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|  | SAFETY DATA SHEET | Version: 4 Revision date: 2025-04-24 |
| | Dimethyl Ether DME - Pure | PG-SDS-06 |

This SDS conforms to the Globally Harmonised System (GHS), South African Regulations on Hazardous Chemical Agents, and SANS 10234, SANS 11014 & SANS 10228.

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

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| Product name | Dimethyl Ether (DME) - Aerosol Grade |
| Chemical Name | Dimethyl Ether |
| Other means of identification | DME, DIMETHYL ETHER, dimethyl ether, Dimethylether |
| Recommended Intended Purpose | Chemical intermediate, Aerosol propellants, Foaming (blowing) agents. |
| Company Information | Puregas (Pty) Ltd PO Box 123884, Alrode, 1451, Gauteng, South Africa Tel: (011) 903 9760 Fax: (011) 903 9766 Cellphone: 082 889 6946 (1 st) 082 885 7475 (2 nd) Email: info@puregas.co.za Website: www.puregas.co.za |
| Emergency Telephone | 0800 172 743 Rapid Spill Response - 24 hours, 7 days a week |

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance - GHS classification as published through ECHA


| Hazard Classification | Category | Hazard Statement |
|-----------------------|----------|---|
| Flammable Gas | 1 | H220 Extremely flammable gas. |
| Flammable Liquids | 1 | H224 Extremely flammable liquid and vapour |
| Gases under pressure | 2.2 | H280 Contains gas under pressure; may explode if heated |
| Eye Irritant | 2 | H319 Serious eye damage/eye irritant |
| Skin Irritant | 2 | H315 Skin corrosion/irritant |
| STOT | | H336 May cause drowsiness or dizziness |

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| Hazard Pictograms |   |
| | GHS02 GHS04 |

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| Signal Word | Danger |
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Precautionary Statements

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| General: | P101 P102 P103 | If medical advice is needed, have product container or label at hand Keep out of reach of children Read carefully and follow all instructions |
| Prevention | P210 P280 P261 P262 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing gas Do not get in eyes, on skin, or on clothing |
| Response | P377 P318 P304+P340 | Leaking gas fire: Do not extinguish, unless leak can be stopped safely. If exposed or concerned, get medical advice. IF INHALED: Remove person to fresh air and keep comfortable for breathing. |

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| | P302 + P336 + P315 P381 | IF ON SKIN: Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical advice/attention. Eliminate all ignition sources if safe to do so |
| Storage | P410 + P403 P405 | Protect from sunlight. Store in a well-ventilated place. Store locked up. |
| Disposal | P501 | Dispose of contents/ container to an approved facility in accordance with local, regional, national and international regulations. |
| Main Hazard | This substance is an extremely flammable gas. | |
| Other Hazards | An asphyxiant at high concentrations – oxygen depletion can be fatal. | |

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

| CAS No | EC No | Name |
|-------------------|-----------|----------------|
| 115-10-6 | 204-065-8 | Dimethyl ether |
| UN Number: | 1033 | |


See Section 8 for Exposure Guidelines and Section 15 for Regulatory Classifications.

SECTION 4. FIRST AID MEASURES

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| General information | Never give anything by mouth to an unconscious person. When symptoms persist or in all cases of doubt seek medical advice. |
| In case of inhalation | Inhalation: Remove from exposure, and lie down. Move to fresh air. Keep the patient warm and at rest. Artificial respiration and/or oxygen may be necessary. Consult a physician. |
| In case of skin contact | Skin contact: Take off all contaminated clothing immediately. Flush the area with lukewarm water. Do not use hot water. If frostbite has occurred, call a physician. |
| In case of eye contact | Eye contact: Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Get medical attention. |
| In case of ingestion | Ingestion: This is not considered a potential route of exposure. |
| Treatment (Advice to doctor) | Treatment: Do not give adrenaline or similar drug |

SECTION 5. FIRE-FIGHTING MEASURES

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| Suitable extinguishing media | Water spray, Foam, Dry chemical, Carbon dioxide (CO2), |
| Unsuitable extinguishing media | Not applicable |
| Special hazards arising from the substance | Pressure build-up Vapours may form explosive mixtures with air. Under conditions giving incomplete combustion, hazardous gases produced may consist of: Carbon oxides |
| Special protective equipment for fire-fighters | In the event of a fire, wear a self-contained breathing apparatus. Use personal protective equipment. |
| Additional information | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Cool containers/tanks with water spray. |

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SECTION 6. ACCIDENTAL RELEASE MEASURES


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| Personal precautions | Evacuate personnel to safe areas. Ventilate the area. Refer to protective measures listed in the section handling and storage and inspection exposure controls/personal protection. |
| Environmental precautions | Should not be released into the environment. |
| Methods and material for containment and cleaning up | Evaporates. |

SECTION 7. HANDLING AND STORAGE

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| Precautions for safe handling | Avoid breathing vapours or mist. Avoid contact with skin, eyes and clothing. Provide sufficient air exchange and/or exhausting work rooms. For personal protection see section exposure controls/personal protection. |
| Advice on protection against fire and explosion | Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air. The product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard. No sparking tools should be used. Take measures to prevent the build-up of electrostatic charge. Keep away from heat and sources of ignition. Keep away from open flames, hot surfaces and sources of ignition. When using do not smoke. |
| Requirements for storage rooms and vessels | Requirements for storage areas and containers: Keep containers tightly closed in a cool, well-ventilated place. Store in the original container. |

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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| Type Form of exposure: TWA Control parameters 1 920 mg/m ³ 1 000 ppm Update 02 / 2006 Basis EU ELV Type Form of exposure: TWA Control parameters 766 mg/m ³ 400 ppm Update 2007 Basis EH40 WEL Type Form of exposure: STEL 958 mg/m ³ 500 ppm Update 2007 Basis EH40 WEL | |
| Exposure controls | As vapourised DME is a simple asphyxiant, avoid any areas where spillage has taken place. Only enter once testing has proved the atmosphere to be safe. |
| Respiratory protection | For rescue and maintenance work in storage tanks use self-contained breathing apparatus. Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing. |
| Hand protection | Heat insulating gloves |

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| Eye protection | Safety glasses Additionally wear a face shield where the possibility exists for face contact due to splashing, spraying or airborne contact with this material. |
| Skin and body protection | Lightweight protective clothing |
| Hygiene measures | Handle in accordance with good industrial hygiene and safety practices. When using do not smoke |
| Engineering Controls | Ensure adequate ventilation, especially in confined areas. |

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

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| Physical state | Liquified gas |
| Colour | Colourless |
| Odour | Almost odourless. |
| pH | Not applicable |
| Freezing point | -141 °C |
| Boiling point | -24.8 °C |
| Flash point | -41 °C |
| Flammability | Extremely flammable |
| Lower Explosion Limit | 3.3 %(V) |
| Upper explosion limit | 18.6 %(V) |
| Auto-ignition temperature | 350 OC (235 OC,BAM, DIN 51 794) |
| Density | 668 kg/m3 at 20 °C Liquid |
| Log Pow | 0.07 at 25 °C |
| Vapour pressure | 470 kPa at 25 °C |
| Relative vapour density | 1040 kPa at 50 °C |
| Solubility : Water | 1.59 (Air = 1.0) |
| Solubility in other solvents | 328 g/l at 20 °C at 410kPaLiquefied gas, Closed system Organic solvents |

SECTION 10. STABILITY AND REACTIVITY

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| Reactivity | Vapours may form an explosive mixture with air. |
| Chemical Stability | Relatively stable |
| Conditions to avoid | Temperature : > 52 °C |
| Incompatible materials | Oxygen, Oxidizing agents, Acid anhydrides, Strong acids, Carbon monoxide, Acetic anhydride, Powdered metals |
| Hazardous decomposition products. | formaldehyde, Carbon dioxide (CO2), Carbon monoxide, Methanol |


SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

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| Acute toxicity: | Not classified |
| Skin corrosion/irritation | Not classified |
| Serious eye damage/irritation | Not classified |
| Germ cell mutagenicity: | Not classified |
| Carcinogenicity: | Not classified |
| Reproductive toxicity: | Not classified |

SECTION 12. ECOLOGICAL INFORMATION

No ecological damage was caused by this product.

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SECTION 13. DISPOSAL CONSIDERATIONS

Product: Can be used after re-conditioning. In accordance with local and national regulations. Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities.

Contaminated packaging: Empty pressure vessels should be returned to the supplier.

SECTION 14. TRANSPORT INFORMATION

UN Pictogram
Flammable Gas



Land and inland navigation transport ADR/RID

UN No. 1033, Shipping Name Dimethyl ether, ERG No. 115, Class 2.1, Hazchem Warning 2-Flammable gas

Marine transport IMDG

MDG 1033, Shipping Name Dimethyl ether, ERG No. 115, Class 2.1, Hazchem Warning Flammable gas.

Air transport ICAO/IATA-DGR

ICAO/IATA Code 1033, Class 2.1, Packaging instructions: Cargo: 200, Passenger: Forbidden, Maximum quantity allowed: Cargo: 150 kg, Passenger: Forbidden

Special precautions for user

The protective measures listed in Sections 6, 7, and 8 of the Safety Data Sheet have to be considered.

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific to the substance or mixture:

Occupational Health and Safety Act, Hazardous Chemical Agents Regulations

SANS 11014:2010 Edition 1

SANS 10228:2012 Edition 6

SANS 10234:2019 Edition 2

SUPPLEMENT TO SANS 10234 Edition 1

National Road Traffic Act

Dangerous Goods Regulations


SECTION 16. OTHER INFORMATION

SELECTED BIBLIOGRAPHY

1. Data sheets as supplied by various Suppliers and Manufacturers
2. Emergency Response Handbook - Annex A of SABS 0232-3
3. GHS Purple booklet
4. Handling Chemicals Safety, 2nd. Ed. Dutch Association of Safety Experts, Dutch Chemical Industry Association, Dutch Safety Institute, 1980
5. NIOSH Pocket Guide to Chemical Hazards, NIOSH, June 1990
6. ECHA
7. Occupational Health and Safety Act, Hazardous Chemical Agents Regulations
8. SANS 11014:2010 Edition 1
9. SANS 10228:2012 Edition 6
10. SANS 10234:2019 Edition 2
11. SUPPLEMENT TO SANS 10234 Edition 1
12. National Road Traffic Act
13. Dangerous Goods Regulations

Wording of the R/S-phrases specified

R12 – Extremely Flammable

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R18 – In use may form flammable explosive vapour-air mixture.

R44 – Risk of explosion if heated under confinement.

S2 Keep out of reach of children

S3 Keep in a cool place

S9 Keep the container in well-ventilated place

S15 Keep away from heat

S29 Do not empty into drains

S16 Keep away from sources of ignition

S33 Keep away from static discharge

S41 in case of fire and/or explosion do not breathe fumes

Refer to SANS 10265 for an explanation of the above.

Disclaimer:

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.