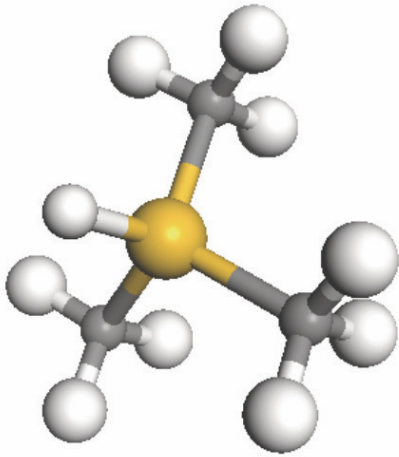


ALOHA™ CVD/ALD Materials



3MS

TriMethylSilane

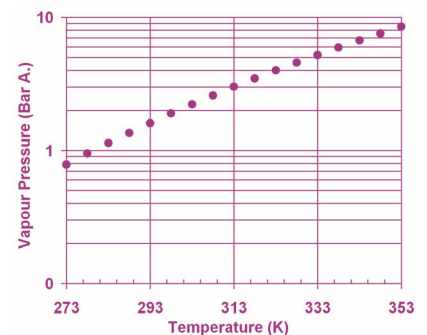
$\text{SiH}(\text{CH}_3)_3$

CAS n° 993-07-7

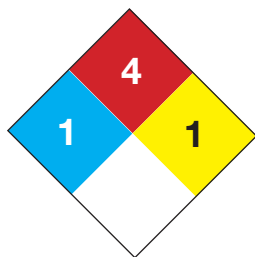
- 3MS or trimethylsilane is used in the semiconductor industry for Plasma Enhanced Chemical Vapor Deposition (PECVD) of SiOC:H dielectrics, and for SiC:H and SiCN etch stop layers.
- 3MS is a highly flammable liquified gas, stored under it's own vapor pressure.
- ALOHA™'s 3MS comes with ultra high purity specifications, and is currently qualified by, and supplied to leading customers worldwide.
- 3MS has sufficient vapor pressure to be dispensed directly in gaseous form to the process chamber. However, the relatively high flow rate used in certain applications and the large heat of vaporization makes the facilitization of several chambers from a single 3MS cylinder particularly challenging.
- For this purpose, Air Liquide's patented AVP™ dispense system is particularly suitable for high flow dispense of 3MS, either from cylinder or bulk containers and centralized delivery system.

Physical & Chemical Properties

Physical Properties	
Molecular weight	74.2 g.mol ⁻¹
Physical State	Liquified compressed gas
Boiling Point	6.7°C
Melting Point	-135.9°C
Vapor Pressure	1.3 Bar @ 20°C
Density (vapor)	3 mg.cm ⁻³
Gravity (Liq)	0.62 g.cm ⁻³ @ 25°C
Flash Point	-60°C



Hazard Rating



HMIS

Health: 1
Flammability: 4
Reactivity: 1

Handling

- High purity 3MS is intrinsically stable, and does not thermally decompose under an inert atmosphere at room T. It is highly flammable and may react with water. However, the reaction with water is very slow at room T at neutral pH.
- 3MS is typically distributed in UHP stainless steel gas delivery systems. Recommended sealing material for valves and regulators include PCTFE, PTFE and PVDF. PFA and FEP should be avoided.

Packaging & Dispensing System

- Due to its relatively high heat of vaporization (14.6 W/slm) and usual high flow usage, consistent and reliable gas supply can become an issue, especially when supplying multiple chambers. In such a case, Air Liquide's patented AVPTM Gas cabinet or AVPTM Bulk delivery system is the solution of choice.
- The patented AVPTM concept allows to compensate exactly the heat of vaporization of the liquid 3MS by a controlled heat input, without overheating the cylinder. For bulk delivery, a patented induction heating system developed by Air Liquide coupled with AVPTM regulation enables optimization of bulk package heating.
- 3MS is available in various cylinder configurations and valves to accommodate customer usage and compliance with local regulations.



Transport Information

- Proper shipping name: Trimethylsilane, NOS
- CAS n° 993-07-7
- UN Number: UN 3161
- ADR Class/division: 2.1
- Label ADR: Label 3: Flammable gas

