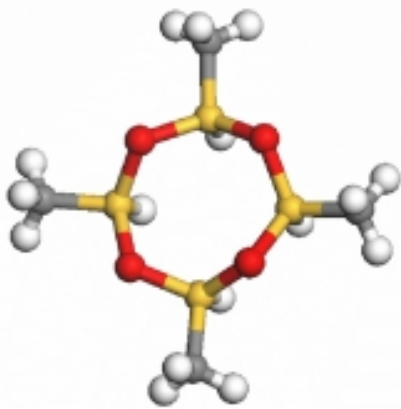


ALOHA™ CVD/ALD Materials



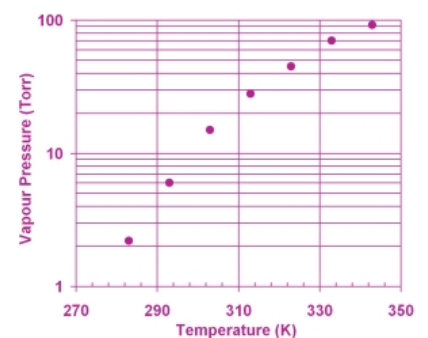
TMCTS

Tetramethylcyclotetrasiloxane
 $[-\text{HSi}(\text{CH}_3)\text{O}-]_4$
 CAS n° 2370-88-9

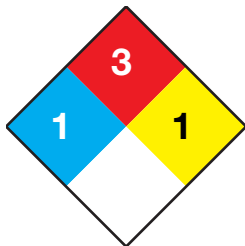
- TMCTS, or tetramethylcyclotetrasiloxane is used in the semiconductor industry for the deposition of low-k and oxide films by plasma enhanced chemical vapor deposition.
- TMCTS is a flammable colorless liquid in normal conditions.
- In certain conditions, crude TMCTS can polymerize up to the point of forming a non-flowable gel. Heat, moisture, alkali and acid impurities, and radical generators are all likely to trigger and enhance the polymerization of the product, making it unsuitable for usage in semiconductor processing.
- ALOHA's TMCTS undergoes a special and proprietary purification and stabilization process to ensure the highest stability and low tool maintenance downtime.

Physical Chemical Properties

| Physical Property | |
|-------------------|--------------------------------|
| Molecular Weight | 240.5 g.mol ⁻¹ |
| Physical State | Liquid |
| Melting Point | < -65°C |
| Boiling Point | 135°C |
| Vapor Pressure | 7 Torr @ 20°C |
| Density | 0.99 g.cm ⁻³ @ 25°C |
| Viscosity | 0.81 cst @ 20°C |
| Flash Point | 31°C |
| Heat Capacity | 1.55 J/g.K @ 100°C |



Hazard Rating



HMIS

Health: 1
Flammability: 3
Reactivity: 1

TMCTS reacts slowly with water with the slow formation of H₂.

Handling

- ALOHA's TMCTS has been proven to be more stable than any other competing TMCTS under accelerated ageing conditions.
- TMCTS should be stored at all time in a thermally controlled environment (< 40°C)
- TEOS-compatible materials for valve seats and other polymeric parts are also suitable for TMCTS service.

Packaging & Dispensing System

- TMCTS can be distributed in UHP stainless steel distribution systems, such as Air Liquide's CANDI system. The CANDI system is equipped with specific features such as a non-intrusive level sensing system, and Smart Empty Control system to ensure last drop usage of the product.
- TMCTS is available in SEMI F66-1101 and F 96-0704 compliant canisters of 10, 5 and 2 Gallons equipped with manually or pneumatically actuated valves. Custom packages are also available on request for special applications or qualification samples.



Transport Information

- Proper shipping name: , FLAMMABLE LIQUID, n.o.s., (TETRAMETHYLCYCLOTETRASILOXANE)
- CAS n° 2370-88-9
- UN Number: 1993
- Class/division: 3
- Package group: III
- Label (DOT, ADR) : FLAMMABLE LIQUID

