

**SOVEREIGN CHEMICAL COMPANY**

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Material Safety Data Sheet

Sovchem MBS Granule

1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Manufacturer: Sovereign Chemical Company 1225 West Market St. Akron, Ohio 44313 USA Phone: 330-869-0500	Emergency Contact: Chemtrec: 1-800-424-9300 (continental USA) (1)703-527-3887 (outside continental USA)
Trade Name(s): Sovchem MBS Granule	MSDS Number: 1566
Chemical Name: 2-(4-Morpholinyl) mercaptobenzothiazole	Synonyms: Morpholine, 4-(2-benzothiazolythio), N-oxydiethylene-2-benzothiazylsulfenamide, (2-Morpholiniothio) benzothiazole, MOR, MBS
Prepared By: Sovereign Chemical Company	Date of Issue: May 7, 2009 Revision Number: 4 (supersedes June 12, 2003) Change(s): 3 year update

2. INGREDIENTS

<u>Component</u>	<u>CAS #</u>	<u>Percent</u>	<u>BRMA (TLV)</u>	<u>OSHA (PEL)</u>	<u>ACGIH (TLV)</u>
2-(4-Morpholinyl) mercaptobenzothiazole	102-77-2	>97	<2.5 mg/M ³ (total dust)	NE	NE
2-Mercaptobenzothiazole	149-30-4	0 - 1			

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Light cream to light tan pellets. Use water spray, foam, carbon dioxide or dry powder to extinguish fires. Wear full protective equipment including self-contained breathing apparatus when fighting fire. During fire situations fumes of nitrogen oxides, morpholine and carbon monoxide may be emitted. Avoid dust formation. Avoid contact with skin and eyes. Avoid releasing into the environment.

HMIS Rating: Health – 1, Flammability –1, Reactivity – 0, Personal Protection - F - safety glasses, protective gloves, apron, dust mask

This is recommended personal protection equipment, final personal protection equipment should be determined by the plant safety department based on the actual conditions under which the product is used.

Potential Health Effects:

Eye: Dust and fumes may cause irritation.

Skin Contact: May cause irritation. Classified as a skin sensitizer by OSHA.

Ingestion: Is not expected to be an important route of entry. May cause digestive system irritation.

Inhalation: May cause irritation.

Chronic & Carcinogenicity: No NTP or IARC materials.

4. FIRST AID MEASURES

Skin: Wash thoroughly with mild soap and water. Seek medical attention if irritation develops. Remove any contaminated clothing and launder thoroughly before reuse. Classified as a skin sensitizer by OSHA.

Eye: Flush with tepid water for at least 15 minutes holding the eyelids wide open. Seek medical attention if irritation develops.

Ingestion: Seek medical attention. Symptomatic treatment.

Inhalation: Remove exposed person to fresh air. Seek medical attention. Symptomatic treatment.

Notes to the physician: There is no specific antidote known. Treatment of overexposure should be directed at the control of symptoms and according to the clinical condition of the patient.

5. FIRE FIGHTING MEASURES

Flash Point: 190°C **LEL:** ND **UEL:** ND **Auto Ignition Temperature:** 345°C

Use water spray, foam, carbon dioxide or dry powder to extinguish fires. Product in or near fires should be cooled with a water spray or fog. A self contained breathing apparatus (SCBA) operating in the positive pressure mode and full fire fighting protective clothing should be worn for combating fires.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear suitable protective equipment (gloves, safety goggle/face protection, dust mask and protective clothing. Provide sufficient ventilation to minimize exposure.

Environmental Precautions: Do not discharge into drains and the environment.

Methods for Clean-up: Sweep and shovel up into clean dry covered containers. Minimize dust. Do not contaminate unspilled material. Flush area with water and collect cleaning water for proper disposal.

7. HANDLING AND STORAGE

Storage Conditions: Store in cool (below 30°C), dry places away from acids and oxidizing materials.

Store in closed containers in a dry environment.

Handling: Good housekeeping and engineering practices should be employed to prevent the generation and accumulation of dusts. . Avoid skin and eye contact and dispersion of dust in air to reduce potential for dust ignition/explosion. Wash thoroughly after handling. Individuals handling this product should wear personal protective equipment specified in Section 8. Plant environment should include controls and equipment specified in Section 8.

Technical Measures: Good local ventilation is need at points, where bags or containers are opened and discharged. Take measures against electrostatic charges. Electrically bond and ground all containers and equipment before transfer or use of material.

8. EXPOSURE CONTROL - PERSONAL PROTECTION

Engineering Controls: Local exhaust ventilation should be provided. Design details for local exhaust ventilation systems may be found in the latest edition of "Industrial Ventilation: A Manual of Recommended Practices" published by the ACGIH Committee on Industrial Ventilation, P.O. Box 16153, Lansing, MI 48910. The need for local exhaust ventilation should be evaluated by a professional industrial hygienist. Local exhaust ventilation systems should be designed by a professional engineer.

Respiratory Protection: Wear dust mask or dust respirator if product dusts are formed.

Eye Protection: Use safety goggles or face protection.

Protection Gloves: Wear gloves.

Other Protection Items: Neoprene or nitrile rubber coated apron or other body covering may be required if there is a possibility of regular work clothing becoming contaminated with the product. All soiled or dirty clothing and personal protective equipment should be thoroughly cleaned before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance/Physical State: Light cream to light tan pellets	Melt Point: 80°C
Vapor Density (Air = 1): NA	Octanol/Water Partition Coefficient: log Pow = 3.55
Vapor Pressure: NA	Evaporation Rate BuOAC = 1: NA
Odor: Slightly aromatic	Specific Gravity: 1.36 g/cc at 25°C
% Volatile by Volume: Not volatile	Boiling Point: NA
% Solubility (H₂O) : Insoluble	pH: NA
Other: Soluble in benzene, acetone, chloroform, carbon disulfide.	Partially soluble in ethyl/methyl alcohol and gasoline.

10. STABILITY AND REACTIVITY

Stability /Polymerization: Stable under normal conditions. Hazardous polymerization will not occur.

Incompatibility (conditions to avoid): Avoid contact with strong oxidizing agents and concentrated mineral acids.

Hazardous Decomposition Products: Thermal decomposition into carbon monoxide, nitrogen oxides, sulfur dioxide and morpholine fumes. In contact with oxidizing materials and acids, toxic sulfur compounds and amine vapors may be produced.

Special Sensitivity: None that are known.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity:

LD₅₀ oral (rat) = no mortality n rat at 5000 mg/kg

LD₅₀ dermal (rabbit) = >7940 mg/kg.

Inhalation: no data available.

Local Effects:

Inhalation: Risk of irritation of respiratory system.

Skin-contact: Classified as a skin sensitizer by OSHA. Proven human sensitizer.

Eye-contact: In animals (rabbits): slightly irritating to eyes.

Chronic Toxicity:

No effect concentration (rat/1 month): 10 mg/m³

Specific Effects:

In vitro: not genotoxic

Experimentation on animals has not shown carcinogenic effect.

Absence of toxic effects on fertility.

Absence of toxic effects for total development.

Mutagenicity/carcinogenicity: No NTP or IARC ingredients

12. ECOLOGICAL INFORMATION

Biodegradation: In water: 0% after 28 days, in air: Photolysis t_{1/2} life = 1 hour

Mobility/Bioaccumulation: No data available

Ecotoxicity:

96 hr-LC50 (Fathead minnow) = 3.5 mg/l, moderately toxic

96 hr-C150 (Algae) = 2.0 mg/l, moderately toxic

96 hr-LC50 (Chlorophyll) = 2 ppm, moderately toxic

48 hr-CE(1)50 (Daphnia) = 4.0-5.3 mg/l

48 hr-LC50 (Midage) = 5.3 mg/l

96 hr-LC50 (Fish) = 2 mg/l

13. DISPOSAL CONSIDERATIONS

Product: Dispose of in chemical land-fill not recommended. Incineration with flue gas-scrubbing recommended.

Do not discharge into drains or the environment.

Packaging: Contaminated packaging should be disposed of as a chemical waste.

14. TRANSPORTATION INFORMATION

US DOT/Canadian TDG: Not regulated

UN Number: NA

ADR/RID: Not Known

IMDG: Not Regulated

IATA: Not Regulated for Transportation

15. REGULATORY INFORMATION

WHMIS: D2B Toxic Materials/ Materials causing other Toxic Effects..

CERCLA/RCRA: Not listed, no reportable quantities or threshold planning quantities.

Sara Title 311/312 Hazard Category: Immediate Delayed Fire

SARA Title III, Section 313: 2-mercaptobenzothiazole.

NTP, IARC, SUBPART Z, Proposition 54 (CA), Clean Air: Not listed.

OSHA Hazard Communication Classification: Skin sensitizer.

Inventories: US TSCA listed, Canada DSL listed (1142), Australia AICS listed, Japan ENCS listed (5-897X:5-898X), Korea ECL listed (KE-27731)

16. OTHER INFORMATION

NE = Not Established

NA = Not Applicable

ND = Not Determined

Information contained in this MSDS sheet have been gathered from the following documents:

Add sources used to make msds

Chemical REG-A-DEX, J.J.Keller, March 2000

WHMIS Compliance Manual, Carswell, April 2000

Transportation of Dangerous Good, J.J.Keller, February 2000

Code of Federal Regulations, Transportation, 49 CFR Parts 100 to 185, October 1998

NIOSH Pocket Guide to Chemical Hazards, June 1997

ACGIH Threshold Limit Values, 1999

HMIS Implementation Manual, 2nd Edition

Toxicity and Safe Handling of Rubber Chemicals, BRMA, 3rd Edition

ChemCheck Handbook, Specialty Technical Publishers, March 2000

IARC WEB site

NTP WEB site

IMPORTANT SAFETY NOTICE: The information in the Material Safety Data Sheet relates only to the specific material(s) described herein and does not relate to use in combination with any other material or substance or in any process. We believe that the information contained herein is current as of the date of issue of this Material Safety Data Sheet. Since the use of this information and these opinions and the conditions of use of this product are not within the control of Sovereign Chemical Company, it is the user's obligation to determine the conditions of safe use of the product.

Users of this product should study this Material Safety Data Sheet and become aware of the product hazards and safety information before using the product. Users should also notify their employees, agents, and contractors of the information on this Material Safety Data Sheet and any product hazards and safety information in order to provide safe use of this product.