

### Section 1: Product and Company Identification:

#### 1.1 Product Identifier

Product Form: Mixture  
 Identification of Substance: Dispersible Silica  
 Product Name: NYACOL® HDS 2  
 Synonym: Dispersible Amorphous Silica  
 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<sub>2</sub>

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

Recommended Use: Polymer additive.  
 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](mailto:info@nyacol.com)  
 Internet: [www.nyacol.com](http://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

Components do not meet the criteria for a PBT or vPvB substance.

#### 2.4 Unknown acute toxicity (GHS US)

No information available.

### Section 3: Composition / Information on Ingredients

Description: Mixture consisting of the following components.

Component Name:	Product Identifier	GHS Classification	Percent By Weight
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Silicon Dioxide:	CAS: 7631-86-9 EINECS: 231-545-4 Index: Not available	Not classified	80
Surface Modifier, Trade Secret: REACH: 05-2117294630-42-0000	Listed	Not classified	16 – 20
Water:	CAS: 7732-18-5 EINECS: 231-791-2 Index: Not available	Not classified	0 – 4

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.

**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. Get 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. Get medical attention.

**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.

**Unsuitable extinguishing media:** None known.

### 5.2 Special hazards arising from the substance or mixture

**Flammability of the product:** Material will not burn in a fire. Containers can build pressure if exposed to heat or fire.

Special Hazard Arising from the Chemical:	None known.
Fire Hazard:	None known.
Explosion Hazard	None known.
Reactivity:	None known.

### 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 dust or 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

Minimum feasible handling, and temperatures should be maintained. Avoid contact with skin and eyes. Avoid generating mist during use. Use only in well ventilated area. Do not smoke.

#### 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, ingestion and contact with eyes. 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

Keep from freezing. Periods of exposure to high temperatures should be minimized. Provide sufficient ventilation in storage and workrooms. 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 <sup>3</sup> /%SiO <sub>2</sub>	8 hours	OSHA PEL – <a href="http://www.cdc.gov/niosh/idlh/7631869.html">http://www.cdc.gov/niosh/idlh/7631869.html</a>
UK	6 mg/m <sup>3</sup> (inhalable)	8 hours	Health and Safety Executive – <a href="http://www.hse.gov.uk/pubns/priced/eh40.pdf">http://www.hse.gov.uk/pubns/priced/eh40.pdf</a>
Germany	4 mg/m <sup>3</sup> (inhalable)	8 hours	Senate Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (MAK Commission): <a href="http://www.dfg.de/en/dfg_profile/statutory_bodies/senate/health_hazards/index.html">http://www.dfg.de/en/dfg_profile/statutory_bodies/senate/health_hazards/index.html</a>
Belgium	10 mg/m <sup>3</sup>	8 hours	Service public fédéral Emploi, Travail et Concentration sociale: <a href="http://www.emploi.belgique.be/WorkArea/showcontent.aspx?id=23914">http://www.emploi.belgique.be/WorkArea/showcontent.aspx?id=23914</a>
Austria	2 mg/m <sup>3</sup> (inhalable)	8 hours	<a href="http://www.arbeitsinspektion.gv.at/NR/rdonlyres/F173280B-D4FB-44D2-8269-8DB2CB1D2078/0/GKV2011.pdf">http://www.arbeitsinspektion.gv.at/NR/rdonlyres/F173280B-D4FB-44D2-8269-8DB2CB1D2078/0/GKV2011.pdf</a>

### 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 <sup>3</sup>

#### 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 changed and 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):	Solid. White Powder.
Upper/lower flammability or explosive limits:	Not determined.
Volatile by Weight:	<20%
Odor:	Slight.
Vapor Pressure:	Not applicable.
Odor Threshold:	Not determined.
Vapor Density:	Not applicable.
pH:	Not applicable.
Bulk Density Untamped:	~ 0.5 g/cc (18 lb/ft <sup>3</sup> )
Melting point/freezing point:	Not determined.
Solubility in Water:	Hydrophobic
Initial boiling point and boiling range:	Not applicable.
Flashpoint:	Not applicable.
Evaporation Rate:	Not applicable.
Flammability (solid, gas):	Will not self-ignite.
Partition Coefficient:	Not determined.
Auto-ignition temperature:	Not determined.
Decomposition temperature:	Not determined.
Viscosity:	Not applicable.
Specific Gravity:	Not applicable.
Freezing Point:	Not applicable.
Explosion Limits:	Not applicable.
Oxidizing Properties:	Not an oxidizer.

#### 9.2 Other information

Not applicable.

### Section 10: Stability and Reactivity

#### 10.1 Reactivity

Not determined.

#### 10.2 Chemical Stability

Stable.

#### 10.3 Possibility of hazardous reactions

Hazardous polymerization will not occur.

#### 10.4 Conditions to avoid

No recommendation.

#### 10.5 Incompatible materials

Not determined.

#### 10.6 Hazardous decomposition products

Not determined.

### Section 11: Toxicological Information

#### 11.1 Information on toxicological effects

Acute toxicity:

LD50, Rat, Oral Values for classification:

Silicon Dioxide, 7631-86-9:

>5000 mg/kg

Proprietary Surface Treatment:

>5 g/kg

Skin corrosion/irritation:

Avoid contact with skin, may cause skin irritation or dryness.

Eye damage/irritation:

Inhalation:

Avoid contact with eyes, may cause irritation.

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/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.

Sensitization:

No sensitizing effect known.

Chronic Effects:

No further relevant information available.

Carcinogenicity

No data indicating any concern for carcinogenicity.

## Section 12: Ecological Information

### 12.1 Aquatic Toxicity, Silicon Dioxide CAS #7631-86-9

Not harmful to aquatic organisms.

### 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

No further relevant information available.

### 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 solidified for disposal in a landfill 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

Not an environmental hazard for transport.

### 14.6 Special precautions for user

None.

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 the substance or mixture

##### 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
NZIoC (New Zealand):	All ingredients listed
PICCS (Philippines):	All ingredients listed
IECSC (China):	All ingredients listed
Technical Instructions (air):	Not determined.

Water hazard class:

Based on available data, Silicon Dioxide is not classified as dangerous for the environment according regulation (EC) 1272/2008.

State Right-to-Know Laws:

Section 3 of this SDS lists all components of the product.

California Proposition 65:

No ingredients listed.

SARA Section 311/312 (29 CFR 1910.1200) Hazards:

Not classified according to GHS.

SARA 313, 304 and CERCLA 102 (A):

No ingredients listed.

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.

# SAFETY DATA SHEET

## NYACOL® HDS 2

REVISION: June 3, 2020  
 SUPERSEDES: May 17, 2018  
 VERSION NO.: 2

FDA: 21 CFR Proprietary  
 SurfaceTreatment:  
 Meets the ingredient  
 requirements of the following sections of  
 21CFR for indirect food  
 additives when used according to the  
 regulations, and any  
 limitations that may apply:

FDA: 21 CFR Proprietary SurfaceTreatment: Meets the ingredient  
 requirements of the following sections of 21CFR for indirect food  
 additives when used according to the regulations, and any  
 limitations that may apply:  
 175.105 Adhesives.  
 175.320 Resinous & Polymeric Coatings for Polyolefin Films.  
 176.170(a) Components of Paper & Paperboard in contact with Aqueous &  
 Fatty Foods. May exempt extractive limitations according to  
 provisions of 176.170(a).  
 176.180(b)(1) Components of Paper & Paperboard in contact with dry food [by  
 cross reference to 176.170(a)]. May exempt extractive limitations  
 according to provisions of 176.170(a).  
 176.200 Defoaming agents used in coatings.  
 177.1010 Acrylic acid-modified acrylic plastics semi-rigid and rigid.  
 177.1200 Cellophane.  
 177.2260 Filters resin-bonded.  
 177.2420 Polyester Resins Cross-Linked. (not itself listed but is listed as a  
 component to make Polyesters that meet the ingredient  
 requirements of this regulation.)  
 177.2600 Rubber articles intended for repeated use – Plasticizers total not to  
 exceed 30% by weight of rubber product.  
 177.2600 Rubber articles intended for repeated use – Activators (total not to  
 exceed 5% by weight of the rubber article).  
 178.3570 Lubricants with incidental food contact.  
 178.3910 Surface lubricants used in the manufacture of metallic articles.

WHMIS:  
 Controlled Products Regulations:

Not controlled.  
 This SDS contains all the information items specified in Schedule 1,  
 Column 3 of the Controlled Products Regulations in a 16-heading  
 format.

### 15. 2 Chemical safety assessment

A chemical safety assessment has not been carried out for silicon dioxide.

### Section 16: Other Information

List of hazard phrases: None, as silicon dioxide is not classified according to regulation (EC) 1272/2008 (CLP).

National Fire Protection Association (U.S.A.) 704 Hazard 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 plastics. 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.  
 Revision Date: June 3, 2020  
 Supersedes: May 17, 2018



This SDS has been prepared with data from Nyacol Nano Technologies, Inc.'s laboratories, raw material suppliers, and government publications. Information herein is accurate to the best of our knowledge. Suggestions are made without warranty or guarantee of results. Before using, the user should determine the suitability of the products for the intended use, and the user assumes the risk and liability in connection therewith. We do not suggest violation of any existing patents or give permission to practice any patented invention without license.

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