



# MATERIAL SAFETY DATA SHEET

## 1. CHEMICAL IDENTIFICATION AND COMPANY INFORMATION

PRODUCT NAME: Dimethyl Sulfoxide  
 SYNONYMS: DMSO; Methyl Sulfoxide  
 PRODUCT NUMBER: D241  
 CAS NO: 67-68-5  
 NIOSH/RTECS NO: PV6210000  
 COMPANY INFO: *PhytoTechnology Laboratories*  
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## 2. COMPOSITION/INFORMATION ON INGREDIENTS

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

## 3. PHYSICAL & CHEMICAL PROPERTIES

Product Description: Dimethyl Sulfoxide  
 Formula:  $(\text{CH}_3)_2\text{SO}$   
 Molecular Weight: 78.13  
 Storage Temperature: RT  
 pH (1% (v/v)): Under Development (3.5 – 6.5 suspected range)  
 Vapor Density: 2.7  
 Melting Point: 18.55 C  
 Specific Gravity: 1.10  
 Solubility: Miscible with Water  
 Appearance: Colorless, clear liquid  
 Odor: Odorless

## 4. HAZARDS IDENTIFICATION

Label Hazard Warnings: Irritating to eyes, respiratory system, and skin  
 Label Precautionary Statements: Do not breathe fumes/vapor. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.  
 Laboratory Protective Equipment: Safety glasses, protective gloves, lab coat, and appropriate respirator recommended

HMIS Rating:	<b>Health</b>	<b>Flammability</b>	<b>Reactivity</b>	<b>Personal Protection Equipment</b>
	2	1	0	H
NFPA Rating:	<b>Health</b>	<b>Flammability</b>	<b>Reactivity</b>	<b>Special Hazards</b>
	2	2	0	-

Storage and Handling Precautions: Store in a tightly sealed container in a cool, dry place. Very hygroscopic substance. Protect from moisture. Do not breathe fumes. Avoid contact with material. Wash thoroughly after handling.

## 5. POTENTIAL HEALTH HAZARDS/ TOXICOLOGICAL INFORMATION

Toxicity:	LD <sub>50</sub> (Oral-Rat)(mg/Kg):	14,500
	LD <sub>50</sub> (IP-Rat)(mg/Kg):	200
	LD <sub>50</sub> (IV-Mouse)(mg/Kg):	3100
Carcinogenicity:	NTP:	No
	IARC:	No
	Z List:	No
	OSHA Reg:	No
Effects of Overexposure:	Irritation, itching, gastrointestinal upset, dermatitis, corneal damage, possible mutagenic, tumorigenic, and reproductive effects, muscular weakness, fetal death, heart problems, cyanosis, breathing difficulties	
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	

## 6. EMERGENCY AND FIRST AID

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. <b>Get medical attention.</b>
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. <b>Get medical attention.</b>
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. <b>Get medical attention if irritation persists.</b>
Skin Contact	Irritating. May cause reddening, itching or inflammation.	Wash area thoroughly with soap and water. Remove and wash contaminated clothing. <b>Get medical attention if irritation persists.</b>

## 7. FIRE HAZARDS & FIRE FIGHTING MEASURES

Flash Point (Closed Cup):	87 C	
Flammable Limits:	Upper – 42 %	Lower – 2.6 %
Fire Extinguishing Media:	Water spray, carbon dioxide, dry chemical powder, or appropriate foam. Use extinguishing media suitable for surrounding fire.	
Special Fire-Fighting Procedures:	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.	
Unusual Fire & Explosion Hazards:	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, formaldehyde, methyl mercaptan	

## 8. REACTIVITY & CONDITIONS TO AVOID

Stability:	Stable under normal conditions of use – Material is very hygroscopic, material is combustible
Hazardous Polymerization:	Will not occur
Conditions to Avoid:	Moisture, sources of ignition, high temperatures, incompatibles
Incompatibles:	Strong oxidizing agents, copper wool, trichloroacetic acid, potassium permanganate, acid halides, cyanuric chloride, silicon tetrachloride, methyl bromide, sodium hydride, iodine pentafluoride, silver fluoride, magnesium perchlorate, phosphorus trichloride, perchloric and periodic acids
Hazardous Decomposition Products:	Carbon dioxide, carbon monoxide, sulfur oxides, formaldehyde, methyl mercaptan

## 9. SPECIAL PRECAUTIONS/PROTECTIVE EQUIPMENT

Ventilation:	Ventilation hood recommended
Respiratory Protection:	A NIOSH/MSHA approved air purifying respirator is recommended where airborne concentrations are expected to exceed exposure limits. Protection provided by purifying respirators is limited.
Eye/Skin Protection:	Have eye-washing facilities readily available where eye contact can occur. Wear chemical safety goggles. Use appropriate chemical protective gloves when handling. Showering and changing into street clothes after work is recommended.

## 10. SPILLS & LEAKS

Spill or Discharge:	Wear suitable protective clothing and a self-contained breathing apparatus if available. Carefully sweep up and remove. Place material in a dry container and cover. Remove from the area. Flush spill area with water.
Disposal Procedure:	Dispose in accordance with all applicable federal, state, and local environmental regulations.
EPA Hazardous Waste Number:	N/A

## 11. TRANSPORTATION DATA

Domestic (D.O.T.):	Proper Shipping Name:	CHEMICALS, N.O.S. (NON-REGULATED)
	Hazard Class:	N/A
	UN/NA:	N/A
	Labels:	N/A
International (I.M.O.):	Proper Shipping Name:	CHEMICALS, N.O.S. (NON-REGULATED)
	Hazard Class:	N/A
	UN/NA:	N/A
	Labels:	N/A

## 12. REGULATORY INFORMATION

### U.S. Federal Regulatory Information

TSCA: Yes

SARA TITLE III:

Section 302 (EHS) Ingredients: No  
Section 313 Ingredients: No  
Section 304 (EHS/CERCLA) Ingredients: No

SARA TITLE III NOTIFICATION INFORMATION

Acute Health Hazard: Yes  
Chronic Health Hazard: No  
Fire Hazard: No  
Sudden Release of Pressure Hazard: No

International Regulatory Information

Risk Phrases: 36/37/38 – Irritating to eyes, respiratory system, and skin

Safety Phrases: 23 – Do not breathe fumes/vapor  
26 – In case of contact with eyes, rinse immediately with plenty of water and seek medical advice  
36 – Wear suitable protective clothing

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