

1. Chemical Product and Company Identification

Trade Name: NYACOL D-6
Chemical Name: Silicon Dioxide and Water
Synonyms: Colloidal Silica Sol
Product Code: D-6
Use: Concrete Densifier
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: 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 ³ TWA	17
Water:	7732-18-5	None	83

<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 harmful.
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.

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
pH:	10.0
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 ³
Specific Gravity:	1.2
Volatile by Weight:	83%
Viscosity:	Less than 20 cP
Explosion Limits:	Not applicable.
Partition Coefficient:	Not available.
Evaporation Rate:	Slow (Butyl Acetate = 1)

10. Stability and Reactivity

Chemical Stability:	D-6 is stable.
Conditions To Avoid:	No recommendations.
Incompatibility With Other Materials:	None known.
Hazardous Decomposition Products:	None known.
Hazardous Polymerization:	Will not occur.

11. Toxicological Information

Material LD₅₀, 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/M³) SiO₂ 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: D-6 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.
 U.S. D.O.T. Regulations: See Section 14.
 FDA: 21 CFR 175.105 - Silicon Dioxide may be used as a component of adhesives used to prepare articles intended for the use in packaging, transporting or holding food.
 21 CFR 177.1200 - Silicon Dioxide may be used as a component of a polymer used as a base sheet or as a coating applied to a base sheet for use in food packaging.
 21 CFR 182.90 - Silicon Dioxide is generally recognized as safe (GRAS) as a substance migrating to food from paper and paper board products used in food packaging.

U.S. State Regulations

California Proposition 65: No ingredients listed.
 State Right-to-Know Laws: Section 2 of this MSDS lists all components of D-6.

15. Regulatory Information, continuedCanadian 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 CPR in a 16-heading format.

EC Regulations

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

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:	D-6 is recommended for use in concrete densification. 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 D-6 should read and understand this MSDS and be trained in the proper use of this material.
MSDS Prepared By:	Robert J. Nehring, Jr. Technology & Manufacturing Nyacol Nano Technologies, Inc. Telephone: 508-881-2220 U.S.A.
Revision Date:	September 16, 2011
Supersedes:	None

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

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