

## SALES SPECIFICATION DIETHYL ETHER, MILITARY GRADE

### Quality Attributes

Test Description	Limits	Test Method
Appearance	Colorless Liquid	Visual
Diethyl ether, weight %	99.60 min.	GC
Acetylene, weight %	0.0010, max.	MIL-E-199A
Acidity as Acetic Acid, weight %	0.0060, max.	MIL-E-199A
Specific Gravity at 20/20 °C	0.7120 – 0.7230	ASTM
Chlorides	Negative	MIL-E-199A
Aldehydes (as HCHO)	Negative	MIL-E-199A
Peroxides (as H <sub>2</sub> O <sub>2</sub> ), ppm	Negative	MIL-E-199A
Residue After Evaporation, weight %	0.0020, max.	MIL-E-199A
BHT range	7 – 9 ppm	Not available
Description: Colorless, highly volatile, highly flammable liquid.		

**Reference:** MIL-E-199A Military Specification Ether, Diethyl, Technical.

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- **Extremely flammable:** Diethyl ether is a Class IA. Flammable liquid, with a very low flash point and a tendency to form flammable vapors at room temperature.
- **Peroxide formation:** It can form explosive peroxides upon exposure to air and light. Stabilizers like BHT are often added to prevent this.
- **Incompatible materials:** Do not mix with strong oxidizing agents, strong acids, or halogens.
- **Health hazards:** Vapors can cause drowsiness and dizziness (narcotic effects). It can also be harmful if swallowed and may cause mild skin irritation and serious eye irritation.

## PRODUCT DATA SHEET

### DIETHYL ETHER, MILITARY GRADE

Diethyl ether is an extremely flammable, colorless liquid with a low boiling point (34.6° C) and a flash point of -45°C. It has a density of about 0.706 g/mL at 25°C, is only slightly soluble in water, and has a vapor density of approximately 2.6. Diethyl ether can form explosive peroxides when exposed to air and light, and its vapors have upper and lower flammability limits of approximately 36% and 1.9 % by volume, respectively.

#### Chemical and Physical Properties

Property	Value
Chemical Formula	C <sub>4</sub> H <sub>10</sub> O
Molecular Weight	74.12 g/mol
Cas Number	60-29-7
Appearance	Colorless liquid
Odor	Pungent/sweet
Melting point/freezing point	-116 °C
<b>Boiling point</b>	<b>34.4 °C</b>
Lower flammability limit	1.9%
Upper flammability limit	48%
<b>Flash point</b>	<b>Closed cup - 45°C</b> <b>Open cup - 40°C</b>
Auto-ignition temperature	180 °C
Decomposition temperature	Not available
pH	7
Kinematic viscosity	0.23 cP @ 25°C
Solubility	≥ 100mg/l @ 20°C
Partition coefficient n-octanol/water (log value)	0.89
Vapor pressure	440 mmHg @ 20°C
Density	0.7140-0.7200 g/cm <sup>3</sup>
<b>Relative vapor density (air =1)</b>	<b>2.6 @ 20°C</b>