



SAFETY DATA SHEET

94610 Cooling System Conditioner

SECTION 1- PRODUCT IDENTIFICATION

PRODUCT NAME : Protex Cooling System Conditioner
SYNONYMS : Product is a mixture: No synonyms are available.
PRODUCT USE : Moderately Alkaline Material
SUPPLIER : BARDAHL MANUFACTURING CORP.
SUPPLIER'S ADDRESS : 1400 NW 52ND ST, SEATTLE, WA 98107 (888) 227-3245
EMERGENCY RESPONSE PHONE : PERS: 1-800-633-8253

SECTION 2 – HAZARD IDENTIFICATION

CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

GHS U.S. – CLASSIFICATION : H302 Harmful if swallowed.
H315 Causes skin irritation
H319 Causes serious eye irritation

LABEL ELEMENTS : **GHS – US HAZARD PICTOGRAMS** The product is classified and labeled according to the Globally Harmonized System (GHS).

HAZARD PICTOGRAMS :



SIGNAL WORD : WARNING
HAZARD STATEMENTS (GHS-US) : Not established
: H302 Harmful if swallowed.
: H315 Causes skin irritation.
: H319 Causes serious eye irritation.

PRECAUTIONARY STATEMENTS (GHS-US) : P101 If medical advice is needed, have product container or label at hand.
: P102 Keep out of reach of children.
: P103 Read label before use.
: P264 Wash skin and contaminated clothing thoroughly after handling.
: P270 Do not eat, drink or smoke when using this product.
: P280 Wear suitable protective gloves/protective clothing/eye protection/face protection.
: P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
: P302+P352 : IF ON SKIN: Wash with plenty of soap and water.
: P305+351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
: P332+P313 If skin irritation occurs: Get medical advice/attention.
: P337+P313 If eye irritation persists: Get medical advice/attention.
: P501 Dispose of contents/container in accordance with local/regional/national/international regulations

OSHA HAZARDS : Not applicable

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TARGET ORGANS : Not applicable
CLASSIFICATION SYSTEM : NFPA/HMIS Definitions: 0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme.
NFPA RATINGS (SCALE 0-4) : Health = 2, Fire = 0, Reactivity = 0
HMIS RATINGS (SCALE 0-5) : Health = 2, Fire = 0, Reactivity = 0

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL CHARACTERISTIC : Mixtures
DESCRIPTION : Mixture of the substances listed below with nonhazardous additions.

COMPONENT	PERCENT	CAS #	EC #	GHS CLASS
Morpholine	1-5	110-91-8	203-815-1	Flam Liq Cat 3, Acute Tox Oral Cat 5, Acute Tox Dermal Cat 3, Skin Cor Cat 1B, Eye Dam Cat 1
Potassium Silicate	0.1-1.0	1312-76-1	215-199-1	Skin Irrit Cat 2, Eye Irrit Cat 2
Propylene Glycol	1-5	57-55-6	200-338-0	Skin Irrit Cat 3, Eye Irrit Cat 2B

Irrit = Irritation, Flam = Flammable, Cat. = Category, Dam = Damage, Liq = Liquid, STOT SE = Specific Target Organ Toxicity Single Exposure.

SECTION 4 – FIRST AID MEASURES

DESCRIPTION OF FIRST AID MEASURES

GENERAL : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice. Show the label where possible.
EYE CONTACT : Immediately flush eyes with water for at least 15 minutes. Hold eyelids open to ensure adequate flushing. Get immediate medical attention.
SKIN CONTACT : Remove contaminated clothing and shoes. Wash affected skin area with soap and water. Delayed skin damage is possible if product is not completely washed off. Get immediate medical attention.
SWALLOWING (INGESTION) : If ingested, dilute swallowed material by drinking water. DO NOT INDUCE VOMITING. If vomiting occurs spontaneously, keep airway clear. Give more water when vomiting stops. Never give anything by mouth to an unconscious person. Get immediate medical attention.
INHALATION : Remove to fresh air. Get immediate medical attention.
OTHER INSTRUCTIONS : Rescue personnel must wear appropriate protective equipment during removal of victims from contaminated areas. Treat symptomatically and supportively.

SECTION 5 – FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA : Dry chemical, foam, water or carbon dioxide.
SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE FIGHTERS : In the event of a fire, wear a NIOSH (USA) or CEN (EU) approved, positive pressure, self-contained breathing apparatus (SCUBA) and full protective clothing. Evacuate all non-essential personnel from the danger area.
UNUSUAL FIRE AND EXPLOSION HAZARDS : No further relevant information is available.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

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- PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT & EMERGENCY PROCEDURES** : Restrict access to keep out unauthorized or unprotected personnel. Wear protective equipment. Avoid inhalation and direct contact.
- ENVIRONMENTAL PROCEDURES** : Keep spilled material away from sewage/drainage systems and waterways.
- METHODS AND MATERIALS FOR CONTAINMENT AND CLEAN-UP** : All clean-up personnel must be properly trained. Confine the spill and remove incompatible materials and ignition sources. Ensure adequate ventilation. Secure the source of the leak if conditions are safe. Neutralize spill and collect using an appropriate absorbent material such as clay or vermiculite. Place waste in an appropriate container for disposal. Use care during clean-up to avoid exposure to the material and injury from broken containers.

SECTION 7 – HANDLING AND STORAGE

- PRECAUTIONS FOR SAFE HANDLING** : Use with adequate ventilation. Wear proper protective equipment. Do not mix with water or acids without proper dilution and agitation to prevent a potentially violent reaction.
- CONDITIONS FOR SAFE STORAGE** : Store in closed, properly labeled containers. Protect containers from heat, physical damage, ignition sources and incompatible materials. Have emergency equipment for fires and spills readily available.



SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

- TLV (THRESHOLD LIMIT VALUE)** : The TLV in section in section III is the ACGIH/TLV-TWA (threshold limit value/time weighted average concentration for an eight hour work day). The STEL is the short term exposure limit and the (Ceil) is the ceiling limit.

COMPONENT	OSHA PEL – TWA	ACGIH – TLV	ACGIH – STEL
Morpholine	20 ppm	20 ppm	20 ppm
Potassium Silicate	Not Established	Not Established	Not Established
Propylene Glycol	Not Established	Not Established	Not Established

- EYE PROTECTION** : Wear chemical splash goggles or face shield.
- SKIN PROTECTION** : Minimize contact with product. Wear chemical resistant coveralls, boots, gloves, apron and/or suitable long-sleeved clothing.
- RESPIRATORY PROTECTION** : In case of brief exposure use respiratory filter device. In case of intensive or longer exposure, use respiratory protective device that is independent of circulating air.
- VENTILATION** : Ensure adequate ventilation.
- ADDITIONAL MEASURES** : Emergency eyewash and safety shower facilities should be available in the immediate work area.
- REQUIRED WORK/HYGIENE** : Wash hands thoroughly after handling. Keep away from all food stuffs, beverages and feed. Do not eat, drink or smoke in work area.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

- APPEARANCE** : Clear colorless liquid with mild odor.

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ODOR	: Mild odor.
ODOR THRESHOLD	: Not available
PH	: 11.0 - 11.6 AS IS
MELTING POINT/FREEZING POINT	: Not available
BOILING POINT	: Approx. 212° F.
FLASH POINT	: Non flammable
EVAPORATION RATE	: Not available
FLAMMABILITY	: Non flammable
LOWER FLAMMABILITY LIMIT	: Not available
UPPER FLAMMABILITY LIMIT	: Not available
VAPOR PRESSURE	: Not available
VAPOR DENSITY (AIR=1)	: Not available
RELATIVE DENSITY	: 1.02
SOLUBILITY IN WATER	: Soluble in water
PARTITION COEFFICIENT n-OCTANOL/WATER	: Not available
AUTOIGNITION TEMPERATURE	: Not available
DECOMPOSITION TEMPERATURE	: Not available

SECTION 10 – STABILITY AND REACTIVITY

STABILITY	: Stable under recommended storage conditions.
HAZARDOUS CONDITIONS TO AVOID	: No decomposition if used according to specifications
INCOMPATIBLE MATERIALS	: Keep away from strong acids.
HAZARDOUS DECOMPOSITION PRODUCTS	: No dangerous decomposition products known.

SECTION 11 – TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION	: Morpholine
ACUTE TOXICITY	LD50 Oral (rat): 1,450 mg/kg, LC50 Inhalation (rat), 8hr: 8,000 ppm, LD50 Dermal (rabbit): 500mg/kg.
SKIN CORROSION/IRRITATION	: Skin – Rabbit: Result: Severe skin irritation - 24 Hr.
SERIOUS EYE DAMAGE	: Eyes – Rabbit. Result: Severe eye irritation.
GERM CELL MUTAGENICITY	: Mouse: lymphocyte: Morphological transformation. Hamster: ovary: Sister chromatid exchange.
CARCINOGENICITY	: Carcinogenicity - Mouse – Oral: Tumorigenic:Neoplastic by RTECS criteria. Lungs, Thorax, or Respiration:Bronchiogenic carcinoma. Liver:Tumors. This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification. IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Morpholine) NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
REPRODUCTIVE TOXICITY	: No data available.

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SPECIFIC ORGAN TOXICITY –	: STOT-SE (Single Exposure): No data available. STOT-RE (Repeated Exposure): No data available.
ADDITIONAL INFORMATION	: Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Cough, Shortness of breath, Headache, Nausea, Stomach - Irregularities - Based on Human Evidence.
TOXICOLOGICAL INFORMATION	: Potassium Silicate
ACUTE TOXICITY	: The acute oral toxicity of this product has not been tested. When chemically similar sodium silicates were tested on a 100% solids basis, their single dose acute oral LD50 in rats ranged from 1500 mg/kg to 3200 mg/kg. The acute oral lethality resulted from nonspecific causes. This product contains approximately 39.2% potassium silicate.
ACUTE IRRITATION	: This material has not been tested for primary eye irritation. However, on the basis of its similarity to sodium silicate solutions in composition and alkalinity it is regarded as an eye irritant. When tested for primary skin irritation potential, similar potassium silicate solution produced no irritation to intact skin, but well defined irritation to abraded skin. Human experience confirms that irritation occurs when potassium silicates get on clothes at the collar, cuffs or other areas where abrasion may occur.
TOXICOLOGICAL INFORMATION	: Propylene Glycol
ACUTE TOXICITY	: LD50 Oral (rat): 20,000 mg/kg, LD50 Dermal (rabbit): 20,800 mg/kg, LC50 Inhalation: Not applicable.
CARCINOGENICITY	: Not listed, IARC, NTP, ACGIH and OSHA.
MUTAGENICITY	: No data available.
SENSITISATION	: No evidence of sensitization.

SECTION 12 – ECOLOGICAL INFORMATION
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ECOLOGICAL INFORMATION	: Morpholine
TOXICITY TO FISH	: Toxicity to fish LC50 - Oncorhynchus mykiss (rainbow trout) - 180 - 380 mg/l - 96 hr. Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna (Water flea) - 100 mg/l - 24 hr. Toxicity to algae Growth inhibition LOEC - Desmodesmus subspicatus (green algae) - 80 mg/l - 72 hr. EC50 - Desmodesmus subspicatus (green algae) - > 310 mg/l - 72 hr.
PERSISTENCE /	: Biodegradable
BIODEGRADABILITY	
BIOACCUMULATION	: No data available.
MOBILITY IN SOIL	: No data available.
ECOLOGICAL INFORMATION	: Potassium Silicate
ECOTOXICITY	: The ecotoxicity of potassium silicate has not been tested. The following data is reported for chemically similar sodium silicates on a 100% solids basis: A 96 hour median tolerance for fish (Gambusia affinis) of 2320 ppm; a 96 hour median tolerance for water fleas (Daphnia magna) of 247 ppm; a 96 hour median tolerance for snail eggs (Lymnea) of 632 ppm; and a 96 hour median tolerance for Amphipoda of 160 ppm. This product contains approximately 39.2% potassium silicate.
ENVIRONMENTAL FATE	: This material is not persistent in aquatic systems, but its high pH when undiluted or un-neutralized is acutely harmful to aquatic life. Diluted material rapidly depolymerizes to yield dissolved silica in a form that is indistinguishable from natural dissolved silica. It does not contribute to BOD. This material does not bio-

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accumulate except in species that use silica as a structural material such as diatoms and siliceous sponges.

ECOLOGICAL INFORMATION	: Propylene Glycol
ECOTOXICITY	: 96 HR LC50 ONCORHYNCHUS MYKISS 51600 MG/L [STATIC] 96 HR LC50 PIMEPHALES PROMELAS 51400 MG/L [STATIC] 96 HR LC50 PIMEPHALES PROMELAS 710 MG/L 24 HR EC50 DAPHNIA MAGNA > 10000 MG/L 48 HR EC50 DAPHNIA MAGNA > 1000 MG/L [STATIC] 96 HR EC50 PSEUDOKIRCHNERIELLA SUBCAPITATA 19000 MG/L
PERSISTENCE AND DEGRADABILITY	: Readily biodegradable.
MOBILITY	: This material is expected to have very high mobility in soil. It does not absorb to most soil types.

SECTION 13 – DISPOSAL CONSIDERATIONS

WASTE DISPOSAL	: This product must be disposed of in accordance with Federal, state and local environmental regulations. Discarded materials may be considered hazardous waste due to pH/corrosivity. It is the responsibility of the product user to determine at the time of disposal whether a material containing, or derived from this product, should be classified as a hazardous waste.
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SECTION 14 – TRANSPORTATION INFORMATION

DOT/IMDG/ IATA PROPER SHIPPING NAME	: Not Hazardous
HAZARD CLASS AND LABEL	: Not Applicable.
UN NUMBER	: Not Applicable.
PACKAGING GROUP	: Not Applicable.
EPA REPORTABLE QUANTITY (RQ)	: Not Applicable.
MARINE POLLUTANT	: Not listed.
EMERGENCY RESPONSE GUIDE	: Not Applicable.

SECTION 15 – REGULATORY INFORMATION

U.N. GHS CLASSIFICATION & LABELING INFORMATION: See Section 2 for GHS Hazard Information

U.S. FEDERAL REGULATORY INFORMATION:

LISTED CARCINOGEN	: Not listed.
TSCA STATUS	: The ingredients of this product are listed in TSCA inventory (40CFR 710.)
SARA SECTION 302	: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA SECTION 312	: Not applicable
SARA SECTION 313	: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
NFPA HEALTH	: 2
NFPA FLAMMABILITY	: 0

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NFPA REACTIVITY : 0

EUROPEAN UNION REGULATORY INFORMATION:

EC CLASSIFICATION : Xi: Irritant

DSD/DPD RISK (R) PHRASES : R22: Harmful if swallowed.
R36/38: Irritating to eyes and skin.

DSD/DPD SAFETY (S) PHRASES : S1/2: Keep locked up and out of reach of children.
S24/25: Avoid contact with eyes and skin.
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36/S37/39: Wear suitable protective clothing, gloves and eye/face protection.
S45: In case of accidents or if you feel unwell, seek medical advice immediately. Show label where possible.
S61: Avoid release to the environment.
S62: If swallowed, do not induce vomiting.
S64: If swallowed, rinse mouth with water if victim is conscious.



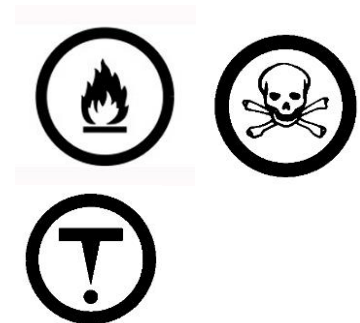
DSD/DPD HAZARD SYMBOL : Xi: Irritant

CANADIAN REGULATORY INFORMATION:

WHMIS CATEGORY : B2: Flammable and combustible liquids. (Morpholine)
D1B: Toxic material causing serious and immediate toxic effects. (Morpholine)
D2B: Materials that cause other toxic effects (TOXIC). (Morpholine)

DOMESTIC SUBSTANCES LIST (DSL) : Listed

INGREDIENT DISCLOSURE LIST : Listed



SECTION 16 – OTHER INFORMATION

DISCLAIMER : The information contained herein has been compiled from sources believed to be reliable and accurate to the best of our knowledge at this date. It is provided without warranty, expressed or implied, as to the results of use of this information or to the product to which it relates. Bardahl Manufacturing Corp. assumes no responsibility for injury to any person or property resulting from any use of the material. Each user assumes the risk in their use of this product and should review the data and recommendations in the specific context of their intended use.

FOOT NOTES : N/A = Not Applicable
IMDG : International Maritime Code for Dangerous Goods
DOT : US Department of Transportation
IATA : International Air Transportation Association
ACGIH : American Conference of Governmental Industrial Hygienists
NFPA : National Fire Protection Association (USA)
HMIS : Hazardous Materials Identification System (USA)
LC50 : Lethal concentration, 50 percent

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LD50	: Lethal dose, 50 percent
STOT	: Systemic Target Organ Toxicity
DATE PREPARED	: JAN 12, 2011
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