



# TULSTAR PRODUCTS, INC.

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## MATERIAL SAFETY DATA SHEET

### COMPANY INFORMATION

Company Name: **TULSTAR PRODUCTS, INC.**  
5510 S. Lewis Ave.  
Tulsa, OK 74105  
Phone Number: (918) 749-9060  
Fax Number: (918) 747-1444  
Email Address: [tulstar@tulstar.com](mailto:tulstar@tulstar.com)  
Emergency Number: CHEMTREC 800-424-9300 (24 hours)

### IDENTIFICATION

Product Name: Dimethyl Ether  
Chemical Name: Dimethyl Ether  
Synonyms: DME  
CAS Number: 115-10-6

### HAZARD IDENTIFICATION

Extremely Flammable

### FIRST AID MEASURES

Symptoms & Effects: Irritating to eyes and respiratory system. Causes frost bite.  
First Aid General Information : In all cases of doubt, or when symptoms persist, seek medical attention.  
Inhalation: Move to fresh air, rest, half upright position, loosen clothing. Use Oxygen or artificial respiration if there is difficulty in breathing. Seek medical advice after significant exposure.  
Skin: In case of frost bite: DO NOT remove clothing, but first thaw frosted parts with water (never use warm water!) Then remove clothing carefully and seek medical advice.  
Eye: Rinse thoroughly with plenty of water. Eyelids should be held away from the eyeball to ensure thorough rinsing. Seek medical advice after significant exposure.  
Ingestion: Not Likely to occur.  
Advice to Physician: Symptomatic treatment is advised.

### FIRE-FIGHTING MEASURES

Extinguishing Media: Powder.  
Unsuitable Extinguishing Media: None known.  
Special Exposure Hazards: Vapors may form explosive mixtures with air.  
Vapors may also travel to a source of ignition and flash back.  
Hazardous Decomposition/  
Combustion Products: No Hazardous decomposition products known.  
Protective Equipment: Use self-contained or supplied-air respiratory equipment.  
Other Information: Cool closed containers with water.

## ACCIDENTAL RELEASE MEASURES

|                            |   |
|----------------------------|---|
| Personal Precautions:      | Wear self-contained breathing apparatus.<br>For personal protection see Section – EXPOSURE CONTROLS       |
| Environmental Precautions: | Do not allow to enter drains or water courses.  |
| Methods for Cleaning Up:   | Isolate spill area. Ventilate the area.   |
| Other Information:         | Take precautionary measures against static discharges.<br>Keep away from sources of ignition- No smoking. |

## HANDLING AND STORAGE

|                              |   |
|------------------------------|---|
| Handling:                    | Use only in well ventilated areas.  |
| Fire & Explosion Prevention: | Keep away from sources of ignition -No Smoking.<br>Take precautionary measures against static discharges. Vapors are heavier than air and may spread along floors. Vapors may travel to a source of ignition and flash back.<br>Store in a dry, well-ventilated places away from sources of heat and direct sunlight. |

## EXPOSURE CONTROLS/PERSONAL PROTECTION

|                       |  |
|-----------------------|--|
| Engineering Controls: | Provide adequate ventilation. Use explosion protected equipment.   |
| Exposure Limits:      | In this country, no exposure limit has been established.   |
| Personal Protection:  | Respiratory- Use self-contained respiratory equipment.<br>Hand- Wear suitable gloves of neoprene.<br>Eye- Wear eye/face protection.<br>Skin & Body- Wear suitable protective clothing. |

## PHYSICAL & CHEMICAL PROPERTIES

|                               |  |
|-------------------------------|--|
| Appearance:                   | Liquefied gas (25° C)  |
| Color:                        | Colorless  |
| Odor:                         | Almost odorless  |
| Boiling Point:                | -25° C (101.3 kPa)   |
| Melting Point:                | -141° C (freezing point)   |
| Flash Point:                  | -41° C   |
| Flammability:                 | #R13   |
| Autoignition Temperature:     | 350° C (235° C, SAM, DIN 51 794)   |
| Explosive Properties:         | Pours may form explosive mixtures with air                                   |
| Explosive Limits:             | 3 – 18.6 Vol % (ASTM)  |
| Oxidizing Properties:         | Not determined   |
| Vapor Pressure:               | 510 kPa (20° C)<br>1140 kPa (50° C)  |
| Density:                      | Approximately 670: kg/m <sup>3</sup> (20° C, liquid)                         |
| Bulk Density:                 | Not applicable   |
| Solubility in Water:          | 328 g/l (20° C, 410 kPa)   |
| Solubility in Other Solvents: | Soluble in methanol, ethanol, isopropanol, chlorinated hydrocarbons, toluene |
| pH Value:                     | Not relevant   |
| Partition Coefficient:        | - 0.18 (n-octanol/water)   |
| Relative Vapor Density:       | 1.59 (air = 1)   |
| Viscosity:                    | Not applicable   |

## **STABILITY & REACTIVITY**

Stability: Stable under recommended storage and handling conditions.  
Conditions to Avoid: Keep away from sources of ignition (NO SMOKING). Avoid contact with Air/O<sub>2</sub> (formation of peroxides).  
Materials to Avoid: Chlorine, air, hydrochloric acid (HCl), O<sub>2</sub>, HF, N<sub>2</sub>O, strong oxidizing agents, rubber, KEL-F, viton.  
Hazardous Decomposition Products: None known.

## **TOXICOLOGICAL INFORMATION**

Name: Dimethyl Ether  
Acute Toxicity: Oral LD50- Not applicable  
Inhalation LC50- Rat., 16.4 Vol %, 4 – hours inhalation (Lit.)  
Irritation (skin)- Causes frost bite  
Other Toxicological Information: Not mutagenic, not teratogenic, not carcinogenic.

## **ECOLOGICAL INFORMATION**

Ecotoxicity: Fish- Poecilia reticulata: Acute toxicity, 96h-LC50 > 4000 mg/l  
Daphnia- Daphnia magna: Acute toxicity, 48h-EC50 > 4000 mg/l  
Fate: Degradation Abiotic- The product can be degraded by chemical or photolytic processes.  
Degradation Biotic- Not readily biodegradable (closed bottle test).

## **DISPOSAL CONSIDERATIONS**

Product: According to local regulations (most probably controlled incineration)  
Contaminated Packaging: Not restricted. Exclude sources of ignition and ventilate the area.

## **TRANSPORT INFORMATION**

|                 |                    |                     |                  |      |
|-----------------|--------------------|---------------------|------------------|------|
| Land Transport: | ADR Class:         | 2                   | ADR Item Number: | 2F   |
|                 | RID Class:         | 2                   | RID Item Number: | 2F   |
|                 | Hazard ID #:       | 23                  | Substance ID #:  | 1033 |
|                 | TREM-Card:         | CEFIT TEC (R) – 676 | UN Number:       | 1033 |
|                 | Transport Label:   | 3                   |                  |      |
| Sea Transport:  | IMO/IMDG code      |                     | Class:           | 2    |
|                 | Packing Group:     | None                | UN Number:       | 1033 |
|                 | EMS:               | 2-07                | MFAG:            | 330  |
|                 | Marine Pollutant:  | No                  |                  |      |
| Air Transport:  | Transport Label:   | 2.1                 |                  |      |
|                 | ICAO-TI/IATA-DGR   |                     |                  |      |
|                 | Class:             | 2.1                 |                  |      |
|                 | Other Information: | Cargo aircraft only |                  |      |
|                 | Transport Label:   | 2. Flammable gas    |                  |      |