SAFETY DATA SHEET

Date Printed: 05/27/2024
Date Revised: 01/15/2022

SECTION 1. IDENTIFICATION

Product Identifier: (4N) 99.99% Silicon Nanowires

Product Code: SI-E-04-NW

CAS Number: 7440-21-3

Relevant identified uses of the substance: Scientific research and development

Supplier details:

American Elements
10884 Weyburn Ave.
Los Angeles, CA 90024
Tel: +1 310-208-0551
Fax: +1 310-208-0351
Emergency telephone number:
+1 800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture
GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable solids (Category 2), H228
For the full text of the H-Statements mentioned in this Section, see Section 16.
Pictogram

Signal word
Warning
Hazard statement(s)
H228
Flammable solid.
Precautionary statement(s)
P210
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P240
Ground/bond container and receiving equipment.
P241
Use explosion-proof electrical/ ventilating/ lighting/ equipment.

P280
Wear protective gloves/ protective clothing/ eye protection/ face protection.
P370 + P378
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
Hazards not otherwise classified (HNOC) or not covered by GHS-none

---

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances
Formula: Si
Molecular Weight: 28.09 g/mol
CAS-No.: 7440-21-3
EC-No.: 231-130-8

SECTION 4. FIRST AID MEASURES

Description of first aid measures
General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact
Wash off with soap and plenty of water. Consult a physician.
In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.
Indication of any immediate medical attention and special treatment needed
no data available

SECTION 5. FIREFIGHTING MEASURES

Extinguishing media
Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Special hazards arising from the substance or mixture
silicon oxides
Advice for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.
Further information
Use water spray to cool unopened containers.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.
Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
Methods and materials for containment and cleaning up
Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal. Contain spillage, pick up with an electrically protected vacuum cleaner or by wet-brushing and transfer to a container for disposal according to local regulations (see section 13)
Reference to other sections
For disposal see section 13.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin andeyes. Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.Keep away from sources of ignition -No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.
Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Over time, pressure may increase causing containers to burst Moisture sensitive. Store under nitrogen. Keep in a dry place.
Specific end use(s)
Apart from the uses mentioned in section 1 no other specific uses are stipulated

---

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure controls
Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
Personal protective equipment
Eye/face protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protecti
on tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
Body Protection
impervious clothing, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the

specific workplace.
Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties
Appearance
Form: powder
Odor
odourless
Odor Threshold
no data available
pH
no data available
Melting point/freezing point
Melting point/range: 1,410 °C (2,570 °F) - lit.
Initial boiling point and boiling range
2,355 °C (4,271 °F) - lit.
Flash point
no data available
Evaporation rate
no data available
Flammability (solid, gas)
The substance or mixture is a flammable solid with the category 2.
Upper/lower flammability or explosive limits
no data available
Vapor pressure
no data available
Vapor density
no data available
Relative density
2.33 g/mL at 25 °C (77 °F)
Water solubility
insoluble
Partition coefficient: n-octanol/water
no data available
Auto-ignition temperature
> 400 °C (> 752 °F)
Decomposition temperature
no data available
Viscosity
no data available
Explosive properties
no data available
Oxidizing properties
no data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity
no data available
Chemical stability
Stable under recommended storage conditions.
Possibility of hazardous reactions
no data available
Conditions to avoid
Heat, flames and sparks. Extremes of temperature and direct sunlight.
Incompatible materials
Strong oxidizing agents, Alkali carbonates, Calcium, cobalt difluoride, manganese trifluoride
Hazardous decomposition products
Other decomposition products - no data available
In the event of fire: see section 5

SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects
Acute toxicity
LD50 Oral - rat - 3,160 mg/kg
Inhalation: no data available
Dermal: no data available
no data available
Skin corrosion/irritation
no data available
Serious eye damage/eye irritation
Eyes - rabbit
Result: Mild eye irritation - 24 h
(Draize Test)
Respiratory or skin sensitisation
no data available
Germ cell mutagenicity
no data available
Carcinogenicity
IARC:
No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:
No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:
No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:
No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity
no data available
no data available
Specific target organ toxicity - single exposure

no data available
Specific target organ toxicity - repeated exposure
no data available
Aspiration hazard
no data available
Additional Information
RTECS: VW0400000
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity
no data available
Persistence and degradability:
no data available
Bioaccumulative potential:
no data available
Mobility in soil:
no data available
Results of PBT and vPvB assessment:
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
Other adverse effects
no data available

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods
Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.
Contaminated packaging
Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

DOT (US)
UN number: 1346
Class: 4.1
Packing group: III
Proper shipping name: Silicon powder, amorphous
Reportable Quantity (RQ):
Marine pollutant: No
Poison Inhalation Hazard: No
IMDG
UN number: 1346
Class: 4.1
Packing group: III
EMS-No: F-A, S-G

Proper shipping name: SILICON POWDER, AMORPHOUS
Marine pollutant: No
IATA
UN number: 1346
Class: 4.1
Packing group: III
Proper shipping name: Silicon powder, amorphous

SECTION 15. REGULATORY INFORMATION

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
SARA 311/312 Hazards
Fire Hazard
Massachusetts/Pennsylvania/New Jersey Right To Know Components
Silicon
CAS-No.
7440-21-3
Revision Date
2007-03-01
California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

---

16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.