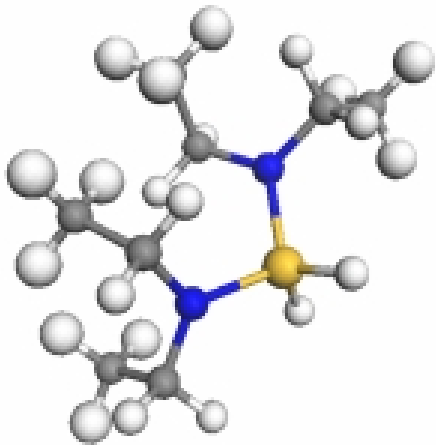


ALOHA™ Special Precursors



SAM.24

Silanediamine, N,N,N',N'-tetraethyl
 (C₈H₂₂N₂Si)

CAS n° 27804-64-4

Enabling Material Award - EuroAsia 2006

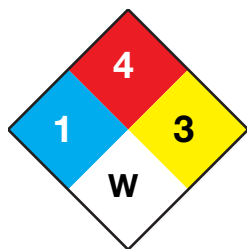
- SAM.24 is ALOHA's newly designed precursor for low temperature ALD of SiO₂ and silicate-based high-k films.
- SAM.24 has been designed and optimized through our Precursor Screening Program to best fulfill all the requirements of the ideal SiO₂ ALD precursor, namely:
 - Self limited growth characteristics under a wide temperature range
 - High growth per cycle by optimization of ligand steric hindrance (1-1.5 Ang/cycle)
 - Low film contamination, even at low T ([C] < 0,3 atomic% @ 250°C)
 - High volatility
 - Constant film properties and composition over a wide temperature range (WER change < 10% for films deposited between 200 and 300°C)
 - Lower cost (materials) of ownership from a simpler synthesis process than usual aminosilanes
- SAM.24 is exclusively available from ALOHA, and is provided with a BALAZS CofA to ensure the highest material integrity.

Physical Chemical Properties

Physical Property	
Molecular Weight	174.36 g.mol ⁻¹
Physical State	Liquid
Melting Point	< -10°C
Boiling Point	188°C est.
Vapor Pressure	30 Torr @ 70°C
Density	0.786 g.cm ⁻³ @ 25°C



Hazard Rating



HMIS

Health: 1
Flammability: 4
Reactivity: 3

The product should be handled considering that the major by-product in case of air exposure is diethylamine. Please consult SAM.24 MSDS for additional information.

All materials in contact with 3DMAS should be compatible with amines.

Packaging & Dispensing System

- SAM.24 can be packaged in a variety of canisters depending on the application.
- For on-board applications, SAM.24 is usually supplied in 1200, 1800 or 2500 ml canisters with various valving and dip-tube configurations. Multipoint or continuous level sensing systems can also be customized to meet each specific requirements. ALOHA's on-board canisters have all-metal construction and are cleaned and dried by state of the art techniques. SAM.24 can also be filled in properly documented customer-supplied canisters.
- For remote refill of POU bubblers or DLI systems, SAM.24 is available in SEMI F66-1101 and F 96-0704 compliant canisters of 5, 3, 2 and 1 Gallons.
- Since SAM.24 has a relatively high vapour pressure at room temperature, the solvent purge option for the Air Liquide CANDI system is not mandatory. When used, ALOHA's UHP Hexane or Octane are appropriate solvents. For the cleaning of on-board manifold and direct exhaust to the tool, specific high volatility solvent can be proposed.



Transport Information

- Proper shipping name: Organometallic substance, water reactive, flammable, n.o.s.
- CAS n° 27804-64-4
- UN Number : UN 3399
- Class/division: 4.3 (Dangerous When Wet)
- Package group: II
- Hazard Labels Required: Class 4.3 (Dangerous When Wet), Class 3 (Flammable)

