

**1. Identification**

|                               |  |      |
|-------------------------------|--|------|
| Product identifier            | <b>Nan-O-Sil ASD®</b>  |      |
| 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   |      |
| Supplier                      | Energy Strategy Associates, Inc.   | Text |
| Address                       | P.O. Box 203   |      |
|                               | Spencertown, NY, 12165   |      |
|                               | USA  |      |
| Phone number                  | +1 (518)-755-6581  |      |
| Emergency phone number(s)     | CHEMTREC (CCN5688):<br>Within USA and Canada: (800) 424-9300<br>Outside USA and Canada: (703) 527-3887 |      |

**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.<br>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.

### 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 |
|---------------------------|--|

### 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.

**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.