Dimethyl Sulfoxide

10328583

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SECTION 1. IDENTIFICATION

Product name	:	Dimethyl Sulfoxide
Number	:	000000011358
Product Use Description	:	Solvent
Manufacturer or supplier's details	:	Honeywell Specialty Chemicals Seelze GmbH Wunstorfer Straße 40 Seelze, 30926
For more information call	:	1-800-368-0050 +1-231-726-3171(Monday-Friday, 9:00am-5:00pm)
In case of emergency call	:	**Medical: 1-800-498-5701 or +1-303-389-1414**
	:	**Transportation (CHEMTREC): 1-800-424-9300 or +1-703-527-3887**
	:	
	:	(24 hours/day, 7 days/week)

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Form	:	liquid
Color	:	colourless
Odor	:	garlic/onion

Classification of the substance or mixture

Classification of the substance or mixture	:	Flammable liquids, Category 4

GHS Label elements, including precautionary statements

Signal word	:	Warning

Hazard statements	:	Combustible liquid.
Precautionary statements	:	**Prevention:** Keep away from heat/sparks/open flames/hot surfaces. No smoking. Wear protective gloves/ eye protection/ face protection. **Response:** In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction. **Storage:** Store in a well-ventilated place. Keep cool. **Disposal:** Dispose of contents/ container to an approved waste disposal plant.
Hazards not otherwise classified	:	May cause eye and skin irritation.

Carcinogenicity

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP, IARC, or OSHA.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms	:	DMSO
Formula	:	C2H6OS
Chemical nature	:	Substance

Chemical name	CAS-No.	Concentration
Dimethyl sulfoxide	67-68-5	100.00 %

SECTION 4. FIRST AID MEASURES

Inhalation	:	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Use oxygen as required, provided a qualified operator is present. Call a physician.
Skin contact	:	Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. Wash contaminated clothing before re-use. Call a physician if irritation develops or persists.
Eye contact	:	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician if irritation develops or persists.
Ingestion	:	Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Call a physician.

Notes to physician

Indication of immediate medical attention and special treatment needed, if necessary	:	Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Carbon dioxide (CO2) Dry chemical Foam Cool closed containers exposed to fire with water spray.
Unsuitable extinguishing media	:	Do not use a solid water stream as it may scatter and spread fire.
Specific hazards during firefighting	:	Combustible. Vapours may form explosive mixtures with air. Vapours are heavier than air and may spread along floors. Vapors may travel to areas away from work site before igniting/flashing back to vapor source. In case of fire hazardous decomposition products may be produced such as:

Formaldehyde
Methyl mercaptan
Sulfur dioxide
Carbon dioxide (CO2)
Carbon monoxide

Special protective equipment for firefighters : Wear self-contained breathing apparatus and protective suit.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Wear personal protective equipment.
Immediately evacuate personnel to safe areas.
Keep people away from and upwind of spill/leak.
Ensure adequate ventilation.
Remove all sources of ignition.
Do not swallow.
Avoid breathing vapours, mist or gas.
Avoid contact with skin, eyes and clothing.

Environmental precautions : Prevent further leakage or spillage if safe to do so.
Prevent product from entering drains.
Discharge into the environment must be avoided.
Do not flush into surface water or sanitary sewer system.
Do not allow run-off from fire fighting to enter drains or water courses.

Methods and materials for containment and cleaning up : Ventilate the area.
No sparking tools should be used.
Use explosion-proof equipment.
Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

SECTION 7. HANDLING AND STORAGE

Handling

Precautions for safe handling : Wear personal protective equipment.
Use only in well-ventilated areas.
Keep container tightly closed.

Do not smoke.
Do not swallow.
Avoid breathing vapours, mist or gas.
Avoid contact with skin, eyes and clothing.

Advice on protection against fire and explosion : Keep away from fire, sparks and heated surfaces.
Take precautionary measures against static discharges.
Ensure all equipment is electrically grounded before beginning transfer operations.
Use explosion-proof equipment.
Keep product and empty container away from heat and sources of ignition.
No sparking tools should be used.
No smoking.

Storage

Conditions for safe storage, including any incompatibilities : Store in area designed for storage of flammable liquids. Protect from physical damage.
Keep containers tightly closed in a dry, cool and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Keep away from heat and sources of ignition.
Keep away from direct sunlight.
Store away from incompatible substances.
Container hazardous when empty.
Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Protective measures : Ensure that eyewash stations and safety showers are close to the workstation location.

Engineering measures : Use with local exhaust ventilation.
Prevent vapour buildup by providing adequate ventilation during and after use.

Eye protection : Do not wear contact lenses.
Wear as appropriate:
Safety glasses with side-shields

If splashes are likely to occur, wear:
Goggles or face shield, giving complete protection to eyes

Hand protection : Solvent-resistant gloves
Gloves must be inspected prior to use.
Replace when worn.

Skin and body protection : Wear as appropriate:
Solvent-resistant apron
Flame retardant antistatic protective clothing.
If splashes are likely to occur, wear:
Protective suit

Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment.
For rescue and maintenance work in storage tanks use self-contained breathing apparatus.
Use NIOSH approved respiratory protection.

Hygiene measures : When using, do not eat, drink or smoke.
Wash hands before breaks and immediately after handling the product.
Keep working clothes separately.
Remove and wash contaminated clothing before re-use.
Do not swallow.
Avoid breathing vapours, mist or gas.
Avoid contact with skin, eyes and clothing.

Exposure Guidelines

Components	CAS-No.	Value	Control parameters	Update	Basis
Dimethyl sulfoxide	67-68-5	TWA : Time weighted average	(250 ppm)	2007	WEEL:US. OARS. WEELs Workplace Environmental Exposure Level Guide

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state : liquid

Color : colourless

Odor	:	garlic/onion
Odor threshold	:	Note: no data available
pH	:	Note: Not applicable
Freezing point	:	18.5 °C
Boiling point/boiling range	:	189 °C
Flash point	:	190 °F (88 °C) Method: closed cup
Evaporation rate	:	Note: no data available
Lower explosion limit	:	2.6 %(V)
Upper explosion limit	:	42 %(V)
Vapor pressure	:	0.61 hPa at 20 °C(68 °F)
Vapor density	:	2.7
Density	:	1.1004 g/cm3 at 20 °C 1.0954 g/cm3 at 25 °C
Water solubility	:	Note: soluble
Partition coefficient: n-octanol/water	:	Note: no data available
Ignition temperature	:	215 °C

Decomposition temperature	:	Note: no data available
Viscosity, dynamic	:	Note: no data available
Viscosity, kinematic	:	Note: no data available
Molecular weight	:	78.13 g/mol

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Not classified as a reactivity hazard.
Chemical stability	:	Stable under recommended storage conditions.
Possibility of hazardous reactions	:	Hazardous polymerisation does not occur.
Conditions to avoid	:	Protect from frost, heat and sunlight. Protect from moisture.
Incompatible materials	:	Oxidizing agents Strong acids Reducing agents Alkali metals Boron compounds Plastics Metal salts of oxoacids Acyl halides Aryl halides Non metal halides Methyl bromide Non-metallic chlorides Active halogen compounds
Hazardous decomposition products	:	Hazardous decomposition products due to incomplete combustion Formaldehyde Sulphur dioxide Methyl mercaptan Carbon dioxide (CO2)

Carbon monoxide

SECTION 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity	:	LD50: 14,500 mg/kg Species: Rat
Acute inhalation toxicity	:	LC0: > 5,330 mg/m3 Exposure time: 4 h Species: Rat Note: No deaths
Acute dermal toxicity	:	LD50: 40,000 mg/kg Species: Rat
Skin irritation	:	Species: Rabbit Result: slight irritation Method: OECD Test Guideline 404 Exposure time: 4 h
Eye irritation	:	Species: Rabbit Result: slight irritation Method: OECD Test Guideline 405
Sensitisation	:	Maximisation Test Species: Guinea pig Result: Did not cause sensitisation on laboratory animals.
Repeated dose toxicity	:	Species: Rat, male Application Route: Inhalation Exposure time: 2 Weeks No observed adverse effect level: 1100 mg/kg

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity effects

Toxicity to fish	:	flow-through test LC50: 34,000 mg/l Exposure time: 96 h Species: Pimephales promelas (fathead minnow) Note: static test
	:	static test LC50: 40,000 mg/l Exposure time: 96 h Species: Lepomis macrochirus (Bluegill sunfish) Note: static test
Toxicity to daphnia and other aquatic invertebrates	:	static test LC50: 24,600 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea)

Further information on ecology

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods	:	Observe all Federal, State, and Local Environmental regulations.

SECTION 14. TRANSPORT INFORMATION

DOT	UN/ID No.	:	NA 1993
	Proper shipping name	:	Combustible liquid, n.o.s. (Dimethyl sulfoxide)
	Class		CBL
	Packing group		III
	Hazard Labels		NONE

Required only for US-DOT Bulk Shipments

TDG	Not dangerous goods
IATA	Not dangerous goods
IMDG	Not dangerous goods

SECTION 15. REGULATORY INFORMATION

Inventories

US. Toxic Substances Control Act	:	On TSCA Inventory
Australia. Industrial Chemical (Notification and Assessment) Act	:	On the inventory, or in compliance with the inventory
Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL)	:	All components of this product are on the Canadian DSL
Japan. Industrial Safety & Health Law (ISHL) List	:	On the inventory, or in compliance with the inventory
Korea. Existing Chemicals Inventory (KECI)	:	On the inventory, or in compliance with the inventory
Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act	:	On the inventory, or in compliance with the inventory
China. Inventory of Existing Chemical Substances (IECSC)	:	On the inventory, or in compliance with the inventory
New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand	:	On the inventory, or in compliance with the inventory

National regulatory information

SARA 302 Components	:	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 Components	:	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
SARA 311/312 Hazards	:	Fire Hazard Acute Health Hazard
California Prop. 65	:	This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

SECTION 16. OTHER INFORMATION

		HMIS III	NFPA
Health hazard	:	1	2
Flammability	:	2	2
Physical Hazard	:	0	
Instability	:		0

Hazard rating and rating systems (e.g. HMIS® III, NFPA): This information is intended solely for the use of individuals trained in the particular system.

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a

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