

**HMIS Index:**

0 - Minimal  
1 - Slight  
2 - Moderate  
3 - Serious  
4 - Severe

**MATERIAL SAFETY DATA SHEET**

**Semi-Sperse® 25-E**  
**Aqueous Dispersion**

**HMIS Rating:**

1 - Health  
0 - Flammability  
0 - Reactivity  
B- PPE

MSDS has been prepared in accordance with ANSI standard Z400.1-1993, EC Directive 91/155/EEC and 93/112/EEC.

**SECTION I - Chemical Product and Company Identification**

**Trade Name**  
Semi-Sperse® 25-E  
Aqueous Dispersion

**Product Type**  
Silicon Dioxide  
Aqueous  
Dispersion

**Date Revised:**  
October 27, 2003  
**Date Created:**  
September 6, 2001

**Prepared By:**  
Michael Trembley  
**Title:**  
Product Stewardship Mgr.

**Manufacturer/Supplier**

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**Telephone No.**

630-375-5586 (U.S.) - MSDS Request  
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011-44 (0) 1446 422000 (U.K.)  
011-81-59-266-0120 (Japan)

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630-585-9976 (U.S.)  
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011-81-59-266-0121 (Japan)

**Emergency Telephone No.**

Chemtrec (U.S.) 800-424-9300  
Chemtrec (Intl.) 703-527-3887  
Cabot Microelectronics (U.S.) 630-585-9471  
011-44-1446736999 (U.K.)

**SECTION II - Composition/Information on Ingredients****Substance Trivial Name**

Semi-Sperse® 25-E Aqueous Dispersion

**Formal Name**

Aqueous Dispersion

**Chemical Family**

Not Applicable

**Component**

Silica, Amorphous, Crystalline  
Free

**CAS No.**  
112945-52-5

**EINECS #**

231-545-4

**% by Weight**

25

**EU Classification**

Not classified

De-Ionized Water

7732-18-5

231-791-2

74

Potassium Hydroxide

1310 - 58-3

215-181-3

< 1

**Trade Names and Synonyms**

Semi-Sperse® 25-E Aqueous Dispersion

**Material Uses**

Used as a polishing slurry in the semiconductor industry and other applications.

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### SECTION III - Hazards Identification

**Emergency Overview:**

Milky white slurry.

**Caution:** May cause skin and eye irritation. Do not breath dust from dried product.

**Potential Environmental Effects:** None expected.

**Potential Health Effects**

**Routes of Exposure:** Eye, Skin

**Eye:** May cause slight irritation.

**Skin:** May cause slight irritation.

**Ingestion:** May be harmful if swallowed.

**Inhalation:** Due to this materials liquid dispersion state, it is not expected to be a significant inhalation hazard. Dried product may cause irritation to the respiratory tract.

**Chronic Effects:** Not listed as a carcinogen by IARC, NTP, Z List or OSHA.

**Teratology:** None identified

**Reproduction Info.:** None identified

**Target Organs:** None identified

**Medical Conditions Aggravated:** None Identified

### SECTION IV - First Aid Measures

**Inhalation:** Remove to fresh air. If breathing is difficult, give oxygen. If symptoms develop, seek medical attention. If not breathing, give artificial respiration.

**Ingestion:** Do not induce vomiting. If conscious and alert, rinse mouth with water. If symptoms develop seek medical attention.

**Eyes:** Immediately flush lightly with plenty of water for at least 15 minutes. If symptoms develop seek medical attention.

**Skin:** Flush affected area with water. Remove contaminated clothing. If symptoms develop seek medical attention.

**Advice to Physicians**

Treat symptomatically if present.

### SECTION V - Fire Fighting Measures

<b>Extinguishing Media</b> Use extinguishing media for surrounding fire.	<b>Unsuitable Media</b> Not Applicable	<b>Flash Point</b> Not Applicable	<b>Flash Point Method</b> Not Applicable
<b>Lower Explosive Limit</b> Not Applicable	<b>Upper Explosive Limit</b> Not Applicable	<b>Ignition in Air</b> Not Defined	
<b>Flammability Classification</b> Not Applicable		<b>Flame Propagation in Air</b> Not Applicable	
<b>Fire Fighting Procedure</b> No special fire fighting procedures.		<b>Combustion Hazards</b> Not Applicable	
<b>Protective Equipment</b> Standard personal protective equipment for structural fire fighting.		<b>Unusual Fire Hazards</b> None expected.	
<b>Dust Explosion Potential</b> Not Applicable		<b>Static Discharge Effects</b> Not Applicable	
<b>Sensitivity to Impact</b> Not Applicable			



## SECTION VI - Accidental Release Measures

### Personal Precautions

Safety glasses or goggles, impervious gloves and protective clothing recommended when handling. If spilled material dries, creating airborne dust concentrations that exceed the applicable exposure limit, then an approved respirator for dust/fumes is recommended.

### Spill Cleanup Measures

Absorb with inert material (e.g., dry sand or earth), then place in chemical waste container. Wear appropriate PPE. See Section 8.

### Environmental Precautions

Do not allow material to surface waters.

## SECTION VII - Handling and Storage

### Handling & Storage Precautions

**Handling:** Avoid skin and eye contact. Avoid generating aerosols or mists. Do not breath aerosols, mists or dust from dried product.

**Storage:** KEEP FROM FREEZING.

### Hygienic Practices

Avoid contact with skin. Wash exposed skin frequently. Good practices should be followed in regard to work clothing.

### Special Precautions

None

## SECTION VIII - Exposure Controls/Personal Protection

### Inhalation Standards

TLV (U.S.) = 10 mg/m<sup>3</sup> total dust for particles not otherwise classified.

PEL (U.S.) = 10 mg/m<sup>3</sup> for nuisance dust.

MAK (Germ.) = 4 mg/m<sup>3</sup> inhalable dust.

OES (U.K.) = 6 mg/m<sup>3</sup> total inhalable, 2.4 mg/m<sup>3</sup> respirable dust.

Australia (TLV) = 10 mg/m<sup>3</sup> total dust containing no asbestos and <1% crystalline silica.

### Eye-Face Protection

Safety glasses with side shields or goggles recommended to prevent eye contact

### Skin Protection

Impervious gloves.

### Protective Clothing

Wear appropriate clothing to minimize skin contact.

### Respiratory Protection

None normally needed unless mists or dust are generated.

An approved air-purifying respirator (APR) for dusts/mists may be appropriate to control exposure. Protection provided by air-purifying respirators is limited. Use a positive-pressure, air supplied respirator if there is any potential for uncontrolled release, exposure levels are not known, or any circumstances where air-purifying respirators may not provide adequate protection. Use of respirators must include a complete respiratory protection program in accordance with national standards and current best practices.

The following agencies/organizations approve respirators and/or criteria for respirator programs:

U.S.: NIOSH approval under 42 CFR 84 required.

OSHA (29 CFR 1910.134)

ANSI Z88.2-1992

EU: CR592 Guidelines for the Selection and Use of Respiratory Protection.

Germany: DIN/EN 143 Respiratory Protective Devices for Dusty Materials.

UK: BS 4275 Recommendations for the Selection, Use and Maintenance of Respiratory Protective Equipment.

HSE Guidance Note HS(G)53 Respiratory Protective Equipment.

### Engineering Controls

If user operations generate dust, fumes or mist, use ventilation to keep exposure to airborne contaminants below exposure limits.

**Other Protective Measures**  
None.

### SECTION IX - Physical and Chemical Properties

<b>Physical State</b> Slurry	<b>Color</b> Milky White	<b>Odor</b> None
<b>Odor Threshold</b> Not Applicable	<b>pH</b> 10.9 – 11.2	<b>Boiling Point</b> 100°C/212° F
<b>Evaporation Rate</b> Same as water	<b>Melting/Freezing Point</b> 0°C/32° F	<b>% Volatile by Volume</b> Not Applicable
<b>Solubility in Water</b> Dispersible	<b>Specific Gravity</b> 1.166 g/cm <sup>3</sup> @25°C	<b>Vapor Density</b> Water
<b>Vapor Pressure</b> Water	<b>Reid Vapor Pressure</b> Not Applicable	<b>Water/Oil Distribution</b> Not Applicable
<b>Viscosity</b> Not Determined	<b>Pour Point</b> Not Applicable	

### SECTION X - Stability and Reactivity

<b>Chemical Stability</b> Stable	<b>Conditions to Avoid</b> Freezing conditions	<b>Incompatible Materials</b> None
<b>Reactivity</b> Stable	<b>Hazardous Decomposition</b> Nitrogen oxides, CO, CO <sub>2</sub> gases	<b>Hazardous Polymerization</b> Will not occur

### SECTION XI - Toxicological Information

**Acute Toxicity**  
Oral (rat): Not tested  
Dermal (rabbit): Primary Irritation Index =0.4; Slightly Irritating: Toxicity Category IV  
Inhalation (rat): Not tested  
Skin Irritation: Not tested  
Eye Irritation: Minimally Irritating: Toxicity Category IV  
Carcinogenicity: Not listed as a carcinogen by IARC, NTP, Z List or OSHA.  
Mutagenicity: Not tested  
Reproductive Toxicity: Not tested  
Teratogenicity: Not tested

<b>Chronic Ingestion Effect</b> None expected	<b>Chronic Eye Effect</b> None expected	<b>Chronic Skin Effect</b> None expected
<b>Chronic Inhalation Effect</b> None known	<b>Sensitization to Material</b> None expected	<b>Synergistic Materials</b> None expected

### SECTION XII – Ecological Information

<b>Mobility</b> Oxide component not mobile in soil.	<b>Persistence/Degradability</b> The oxide component of the this material will persist.	<b>Bio-Accumulation</b> This material is not expected to bio-accumulate.
<b>Ecotoxicity (Untreated Silica)</b> Acute Fish Toxicity: Not Tested Acute Daphnia Toxicity: Not Tested WGK Water Hazard Class: Not Determined		



## SECTION XIII - Disposal Considerations

### Legal Classification

Dispose of in accordance with all applicable National, State and Local regulations. Same considerations should be given to the disposal of empty containers.

As sold, not defined as hazardous waste under U.S. RCRA (Resource Conservation and Recovery Act) regulations.

**Waste Key No.** Not determined.

## SECTION XIV - Transport Information

<b>UN Number</b> Not applicable	<b>UN Proper Shipping Name</b> Non-hazardous/Non-regulated	<b>UN Class</b> Not applicable
<b>UN Packing Group</b> Not applicable	<b>GGVS/GGVE/RID/ADR/IMDG-Code/ICAO-TI Information</b> Not determined	<b>US Rail Regulations</b> Not determined

## SECTION XV - Regulatory Information

**National Registries:** All components are in compliance with the inventories below:

**Australia:** AICS Australian Inventory List

**Canada:** CEPA, Canadian Environmental Protection Act, 6<sup>th</sup> Amendment, Domestic Substance List.

**China:** Inventory of Existing Chemical Substances in China.

**Europe:** EINECS, European Inventory of Existing Commercial Chemical Substances.

**United States:** TSCA, Toxic Substance Control Act.

**Japan:** MITI, Ministry of International Trade and Industry List of Existing Chemical Substances.

**Korea:** ECL, Existing Chemical List.

**Europe (EU):** This material is not defined as a dangerous substance regarding EU Directive 67/548/EEC and it's various amendments and adaptations.

**U.S. Clean Air Act, 1990:** No components are listed as hazardous air pollutants. No components contain or are manufactured with Class I or Class II ozone depleting chemicals, as defined in the Clean Air Act of 1990.

**U.S. Clean Water Act (40 CFR 116):** No components are listed.

**U.S. SARA Title III – Superfund Amendments and Reauthorization Act (SARA)**

**Section 302:** Does not contain any constituents that are identified as extremely hazardous.

**Section 311/312:** Under SARA 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are: 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

**Section 311/312 – MSDS Requirements** - Not regulated.

**Section 313:** Does not contain any of the substance identified under Section 313 as toxic chemicals in excess of the *de minimis* concentrations necessary to be subject to this rule.

**Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, 40 CFR 302):** This material is not a hazardous substance under the CERCLA. Notification of spills of this material is not required.

## SECTION XVI - Other Information

### Reference Sources Used

Sax, Irving N. & Lewis Sr., Richard J. *Dangerous Properties of Industrial Materials*, 7th Edition.

ACGIH, *Documentation of TLVs and BEIs*, 6th edition.

Sax, Irving N. & Lewis Sr., Richard J. *Dangerous Properties of Industrial Materials*, 7<sup>th</sup> Edition. xCook, Warren A., *Occupational Exposure Limits Worldwide*, 1988.

### Revision Indicator

Revised sections of the MSDS will be indicated by an asterisk (\*) in front of the section affected.

### Disclaimer

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