

EMS CATALOG NO: 13390
EMS PRODUCT: Dimethyl Sulfoxide
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MATERIAL SAFETY DATA SHEET

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FOR PRODUCT AND SALES INFORMATION

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PRODUCT IDENTIFICATION

COMMON NAME: Dimethyl Sulfoxide

COMMERCIAL NAME(S): Not available.

SYNONYM: DMSO; SULFINYLBIS {METHANE}

CHEMICAL NAME: N/A

CHEMICAL FAMILY: Solvent

CHEMICAL FORMULA: (CH₃)₂SO

CAS#: 67-68-5

RTECS: PV6210000

TSCA: TSCA 8(b) inventory: Dimethyl Sulfoxide

CI#: Not applicable.

COMPOSITION AND INFORMATION ON INGREDIENTS

NAME: Dimethyl Sulfoxide

CAS#: 67-68-5

TWA(mg/m³):

STEL (mg/m³):

% BY WEIGHT: 100

TOXICOLOGICAL DATA ON INGREDIENTS:

ORAL (LD50): Acute: 14500 mg/kg [Rat]. 7920 mg/kg [Mouse].

HAZARDS IDENTIFICATION

POTENTIAL ACUTE HEALTH EFFECTS: Extremely hazardous in case of skin contact (permeator), of ingestion. Very hazardous in case of eye contact (irritant), of inhalation. Hazardous in case of skin contact (irritant). Inflammation of the eye is characterized by redness, watering, and itching.

POTENTIAL CHRONIC HEALTH EFFECTS:

CARCINOGENIC EFFECTS: Not available.

MUTAGENIC EFFECTS: Not available.

TERATOGENIC EFFECTS: Not available.

DEVELOPMENTAL TOXICITY: Not available.

The substance is toxic to blood, kidneys, lungs, the nervous system, liver, mucous membranes. Repeated or prolonged exposure to the substance can produce target organs damage.

FIRST AID MEASURES

EYE CONTACT: Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Do not use an eye ointment. Seek medical attention.

SKIN CONTACT: After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cold water may be used. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

SERIOUS SKIN CONTACT: Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

INHALATION: Remove to fresh air. Loosen tight clothing such as a collar, tie belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

SERIOUS INHALATION: Not available.

INGESTION : **Induce vomiting.** Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

SERIOUS INGESTION: Not available.

FIRE AND EXPLOSION DATA

FLAMMABILITY OF THE PRODUCT: Combustible.

AUTO-IGNITION TEMPERATURE: 215°C (419°F)

FLASH POINTS: Closed Cup: 89°C (192.2°F)
Open Cup: 95°C (203°F)

FLAMMABLE LIMITS: Lower: 2.6%
Upper: 42%

PRODUCTS OF COMBUSTION: These products are carbon oxides (CO, CO₂), sulfur oxides (SO₂, SO₃...)

FIRE HAZARDS IN PRESENCE OF VARIOUS SUBSTANCES: Not available.

EXPLOSION HAZARDS IN PRESENCE OF VARIOUS SUBSTANCES:

RISKS OF EXPLOSION OF THE PRODUCT IN PRESENCE OF MECHANICAL IMPACT: Not available.

RISKS OF EXPLOSION OF THE PRODUCT IN PRESENCE OF STATIC DISCHARGE: Not available.

FIRE FIGHTING MEDIA AND INSTRUCTIONS:

SMALL FIRE: Use DRY chemical powder.

LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

SPECIAL REMARKS ON FIRE HAZARDS: Not available.

SPECIAL REMARKS ON EXPLOSION HAZARDS: Not available.

ACCIDENTAL RELEASE MEASURES

SMALL SPILL: Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

LARGE SPILL: Combustible material. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. If the product is in its solid form: Use a shovel to put the material into a convenient waste disposal container. If the product is in its liquid form: Absorb with an inert material and put the spilled material in an appropriate waste disposal. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

HANDLING AND STORAGE

PRECAUTIONS: Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/ spray. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek

medical advice immediately and show the container or the label. Avoid contact with skin and eyes.

STORAGE: Flammable materials should be stored in a separate safety storage cabinet or room. Keep away from heat. Keep away from sources of ignition. Keep container tightly closed. Keep in a cool, well-ventilated place. Ground all equipment containing material. Keep container dry. Keep in a cool place.

EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide exhaust ventilation or other engineering controlled to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

PERSONAL PROTECTION: Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

PERSONAL PROTECTION IN CASE OF A LARGE SPILL: Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

EXPOSURE LIMITS: Not available.

PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE AND APPEARANCE: Liquid.

ODOR: Garlic like

TASTE: Not available.

COLOR: Clear Colorless.

MOLECULAR WEIGHT: 78.13 g/mole

pH (1% SOLN/WATER): Not available.

BOILING POINT: 189°C (372.2°F)

MELTING POINT: 18.45°C (62.2°F)

CRITICAL TEMPERATURE: Not available.

SPECIFIC GRAVITY: 1.1008 (Water=1)

VAPOR PRESSURE: 0.417 mm of Hg (@20°C)

VAPOR DENSITY: 2.7 (Air=1)

VOLATILITY: Not available.

ODOR THRESHOLD: Not available.

WATER/OIL DIST. COEFF.: The product is more soluble in oil; log (oil/water)=107

IONICITY (IN WATER): Not available.

DISPERSION PROPERTIES: See solubility in water.

SOLUBILITY: Easily soluble in cold water, hot water.

STABILITY AND REACTIVITY DATA

STABILITY: The product is stable.
INSTABILITY TEMPERATURE: Not available.
CONDITIONS OF INSTABILITY: Not available.
INCOMPATIBILITY WITH VARIOUS SUBSTANCES: Not available.
CORROSIVITY: Non-corrosive in presence of glass.
SPECIAL REMARKS ON REACTIVITY: Not available.
SPECIAL REMARKS ON CORROSIVITY: Not available.
POLYMERIZATION: No.

TOXICOLOGICAL INFORMATION

ROUTES OF ENTRY: Dermal contact. Eye contact. Inhalation. Ingestion.
TOXICITY TO ANIMALS:
Acute oral toxicity (LD50): 7920 mg/kg [Mouse].
CHRONIC EFFECTS ON HUMANS: The substance is toxic to blood, kidneys, lungs, the nervous system, liver, mucous membranes.
OTHER TOXIC EFFECTS ON HUMANS: Extremely hazardous in case of skin contact (permeator), of ingestion. Very hazardous in case of inhalation. Hazardous in case of skin contact (irritant).
SPECIAL REMARKS ON TOXICITY TO ANIMALS: Not available.
SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS: Not available.
SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available.

ECOLOGICAL INFORMATION

ECOTOXICITY: Not available.
BOD5 AND COD: Not available.
PRODUCTS OF BIODEGRADATION: Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
TOXICITY OF THE PRODUCTS OF BIODEGRADATION: The products of degradation are more toxic.
SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available.

DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: Recycle to process, if possible. Consult your local or regional authorities.

TRANSPORT INFORMATION

DOT CLASSIFICATION: Not a DOT controlled material (United States).
IDENTIFICATION: Not applicable.
SPECIAL PROVISIONS FOR TRANSPORT: Not applicable.

OTHER REGULATORY INFORMATION

FEDERAL AND STATE REGULATIONS:

TSCA 8 (b) INVENTORY: Dimethyl sulfoxide

OTHER REGULATIONS:

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200)

OTHER CLASSIFICATIONS:

WHMIS (CANADA):

Class B-3: Combustible liquid with a flash point between 37.8oC (100oF)
and 93.3oC (200oF).

Class D-2A-Material causing other toxic effects (VERY TOXIC).

DSCLA (EEC):

R38-Irritating to the skin

R41-Risk of serious damage to eyes.

HMIS (U.S.A.):

HEALTH HAZARD: 1

FIRE HAZARD: 2

REACTIVITY: 0

PERSONAL PROTECTION: h

NATIONAL FIRE PROTECTION ASSOCIATION (U.S.A.)

HEALTH: 1

FLAMMABILITY: 1

REACTIVITY: 0

SPECIFIC HAZARD:

PROTECTIVE EQUIPMENT:

Gloves.

Lab Coat.

Vapor respirator. Be sure to use an approved/certified respirator
or equivalent. Wear appropriate respirator when ventilation is
inadequate.

Splash goggles.