. The inerts are on the Inventory list.

FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE ACT (FIFRA):

EPA Reg. No. 5785-63-1706.

This product is registered for use as a microorganism control chemical used in industrial recirculating and once-through cooling water tower systems. In all cases follow instructions on the product label.

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 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):
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.



MATERIAL SAFETY DATA SHEET

PRODUCT

NALCO 7343 TAB

Emergency Telephone Number

Medical (312) 920-1510 (24 hours)

SECTION 14 REGULATORY INFORMATION

(CONTINUED)

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:

This product complies with the MSDS and labeling requirements of the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65).

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.

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.

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



MATERIAL SAFETY DATA SHEET

PRODUCT NALCO 7343 TAB

Emergency Telephone Number
Medical (312) 920-1510 (24 hours)

SECTION 17 BIBLIOGRAPHY

(CONTINUED)

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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, CH, 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, CH.

PREPARED BY: John J. Kasper, MSc., Manager Product Safety
DATE CHANGED: 01/22/88 DATE PRINTED: 02/13/89

BETZ INDUSTRIAL

4636 SOMERTON ROAD TREVOSE, PA. 19047

BETZ MATERIAL SAFETY DATA SHEET

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

PRODUCT :SLIMICIDE C31

EFFECTIVE DATE 10-31-88

PRINTED: 12/14/8

PRODUCT APPLICATION : SOLVENT-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.

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

METHYLENE BIS(THIOCYANATE)*** CAS#6317-18-6; IRRITANT(SKIN); CORROSIVE (EYES); TOXIC(ORAL INGESTION); PEL:NONE; TLV:NONE.

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

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

PH: AS IS	(APPROX.) 3.2	ODOR: NONE
FL.PT.(DEG.F): 120	SETA(CC)	SP.GR.(70F)OR DENSITY: 1.095
VAPOR PRESSURE(mmHG): 24		VAPOR DENSITY(AIR=1): ND
VISC cps70F: 64		%SOLUBILITY(WATER): 1
EVAP.RATE: ND	WATER=1	APPEARANCE: YELLOW (WITH WHITE FLOC)
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: SLIMICIDE C31

EFFECTIVE DATE 10-31-88

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

ACUTE SKIN EFFECTS *** PRIMARY ROUTE OF EXPOSURE

SEVERE IRRITANT TO THE SKIN.SKIN SENSITIZER

ACUTE EYE EFFECTS ***

SEVERE IRRITANT TO THE EYES, POSSIBLY CORROSIVE

ACUTE RESPIRATORY EFFECTS *** PRIMARY ROUTE OF EXPOSURE

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

RESPIRATORY TRACT

CHRONIC EFFECTS OF OVEREXPOSURE***

NO EVIDENCE OF POTENTIAL CHRONIC EFFECTS.

MEDICAL CONDITIONS AGGRAVATED ***

NOT KNOWN

SYMPTOMS OF EXPOSURE ***

INHALATION MAY CAUSE IRRITATION OF MUCOUS MEMBRANES AND RESPIRATORY TRACT;
SKIN CONTACT CAUSES SEVERE IRRITATION OR BURNS.

PRECAUTIONARY STATEMENT BASED ON TESTING RESULTS ***

MAY BE TOXIC IF ORALLY INGESTED OR INHALED.

-----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
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
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.FOAM OR WATER CREATE A SLIPPERY
CONDITION.SPREAD SAND OR GRIT

MATERIAL SAFETY DATA SHEET (PAGE 3 OF 3)

PRODUCT: SLIMICIDE C31

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 RESPIRATOR WITH ORGANIC VAPOR, HIGH EFFICIENCY PARTICULATE CARTRIDGES 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- 121

...REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:
TREAT AS OIL SPILL

...RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE, THE RCRA HAZARDOUS WASTE IDENTIFICATION NUMBER IS: D001=IGNITABLE

...DOT HAZARD CLASSIFICATION: COMBUSTIBLE

...DOT SHIPPING DESIGNATION IS: NA1993 COMBUSTIBLE 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), DELAYED(CHRONIC) AND FIRE

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

NFPA/HMIS : HEALTH - 3 ; FIRE - 2 ; REACTIVITY - 0 ; SPECIAL - NONE ; PE - D

MATERIAL SAFETY DATA SHEET

VENDOR:

Schaefer Chemical Products Company
3000 Carrollton Road
Saginaw, MI. 48604

517/753-1877

Date: 11/6/85

Product Name: Tower Treat M

Hazard(s) as defined by OSHA Hazard Communication Standard:

Corrosive to eyes and skin.

Toxic by ingestion or dermal absorption.

COMPONENTS

Chemical Name	% by wt	TLV
Potassium N-methyldithiocarbamate	4.2	N/A
CAS Registry Number: 137-41-7		
Disodium cyanodithioimidocarbonate	5.8	N/A
CAS Registry Number: 138-93-2		

PHYSICAL DATA

Appearance: Clear red-orange liquid

Odor: Sulfide

Boiling point: Above 212°F.

Solubility: Complete

Specific gravity: 1.0695

pH

9-10

FIRE AND EXPLOSION DATA

Flash point: None below 212°F.

Flammable limits: N/A

Extinguishing Media: Water fog, carbon dioxide, foam, dry chemical

Special Firefighting Procedures: None

REACTIVITY DATA

Stability: Stable

Incompatibility: Strong acids

Hazardous Decomposition Products:

Hydrogen sulfide

HEALTH HAZARD DATA

Acute Effects: Oral LD50=192 mg/kg; Dermal LD50=884 mg/kg;
Inhalation at high levels of mist can cause irritation to lung tissue due to corrosive characteristics.

Irritant Effects: Corrosive to eyes and skin.

Sensitization Effects: Not tested. Product is not expected to cause allergic reactions.

Carcinogenic Potential: Not listed in any of OSHA Standard, Section 1910.1200 sources as carcinogenic;

Other Health Effects: None known.

User: HVAC

Stored in DC-DVS

RECEIVED FEB 29 1988

2027.505

HANDLING PRECAUTIONS

Rubber gloves and safety glasses or goggles required. Body-protective clothing and shoes are recommended. Eye-wash fountains in the work area are recommended.

EMERGENCY AND FIRST AID INSTRUCTIONS

Eye exposure: Flush with clean, cool water for 15 minutes. See a physician.

Skin exposure: Wash with soap and water and apply glycerin. See a physician if irritation occurs. Remove and wash contaminated clothing.

Inhalation: Remove to fresh air.

SPILL, LEAK, AND DISPOSAL PROCEDURES

Large spills: Dam area to prevent spill from entering fish-bearing waters. Pump into appropriate containers. Dispose of as below.

Small spills: Flush liquid to sewer with copious amounts of water.

Product disposal: Product is hazardous waste, EPA Hazard Code (C,R), EPA Hazardous Waste Numbers D002, D003, due to pH.

Container disposal: Offer for recycling or triple rinse and dispose of in an approved landfill.

REGULATORY CLASSIFICATIONS

EPA Registration: EPA Reg. No. 11463-6

TSCA Inventory: Not Applicable.

FDA Regulation(s): 21 CFR 176.300, 173.320

The information on this Material Safety Data Sheet reflects the latest information and data that we have on hazards, properties, and handling of this product under the recommended conditions of use. Any use of this product or method of application which is not described in the Product Data Sheet is the responsibility of the user.

This Material Safety Data Sheet was prepared to comply with the OSHA Hazard Communication regulation.