Specialized in chemicals

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Material Safety Data Sheet

Methyl Sulfonyl Methane

Section 1: Chemical Product and Company Identification

Molecular formula: C2H6O2S
CAS Nr: 67-71-0
EINECS: 200-665-9
Molecular weight: 94.13 g/mol
Synonyms: MSM;METHYLSULPHONE;METHYL SULFONYL METHANE;METHYL SULFONE; DIMETHYL SULPHONE;DIMETHYL SULFONE;(CH3)2SO2

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Section 2: Composition and Information on Ingredients

Composition:

Name	**CAS #**	**% By Weight**
Methyl Sulfon	67-71-0	⩾ 99.0%

Section 3: Hazards Identification

Hazard description: · Not applicable
Information pertaining to particular dangers for man and environment
Not applicable

Section 4: First Aid Measures

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water.

Then consult a doctor.

After swallowing

Seek medical treatment.

Section 5: Fire and Explosion Data

Suitable extinguishing agents

Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards caused by the material, its products of combustion or

Resulting gases:

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

Sulfur oxides (SOx)

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

Section 6: Accidental Release Measures

Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Additional information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

Section 7: Handling and Storage

Handling

Information for safe handling:

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

No special precautions are necessary if used correctly.

Information about protection against explosions and fires:

No special measures required.

Storage

Requirements to be met by storerooms and receptacles:

No special requirements.

Information about storage in one common storage facility:

Store away from oxidizing agents.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

Section 8: Exposure Controls/Personal Protection

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace:

Not required.

Additional information: No data

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Breathing equipment:

Use suitable respirator when high concentrations are present.

Protection of hands: Impervious gloves

Eye protection: Safety glasses

Body protection: Protective work clothing.

Section 9: Physical and Chemical Properties

Form:	White crystalline or powder
Color:	Colorless
Odor:	Not determined
Value/Range Unit Method	Change in condition
Melting point/Melting range:	108-110 ° C
Boiling point/Boiling range:	238 ° C
Sublimation temperature / start:	Not determined
Flash point:	143 ° C
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Danger of explosion:	Product does not present an explosion hazard.
Explosion limits:	
Lower:	Not determined
pper:	Not determined
Vapor pressure:	Not determined
Density:	Not determined
Solubility in / Miscibility with Water:	at 20 ° C 150 g/l

Section 10: Stability and Reactivity Data

Stability: Stable Conditions to avoid:

Prolonged heating above 150C (302F) can cause pid, exothermic decomposition

Materials to avoid:

Organic and inorganic acid chlorides, strong oxidizing agents, alkali metals, hydrobromic acid, acidic solutions of alkali bromides

Hazardous decomposition products:

Sulfur dioxide, formaldehyde, methyl mercaptan, dimethyl sulfide, dimethyl disulfide, and bis (methylthio) methane

Hazardous polymerization:

Will not occur. No stabilizers are needed or present.

Section 11: Toxicological Information

Data for Dimethyl Sulfoxide:

Acute Toxicity Data:

Oral LD-50 (male rat): 14,500-28,300 mg/kg

Inhalation (rat): No mortality rate @ 2,900 mg/m3(900 ppm)/ 24 hrs.

Dermal LD-50 (rat): 40,000 mg/kg

Skin irritation (human): Mild

Repeated skin application (human): Slight irritation

Skin sensitization (human): None by EC protocols

Eye irritation (human): None by EC protocols

Subchronic Toxicity Data:

Oral study (13 weeks, rat):

LOEL = 8800 mg/kg/day (minor target organ effects: liver) (reduced body weight gain): NOEL = 1100 mg/kg/day
Inhalation study (6 weeks, rat): NOEL = 60ppm
**** Note - definitions for data:**
LOEL = lowest observed effect level **NOAEL** = no observed adverse effect level **NOEL** = no observed effect level.
Developmental Toxicity Data:
DMSO is not considered to be directly embryotoxic and has been shown to be a successful cryoprotectant for mammalian semen and embryos.
A mouse teratology NOEL of 12 g/kg/day has been established based on research with a 50% DMSO solution administered orally. Teratology data suggests that:
1. DMSO is not a teratogen to mammals when administered via oral and dermal routes at dose level that do not produce overt maternal toxicity.
2. DMSO is not a teratogen at low dose levels regardless of the route of administration.
3. The teratogenic potential of DMSO is dependent on route of administration, the dose level and the gestational time of exposure, but in all cases is extremely low or non-existent.
Mutagenicity/Genotoxicity Data:
Salmonella typhimurium assay (Ames test): negative (+/- activation).
DMSO is used as a neutral solvent in the Ames mutagen test.

Section 12: Ecological Information

Introduction:
This environmental effects summary is written to assist in addressing emergencies created by an accidental spill which might occur during shipment or handling of this material. It is not meant to address discharges to sanitary sewers or publicly owned treatment works.
Aquatic Toxicity:
The LC50 (96 hrs.) for ten species of fish range from 32,500 to 43,000 ppm. The LC50 for two species of protozoans are 32,000 and 38,000 ppm. The concentration required to inhibit growth (EC50) for five species of blue-green algae and one green algae species ranged from 0.4 to 4.0%. DMSO is non-bio-accumulating since the log of the octanol/water partition coefficient is –2.03.
4 **MATERIAL SAFETY DATA SHEET August 20, 2004 DIMETHYL SULFOXIDE (DMSO) MSDS GCC1-7**
Phytotoxicity:
Soaking tomato, cucumber, and bean seeds for 18hrs in up to 8% DMSO solutions had no effect on germination rate. DMSO has no effect on the growth rate of corn when sprayed on at rates up to 30 gallon/acre. When diluted with a large amount of water, release of DMSO, directly or indirectly, to the environment is not expected to have significant effect.
Biological Oxygen Demand:
Theoretical Oxygen Demand at 10 ppm: 123 mg oxygen
Chemical Oxygen Demand at 10 ppm: 107 mg/l
Biological Oxygen Demand-5 at 10 ppm: <1.0 mg/l

Section 13: Disposal Considerations

Waste Disposal:
Disposal Methods
Waste Disposal:

Dilute and flush to an approved wastewater treatment system. Bacterial decomposition of dimethyl sulfoxide during wastewater treatment can result in the release of dimethyl sulfide (a volatile substance with a strong disagreeable odor). Waste DMSO can also be incinerated in an approved furnace where permitted. Consult federal, state or local authorities for proper disposal procedures.

Empty Containers:

Should be transported/delivered using a registered waste carrier for recycling or waste disposal in accordance with local 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

Not available.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/10/2005 12:10 AM

Last Updated: 05/21/2013 12:00 PM

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