



**PhytoTechnology
Laboratories®**

SAFETY DATA SHEET

1. CHEMICAL IDENTIFICATION AND COMPANY INFORMATION

PRODUCT NAME: Dimethyl Sulfoxide, ACS Reagent
PRODUCT NUMBER: D241
COMPANY INFO: *PhytoTechnology Laboratories®*
PO Box 12205, Shawnee, KS 66282-2205
Phone: 1-888-749-8682 or 1-913-341-5343; Fax: 1-888-449-8682 or 1-913-341-5442
www.phytotechlab.com

EMERGENCY PHONE NUMBER: 1-800-535-5053 - US Only
1-352-323-3500 - International

RECOMMENDED USE: For Research Use Only

RESTRICTIONS ON USE: Products sold by *PhytoTechnology Laboratories®* are intended for research and laboratory use only. Products are not to be used as human or animal therapeutics, cosmetics, agricultural or pesticidal products, food additives, or as household chemicals.

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS):

H227 – Flammable liquids (Category 4)

GHS Label elements, including hazard and precautionary statements:

Pictogram:



Signal Word: **Warning**

Hazard Statements: H227 – Combustible liquid.

Precautionary Statements:

P210 – Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

P280 – Wear protective clothing/protective gloves/eye protection/face protection.

P305 + P351 + P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: DMSO; Methyl Sulfoxide

CAS No.: 67-68-5

Formula: $(\text{CH}_3)_2\text{SO}$

Molecular Weight: 78.13 g/mol

EC No.: 200-664-3

| Ingredient | CAS Number | Percent | Hazardous |
|--------------------|------------|---------|---|
| Dimethyl Sulfoxide | 67-68-5 | >99 % | No exposure limits established by OSHA or ACGIH |

4. FIRST AID MEASURES

General Advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

| Route of Entry | Symptoms | First Aid Procedures |
|-----------------------|---|--|
| Ingestion | May cause irritation if swallowed | If swallowed, wash out mouth with water. Never give anything by mouth to an unconscious person. Get medical attention. |
| Inhalation | May cause irritation to respiratory tract | Safely remove victim to fresh air. If not breathing, institute cardiopulmonary resuscitation (CPR). If breathing is difficult, ensure clear airway and give oxygen. Get medical attention. |
| Eye Contact | Direct contact may cause irritation. May cause redness, tearing, or blurred vision. | Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Get medical attention if irritation persists. |
| Skin Contact | Irritating. May cause reddening, itching or inflammation. | Wash area thoroughly with soap and water. Remove and wash contaminated clothing. Get medical attention if irritation persists. |

Most Important Symptoms or Effects, Both Acute and Delayed:

See section 2 and/or section 11

Recommendation for Immediate Medical Care and Special Treatment Needed:

No data available

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media:

For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Special Protective Equipment and Precaution for Firefighters:

In the event of a fire, wear full protective clothing and NIOSH approved self-contained breathing apparatus. Evacuate the area and fight fire from a safe distance.

Hazardous Combustion Products:

May emit toxic fumes under fire conditions. Above 87 °C, explosive vapor/air mixtures may be formed

Toxic Gases Produced:

Carbon dioxide, carbon monoxide, sulfur oxides

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:

Use personal protection recommended in Section 8. Avoid breathing vapors, mist or gas. Remove all sources of ignition. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. Ensure adequate ventilation, especially in confined areas. Evacuate personnel to safe areas.

Environmental Precautions:

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Method of Containment and Cleanup:

Clean-up personnel should wear proper protective equipment and clothing. Contain spilled material and do not let product enter drains. Soak up with inert absorbent material and place in a suitable, closed container for disposal in accordance with all local, state/provincial, and national requirements. Ventilate the area if necessary. Do not let products enter drains.

7. HANDLING AND STORAGE

Precaution for Safe Handling:

Avoid contact with skin and eyes. Avoid incompatible substances. Keep away from a source of ignition. No smoking. Take measures to prevent the buildup of electrostatic charge. Wash thoroughly after use.

Conditions for Safe Storage:

Keep in a tightly closed container and store in a cool, dry, and well-ventilated area. Very hygroscopic substance. Protect from moisture.

Incompatibilities: Acid chlorides, Phosphorus halides, Strong acids, Strong oxidizing agents, Strong reducing agents

Recommended Storage Temperature: Room Temperature

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OSHA's Permissible Exposure Limits (PELs): No data available

Threshold Limit Values (TLVs): No data available

Workplace Environmental Exposure Levels (WEEL): 250 ppm

Engineering Controls: Handle in accordance to general industrial hygiene and safety practice.

Personal Protective Equipment (PPE):

Eye/Face Protection: Chemical safety glasses or goggles. Have eye-washing facilities readily available where eye contact can occur.

Skin Protection: Protective gloves

Body Protection: Lab coat

Respiratory Protection: Appropriate respirator

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Colorless, Clear Liquid

pH: No data available

Solubility: Miscible with Water

Melting Range: 18.5 °C

Vapor Density: 2.7 atm

Vapor Pressure: 0.55 hPa (0.41 mmHg) at 20 °C (68 °F)

Specific Gravity: 1.10 g/mL

Odor: Odorless

Odor Threshold: No data available

Viscosity: No data available

Relative Density: 1.1 g/mL

Evaporation Rate: No data available

Initial Boiling Point and Boiling Range: 189 °C (372 °F)

Flammability (solid, gas): No data available

Partition coefficient: Log Pow: -2.03
n-octanol/water):

Auto-ignition Temperature: No data available

Decomposition Temperature: No data available

Flash Point (Closed Cup): 87 °C

Flammable Limits: Upper – 42 % Lower – 2.6 %

10. STABILITY AND REACTIVITY

Reactivity: No data available

Chemical Stability: Stable under normal conditions of use – Material is very hygroscopic, material is combustible

Possibility of Hazard Reactions: Will not occur

Conditions to Avoid: Moisture, sources of ignition, high temperatures, incompatibles

Incompatibles Materials: Acid chlorides, Phosphorus halides, Strong acids, Strong oxidizing agents, Strong reducing agents

Hazardous Decomposition Products: Carbon dioxide, carbon monoxide, sulfur oxides

11. TOXICOLOGICAL INFORMATION

| | | |
|--|--|-------------------|
| Toxicity: | LD ₅₀ (Oral-Rat)(mg/Kg): | 14,500 |
| | LD ₅₀ (Inhalation-Rat)(ppm/4hr): | 40250 |
| | LD ₅₀ (IV-Mouse)(mg/Kg): | 3100 |
| | LD ₅₀ (Dermal-Rabbit)(mg/Kg): | >5000 |
| Carcinogenicity: | NTP: | No |
| | IARC: | No |
| | Z List: | No |
| | OSHA Reg: | No |
| Reproductive Toxicity: | No data available | |
| Symptoms Associated with Overexposure: | Irritation, itching, gastrointestinal upset, dermatitis, corneal damage, possible mutagenic, tumorigenic, and reproductive effects, muscular weakness, fetal death, heart problems, cyanosis, breathing difficulties | |
| Specific Target Organ Toxicity: | Single Exposure: | No data available |
| | Repeated Exposure: | No data available |
| Target Organs: | Respiratory system, skin, eyes, blood, liver, central nervous system | |
| Medical Conditions Aggravated By Exposure: | Central nervous system or cardiac impairment | |
| Routes of Entry: | Inhalation, skin and eye contact | |
| NIOSH/RTECS NO: | PV6210000 | |

The toxicological properties of this product have not been thoroughly investigated

12. ECOLOGICAL INFORMATION

| | |
|--------------------------------|--|
| Toxicity: | LC50 – fathead minnow – 34,000 mg/L – 96 hrs |
| | LC50 – rainbow trout – 35,000 mg/L – 96 hrs |
| | EC50 – water flea – 27,500 mg/L |
| Persistence and Degradability: | No data available |
| Bioaccumulative Potential: | No data available |
| Mobility in Soil: | No data available |
| Other Adverse Effects: | No data available |

13. DISPOSAL CONSIDERATION

| | |
|-----------------------------|--|
| Disposal Procedure: | Dispose in accordance with all applicable federal, state, and local environmental regulations. |
| EPA Hazardous Waste Number: | No data available |

14. TRANSPORT INFORMATION

| | | | |
|--------------------|---------------------------|---|--------------------|
| Domestic (D.O.T.): | Proper Shipping Name: | Combustible liquid, n.o.s. (Dimethyl sulfoxide) | |
| | Hazard Class: | None | Packing Group: III |
| | UN/NA: | NA #:1993 | |
| | Marine Pollutant | No | |
| | Poison Inhalation Hazard: | No | |
| | Labels: | Combustible | |

International:

IMDG: Proper Shipping Name: CHEMICALS, N.O.S. (NON-REGULATED)
 Hazard Class: N/A
 UN/NA: N/A
 Labels: N/A

IATA: Proper Shipping Name: CHEMICALS, N.O.S. (NON-REGULATED)
 Hazard Class: N/A
 UN/NA: N/A
 Labels: N/A

15. REGULATORY INFORMATION

TSCA: Yes

SARA TITLE III:

Section 302 (EHS) Ingredients: No

Section 313 Ingredients: No

Section 304 (EHS/CERCLA) Ingredients: No

Section 311/312 Hazard: Fire Hazard, Chronic Health Hazard

Massachusetts Right to Know Components: No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right to Know Components: CAS NO.: 67-68-5 Dimethyl sulfoxide

New Jersey Right to Know Components: CAS NO.: 67-68-5 Dimethyl sulfoxide

California Prop. 65 Components: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

| | | | | |
|--------------|----------------------|------------------------------|--------------------------|------------------------|
| HMIS Rating: | Health Hazard | Chronic Health Hazard | Flammability | Physical Hazard |
| | 0 | * | 2 | 0 |
| NFPA Rating: | Health Hazard | Fire Hazard | Reactivity Hazard | Special Hazard |
| | 0 | 2 | 0 | |

*Chronic Hazard: Chronic (long-term) health effects may result from repeated overexposure.

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