Section 1: Product and Company Identification:

1.1 Product Identifier

Product Form:	Mixture
Identification of Substance:	Silica, Lithium Silicate and Water
Product Name:	NYACOL® LiSol 3
Synonyms:	Colloidal Silica Sol
CAS Number:	7631-86-9
Index Number:	Not available.
EINECS Number:	231-545-4
REACH Registration Number:	01-2119379499-16-0220; See Section 3.
Formula:	SiO_2

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

Recommended Use:	Concrete coatings.
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

Section 2: Hazard(s) Identification

2.1 Classification of the substance or mixture

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

Not classified

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

Not classified

2.2 Label Elements

Not labelled.

Signal Word: Not applicable.

Hazard Pictogram: Not applicable.

Hazard Statement(s): Not applicable.

Precautionary Statement(s): Not applicable.

2.3 Other Hazards

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

2.4 Unknown acute toxicity (GHS US)

No data available.

Section 3: Composition / Information on Ingredients

Description: Mixture consisting of the following components.

Component Name:	Product Identifier	GHS Classification	Percent By Weight

Silicon Dioxide:	CAS: 7631-86-9 EINECS: 231-545-4 Index: Not available	Not classified.	7.5
Lithium Silicate: REACH: Not Registered by NNT.	CAS: 12627-14-4 EINECS: 235-730-0 Index: Not available.	Corr. Eye 1, H318	<1
Water:	CAS: 7732-18-5 EINECS: 231-791-2 Index: Not available	Not classified.	92.5

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

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

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. Remove contaminated clothing.

Inhalation: Remove person from exposure. Seek immediate medical care if respiratory irritation, dizziness, nausea or unconsciousness occurs. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Consult medical professional.

Ingestion: Seek immediate medical care. Do not induce vomiting. Never give anything by mouth to an unconscious 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.

No further relevant information available.

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.

5.2 Special hazards arising from the substance or mixture

Special Hazard Arising from the Chemical: Lithium oxides, silicon oxides and carbon oxides.

Fire Hazard:	No further relevant information available.
Explosion Hazard	Use explosion proof equipment. Keep away from sources of ignition. Do not smoke. Take measures to prevent the build up of electrostatic charge.
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

Use personal protective equipment. Avoid breathing vapor, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas.

6.1.1 For non-emergency personnel

Wear protective equipment. Keep unprotected persons away.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Prevent entry into sewers/surface and ground water.

6.3 Methods and material for containment and cleaning up

Ventilate area. Avoid breathing vapor. Wear appropriate personal protective equipment, including appropriate respiratory protection. Contain spill if possible. Wipe up or absorb on suitable material and shovel up. 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

Keep away from heat and flame and any other ignition source. Avoid contact with skin and eyes. Avoid generating mist or dust during use. Protect against electrostatic charges. Use explosion proof equipment. Keep away from sources of ignition. Do not smoke. Take measures to prevent the build up of electrostatic charge.

7.1.1 Protective measures

Use only in well ventilated areas. As a precautionary measure, the wearing of standard work gear is suggested. Keep ignition sources away. Do not smoke. Protect from heat. Protect against electrostatic charges.

7.1.2 Advice on general occupational hygiene

Avoid inhalation, ingestion or contact with skin. 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

Do not freeze. Keep container tightly closed in a dry and well ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

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	80mg/m^3/%SiO2	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

Silicic acid, lithium salt, CAS 12627-14-4

USA OSHA	OSHA PEL Ceiling (mg/M^3)	Not available.

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:	Exhaust ventilation to keep airborne concentrations below 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. When respiratory protection is required or concentrations are unknown, use an approved air-purifying respirator with organic vapor cartridge.
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):	Translucent liquid.
Upper/lower flammability or explosive limits:	Not determined.
Volatile by Weight:	93%
Odor:	Odorless
Vapor Pressure:	2260 kPs (17 mm Hg) at 20°C water.
Odor Threshold:	Not determined.
Vapor Density:	Not determined.
pH:	9 - 10
Relative Density:	1050 kg/M^3
Melting point/freezing point:	Not determined.
Solubility in Water:	Soluble in water
Initial boiling point and boiling range:	100°C (212°F) water.
Flashpoint:	Not applicable.
Evaporation Rate:	Slow (Butyl Acetate = 1)
Partition Coefficient:	Not determined.
Auto-ignition temperature:	Not determined.
Decomposition temperature:	Not determined.
Viscosity:	Less than 10 cP.
Specific Gravity:	1.1
Freezing Point:	0°C (32°F)
Explosion Limits:	Not determined.
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 recommendation.

10.5 Incompatible materials

Gels when mixed with acid.

10.6 Hazardous decomposition products

No further relevant information available.

Section 11: Toxicological Information

11.1 Information on toxicological effects

Acute toxicity:

LD50, Rat, Oral Values for classification:

Silicon Dioxide, CAS 7631-86-9	>5000 mg/kg
Silicic acid, lithium salt, CAS 12627-14-4	Not available.
Skin corrosion/irritation:	Avoid contact with skin, may cause skin irritation or dryness.
Eye damage/irritation:	Avoid contact with eyes, may cause irritation.
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.
Aspiration:	No data available.
Sensitization:	No data available.
Chronic Effects:	No data available.
Carcinogenicity	No component of this product present levels greater than 0.1% is identified as probable, possible or confirmed human carcinogen by IARS, ACGIH, NTP and OSHA.

Section 12: Ecological Information

12.1 Aquatic Toxicity

Aquatic Toxicity, Silicon Dioxide CAS #7631-86-9: Not harmful to aquatic organisms.
Silicic acid, lithium salt, CAS 12627-14-4: No data available.

12.2 Persistence and degradability

No further relevant information available.

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

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

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. Recover if possible. Disposal should be in accordance with applicable regional, national and local laws and regulations.

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

Not applicable.

Section 15: Regulatory Information

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

EPA TSCA Inventory:	All ingredients listed.
State Right-to-Know Laws:	Section 3 of this SDS lists all components of the product.
SARA Section 311/312 (29 CFR 1910.1200) Hazards:	Not classified according to GHS.
SARA 313, 304 and CERCLA 102 (A):	No ingredients listed.
California Prop. 65 Components:	No ingredients listed.

15. 2 Chemical safety assessment:

A Chemical Safety Assessment has not been carried out.

15.3 International regulations

Canadian Regulations:

Domestic Substance List:	All ingredients listed.
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.

Worldwide Chemical Inventories

EINECS (EU):	All ingredients listed
TSCA (USA):	All ingredients listed
DSL (Canada):	All ingredients listed
AICS (Australia):	All ingredients listed
ENCS (Japan):	All ingredients listed
ECL (Korea):	All ingredients listed

PICCS (Philippines):	All ingredients listed
IECSC (China):	All ingredients listed

Section 16: Other Information

Full text of H statements referred to under sections 2 and 3:
H318 - Causes serious eye damage.

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 coatings for concrete. 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 the product should read and understand this SDS and be trained in the proper use of this material.
Other Special Considerations:	None known.
SDS Prepared By:	Andrew A. Guzelian Nyacol Nano Technologies, Incorporated Telephone: 508-881-2220 U.S.A.
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