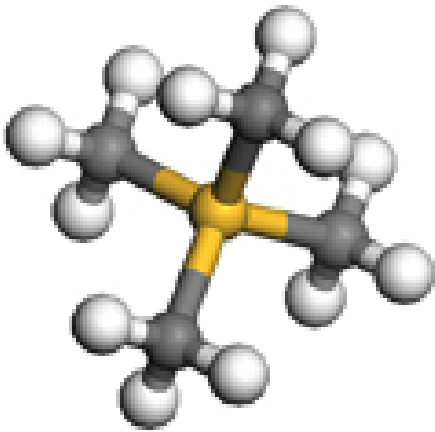


ALOHA™ CVD/ALD Materials



4MS

Tetramethylsilane

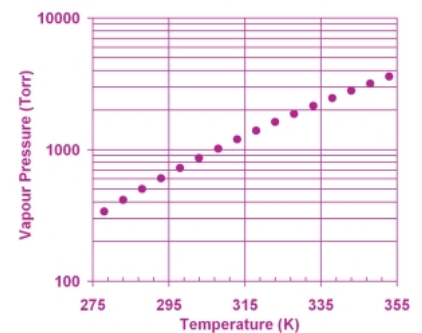
$\text{Si}(\text{CH}_3)_4$

CAS n° 75-76-3

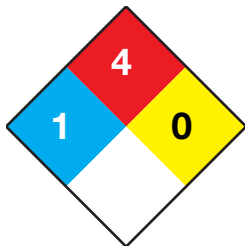
- 4MS or tetramethylsilane is used in the semiconductor industry for Plasma Enhanced Chemical Vapor Deposition (PECVD) of low k dielectric and SiC:H etch stop films on several OEM platforms. It is a colorless highly volatile liquid in normal conditions.
- 4MS is also used as a SiC precursor for optoelectronics, power semiconductors and photosensitive films applications.
- Air Liquide's ultrahigh purity 4MS is qualified at several semiconductor customers and OEM worldwide, and can be supplied in a variety of packages for either liquid phase or sub-atmospheric vapour phase dispense.
- 4MS is widely used in analytical laboratories as NMR standard.

Physical Chemical Properties

Physical Property	
Molecular Weight	88.2 g.mol ⁻¹
Physical State	Liquid
Melting Point	-99°C
Boiling Point	26.5°C
Vapor Pressure	602 Torr @ 20°C
Density	0.648 g.cm ⁻³ @ 20°C
Viscosity	2.42N/(s.m ³) @20°C
Flash Point	-27.7°C
Auto Ignition Point	449°C
Conversion Factor / N ₂ (MFC)	0.25



Hazard Rating



HMIS

Health: 1
Flammability: 4
Reactivity: 0

Explosion limits

Lower: 1%
Upper: 37%

Handling

- 4MS is intrinsically extremely stable, and does not thermally decompose under an inert atmosphere at room temperature. It is highly flammable but does not spontaneously react with water (not soluble).
- 4MS can be distributed in UHP stainless steel distribution systems, either in liquid phase or in gas phase at subatmospheric pressure. Recommended sealing materials include PCTFE, PTFE, PVDF.
- Because of its high vapor pressure, transportation and storage should be kept below 50°C.

Packaging & Dispensing System

- 4MS is typically delivered using liquid dispense systems such as CANDI on most OEM platforms. However, due to its relatively high vapor pressure, cylinder-based gas phase delivery (AVP) is also possible at limited flow rates.
- For liquid feed, 4MS is available in SEMI F66-1101 and F 96-0704 compliant canisters of 5 Gallons and 2 Gallons (18,9L and 7,6L) equipped with manually or pneumatically actuated valves. Custom packages are also available on request.
- Special 1,3L on-board canisters can be supplied for qualification purpose, and/or as a point of use refillable buffer container.



Transport Information

- Proper shipping name: Tetramethylsilane, NOS
- CAS n° 75-76-3
- UN Number: 2749
- ADR Class/division: 3
- ADR Package group: I
- Label ADR: Label 3: Flammable liquid

