

1. Identification

Product identifier Nan-O-Sil ASD™
 Other means of identification
 CAS number 7631-86-9
 Synonyms Silicon dioxide, Synthetic Amorphous Silica, Pyrogenic (Fumed) Amorphous Silica

Recommended use No information available
 Recommended restrictions No information available

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2. Hazard(s) identification

OSHA defined hazards This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

GHS defined hazards Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Label elements No labeling applicable

Hazard Not Otherwise Classified (HNOC) Not applicable

Other hazards Not available

3. Composition/information on ingredients

Component	CAS number	%
Silica, amorphous (crystalline free)	7631-86-9	100

4. First-aid measures

Inhalation Remove to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately if symptoms occur.

Skin contact Wash off with soap and water. Do not rub or scratch exposed skin. Get medical attention if irritation develops and persists

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Do not rub eyes. Get medical attention if irritation occurs.

Ingestion Rinse mouth. Get medical attention if material is ingested.

Most important symptoms and effects (acute and delayed) May cause respiratory tract irritation, skin/eye irritation. May be harmful if swallowed

General information Treat symptomatically. Ensure medical personnel are made aware of material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	This product is not flammable. If it is involved in a fire, use extinguishing methods appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	No limitations of extinguishing agents are given for this product.
Specific hazards arising from the chemical	Non-combustible, ambient fire may liberate hazardous vapors
Special protective equipment and precautions for firefighters	As in any fire, self-contained breathing apparatus and full protective clothing must be worn. Avoid breathing dust and contact with skin/eyes.

6. Accidental release measures

Personal precautions	Ensure adequate ventilation. For personal precautions, see section 8 of the SDS.
Protective equipment	Wear personal protective equipment as described in section 8 of the SDS.
Emergency procedures	Evacuate unnecessary personnel. Stop the flow of material, if this is without risk. Avoid the generation of dusts during clean-up.
Methods and materials for containment and cleaning up	Large Spills: Shovel the material into waste container. Following product recovery, wet down with water and dike for later disposal, flush area with water. Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Collect dust using a vacuum cleaner equipped with HEPA filter.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground. For waste disposal, see section 13 of the SDS.

7. Handling and storage

Precautions for safe handling	Wear personal protective equipment. Minimize dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Avoid prolonged exposure. Avoid contact with skin, eyes and clothing. Do not ingest or breathe dust. Handle in accordance with good industrial hygiene and safety practice.
Conditions for safe storage, including any incompatibilities	Store in tightly closed container. Store in a dry and well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-3 (29 CFR 1910.1000)

Material	Type	Value	Form
Silica, amorphous (CAS 7631-86-9)	TWA	5 mg/m3	Respirable fraction
		15 mg/m3	Total dust

US. NIOSH: Pocket Guide to Chemical Hazards

	Type	Value
Silica, amorphous (CAS 7631-86-9)	TWA	6 mg/m3

Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Good general ventilation should be used, and local exhaust ventilation should be used in any operation which may generate airborne dusts. If engineering measures are not sufficient to maintain concentrations of dust particulates below exposure limits, suitable respiratory protection must be worn.
Personal Protective Equipment (PPE)	
Eyes/face protection	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133.
Skin protection	Wear suitable gloves and protective clothing to prevent skin exposure.
Respiratory protection	Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits, or if irritation or other symptoms are experienced.
General hygiene considerations	Always observe good industrial hygiene practices, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Physical state	Solid	Solubility (water)	Insoluble
Form	Particulate Powder	Partition coefficient (n-octanol/water)	Not available.
Color	White	Auto-ignition temperature	Not available
Odor	Odorless	Decomposition temperature	Not available
Odor threshold	Not available	Viscosity	Not applicable
Melting point/freezing point	3110 °F / 1710 °C	Explosive properties	Not explosive
Initial boiling point	4046 °F / 2230 °C	Heat of combustion (NFPA 30B)	0 kJ/g
Flash point	Not applicable	Molecular weight	60.08 g/mol
Evaporation rate	Not applicable	Oxidizing properties	Not oxidizing
Flammability (solid, gas)	Not flammable	Specific gravity	2.2 at 25 °C
Vapor pressure	< 0.0000001 kPa (77 °F / 25 °C)	Surface tension	5.2 mN/m (77 °F / 25 °C)
Vapor density	Not applicable	Other information	Not available

10. Stability and reactivity

Reactivity	Non-reactive under normal conditions of use, storage and transport.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	No additional information available
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Fluorine, oxygen difluoride, chlorine trifluoride
Hazardous decomposition products	None known.

11. Toxicological information

Information on likely routes of exposure

Principal routes of exposure	Ingestion, inhalation.
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Acute toxicity

Product	Species	Dose/Route	Result
Silica, amorphous (CAS 7631-86-9)	Rat	LD50/Oral	>5000 mg/kg
	Rabbit	LD50/Dermal	>2000 mg/kg
		LC50/Inhalation	Not available

Symptoms

Inhalation	May cause irritation of the nose, throat, and respiratory tract. When inhaled in very large amounts, damage to the lungs can occur.
Skin contact	May irritate the skin. Mechanical rubbing may increase skin irritation. May cause dryness in cases of severe exposure.
Eye contact	May irritate eye tissue. Rubbing may cause abrasion of cornea. Symptoms can include irritation, redness, scratching of the cornea, and tearing.
Ingestion	May cause irritation of the throat, stomach, and gastrointestinal tract. Not an expected hazard under normal use.
Aspiration hazard	No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic toxicity	Prolonged skin contact may cause dryness. Chronic inhalation may cause lung damage.
Sensitization	No information available.
Carcinogenicity	IARC Group 3, not classifiable as to its carcinogenicity to humans. Not listed on OSHA HCS-Carcinogens. Not listed on NTP.
Mutagenicity	No information available.
Reproductive toxicity	No information available.
Specific Target Organ Toxicity (STOT)	
Single exposure	No information available.
Repeated exposure	No information available.

12. Ecological information

Ecotoxicity

Product	Life Form	Species	Dose	Result
Silica, amorphous (CAS 7631-86-9)	Algae/aquatic plants	Raphidocelis subcapitata	EC50	440 mg/L, 72h
	Crustacea	Ceriodaphnia dubia	EC50	7600 mg/L, 48h
	Fish	Danio rerio	LC50	5000 mg/L, 96h

Ecotoxicity effects	Aquatic environment. Do not empty into drains.
Persistence and degradability	No information available
Bioaccumulative potential	No information available
Mobility in soil	No information available
Other adverse effects	No other adverse ecological effects (ozone depletion, global warming potential, etc.) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose in accordance with all applicable local regulations. Do not dispose into sewer.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues/unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.
Contaminated packaging	Follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT Not regulated.
IATA Not regulated.
IMDG Not regulated.

15. Regulatory information

US federal regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)	Not regulated
CERCLA Hazardous Substance List (40 CFR 302.4)	Not listed
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)	Not listed
OSHA Hazard Communication Standard, 29 CFR 1910.1200.	Not regulated
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List	Not listed
Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)	Not regulated
Safe Drinking Water Act (SDWA)	Not regulated
Superfund Amendments and Reauthorization Act of 1986 (SARA)	
SARA 302 Extremely hazardous substance	Not regulated
SARA 304 Emergency release notification	Not regulated
SARA 311/312 Hazardous chemical	Not listed
SARA 313 (TRI reporting)	Not regulated

US state regulations

California Proposition 65	Not listed as carcinogen or reproductive toxin
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International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)
Australia	Australian Inventory of Industrial Chemicals (AICIS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substance (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s) A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Creation date	06-21-2022
Revision date	10-29-2024
Version #	05

List of abbreviations	CAS: Chemical Abstract Service. DOT: Department of Transportation. EC50: Effective Concentration 50%. HEPA: High Efficiency Particulate Air. IARC: International Agency for Research on Cancer. IATA: International Air Transport Association. IBC Code: International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk. IMDG: International Maritime Dangerous Goods. LC50: Lethal Concentration, 50%. LD50: Lethal Dose, 50%. MARPOL: International Convention for the Prevention of Pollution from Ships. PEL: Permissible Exposure Limit. NFPA: National Fire Protection Association. NIOSH: National Institute for Occupational Safety & Health. NTP: National Toxicology Program TLV: Threshold Limit Value.
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Disclaimer	Energy Strategy Associates, Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.
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