

VALVTECT®

MATERIAL SAFETY DATA SHEET

| | | | |
|------------------|---|---|--|
| Supplier: | ValvTect Petroleum Products A Division of Kop-Coat, Inc. 3400 Dundee Road Northbrook, IL 60062 | EMERGENCIES: Health/spills:..... Chemtrec Assistance..... Chemtrec Outside USA..... | 800-548-0489 800-424-9300 703-527-3887 |
| | | ValvTect Petroleum Products Product Information..... Outside USA..... | 847-272-2278 847-272-2278 |

1. Product Information

| | |
|---------------------|---------------------------|
| Product name | Bioguard ULS Microbiocide |
| Product code | BGDULS201\1 |

Issuing date: 06/28/2012

Contact person:

Environmental Health and Safety
Manager

2. Hazards identification

Emergency Overview

Appearance: Yellow to brown liquid

Odor: Amine

Hazards: DANGER!

Causes eye and skin burns and lung irritation. Harmful if swallowed, inhaled or absorbed through skin. Combustible liquid and vapor. May cause allergic skin reaction.

Potential health effects

Primary Routes of Entry: Eye contact, ingestion, skin contact, inhalation, and absorption.

Eye contact:

Corrosive to eyes! May cause severe eye damage including blindness.

Ingestion:

May be harmful if swallowed. May cause gastrointestinal distress. Symptoms may include irritation to the mouth, throat and stomach and gastrointestinal disturbances such as nausea, vomiting or diarrhea.

Skin contact:

May cause severe skin irritation and/or skin damage depending upon extent of exposure; signs and symptoms may include blistering, burns and/or possible scarring. May be harmful if absorbed through the skin in toxic amounts and

cause systemic effects. Symptoms may include dryness, itching, burning sensation, redness, cracking and swelling depending on the extent of exposure. May cause allergic skin reactions in susceptible individuals, which becomes evident upon reexposure to this material.

Inhalation:

May cause irritation to the nose, throat and respiratory tract.

Chronic effects:

Prolonged or repeated dermal exposure to this product can cause skin dermatitis characterized by red, dry, scaly skin.

Target Organs: Not Determined

This product does not contain carcinogens or potential carcinogens as listed by IARC or NTP.

3. Composition/information on ingredients

| Chemical Name | CAS-No. | Weight % | Carc |
|---|----------------|-----------------|-------------|
| 4-(2-Nitrobutyl) morpholine | 2224-44-4 | 70 - 100 | |
| Methylene Dimorpholine | 5625-90-1 | 1 - 10 | |
| Morpholine | 110-91-8 | 1 - 10 | |
| 4,4'-(2-Ethyl-2-Nitropropane-1,3-diyl)bismorpholine | 1854-23-5 | 1 - 10 | |
| 1-Nitropropane | 108-03-2 | 1 - 10 | |

4. FIRST AID MEASURES

Eye contact:

Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for at least 30 minutes, while holding the eyelid(s) open. If a contact lens is present, DO NOT delay irrigation or attempt to remove the lens. Neutral saline solution may be used as soon as it is available. DO NOT INTERRUPT FLUSHING. If necessary, continue flushing during transport to emergency care facility. Take care not to rinse contaminated water into the unaffected eye or onto the face. Quickly transport victim to an emergency care facility.

Ingestion:

NEVER give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing. Have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING. Have victim drink 2 to 8 oz. (60 to 240 mL) of water. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Have victim rinse mouth with water again. Immediately obtain medical advice.

Skin contact:

As quickly as possible, remove contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Quickly and gently blot or brush away excess chemical. Immediately wash with lukewarm, gently flowing water and non-abrasive soap for 15-20 minutes. Immediately obtain medical advice. Completely decontaminate clothing, shoes and leather goods before reuse or discard.

Inhalation:

Remove to fresh air. If not breathing, administer CPR until help arrives or the victim starts to breathe on his own. If breathing is difficult, give oxygen. Call poison control center, hospital emergency room, or physician immediately. Keep victim quiet and warm until emergency help arrives.

Note to Physician :

There is no specific antidote for effects from overexposure to this material. Treatment should be directed at the control of symptoms and the clinical condition.

5. FIRE-FIGHTING MEASURES

Flash point 160 deg F / 71 deg C

Extinguishing media:

Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective. Water fog, applied gently may be used as a blanket for fire extinguishment.

Hazardous combustion products:

See Section 10 for potential decomposition products.

Protective equipment and precautions for firefighters:

Evacuate all persons from the fire area to a safe location. Move non-burning material, as feasible, to a safe location as soon as possible. Fire fighters should be protected from potential explosion hazards while extinguishing the fire. Wear self-contained breathing apparatus (SCBA) and full fire-fighting protective clothing. Thoroughly decontaminate all protective equipment after use. Containers of this material may build up pressure if exposed to heat (fire). Use water spray to cool fire-exposed containers. Use water spray to disperse vapors if a spill or leak has not ignited. DO NOT extinguish a fire resulting from the flow of flammable liquid until the flow of the liquid is effectively shut off. This precaution will help prevent the accumulation of an explosive vapor-air mixture after the initial fire is extinguished.

6. ACCIDENTAL RELEASE MEASURES

Personal & Environmental Precautions:

Remove sources of ignition immediately. Stop flow of material if safe to do so. Contain spill and keep out of water courses. Ventilate area. Absorb spill in sand, earth or other suitable material. Transfer to appropriate container for disposal using non-sparking tools. Follow personal protective equipment recommendations found in Section 8. Personal protection needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred, and the training and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure limits.

Methods of Containment & Clean-up and Other Information:

This product, if released in large enough quantities, may need to be reported to the US Coast Guard National Response Center at 1-800-424-8802. Contain spills with dikes and absorbents (sand, earth, dry chemical absorbent) to prevent migration and entry into waterways.

7. HANDLING AND STORAGE

Handling:

Keep container closed and upright when not in use. To prevent generation of static discharges, use bonding/grounding connection when transferring material. Vapors may accumulate and travel to distant ignition sources and flashback. Extinguish all sources of ignition including pilot lights, non-explosion proof motors and electrical equipment until vapors dissipate. Since empty containers may retain product residue and flammable vapors, observe precautions even after container is emptied. Do not cut, puncture, or weld on or near empty containers. Do not smoke where product is used or stored. Avoid contact with eyes, skin or clothing. Avoid inhalation (vapor, mist, dust or fume, as applicable). Use only with adequate ventilation. Observe good personal hygiene practices and recommended procedures. Wash thoroughly after handling.

Storage:

Store in areas/buildings designed to comply with OSHA 1910.106. Store away from sources of ignition and heat. Keep containers closed when not in use. Store in cool, well ventilated space away from incompatible materials.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

| Chemical Name | CAS-No. | Z-1 PEL | Z-2 PEL | ACGIH TLV |
|--|-----------|--------------------|---------|-----------|
| 4-(2-Nitrobutyl) morpholine | 2224-44-4 | 70 MGM3 (20 PPM) | | 20 PPM |
| Methylene Dimorpholine | 5625-90-1 | 70 MGM3 (20 PPM) | | 20 PPM |
| Morpholine | 110-91-8 | 70 MGM3 (20 PPM) | | 20 PPM |
| 4,4'-(2-Ethyl-2-Nitropropane-1,3-diyl) bismorpholine | 1854-23-5 | 435 MGM3 (100 PPM) | | 100 PPM |
| 1-Nitropropane | 108-03-2 | 90 MGM3 (25 PPM) | | 25 PPM |

Engineering measures:

Use adequate ventilation to maintain airborne concentrations at levels below permissible or recommended occupational exposure limits. Supplementary local exhaust ventilation may be necessary in poorly ventilated spaces, during spraying, heating or other non-routine activities.

Eye/face protection:

Wear industrial safety goggles, and faceshield, as necessary, when working with the concentrate.

Skin protection:

Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task. Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Chlorinated polyethylene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl alcohol ("PVA"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Respiratory protection:

Respiratory protection may be necessary under certain use conditions. Under such conditions, an appropriate, properly fitted NIOSH-approved respirator must be worn. If respirators are used, a program should be instituted to assure compliance with 29 CFR 1910.34 and 42 CFR 84.

General hygiene considerations:

Facilities utilizing this material should be equipped with an eyewash station and safety shower. Thoroughly clean shoes and wash contaminated clothes before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|------------------------|
| Physical state | Liquid |
| Appearance: | Yellow to brown liquid |
| Odor | Amine |
| pH | 9.5 - 10 |
| Boiling point | 347 deg F / 175 deg C |
| Flash point | 160 deg F / 71 deg C |
| Solubility in water: | Negligible |
| Specific Gravity: | 1.1 |
| Weight per gallon (LB/GAL) : | 9.2 |
| Evaporation rate (n-Butyl acetate = 1): | < 1 |
| Volatile by Weight (including water and exempt compounds) (%): | not determined |
| Volatile Organic Content (VOC): | not determined |

10. STABILITY AND REACTIVITY

Stability:

Stable under normal conditions. Unstable at elevated temperatures. Can crystallize. Dissolve crystals before use by warming and mixing. Avoid temperatures above 35 deg C (95 deg F). Avoid temperatures below 10 deg C (50 deg F) Potentially violent decomposition can occur above 100 deg C (212 deg F). Generation of gas during decomposition can cause pressure in closed systems. Pressure build-up can be rapid.

Incompatibility:

Oxidizing and reducing agents. Keep away from heat, sparks and open flames. Acids.

Hazardous decomposition products:

Carbon monoxide, carbon dioxide, oxides of nitrogen and other toxic organic compounds.

11. TOXICOLOGICAL INFORMATION

Contact Kop-Coat for toxicological information on this product and/or active ingredients.

12. ECOLOGICAL INFORMATION

This material is toxic to fish. Do not contaminate water by cleaning equipment or disposal of waste. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. For guidance, contact your Regional Office of the Environmental Protection Agency.

13. DISPOSAL CONSIDERATIONS

Waste from this material may be a listed and/or characteristic hazardous waste. Dispose of material, contaminated absorbent, container and unused contents in accordance with local, state, and federal regulations.

14. TRANSPORT INFORMATION

| | |
|-----------------------------------|--|
| Transportation: | This product may be reclassified as Consumer Commodity, ORM-D, when shipped by ground; packaging quantity limitations apply. |
| By Ground: | |
| DOT Hazard Class: | 6.1 |
| DOT Proper Shipping Name: | Disinfectant Liquid, Toxic, n.o.s. (contains: 4-(2-Nitrobutyl) Morpholine) |
| DOT Packing Group: | III |
| DOT UN Number: | UN3142 |
| By Air: | |
| IATA Hazard Class: | 6.1 |
| IATA Proper Shipping Name: | Disinfectant Liquid, Toxic, n.o.s. (contains: 4-(2-Nitrobutyl) Morpholine) |
| IATA Packing Group: | III |
| IATA UN Number: | UN3142 |
| By Sea: | |
| IMDG Hazard Class: | 6.1 |
| IMDG Proper Shipping Name: | Disinfectant Liquid, Toxic, n.o.s. (contains: 4-(2-Nitrobutyl) Morpholine) |
| IMDG Packing Group: | III |
| IMDG UN Number: | UN3142 (Marine pollutant) |

15. REGULATORY INFORMATION

EPA registration number: 464-659-60061

Pest Registration Act number: Not applicable.

Other:

Not applicable.

| Chemical Name | CAS-No. | TSCA 12B | SARA 313 | TSCA | DSL | EINECS | Prop 65 | Whmis |
|--|-----------|----------|----------|------|-----|--------|---------|-------|
| 4-(2-Nitrobutyl) morpholine | 2224-44-4 | | | * | * | * | | |
| Methylene Dimorpholine | 5625-90-1 | | | * | * | * | | |
| Morpholine | 110-91-8 | | | * | * | * | | |
| 4,4'-(2-Ethyl-2-Nitropropane-1,3-diyl) bismorpholine | 1854-23-5 | | | * | * | * | * | * |
| 1-Nitropropane | 108-03-2 | * | | * | * | | | * |

16. OTHER INFORMATION

HMIS Health: 3* **HMIS Flammability: 2** **HMIS Physical Hazard: 3**

NFPA Health: 3 **NFPA Flammability: 2** **NFPA Instability/Reactivity: 3**

NOTICE: This document is generated for the purpose of distributing health, safety, and environmental data. The information on this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, expressed, or implied, regarding correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself. Kop-Coat makes no warranty with respect thereto and disclaims all liability from reliance thereon.

Key:

| | |
|-------------------|---|
| ACGIH | American Conference of Governmental Industrial Hygienists |
| CAS | Chemical Abstract Service Registry Number |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CERCLA RQ | CERCLA Reportable Quantity |
| CFR | Code of Federal Regulations |
| CPR | Cardiopulmonary resuscitation |
| DSL | Domestic Substances List of Canada |
| EINECS | European Inventory of Existing Chemical Substances |
| EPCRA | Emergency Planning and Community Right-to-know Act |
| EPCRA EHS | EPCRA Extremely Hazardous Substance |
| EPCRA TPQ | EPCRA Threshold Planning Quantity |
| oF | Fahrenheit degrees |
| g/l | Grams per liter |
| gal | Gallons |
| Group A3 | Carcinogen Category - Confirmed Animal Carcinogen with Unknown Relevance to Humans |
| Group A4 | Carcinogen Category - Not Classifiable as a Human Carcinogen |
| HMIS | Hazardous Materials Identification System - Chemical Rating |
| IARC | International Agency for Research on Cancer |
| lbs or LBS | Pounds |
| MGM3 | Milligrams per cubic meter |
| MIR | Maximum Incremental Reactivity |
| MSDS | Material Safety Data Sheet |
| NFPA | National Fire Protection Association |

| | |
|-----------------------|---|
| NIOSH | National Institute for Occupational Safety and Health |
| NTP | National Toxicology Program |
| OSHA | Occupational Safety and Health Administration |
| PEL | Permissible Exposure Limit |
| PPM | Parts per million |
| Proposition 65 | California's Safe Drinking Water and Toxic Enforcement Act |
| SARA | Superfund Amendments and Reauthorization Act |
| TLV | Threshold Limit Value |
| TSCA | Toxic Substances Control Act |
| USEPA | United States Environmental Protection Agency |
| VOC | Volatile Organic Compound |
| VOL | Volume |
| WT | Weight |
| WHMIS | Canadian Workplace Hazardous Materials Information System |
| UN | United Nations |

ANSI KC 1.74
