



MATERIAL SAFETY DATA SHEET  
NexSil™ 12HS

REVISION: 10/12/2010  
SUPERSEDES: 9/7/2005  
PAGE: 1 OF 4

### 1. Chemical Product and Company Identification

Trade Name: NexSil™ 12HS  
Chemical Name: Silicon Dioxide and Water  
Synonyms: NexSil 12HS Colloidal Silica Sol  
Product Code: NexSil 12HS  
Use: Papermaking, Ceramics  
Manufacturer: Nyacol Nano Technologies, Inc.  
Megunko Road, P.O. Box 349, Ashland MA 01721 U.S.A.  
508-881-2220  
Emergency Telephone: CHEMTREC: 800-424-9300  
E-mail Contact: info@nyacol.com

### 2. Composition / Information on Ingredients

<u>Component</u>	<u>CAS RN</u>	<u>Exposure Limits</u>	<u>Percent By Weight</u>
Silicon Dioxide:	7631-86-9	5 mg/M <sup>3</sup> TWA	40
Water:	7732-18-5	None	60

  

<u>Component</u>	<u>EINECS #</u>	<u>RTECS #</u>	<u>REACH #</u>
Silicon Dioxide:	231-545-4	VV7310000	05-2117294571-38-0000
Water:	231-791-2	ZC0110000	N/A

### 3. Hazard Identification

Emergency Overview: Transparent white liquid. No odor. Keep spills out of surface waters.  
Classification: Not applicable.  
Symbol: Not applicable.  
Risk Phrases: Not applicable.  
Safety Phrases: Not applicable.

#### Potential Health Effects / Health Hazard Identification

##### Acute Exposure:

Eye: May cause eye irritation.  
Skin: May cause irritation.  
Ingestion: Not known.  
Inhalation: Breathing dried dust or spray mist causes irritation.  
Chronic Exposure: Not known.

##### Other Hazards

Known Synergists: None known.  
Explosion Hazard: None known.  
Fire Hazard: None known.  
Corrosion Hazard: None known.

### 4. First Aid Measures

Eye Contact: Flush eyes thoroughly with water for at least fifteen minutes.  
Get medical attention.  
Skin Contact: Immediately flush skin with plenty of water.  
Remove contaminated clothing. Wash clothing before reuse.  
Inhalation: Remove person from exposure source, seek medical professional.  
Ingestion: Consult medical professional. Do not induce vomiting unless directed by medical professional. Never give anything by mouth to an unconscious person.  
First Aid Facilities: Eye wash station. Syrup of Ipecac.  
Advice to Physicians: No recommendations.



MATERIAL SAFETY DATA SHEET  
NexSil™ 12HS

REVISION: 10/12/2010  
SUPERSEDES: 9/7/2005  
PAGE: 2 OF 4

**5. Firefighting Measures**

Flammability: Material will not burn in a fire. Containers can build pressure if exposed to heat or fire.  
Extinguishing Media: All are acceptable. Cool containers with water spray.  
Protective Equipment: Wear standard full firefighter turn-out gear (full bunker gear) and respiratory protection (SCBA).  
Special Exposure Hazard: None known.

**6. Accidental Release Measures**

Leaks and Spills: Dike area to prevent spreading. Absorb with inert material. Put in appropriate container.  
Personal Protection: See Section 8.

**7. Handling and Storage**

Handling: Avoid generating mist or dust during use.  
Storage: Keep from freezing. Store in a cool dry area.

**8. Exposure Controls / Personal Protection**

Engineering Control: Use exhaust ventilation to keep airborne concentrations below exposure limits.  
Respiratory Protection: When respiratory protection is required, or concentrations are unknown, use an approved air-purifying respirator equipped with a dust cartridge.  
Skin Protection: Wear clean body-covering clothing and impervious gloves such as neoprene.  
Eye Protection: Wear approved safety glasses.

**9. Physical and Chemical Properties**

Appearance: Transparent white liquid  
Odor: None.  
Physical State: Liquid. NexSil 12HS is a water-based material.  
pH: 9.7  
Boiling Point: 100° C (212° F) water  
Freezing Point: 0° C (32° F) water  
Flash Point: Not applicable.  
Vapor Pressure: 2260 kPs (17 mm Hg) at 20° C water  
Oxidizing Properties: Not an oxidizer.  
Solubility in Water: Disperses in water but is negligibly soluble.  
Density: 1200 kg/M<sup>3</sup>  
Specific Gravity: 1.3  
Volatile by Weight: 60%  
Viscosity: Less than 10 cP  
Explosion Limits: Not applicable.  
Partition Coefficient: Not available.  
Evaporation Rate: Slow (Butyl Acetate = 1)

**10. Stability and Reactivity**

Chemical Stability: NexSil 12HS is stable.  
Conditions To Avoid: No recommendations.  
Incompatibility With Other Materials: None known.  
Hazardous Decomposition Products: None known.  
Hazardous Polymerization: Will not occur.



MATERIAL SAFETY DATA SHEET  
NexSil™ 12HS

REVISION: 10/12/2010  
SUPERSEDES: 9/7/2005  
PAGE: 3 OF 4

### 11. Toxicological Information

Material LD<sub>50</sub>, Rat, Oral

Silicon Dioxide: 3160 mg/kg  
Water: None.

Effects

Eye Effects: No published data; should be irritating based on pH.  
Skin Effects: No published data available. Workers exposed to this product have reported dried skin.  
Inhalation Effects: Breathing dried dust or spray mist causes irritation. OSHA exposure limit: Amorphous Silica = 20 mppcf (5mg/M<sup>3</sup>) SiO<sub>2</sub> respirable dust or mist. 8-hour time weighted average. Exposure analysis method: NIOSH Manual of Analytical Methods, 3rd edition, Method 7501.  
Ingestion Effects: Not available.

### 12. Ecological Information

Ecotoxicity: No data available.  
Persistence: No data available.

### 13. Disposal Considerations

Disposal Considerations: NexSil 12HS should be recycled or solidified for disposal in a landfill approved for chemical waste.  
United States: Not a RCRA-regulated waste.

### 14. Transport Information

<u>Regulations</u>	<u>Shipping Name</u>	<u>Hazard Class</u>	<u>Packing Group</u>	<u>U.N. Number</u>
U. S. D.O.T.:	Not applicable.	Not applicable.	Not applicable.	Not applicable.
ICAO / IATA:	Not applicable.	Not applicable.	Not applicable.	Not applicable.
IMO / IMDG:	Not applicable.	Not applicable.	Not applicable.	Not applicable.
ADR:	Not applicable.	Not applicable.	Not applicable.	Not applicable.

### 15. Regulatory Information

U.S. Federal Regulations

EPA TSCA Inventory: All ingredients listed.  
SARA Section 313: Contains no listed ingredients.  
D.O.T. Regulations: See Section 14.

U.S. State Regulations

California Proposition 65: No ingredients listed.  
State Right-to-Know Laws: Section 2 of this MSDS lists all components of NexSil 12HS.

Canadian Regulations

Domestic Substance List: All ingredients listed.  
WHMIS: Not regulated.

Transportation of Dangerous Goods: Not applicable.

Controlled Products Regulations: This MSDS contains all the information items specified in Schedule 1, Column 3 of the Controlled Products Regulations in a 16-heading format.

EC Regulations

Classification: Not applicable.  
Symbol: Not applicable.  
Risk Phrases: Not applicable.  
Safety Phrases: Not applicable.



MATERIAL SAFETY DATA SHEET  
NexSil™ 12HS

REVISION: 10/12/2010  
SUPERSEDES: 9/7/2005  
PAGE: 4 OF 4

**16. Other Information**

NFPA 704 Hazard Rating: Health – 1, Flammability – 0, Reactivity – 0, Special – None  
HMIS® Hazard Rating: Health – 1, Flammability – 0, Reactivity – 0  
Protective Equipment – B: Safety Glasses, Gloves

Recommended Use: NexSil 12HS is recommended for use in papermaking and ceramics.  
Other uses have not been investigated and may have other hazards.  
For industrial use only, not for food, drug or home use.

Work Alert: Workers using NexSil 12HS should read and understand this MSDS and be trained  
in the proper use of this material.

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Revision Date: October 12, 2010  
Supersedes: September 7, 2005

This MSDS has been prepared from data from Nyacol Nano Technologies, Inc.'s laboratories, raw material suppliers and government publications.

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