

Responsible Name **Pierce Administration****Section 1. Chemical Product and Company Identification**Common Name **Dimethylsulfoxide**

Code 0020684 0020688 NCI1050

Supplier Pierce Chemical Company

P.O. Box 117  
Rockford, IL 61105  
USA  
815.968.0747

In Case of Emergency CALL CHEMTREC:

800.424.9300  
OUTSIDE US:  
202.483.7616

Print Date 10/24/2000

Validation Date **10/24/2000**

MSDS# 1977

Manufacturer Pierce Chemical Company

P.O. Box 117  
Rockford, IL 61105  
USA  
815.968.0747**Section 2. Composition and Information on Hazardous (OSHA) Ingredients**

Name	CAS #	% by Weight	Exposure Limits
1) Dimethylsulfoxide	67-68-5	98-100	Not available.

**Section 3. Hazards Identification**

Review the most current and approved institutional guideline, protocol, standard operating procedure(s) and MSDS(s) for the proper handling of institutional materials/equipment associated with the use of this Pierce product.

Emergency Overview **WARNING!****CAUSES DAMAGE TO THE FOLLOWING ORGANS: SKIN, EYES.  
MAY CAUSE EYE AND SKIN IRRITATION.**

Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.

Routes of Entry Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.

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

Carcinogenic Effects Data **CARCINOGENIC EFFECTS:** Classified None. by NIOSH.  
**MUTAGENIC EFFECTS:** Mutagenic for bacteria and/or yeast.  
**TERATOGENIC EFFECTS:** Not available.

Medical Conditions Aggravated by Overexposure: Repeated or prolonged exposure is not known to aggravate medical condition.

EU Regulations R36/38- Irritating to eyes and skin.

S24- Avoid contact with skin.

S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S27- Take off immediately all contaminated clothing.



See Toxicological Information (section 11)

---

## Section 4. First Aid Measures

SKIN: Wash contaminated skin with soap and water.

EYES: Flush with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Seek medical attention.

Inhalation: Move exposed person to fresh air. If irritation persists, get medical attention.

Ingestion: Do not induce vomiting. If affected person is conscious, give plenty of water to drink. Seek medical attention.

---

## Section 5. Fire Fighting Measures

*Flammability of the Product* May be combustible at high temperature.

*Flash Points* OPEN CUP: 94.9°C (202.8°F).

*Fire Hazards in Presence of Various Substances* UNUSUAL FIRE AND EXPLOSIONS HAZARDS COMBUSTIBLE LIQUID. EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

METHYL SULFOXIDE (DMSO) UNDERGOES A VIOLENT EXOTHERMIC REACTION ON MIXING WITH COPPER WOOL AND TRICHLOROACETIC ACID. ON MIXING WITH POTASSIUM PERMANGANATE IT WILL FLASH INSTANTANEOUSLY. IT REACTS VIOLENTLY WITH: ACID HALIDES, CYANURIC CHLORIDE, SILICON TETRACHLORIDE, PHOSPHORUS TRICHLORIDE AND TRIOXIDE, THIONYL CHLORIDE, MAGNESIUM PERCHLORATE, SILVER FLUORIDE, METHYL BROMIDE, IODINE PENTAFLUORIDE, NITROGEN PERIODATE, DIBORANE, SODIUM HYDRIDE, PERCHLORIC AND PERIODIC ACIDS. WHEN HEATED ABOVE ITS BOILING POINT METHYL SULFOXIDE DEGRADES GIVING OFF FORMALDEHYDE, METHYL MERCAPTAN, AND SULFUR DIOXIDE.

*Fire Fighting Media* SMALL FIRE: Use DRY chemical powder.

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

*Protective Clothing (Fire)* Be sure to use an approved/certified respirator or equivalent.

---

## Section 6. Accidental Release Measures

*Small Spill and Leak* 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 and Leak* 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. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

---

## Section 7. Handling and Storage

*Handling* Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling.

*Storage* Keep container tightly closed. Keep container in a cool, well-ventilated area.

**Continued on Next Page**

## 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**

**Eyes** Splash goggles.

**Body** Lab coat.

**Respiratory** Vapor respirator. Be sure to use an approved/certified respirator or equivalent.

**Hands** Gloves.

Protective Clothing  
(Pictograms)



Consult local authorities for acceptable exposure limits.

## Section 9. Physical and Chemical Properties

**Physical State** and Liquid.

**Appearance**

**Molecular Weight** 78.13 g/mole

**Molecular Formula** C<sub>2</sub>H<sub>6</sub>OS

**Boiling/Condensation Point** 188.9°C (372°F)

**Melting/Freezing Point** 18.5°C (65.3°F)

**Specific Gravity** 1.101 (Water = 1)

**Vapor Pressure** 0 kPa (@ 20°C)

**Vapor Density** 2.71 (Air = 1)

**Evaporation Rate** 0.026 compared to (n-BUTYL ACETATE=1)

**Viscosity Dynamic:** 1.1 cP

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

**Solubility** Soluble in cold water, hot water.

Partially soluble in diethyl ether, acetone.

**Odor** Sulfurous. Garlic. (Slight.)

**Taste** Bitter. (Slight.)

**Color** Colorless.

## Section 10. Stability and Reactivity

**Stability and Reactivity** The product is stable.

**Incompatibility with Various Substances** Reactive with oxidizing agents, reducing agents, acids, moisture.

**Hazardous Polymerization** Will not occur.

**Hazardous Decomposition Products** Not available.

---

## Section 11. Toxicological Information

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

*Chronic Effects on Humans* **CARCINOGENIC EFFECTS:** Classified None. by NIOSH.

**MUTAGENIC EFFECTS:** Mutagenic for bacteria and/or yeast.

Causes damage to the following organs: skin, eyes, eye, lens or cornea.

*Other Toxic Effects on Humans* Hazardous in case of eye contact (irritant).

Slightly hazardous in case of ingestion, of inhalation (lung irritant).

*Special Remarks on Other Toxic Effects on Humans* To the best of our knowledge, the toxicological properties of this product have not been thoroughly investigated.

---

## Section 12. Ecological Information

*Ecotoxicity* Ecotoxicity in water (LC50): 33500 ppm 48 hours [Bluegill].

*Toxicity of the Products of Biodegradation* The product itself and its products of degradation are not toxic.

---

## Section 13. Disposal Considerations

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

*Waste Stream* Not available.

*Consult your local or regional authorities.*

---

## Section 14. Transport Information

*Contact Pierce for all transport information.*

---

## Section 15. Regulatory Information

*HCS Classification* CLASS: Irritating substance.

CLASS: Target organ effects.

*U.S. Federal Regulations* TSCA 8(b) inventory: Dimethylsulfoxide

TSCA 8(d) H and S data reporting: Dimethylsulfoxide

SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notification: No products were found.

SARA 302/304/311/312 hazardous chemicals: Dimethylsulfoxide

SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Dimethylsulfoxide: immediate health hazard, delayed health hazard

SARA 313 toxic chemical notification and release reporting: No products were found.

Clean Water Act (CWA) 307: No products were found.

Clean Water Act (CWA) 311: No products were found.

Clean air act (CAA) 112 accidental release prevention: No products were found.

Clean air act (CAA) 112 regulated flammable substances: No products were found.

Clean air act (CAA) 112 regulated toxic substances: No products were found.

*WHMIS (Canada)* Not controlled under WHMIS (Canada).

---

No products were found.

*International Regulations*

*EINECS* Not available.

---

*DSCL (EEC)* R36/38- Irritating to eyes and skin.

---

**Continued on Next Page**

**Dimethylsulfoxide**

International Lists Australia (NICNAS): Dimethylsulfoxide

Korea (TCCL): Dimethylsulfoxide

Philippines (RA6969): Dimethylsulfoxide

State Regulations No products were found.

California prop. 65: No products were found.

**Section 16. Other Information**

Hazardous Material Information System (U.S.A.)

Health	*	1
Fire Hazard		1
Reactivity		0
Personal Protection		h

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



Validated by Pierce Administration on 10/24/2000.

Verified by Pierce Administration.

Printed 10/24/2000.

**Notice to Reader**

*To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.*