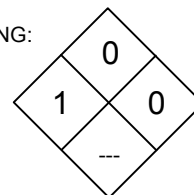




NFPA RATING:

4=Severe
3=Serious
2=Moderate
1=Slight
0=Minimal



MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

PRODUCT NAME: **4939D**
PRODUCT DESCRIPTION: *Cooling Water Treatment*

COMPANY INFORMATION:
Chemicals Inc.
13560 Colombar Court
Fontana, California 92337
Non-emergency: 951-681-9697

Revised: September 26, 2012

24-HOUR EMERGENCY TELEPHONE:
INFOTRAC: 1-800-535-5053
INTERNATIONAL#: 1-352-323-3500

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:	Clear, Amber liquid Musty odor Warning: Cause moderate to severe irritation to eyes. May cause some irritation to skin. Wear safety glasses and gloves when handling. Wash thoroughly after handling.
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POTENTIAL HEALTH EFFECTS Eye contact Skin contact Ingestion Inhalation

EYE CONTACT: Exposure to liquid product may cause moderate to severe irritation to eyes. Symptoms of exposure may include redness, swelling, tearing or pain. Effects of contact may be delayed. Avoid contact.

SKIN CONTACT: Exposure to liquid product may cause moderate to severe irritation to skin with prolonged contact. Symptoms of exposure may include redness, swelling or pain. Effects of contact may be delayed. Avoid contact.

INGESTION: The product is not considered toxic. However, exposure to liquid product may cause moderate to severe irritation to inner linings of mouth, esophagus and gastrointestinal tract. Do NOT ingest.

INHALATION: Inhalation of vapors or fumes may be irritating to mucous membranes and respiratory tract. Avoid contact.

CHRONIC: Prolonged contact may cause burns to eyes and skin.

CARCINOGENS: This product and its components are not listed on NTP, IARC, OSHA or ACGIH lists as cancer-causing agents.

AGGRAVATION OF PRE-EXISTING CONDITIONS: There are no known medical conditions that would be possibly aggravated by exposure to this product.

3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT	CAS #	HAZARD	WT %	ACGIH		OSHA	
				TLV _(TWA)	STEL	PEL _(TWA)	STEL
Potassium hydroxide (KOH)	1310-58-3	Corrosive	1 – 5	NE	2 mg/m ³	NE	2 mg/m ³
Hydroxyethylidene diphosphonic acid (HEDP)	2809-21-4	Irritant	1 – 10	NE	NE	NE	NE
Phosphonobutane tricarboxylic acid (PBTC)	37971-36-1	Irritant	1 – 10	NE	NE	NE	NE
Benzotriazole	95-45-7	Irritant Flammable	1 – 5	NE	NE	NE	NE

4. FIRST AID MEASURES

EYE CONTACT: If this product contacts the eyes, immediately flush eyes with plenty of clean running water for at least fifteen (15) minutes, lifting the upper and lower eyelids occasionally. Remove contact lenses if worn. Seek medical attention if irritation persists.

SKIN CONTACT: If this product contacts the skin, immediately flush the affected area with soap and water for at least fifteen (15) minutes. If the product penetrates the clothing, promptly remove the contaminated clothing or shoes, and flush the affected area as described. Seek medical attention if irritation persists.

INGESTION: If this product is ingested, drink small amounts of water and seek medical attention promptly. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: If this product is inhaled and symptoms occur, move the exposed person to fresh air promptly. Seek medical attention if symptoms persist.

NOTES TO PHYSICIAN: This product is irritating to eyes, skin and mucous membranes. This product has low oral toxicity. Treat exposure symptomatically.

5. FIRE FIGHTING MEASURES

FLASH POINT: None – aqueous solution.

FLAMMABLE LIMITS: NA

AUTOIGNITION TEMPERATURE: NA

EXTINGUISHING MEDIA: Use water, foam, dry chemical or carbon dioxide to extinguish fire.

FIRE/EXPLOSION HAZARD: Dried residue can thermally decompose, giving off irritating and possibly toxic fumes.

FIRE FIGHTING EQUIPMENT: Fire fighters should wear full protective equipment, and have self-contained breathing apparatus available.

SPECIAL PROCEDURES: Use water to cool containers exposed to a fire.

HAZARDOUS COMBUSTION PRODUCTS: Oxides of carbon, possibly toxic phosphines.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Use proper personal protection (refer to Section 8).

ENVIRONMENTAL PRECAUTIONS: Run off from fire control or dilution water may cause pollution. Keep out of drains, municipal sewers, open bodies of water and water course.

CLEAN-UP METHODS: Safely stop source of spill. Clean up spills immediately. Restrict non-essential personnel from the area. Wear protective clothing, goggles and respirator if ventilation is not adequate. For small spills, dilute with large amounts of water and flush to sewer. For large spills, squeegee and collect the spillage or vacuum the spillage. Place collected spillage into containers for reuse or disposal. Dispose according to local, state or federal regulations at an approved chemical waste reprocessing facility. Flush spill area with large amounts of water.

7. HANDLING AND STORAGE

HANDLING: Use proper personal protection when handling (refer to Section 8). Use under well-ventilated conditions. Avoid contact with eyes, skin and clothing. Avoid breathing vapors and mists. Avoid prolonged or repeated contact. Do NOT ingest. Wash thoroughly after handling. Rinse container before disposal.

SHELF LIFE: The recommended shelf life is two (2) years. It is recommended that products be retested if stored for more than two (2) years. Under ideal storage conditions, the shelf life is almost indefinite.

STORAGE TEMPERATURE: The recommended storage temperature is above 32°F, preferably at room temperature (70°F).

GENERAL: Store closed containers in a cool, dry, well-ventilated area away from incompatible materials. This product is stable under normal conditions of handling and storage. Avoid cold temperatures.

8. EXPOSURE CONTROLS / PERSONAL PROTECTIVE EQUIPMENT

Please refer to Section 2 for applicable exposure limits.

EYE PROTECTION: To avoid contact with eyes, use safety glasses or chemical splash goggles. Face shield is recommended. Eye wash station should be available in the work area.

HAND PROTECTION: Use rubber or plastic gloves to minimize skin contact.

BODY PROTECTION: Use a rubber apron to minimize contact. Rubber boots are recommended. Full drench shower should be available in the work area.

RESPIRATOR: Use of respirator protection is not generally required. However, if exposure is above the stated limits or ventilation is inadequate, use a NIOSH approved acid gas/organic vapor respirator to reduce potential for inhalation exposure. When using respirator cartridges, they must be changed frequently to assure breakthrough exposure does not occur.

VENTILATION: General mechanical ventilation is recommended for enclosed areas.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Amber liquid	Boiling Point:	100°C / 212°F
Odor:	Musty	Freezing Point:	0°C / 32°F
Specific Gravity @ 68°F:	~ 1.084	Vapor Pressure:	23.75 mmHg
pH:	~ 2.62	Vapor Density (air = 1):	ND
Water Solubility:	Complete	VOC Content:	Non-volatile

10. STABILITY AND REACTIVITY

GENERAL STABILITY: This product is stable at ambient temperatures and atmospheric pressures.

INCOMPATIBLE MATERIALS: Strong alkalis, oxidizing materials and amines.

HAZARDOUS POLYMERIZATION: Hazardous polymerization is not expected to occur under normal temperatures and pressures.

HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of carbon, possibly toxic phosphines.

11. TOXICOLOGICAL INFORMATION

	<u>Product 4939D</u>	<u>Benzotriazole</u>	<u>PBTC</u>
Eye irritation:	Slight to moderate	Slight to moderate	Slight to moderate
Skin irritation:	Slight to moderate	Slight to moderate	None to slight
Inhalation irritation:	None to slight	Slight to moderate	None to slight
Oral LD₅₀, Rat:	> 4368 mg/kg	560 mg/kg	5000 mg/kg
Dermal LD₅₀, Rabbit:	> 1606 mg/kg	2000 mg/kg	NDA
Inhalation LC₅₀, Rabbit:	NDA	6 mg/l	NDA
Other toxicological data:	NA	See below	See below

	<u>KOH</u>	<u>HEDP</u>
Eye irritation:	Corrosive	Corrosive
Skin irritation:	Corrosive	None to slight
Inhalation irritation:	Moderate to severe	Moderate to severe
Oral LD₅₀, Rat:	365 mg/kg	2400 mg/kg
Dermal LD₅₀, Rabbit:	NDA	7940 mg/kg
Inhalation LC₅₀, Rabbit:	NDA	NDA
Other toxicological data:	See below	See below

KOH: The severity of tissue damage is a function of its concentration, the length of tissue contact time, and local tissue conditions. After exposure there may be a time delay before irritation and other effects occur. This material is a strong irritant and is corrosive to the skin, eyes and mucous membranes. This material may cause severe burns and permanent damage to any tissue with which it comes into contact. Inhalation will cause severe irritation, possible burns with pulmonary edema, which may lead to pneumonitis. Skin contact with this material may cause severe irritation and corrosion of tissue. Eye contact can cause severe irritation, corrosion with possible corneal damage and blindness. Ingestion may cause irritation, corrosion / ulceration, nausea, and vomiting. In general, chronic effects are due to long-term irritation. This material may cause dermatitis on the skin, or recurrent corneal ulceration and visual disturbances. In rare cases reports have noted long-term inhalation causes bronchial inflammatory reaction or obstructive airway dysfunction.

HEDP: [Chronic Toxicity] Dogs orally dosed develop severe effects on the bone, with rib and pelvic fractures reported in many of the animals. No birth defects were noted in rats or rabbits given the product orally during pregnancy. No effects were seen on the ability of female and male rats to reproduce when given the product in their diet for two successive generations. The product produced no genetic changes in standard in vitro assays using bacterial and mammalian cells.

PBTC: [Chronic Toxicity] 2-phosphono-butane-tricarboxylic acid was not mutagenic in the Ames Assay. No significant health effects expected. [Acute effects from overexposure] This product has low oral toxicity. It is irritation to the eyes and non-irritating to the skin. 2-phosphono-butane-tricarboxylic acid is moderately irritating to the mucous membranes.

Benzotriazole: Animals studies have indicated an effect on the central nervous system. Bacterial mutagenicity data exists. Experts consider the data inconclusive.

12. ECOLOGICAL INFORMATION

	<u>Product 4939D</u>	<u>Benzotriazole</u>	<u>PBTC</u>
96 hr LC ₅₀ , Rainbow trout:	> 4500 mg/l	39 mg/l	1000 mg/l
48 hr LC ₅₀ , Daphnia magna:	> 3000 mg/l	142 mg/l	300 mg/l
72 hr EC ₅₀ , Algae:	> 2000 mg/l	15 mg/l	1000 mg/l
	<u>KOH</u>	<u>HEDP</u>	
96 hr LC ₅₀ , Rainbow trout:	NDA	NDA	
48 hr LC ₅₀ , Daphnia magna:	NDA	NDA	
72 hr EC ₅₀ , Algae:	NDA	NDA	

13. DISPOSAL CONSIDERATIONS

US EPA RCRA Status: This product is considered to be a hazardous waste.
US EPA RCRA Hazardous waste code: NA

Do NOT dump into any sewers, on the ground or into any body of water. Rinse containers before disposal. Since emptied containers contain product residue, follow label warnings even after container is emptied. Dispose in accordance with all applicable federal, state and local laws and regulations.

14. TRANSPORT INFORMATION

The data provided in this section is for information only. Please apply the appropriate regulations to properly classify your shipment for transportation.

US DOT

Proper Shipping Name: Not DOT regulated
Hazard Class: NA
Hazard Identification Number: NA
Packing Group: NA
Transport Label: Scale Preventing/Scale Removing Liquid or Paste

15. REGULATORY INFORMATION

Components:	<u>HEDP</u>	<u>PBTC</u>	<u>Benzotriazole</u>	<u>KOH</u>
<u>Carcinogenic Potential</u>				
Regulated by OSHA:	No	No	No	No
Listed on NTP Report:	No	No	Suspect	No
Listed by IARC / Group:	No	No	No	No
ACGIH Appendix A / Group:	Not listed	Not listed	No	Not Listed
<u>US EPA Release Reporting</u>				
CERCLA (40 CFR 302):				
Listed substance:	Not listed	Not listed	Not listed	Potassium Hydroxide
Reportable quantity:	NA	NA	NA	1000 lbs.
Category:	NA	NA	NA	D
RCRA waste number:	NA	NA	NA	D002
Unlisted substance:	NA	NA	NA	NA
Reportable quantity:	NA	NA	NA	NA
Characteristic:	NA	NA	NA	NA
RCRA waste number:	NA	NA	NA	NA
<u>SARA TITLE III</u>				
Section 302 & 303 (40 CFR 355):				
Listed substance:	Not listed	Not listed	Not listed	Not listed
Reportable quantity:	NA	NA	NA	NA
Planning threshold:	NA	NA	NA	NA
Section 311 & 312 (40 CFR 370):				
Hazard categories:	Acute	Acute	None	Acute
Planning threshold:	10000 lbs.	10000 lbs.	NA	10000 lbs.

Section 313 (40 CFR 372):

Listed toxic chemical: Not listed Not listed Not listed Not listed
 Reporting threshold: NA NA NA NA

US TSCA

Listed/Exempt (40 CFR 710): Yes Yes Yes Yes

CA PROP 65

Carcinogen: No No No No
 Reproductive toxin: No No No No

16. OTHER INFORMATION

HMIS Rating

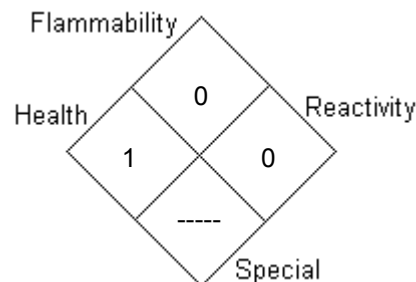
HEALTH	1
FLAMMABILITY	0
REACTIVITY	0
PROTECTION	B

B = Safety glasses, gloves

KEY

4 = Severe ACID = Acid
 3 = Serious ALK = Alkali
 2 = Moderate COR = Corrosive
 1 = Slight OX = Oxidizer
 0 = Minimal W = Use NO WATER

NFPA Rating



Legend:

ACGIH:	American Conference of Governmental Industrial Hygiene	NE:	Not established
A1:	Confirmed human carcinogen	NFPA:	National Fire Protection Association
A2:	Suspected human carcinogen	NIOSH:	National Institute for Occupational Safety and Health
A3:	Confirmed animal carcinogen	NTP:	National Toxicology Program
CAS #:	Chemical Abstract Service Registry number	OSHA:	Occupational Safety and Health Administration
CERCLA:	Comprehensive Environmental Response Compensation and Liability Act	PEL:	Permissible Exposure Limit
DOT:	Department of Transportation	RCRA:	Resource Conservation and Recovery Act
EPA:	Environmental Protection Agency	REL:	Recommended Exposure Limit
HMIS:	Hazardous Materials Identification System	SARA TITLE III:	Superfund Amendments and Reauthorization Act
IARC:	International Agency for Research on Cancer	STEL:	Short Term Exposure Limit (15 minute Time Weighted Average)
Group 1:	Carcinogenic to humans	TLV:	Threshold Limit Value
Group 2A:	Probably carcinogenic to humans	CEIL (C):	Ceiling Exposure Limit
Group 2B:	Possibly carcinogenic to humans	TSCA:	Toxic Substance Control Act
Group 3:	Unclassified as carcinogenic to humans	TWA:	Time Weighted Average
NA or N/A:	Not applicable	VOC:	Volatile Organic Compound
ND:	Not determined	> / <:	Greater than / Less than
NDA:	No data available	~:	Approximately

This Material Safety Data Sheet is presented in good faith as an information source only. It should not be taken as an expressed or implied warranty or guarantee for which the Company assumes legal responsibility. While the Company believes the information contained herein is accurate and compiled from sources believed to be reliable, it is the responsibility of the user to investigate and verify its validity. The Company does not accept liability for any loss or damage that may occur from the use of this information. The buyer or user accepts all responsibility of using, handling and disposing of the product in accordance with applicable federal, state and local rules, regulations and laws.