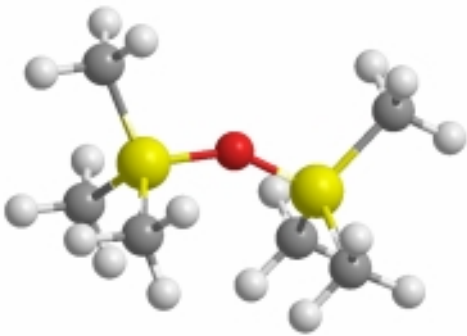


ALOHA™ CVD/ALD Materials



HMDSO

Hexamethyldisiloxane

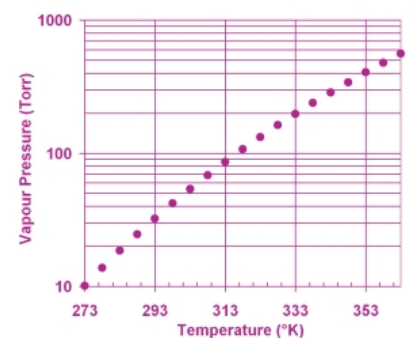
$(\text{CH}_3)_3\text{Si-O-Si}(\text{CH}_3)_3$ $\text{Si}_2\text{OC}_6\text{H}_{18}$

CAS n° 107-46-0

- HMDSO or hexamethyldisiloxane is used in for Plasma Enhanced Chemical Vapor Deposition (PECVD) of a variety of films for numerous applications such as optical anti-reflective coatings, low-k SiOC:H films, or hydrophobic treatments of surfaces. It is a colorless and highly volatile liquid in normal conditions.
- High purity HMDSO is obtained by ultra-purification of industrial grade product, which is obtained by the condensation of trimethylchlorosilane in water.
- Air Liquide's ultrahigh purity HMDSO is produced from controlled source raw material and processed to yield extremely low moisture and particles in order to ensure high performance, repeatable processing.
- The quality of ALOHA's precursors is guaranteed using state of the arts analytical techniques developed by BALAZS™, Air Liquide's analytical service company to the semiconductor industry.

Physical Chemical Properties

Physical Property	
Molecular Weight	162.38 g.mol ⁻¹
Physical State	Liquid
Melting Point	-67°C
Boiling Point	99°C
Vapor Pressure	55 Torr at 30°C
Density	0.763 g.cm ⁻³ at 20°C
Viscosity	0.65 cSt at 25°C
Dielectric constant	2.17
Heat of Vaporization	7.2 kcal/mol
Flash point	-1°C



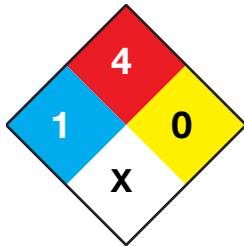
ALOHA Specifications

Parameter	Unit	Specification
Assay	%	>99,9
Water Content	ppm	≤10
Total Chloride	ppm	≤1
Color	APHA	≤10
Particles	#/ml	consult ALOHA

Metals	ppb
Phosphorous	≤10 ppb
Boron	≤10 ppb
Other metals	≤1 ppb

For non-critical applications, a special filtered & dried grade can be supplied by ALOHA. Please consult aloha@airliquide.com for detailed specifications.

Hazard Rating



HMIS

Health: 1
Flammability: 4
Reactivity: 0

Properties and Handling

- HMDSO is intrinsically stable and does not thermally decompose under inert atmosphere. It is not soluble in water (930 ppb) but soluble in most organic solvents.
- HMDSO can be distributed in UHP stainless steel distribution systems, such as the Air Liquide CANDI system.

Packaging & Dispensing System

- HMDSO is typically delivered using a liquid dispensing system such as **C**ontinuous **A**dvanced Precursor **D**ispenser (CANDI) on most OEM Platform. CANDI has distinctive, patent pending features, such as "last drop usage" function that does not require an internal liquid level sensing mechanism.
- HMDSO is available in SEMIF66-1101 and F 96-0704 compliant canisters of 5 Gallons and 2 Gallons (18,9L and 7,6L) equipped with manually or pneumatically actuated valves. For bulk delivery, 55 Gallons canisters are also available along with Air Liquide's Bulk Refill system.



Transport Information

- Proper shipping name:
ADR : Flammable Liquid, N.O.S. (hexamethyldisiloxane)
- DOT : Flammable Liquid, N.O.S. (hexamethyldisiloxane)
- UN Number: 1993
- EINECS Number : 203-492-7
- ADR Class/division: 3
- DOT Class: 3
- Package group: II (F-Highly Flammable)
- Label ADR/DOT: FLAMMABLE



Air Liquide ALOHA is providing a complete advanced precursor solution. AL ALOHA portfolio covers low k, high k, barrier, metal gate, electrode, including some proprietary solutions for SiN, metals and High k. Manufacturing electronic devices with this material may be claimed in certain patents and seller hereby disclaims any liability as to the use of this material made by buyer.

For more information please contact: aloha@airliquide.com or your local Air Liquide representative.

