



Material Safety Datasheet

Revised: 09/15/2020

Section 1: Product and Company Identification

Cat#: NC/001/Dry

Trade Name: SILOCYM™

Chemical Name: Silicon Dioxide (SiO₂) Nanoparticles, 100 nm to 2000 nm.

Identified Uses: Research, Laboratory chemical

Supplier: NanoCYM

7536 E Angus Drive

Scottsdale, AZ, 85251

Section 2: Hazards Identification

OSHA Hazards: Inhalation of mist or dust may be harmful. Avoid repeated or prolonged breathing of spray mist or dust.

2.1 Classification of the substance or mixture

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

Specific target organ toxicity – repeat exposure (Category 1), H372

For the full text of the H-Statement mentioned in the Section, see Section 16

2.2 GHS Label elements, including precautionary statements



Pictogram

Signal Word Danger

Precautionary statement(s)

P261 Do not breathe dust/fume/gas/mist/vapors/spray

P264 Wash skin thoroughly after handling

P280 Wear protective gloves/eye protection/face protection

P312 Call a POISON CENTER or doctor/physician if you feel unwell

P501 Dispose of contents/container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS- none

Section 3: Composition/Information on Ingredients

Appearance: White powder, no odor.

3.1 Substances

Synonyms: Silicon Dioxide (SiO₂) Powder, silica

Molecular weight: 60.08 g/mol

Hazardous components:

Component: Silicon Dioxide (SiO₂) powder



Classification: STOT RE 1: H372

Concentration:

For the full text of the H-Statement mentioned in the Section, see Section 16

Section 4: First Aid Measures

Contact medical personnel.

Flush eyes with flowing water for at least 15 minutes.

In case of skin contact

Remove contaminated clothing. Wash skin with deluge of water for at least 15 minutes.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

If swallowed, give 8 oz. of water or milk to drink. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in Section 2.

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

Section 5: Fire Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide

5.2 Special hazards arising from the substance or mixture

Silicon oxides

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further Information

No data available.

Section 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Avoid breathing dust. For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains.



6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

Section 7: Handling and Storage

Handling

For safe handling:

Keep container tightly sealed and store in cool, dry area in closed containers. Ensure good ventilation is present. Product is not flammable.

Storage

No special requirements to be met by storerooms and receptacles.

Do not store with acids.

Storage class (TRGS 510): Non-combustible solids

Section 8: Exposure Controls and Personal Protection

Exposure limit(s)

Exposure limits are listed below, if they exist.

Component	CAS-No.	Value	Control parameters	Basis
Silicon dioxide	7631-86-9	TWA	6.0 mg/m ³	USA. NIOSH Recommended exposure limits.
		TWA	20.0 million particles per cubic foot	USA. Occupational Exposure Limits (OSHA) – Table Z-3 Mineral dusts.
		TWA	80.0 mg/m ³ / %SiO ₂	USA. Occupational Exposure Limits (OSHA) – Table Z-3 Mineral dusts.
		Millions of particles per cubic foot of air, based on impinge samples counted by light-field techniques. Mppcf X 35.3 = million particles per cubic meter = particles per c.c.		

Eye protection: Goggles



Hand protection: Nitrile rubber gloves. Other chemical resistant gloves may be recommended by your safety professional.

Skin and body protection: Normal work wear.

Respiratory protection: No personal respiratory protective equipment normally required. The specific respirator selected must be based on the airborne concentration found in the workplace and must not exceed the working limits of the respirator.

Engineering measures: Engineering methods to prevent or control exposure are preferred. Methods include process or personnel enclosure, mechanical ventilation (local exhaust), and control of process conditions.

Section 9: Physical and chemical properties

Form: Powder

Color: White

Odor: Odorless

Value/Range Unit Method

Change in condition

Melting point/Melting range: 1610-1728 degrees C

Boiling point/Boiling range: 2230 degrees C

Sublimation temperature / start: Not determined

Flash point: Not applicable

Ignition temperature: Not determined

Decomposition temperature: Not determined

Danger of explosion:

Product does not present an explosion hazard.

Explosion limits:

Lower: Not determined

Upper: Not determined

Vapor pressure: Not determined

Density: at 20 degrees C 1.973 g/cm³

Solubility in / Miscibility with

Water: Insoluble

Section 10: Stability and Reactivity

Thermal decomposition / conditions to be avoided:

Decomposition will not occur if used and stored according to specifications.

Materials to be avoided:

Hydrogen fluoride (HF)

Interhalogens

Halogens

Oxidizing agents



Dangerous reactions: Reacts violently with interhalogens.

Dangerous products of decomposition: No dangerous decomposition products known

Section 11: Toxicological Information

Acute oral toxicity LD50 rat > 3,000 mg/kg

Inhalation: No data available

Dermal: No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

No data available

Carcinogenicity

Carcinogenicity - Rat – Inhalation

Tumorigenic: Carcinogenic by RTECS criteria. Lungs, Thorax, or Respiration: Tumors.

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Silicon dioxide)

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

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1.

Aspiration hazard

No data available



Additional Information

RTECS: Not available To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence

Section 12: Ecological Information

General notes:

Do not allow material to be released to the environment without proper governmental permits.

Section 13: Disposal considerations

Environmental precautions: Prevent the material from entering drains or water courses. Advise Authorities if spillage has entered watercourse or sewer or has contaminated soil or vegetation.

Disposal

Dispose in accordance with all local, state (provincial), and federal regulations. Under RCRA, it is the responsibility of the product's user to determine at the time of disposal, whether the product meets RCRA criteria for hazardous waste. This is because the product uses, transformations, mixtures, processes, etc. may render the resulting materials hazardous. Do not remove label until container is thoroughly cleaned. Empty containers may contain hazardous residues. This material and its container must be disposed of in a safe way.

Section 14: Transport Information

Not a hazardous material for transportation.

DOT regulations:

Hazard class: None

Land transport ADR/RID (cross-border)

ADR/RID class: None

Maritime transport IMDG:

IMDG Class: None

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: None

Transport/Additional information:

Not dangerous according to the above specifications.

Section 15: Regulatory Information

SARA TITLE III: Section 311/312 Categorizations (40CFR370): Immediate health hazard

SARA TITLE III: Section 313 Information (40CFR372)

This product does not contain a chemical which is listed in Section 313 at or above de minimis concentrations.



US. Toxic Substances Control Act (TSCA) All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

California (Proposition 65)

This product does not contain materials which the State of California has found to cause cancer, birth defects or other reproductive harm.

Section 16: Other Information

Full text of H-Statements referred to under sections 2 and 3.

H372 Causes damage to organs through prolonged or repeated exposure.

STOT RE Specific target organ toxicity – repeated exposure

Hazard Rating	Health	Chronic Health Hazard	Fire	Reactivity
HMIS Rating	1	*	0	0
NFPA Rating	0		0	0

Legend:

ACGIH	American Conference of Governmental Industrial Hygienists
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weighted Average

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.