Health	1
Fire	2
Reactivity	0
Personal Protection	F

Material Safety Data Sheet
Dimethyl sulfoxide MSDS

Section 1: Chemical Product and Company Identification

Product Name: Dimethyl sulfoxide

Catalog Codes: SLD3139, SLD1015

CAS#: 67-68-5

RTECS: PV6210000

TSCA: TSCA 8(b) inventory: Dimethyl sulfoxide

CI#: Not applicable.

Synonym: Methyl Sulfoxide; DMSO

Chemical Name: Dimethyl Sulfoxide

Chemical Formula: (CH3)2SO

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Dimethyl sulfoxide	67-68-5	100

Toxicological Data on Ingredients: Dimethyl sulfoxide: ORAL (LD50): Acute: 14500 mg/kg [Rat]. 7920 mg/kg [Mouse]. DERMAL (LD50): Acute: 40000 mg/kg [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects:
Slightly hazardous in case of inhalation (lung irritant). Slightly hazardous in case of skin contact (irritant, permeator), of eye contact (irritant), of ingestion, .

Potential Chronic Health Effects:
Slightly hazardous in case of skin contact (irritant, sensitizer, permeator), of ingestion. CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to blood, kidneys, liver, mucous membranes, skin, eyes. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: 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. Get medical attention if irritation occurs.

Skin Contact:
Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops. Cold water may be used.

Serious Skin Contact: Not available.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.

Section 5: 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: 28.5% (Lewis), 42% (NFPA)

Products of Combustion: These products are carbon oxides (CO, CO2), sulfur oxides (SO2, SO3...).

Fire Hazards in Presence of Various Substances:
Flammable in presence of open flames and sparks, of heat. Non-flammable in presence of shocks.

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:
When heated above its boiling point, dimethyl sulfoxide degrades giving off formaldehyde, methyl mercaptan, and sulfur dioxide

Special Remarks on Explosion Hazards: Not available.

Section 6: 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.

Section 7: 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. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents.

Storage:
Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame). Hygroscopic. Sensitive to light. Store in light-resistant containers.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Provide exhaust ventilation or other engineering controls 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:
Safety glasses. Synthetic apron. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves (impervious).

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust 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.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid.

Odor: Sulfurous. (Slight.)

Taste: Bitter with sweet after-taste (Slight.)

Molecular Weight: 78.13 g/mole

Color: Clear Colorless.

pH (1% soln/water): Not available.

Boiling Point: 189°C (372.2°F)

Melting Point: 18.45°C (65.2°F)

Critical Temperature: Not available.

Specific Gravity: 1.1008 (Water = 1)

Vapor Pressure: 0.1 kPa (@ 20°C)

Vapor Density: 2.71 (Air = 1)

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: The product is more soluble in water; log(oil/water) = -2

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, diethyl ether, acetone.

Solubility:
Soluble in cold water, hot water, diethyl ether, acetone. Soluble in chloroform, ethanol, and benzene.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Heat, ignition sources, flames, incompatibles

Incompatibility with various substances: Reactive with oxidizing agents, reducing agents, acids, alkalis.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Hygroscopic. It has a strong water affinity, and if left exposed it will become rapidly diluted. Incompatible with strong oxidants, arylhalides, bromobenzoyl acetanilide, magnesium perchlorate, perchloric acid, and sodium hydroxide, alkali metals, hydrobromic acid, acidic solutions of alkali bromides, organic and inorganic acid chlorides, acid halides, cyanuric chloride, silver fluoride, methyl bromide, sodium hydride, periodic acid, diborane, iodine pentafluoride, silicon tetrachloride, phosphorous halides (phosphorous trichloride), trichloroacetic acid + copper wool, phosphorous trioxide, thionyl chloride, plastics

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Eye contact. Inhalation.

Toxicity to Animals:
Acute oral toxicity (LD50): 7920 mg/kg [Mouse]. Acute dermal toxicity (LD50): 40000 mg/kg [Rat].

Chronic Effects on Humans:
MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. May cause damage to the following organs: blood, kidneys, liver, mucous membranes, skin, eyes.

Other Toxic Effects on Humans:
Slightly hazardous in case of inhalation (lung irritant). Slightly hazardous in case of skin contact (irritant, permeator), of ingestion, .

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans:
May cause adverse reproductive effects (female fertility and fetotoxicity - post implantation mortality) and birth defects based on animal data. May cause cancer (tumorigenic) based on animal data. May affect genetic material (mutagenic).

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: Causes skin irritation. May cause urticaria(hives), skin rashes, and dermatitis. Dimethyl Sulfoxide is readily absorbed through skin and may carry other dissolved chemicals into the body. An unusual garlic-onion-oyster odor may develop on breath and body/skin. Absorption through skin may also cause diarrhea, and affect respiration(dyspnea, cyanosis), blood, behavior (fatigue, dizziness, sedation, headaches), vision (transient photophobia, and disturbances of color vision), urinary system (hematuria). Eyes: Causes eye irritation. May cause blurred vision, corneal opacity, chemical conjunctivitis. Inhalation: Causes respiratory tract irritation. Symptoms from exposure to high vapor concentrations may include coughing, shortness of breath, headache, dizziness and sedation. Ingestion: Causes gastrointestinal tract irritation, and an usual garlic-onion-oyster may develop on breath, and body/skin. May affect behavior/ central nervous system, respiration (dyspnea). Symptoms may include nausea, vomiting, and diarrhea, abdominal pain, drowsiness, confusion, lethargy, agitation, disorientation, tremor, muscle weakness, chills, chest pains. May also affect liver (elevated liver enzymes, jaundice), cardiovascular system, and urinary system (hematuria, hemoglobinuria, renal tubular injury), eyes (transient photophobia and disturbances of color vision, conjunctive irritation) Chronic Potential Health Effects: Skin: Chronic absorption may cause effects similar to that of acute skin absorption. Chronic skin contact may cause scaling

dermatitis. Ingestion: Repeated oral doses may affect the kidneys (hematuria), blood (normocytic anemia, changes in red blood cell count), and metabolism (weight loss/anorexia), liver (jaundice).

Section 12: 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 product itself and its products of degradation are not toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

Section 15: 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). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances. National Inventory Lists of China, Japan, Korea, and Philippines.

Other Classifications:

WHMIS (Canada):
CLASS B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).

DSCL (EEC):
R36/37/38- Irritating to eyes, respiratory system and skin. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S36/37/39- Wear suitable protective clothing, gloves and eye/face protection.

HMIS (U.S.A.):

Health Hazard: 1

Fire Hazard: 2

Reactivity: 0

Personal Protection: F

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 2

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves (impervious). Synthetic apron. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Safety glasses.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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