

Section 1: Product and Company Identification:

1.1 Product Identifier

Product Form:	Mixture
Identification of Substance:	Silicon Dioxide and Water
Product Name:	NexSil™ 6000
Synonym:	Colloidal Silica Sol
CAS Number:	7631-86-9
Index Number:	Not available.
EINECS Number:	231-545-4
REACH Registration Number:	01-2119379499-16-0220
Formula:	SiO ₂

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use:	Papermaking. Ceramics. Polishing.
Restrictions on Use:	For industrial use only, not for food, drug or home use.

1.3 Details of the supplier of the safety data sheet

Company Identification:	Nyacol Nano Technologies, Incorporated Megunko Road, P.O. Box 349, Ashland, MA 01721 U.S.A. 508-881-2220
Email Contact:	info@nyacol.com
Internet:	www.nyacol.com

1.4 Emergency telephone number

In Case of Emergency:	USA/Canada CHEMTREC: +1 (703) 527-3887 International CHEMTREC: +1 (703) 741-5970 24 Hours/Day: 7 Days/Week
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Section 2: Hazard(s) Identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Skin Irrit. 2, H315 Causes skin irritation.
 Skin Sens. 1, H317 May cause an allergic skin reaction.
 Repr. 1B, H360 May damage fertility or the unborn child.

2.1.1 Classification according to Regulation (EC) No. 1272/2008 (CLP)

Skin Irrit. 2, H315 Causes skin irritation.
 Skin Sens. 1, H317 May cause an allergic skin reaction.
 Repr. 1B, H360Df May damage the unborn child. Suspected of damaging fertility.

2.2 Label Elements – Labelling according to Regulation (EC) No. 1272/2008

Hazard Pictograms:



Signal Word: Danger

Hazard Statement(s):

H315 Causes skin irritation.
 H317 May cause an allergic skin reaction.
 H360Df May damage the unborn child. Suspected of damaging fertility.

Precautionary Statement(s):

P201 Obtain special instructions before use.
 P202 Do not handle until all safety precautions have been read and understood.
 P261 Avoid breathing dust/fume/gas/mist/vapor/spray.
 P264 Wash face, hands and any exposed skin thoroughly after handling.
 P272 Contaminated work clothing should not be allowed out of the workplace.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P302 + P352 If on skin: Wash with plenty of soap and water.
 P308 + P313 If exposed or concerned: Get medical advice/attention.
 P321 Specific treatment – see First Aid Section 4.
 P332 + P313 If skin irritation occurs: Get medical advice/attention.
 P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
 P362 Take off contaminated clothing and wash before reuse.
 P363 Wash contaminated clothing before reuse.
 P405 Store locked up.
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other Hazards

No information available.

2.4 Unknown acute toxicity (GHS US)

No further relevant information available.

Section 3: Composition / Information on Ingredients

3.1 Chemical characterization: Mixtures

Description: Mixture consisting of the following components.

Hazardous Component Name:	Product Identifier	Classification	Percent By Weight
Amino alcohol: REACH: Prerigersted by NNT	Trade secret.	H314: Skin Corr. 1B H317: Skin Sens. 1 H60Df: Repr. 1B H335: STOT SE 3 (C>4%)	2 – 3
Non-hazardous Component Name:	Product Identifier	Classification	Percent By Weight
Silicon Dioxide:	CAS: 7631-86-9 EINECS: 231-545-4 Index: Not available	Not classified.	40
Water:	CAS: 7732-18-5 EINECS: 231-791-2 Index: Not available	Not classified.	57 – 58

Impurities: Present at a level below that to be taken into account for classification.

Stabilizing Additives: None

The supplier currently has no knowledge on additional ingredients that are classified and that contribute to the classification of this substance.

See Section 16 for a list of hazards if identified above.

Section 4: First-Aid Measures

4.1 Description of first aid measures

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids apart while flushing to rinse entire surface of the eye and lids with water. Get medical attention.

Skin Contact: Wash skin with plenty of soap and water for several minutes. Get medical attention if skin irritation develops or persists.

Inhalation:	If inhaled, remove to fresh air. If not breathing, clear person's airway and give artificial respiration. If breathing is difficult, qualified medical personnel may administer oxygen. If effects occur seek medical attention.
Ingestion:	If a person is conscious and can swallow, immediately give two glasses of water (16 oz. or 500 ml.) but do not induce vomiting. If vomiting occurs, give fluids again. Do not give anything by mouth to an unconscious or convulsing person.
First Aid Facilities:	Eye wash station.
Advice to Physicians:	No further relevant information available.

4.2 Most important symptoms and effects, both acute and delayed

Acute or delayed effects are not anticipated.

4.3 Indication of any immediate medical attention and special treatment needed.

Treat symptomatically.

Section 5: Fire-Fighting Measures

5.1 Extinguishing Media

Suitable Extinguishing Media: All are suitable. Use water spray, dry chemical, foam or carbon dioxide to extinguish flames. Use water spray to cool fire-exposed containers. Water or foam may cause frothing.

Unsuitable extinguishing media: None known.

5.2 Special hazards arising from the substance or mixture

Flammability of the product: Material is not flammable. Containers can build pressure if exposed to heat or fire.

Special Hazard Arising from the Chemical: Formation of toxic gases is possible during heating or in case of fire. Combustible products may include carbon monoxide, carbon dioxide, and nitrogen oxides.

Fire Hazard: No further relevant information available.

Explosion Hazard: No further relevant information available.

Reactivity: No further relevant information available.

5.3 Advice for firefighters

Special Protective Equipment for Fire-fighters: Wear standard full firefighter turn-out gear (full bunker gear) and respiratory protection (SCBA).

Section 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Eye protection and impervious gloves. An approved air-purifying respirator should be worn if dust or mist is present.

6.1.1 For non-emergency personnel

Wear protective equipment. Keep unprotected persons away.

6.2 Environmental precautions

Prevent entry into sewers and waterways.

6.3 Methods and material for containment and cleaning up

Ventilate area. Avoid breathing mist. Wear appropriate personal protective equipment, including appropriate respiratory protection. Dike area to prevent spreading and contain spill if possible. Absorb with inert material. Put in appropriate container. Prevent entry into sewers and waterways. Avoid contact with skin, eyes or clothing.

6.4 Reference to other sections

For more information on exposure controls and personal protection or disposal considerations, check section 8 and 13 of this SDS.

Section 7: Handling and Storage

7.1 Precautions for safe handling

Minimum feasible handling. Avoid generating mist during use. Use only in well ventilated area.

7.1.1 Protective measures

Use only in well ventilated areas. As a precautionary measure, the wearing of standard work gear is suggested.

7.1.2 Advice on general occupational hygiene

Avoid inhalation or ingestion. General occupational hygiene measures are required to ensure a safe handling of the substance. These measures involve good personal and housekeeping practices (i.e. regular cleaning with suitable cleaning devices), no eating, drinking and smoking at the workplace and wearing standard working clothes and shoes unless otherwise stated. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas. Shower and change clothes at end of work shift. Do not wear contaminated clothing at home.

7.2 Conditions for safe storage, including any incompatibilities

Periods of exposure to high temperatures should be minimized. Provide sufficient ventilation in storage and workrooms. Keep from freezing. Store in a cool, dry area.

7.3 Specific end use(s)

No additional information available. Refer to Section 1.2 of this SDS.

Section 8: Exposure Controls / Personal Protection

8.1 Control Parameters

8.1.1 National Limit Values

Silicon Dioxide, CAS 7631-86-9

Country	Occupational exposure limit	Reference period	Reference
USA	80 mg/m ³ / %SiO ₂	8 hours	OSHA PEL – http://www.cdc.gov/niosh/idlh/7631869.html
UK	6 mg/m ³ (inhalable)	8 hours	Health and Safety Executive – http://www.hse.gov.uk/pubns/priced/eh40.pdf
Germany	4 mg/m ³ (inhalable)	8 hours	Senate Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (MAK Commission): http://www.dfg.de/en/dfg_profile/statutory_bodies/senate/health_hazards/index.html
Belgium	10 mg/m ³	8 hours	Service public fédéral Emploi, Travail et Concentration sociale: http://www.emploi.belgique.be/WorkArea/showcontent.aspx?id=23914
Austria	2 mg/m ³ (inhalable)	8 hours	http://www.arbeitsinspektion.gv.at/NR/rdonlyres/F173280B-D4FB-44D2-8269-8DB2CB1D2078/0/GKV2011.pdf

Amino alcohol, trade secret

USA OSHA	OSHA PEL Ceiling (mg/M ³)	Not determined.
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8.1.2 DNELs and PNECs

Silicon Dioxide, CAS 7631-86-9

DNEL (Derived No Effect Level)

Route of Exposure/Environmental protection target	DNEL
Inhalation – Long term/systemic effects	4 mg/m ³

PNEC (Predicted No Effect Concentration)

No information available

8.2 Exposure Controls

Engineering Controls:	Ventilation adequate to meet occupational exposure limits.
Hygiene Measures:	Workers should wash exposed skin several times daily with soap and water. Soiled work clothing should be laundered or dry-cleaned.
Respiratory:	Airborne concentrations should be kept to lowest levels possible. If vapor, mist or dust is generated and the occupational exposure limit of the product, or any component of the product, is exceeded, use appropriate NIOSH or MSHA approved air purifying or air supplied respirator after determining the airborne concentration of the contaminant. Air-supplied respirators should always be worn when airborne concentrations of the contaminant or oxygen content is unknown.
Hands:	Wear impervious gloves such as neoprene.
Eyes:	Safety glasses, chemical type goggles, or face shield recommended to prevent eye contact.
Skin:	Wear clean body-covering clothing; impervious gloves such as neoprene. Workers should wash exposed skin several times daily with soap and water. Soiled work clothing should be laundered or dry-cleaned.
Environmental Exposure Controls:	Adverse effects of this material on the environment have not been evaluated. Proper disposal techniques to isolate and recover material should be implemented.

Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance (Physical State, Color):	Liquid. Transparent white.
Upper/lower flammability or explosive limits:	Not determined.
Volatile by Weight:	60%
Odor:	Odorless.
Vapor Pressure:	2260 kPa (17 mm Hg) at 20°C water
Odor Threshold:	Not determined.
Vapor Density:	Not determined.
pH:	10 – 11
Relative Density:	Not determined.
Melting point/freezing point:	Not determined.
Solubility in Water:	Disperses in water but is negligibly soluble.
Initial boiling point and boiling range:	100° C (212° F) water
Flashpoint:	Not applicable.
Evaporation Rate:	Slow (Butyl Acetate = 1)
Flammability (solid, gas):	Not self igniting.
Partition Coefficient:	Not determined.
Auto-ignition temperature:	Not determined.
Decomposition temperature:	Not determined.
Viscosity:	Less than 15 cP
Specific Gravity:	1.3
Freezing Point:	0°C (32° F) water
Explosion Limits:	Not applicable.
Oxidizing Properties:	Not an oxidizer.

9.2 Other information

No further relevant information available.

Section 10: Stability and Reactivity

10.1 Reactivity

Not determined.

10.2 Chemical Stability

Stable under normal ambient and anticipated storage and handling conditions.

10.3 Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4 Conditions to avoid

No further relevant information available.

10.5 Incompatible materials

No further relevant information available.

10.6 Hazardous decomposition products

Oxides of nitrogen and carbon.

Section 11: Toxicological Information

11.1 Information on toxicological effects

Acute toxicity:

LD50, Rat, Oral:

Silicon Dioxide, 7631-86-9	>5000 mg/kg
Amino alcohol, Trade Secret	>2000 mg/kg
Water:	None reported.

LD50, Rat, Dermal:

Amino alcohol, Trade Secret >2000 mg/kg

Inhalation:

Use breathing protection when aerosol or mist is formed. Breathing dried dust or spray mist causes irritation. OSHA exposure limit: Amorphous Silica = 20 mppcf (5 mg/M³) SiO₂ respirable dust or mist. 8-hour time weighted average. Exposure analysis method: NIOSH Manual of Analytical Methods, 3rd edition, Method 7501.

Eye Contact:

Avoid contact with eyes due to potential for irritation.

Sensitization:

Allergic skin reaction may occur.

Chronic Effects:

No further relevant information available.

Reproductive effects:

Amino alcohol, Trade Secret May damage the unborn child. Suspected of damaging fertility.

Carcinogenicity

No data indicating any concern for carcinogenicity.

Section 12: Ecological Information

12.1 Toxicity

Aquatic toxicity, Silicon Dioxide CAS 7631-86-9

Not harmful to aquatic organisms.

Aquatic toxicity, Amino alcohol, trade secret

LC50, Pimephales promelas (fathead minnow), 96 h: 640 mg/l

EC50, Daphnia magna (Water flea), static test, 48 h, immobilization: 22 mg/l

12.2 Persistence and degradability

Amino alcohol biodegrades readily.

12.3 Bioaccumulative potential

No further relevant information available.

12.4 Mobility in soil

No further relevant information available.

12.5 Results of PBT and vPvB Assessment

The product is not considered to be PBT or vPvB.

12.6 Other adverse effects

No further relevant information available.

Section 13: Disposal Considerations

This information presented only applies to the materials as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

Disposal Considerations:

The product should be recycled or burned in an incinerator or scrubber approved for chemical waste.

United States:

The product is not a RCRA hazardous waste.

Section 14: Transport Information

The product is not restricted for transportation.

Sections 14.1 – 14.4

Regulations

U.S. D.O.T.:	Not regulated.
ICAO/IATA:	Not regulated.
IMO/IMDG:	Not regulated.
ADR:	Not regulated.

14.5 Environmental hazards:

No further relevant information available.

14.6 Special precautions for users:

No further relevant information available.

14.7 Transport bulk according to Annex II of MARPOL73/78 and the IBC Code

No further relevant information available.

Section 15: Regulatory Information

15. 1 Safety, health and environmental regulations/legislation specific for substance or mixture:

Worldwide Chemical Inventories

EINECS (EU):	All ingredients conform.
EPA TSCA (USA):	All ingredients listed.
Domestic Substance List (Canada):	All ingredients listed.
WHMIS:	Not regulated.
Technical Instructions (air):	Not determined.
Controlled Products Regulations:	This SDS contains all the information items specified in Schedule 1, Column 3 of the Controlled Products Regulations in a 16-heading format.
Transportation of Dangerous Goods (TDG):	The product does not meet dangerous goods criteria.
State Right-to-Know Laws:	Section 3 of this SDS lists all components of the product.
California Proposition 65:	No ingredients listed.
SARA 313:	No ingredients listed.
SARA Section 311/312 (29 CFR 1910.1200):	Skin corrosion or irritation; Respiratory or skin sensitization; Reproductive toxicity; Specific target organ toxicity, single exposure.

15. 2 Chemical safety assessment:

A Chemical Safety Assessment has not been carried out.

Section 16: Other Information

Full text for relevant hazard phrases from Section 2 and 3

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H360Df May damage the unborn child. Suspected of damaging fertility

National Fire Protection Association (U.S.A.) 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: The product is recommended for use in papermaking, ceramics and precision polishing. 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 this product should read and understand this SDS and be trained in the proper use of this material.

Other Special Considerations: None known.
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