

**Dimethyl sulfoxide****34869-4X4L**

Version 3.0

Revision Date 08/06/2019

Print Date 10/17/2019

**SECTION 1. IDENTIFICATION**

Product name : Dimethyl sulfoxide

Number : 000000011358

Product Use Description : Solvent

Manufacturer or supplier's details : Honeywell International Inc.  
1953 South Harvey Street  
Muskegon, MI 49442

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.**

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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 : C<sub>2</sub>H<sub>6</sub>OS

Chemical nature : Substance

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

**SECTION 4. FIRST AID MEASURES**

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- 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 (CO<sub>2</sub>)  
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 (CO<sub>2</sub>)

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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.

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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.

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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

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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/cm <sup>3</sup> at 20 °C 1.0954 g/cm <sup>3</sup> 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

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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 compoundsHazardous decomposition products : Hazardous decomposition products due to incomplete combustion  
Formaldehyde  
Sulphur dioxide  
Methyl mercaptan  
Carbon dioxide (CO<sub>2</sub>)  
Carbon monoxide



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**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

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**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 : static test  
aquatic invertebrates 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

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**TDG** Not dangerous goods**IATA** Not dangerous goods**IMDG** Not dangerous goods**SECTION 15. REGULATORY INFORMATION****Inventories**US. Toxic Substances : On TSCA Inventory  
Control ActAustralia. Industrial : On the inventory, or in compliance with the inventory  
Chemical (Notification and  
Assessment) ActCanada. Canadian : All components of this product are on the Canadian DSL  
Environmental Protection  
Act (CEPA). Domestic  
Substances List (DSL)Japan. Industrial Safety & : On the inventory, or in compliance with the inventory  
Health Law (ISHL) ListKorea. Existing Chemicals : On the inventory, or in compliance with the inventory  
Inventory (KECI)Philippines. The Toxic : On the inventory, or in compliance with the inventory  
Substances and Hazardous  
and Nuclear Waste Control  
ActChina. Inventory of Existing : On the inventory, or in compliance with the inventory  
Chemical Substances  
(IECSC)New Zealand. Inventory of : On the inventory, or in compliance with the inventory  
Chemicals (NZIoC), as  
published by ERMA New  
Zealand**National regulatory information**

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- 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**

	<b>HMIS III</b>	<b>NFPA</b>
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 warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Final determination of suitability of any material is the sole responsibility of the user. This information should not constitute a guarantee for any specific product properties.

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Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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Prepared by Honeywell Performance Materials and Technologies Product Stewardship Group