# Propellants

## Dimethyl ether (DME)

**Dimethyl ether (DME):** Versatile propellant suitable for all types of solvents.

Dimethyl ether is a single component propellant in the form of liquefied gas, characterized by its versatility of application. Due to its chemical structure, it has a good vapor tension, a good expansion ratio and is a great solvent, being compatible with both polar and non-polar solvents. Water miscibility is especially interesting, allowing water-based formulations.

| Chemical Name: | CAS number: |
| --- | --- |
| Methoxymethane | 115 - 10 - 6 |

### Technical Characteristics:

> Extremely flammable, colorless liquefied gas with a characteristic odor.
> Good vapor pressure.
> Good liquid-gas expansion ratio.
> Miscible with water and polar solvents; facilitates single phase formulations.
> Good solvent: It can act as a solvent in the formulation.
> Low viscosity and vapor tension.
> Due to its solvency power, specific gaskets are needed for tanks and cans.

### Packaging:

- Cylinder
- Roll drum
- ISOtank

### Applications:

- Paint
- Personal care (hairspray, deodorant, etc.)
- Polyurethane
- Home care products
- Technical aerosol

## Properties:

| Chemical Formula | CH3 - O - CH3 | |
|---|---|---|
| Molecular Weight | 46,07 | g/mol |
| Boiling Point | -24,9 | °C |
| Vapor pressure (20°C) | 4,1 | bar |
| Vapor pressure (50°C) | 10,5 | bar (abs) |
| Liquid Density (20°C) | 668,3 | kg/m³ |
| Liquid Density (50°C) | 615 | kg/m³ |
| Relative vapor density | 1,59 | (aire = 1) |
| DME in Water Solubility | 36 | % (m/m) |
| Water in DME Solubility | 5,5 | % (m/m) |
| Net calorific value, liquid | 28,43 | kJ/kg |
| Ignition point | 235 | °C |
| LEL (Lower Explosive Limit) | 3 | % volume |
| UEL (Upper Explosive Limit) | 18,6 | % volume |
| Kauri - Butanol | 91 | |
| Surface Tension (20°C) | 0,0125 | N/m |
| Liquid Viscosity (20°C) | 0,11 | mPas |

## Table of temperature, pressure and density:

| Temperature (°C) | Pressure (bar) | Liquid density (kg/l) |
|---|---|---|
| 0 | 1,7 | 0,700 |
| 5 | 2,2 | 0,693 |
| 10 | 2,7 | 0,685 |
| 15 | 3,4 | 0,677 |
| 20 | 4,1 | 0,669 |
| 25 | 4,9 | 0,661 |
| 30 | 5,8 | 0,653 |
| 35 | 6,8 | 0,645 |
| 40 | 7,9 | 0,636 |
| 45 | 9,1 | 0,627 |
| 50 | 10,4 | 0,618 |
| 55 | 11,9 | 0,609 |
| 60 | 13,5 | 0,599 |
| 65 | 15,2 | 0,589 |

## Normative:

GRIT (Gases Research Innovation & Technology) is committed to the continuous improvement of our inbuilt Quality Control, Environment and Major Accident Prevention Systems as well as close collaboration with our product and service providers. The scope of the system includes the packaging, commercialization, storage and innovation of technical gases and the management of residual fluorinated gas and halogenated solvents.

All this work is reflected in our certificates ISO 9001 & ISO 14001.

## More information:

If you want more information about our products, contact us.

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