

Material Safety Data Sheet

acc. to OSHA and ANSI

1 Identification of substance:

- **Product details:**
- **Trade name:** Silicon Oxide Dispersion in Ethylene Glycol
- **Stock number:** 7014WJC
- **Manufacturer/Supplier:**
Nanostructured & Amorphous Materials, Inc.
16840 Clay Road, Suite #113
Houston, TX 77084, USA

2 Composition/Data on components:

- **Chemical characterization:**
Description: (CAS#)
Silicon oxide (CAS# 7631-86-9), 30%
Ethylene Glycol (CAS# 107-21-1), ~70%

3 Hazards identification

Emergency Overview

OSHA Hazards

Delayed target organ effects
Mild eye irritant
Teratogen
Reproductive hazard

Target Organs

Liver, Cardiovascular system., Eyes, Kidney, Central nervous system

HMIS Classification

Health Hazard: 1
Chronic Health Hazard: *
Flammability: 1
Physical hazards: 0

NFPA Rating

Health Hazard: 1
Fire : 1
Reactivity Hazard: 0

Potential Health Effects

Inhalation May be harmful if inhaled. May cause respiratory tract irritation.
Skin May be harmful if absorbed through skin. May cause skin irritation.
Eyes May cause eye irritation.

Ingestion May be harmful if swallowed.

4 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

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5 Fire fighting measures

Flammable properties

Flash point 111 °C (232 °F) - closed cup

Ignition temperature 400 °C (752 °F)

Suitable extinguishing media

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

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

6 Accidental release measures

Personal precautions

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

Environmental precautions

Do not let product enter drains.

Methods for cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7 Handling and storage

Handling

Avoid inhalation of vapour or mist.

Normal measures for preventive fire protection.

Storage

Keep container tightly closed in a dry and well-ventilated place.

8 Exposure controls and personal protection

Components with limit values that require monitoring at the workplace:

Components	CAS-No.	Value	Control parameters	Update	Basis
Ethylene glycol	107-21-1	CEIL	100 mg/m ³	1995-05-23	US. American Conference of Governmental and Industrial Hygienists Threshold Limit Values for Chemical Substances in the Work Environment; Annual Reports for the Year 2004: Committees on Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs)
Remarks	See Notice of Intended Changes. Refers to Appendix A -- Carcinogens.				

		CEIL	50 ppm 125 mg/m3	1989-03-01	US. Department of Labor - Occupational Safety and Health Administration (OSHA) 29 CFR 1910.1000 Z-1-A
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Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) 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).

Hand protection

Handle with gloves.

Eye protection

Safety glasses

Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9 Physical and chemical properties:

- **Form:** Dispersion
- **Color:** transparent

Value/Range Unit Method

- **Change in condition**
- **Melting point/Melting range:** Not determined
- **Boiling point/Boiling range:** Not determined
- **Sublimation temperature / start:** Not determined
- **Flash point:** Not applicable
- **Flammability (solid, gaseous)** Product is not flammable.
- **Ignition temperature:** 400 °C (752 °F)
- **Decomposition temperature:** Not determined
- **Danger of explosion:**
Product does not present an explosion hazard.
- **Explosion limits:**
- **Lower:** 3.2 %(V)
- **Upper:** 15.3 %(V)
- **Vapor pressure:** 0.11 hPa (0.08 mmHg) at 20 °C (68 °F)
0.13 hPa (0.10 mmHg) at 20 °C (68 °F)
- * **Density:** Not determined

10 Stability and reactivity

Storage stability

Stable under recommended storage conditions.

Materials to avoid

Strong acids, Strong oxidizing agents, Strong bases, Aldehydes, Aluminum

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions, Carbon oxides

11 Toxicological information

Acute toxicity

LD50 Oral - rat - 4,700 mg/kg

LD50 Dermal - rabbit - 10,626 mg/kg

Irritation and corrosion

Eyes - rabbit - Mild eye irritation - 24 h

Sensitization

no data available

Chronic exposure

This product is or contains a component that is probably not carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

Laboratory experiments have shown teratogenic effects.

Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

Signs and Symptoms of Exposure

When ingested early symptoms mimic alcohol inebriation and are followed by nausea, vomiting, abdominal pain, weakness, muscle tenderness, respiratory failure, convulsions, cardiovascular collapse, pulmonary edema, hypocalcemic tetany, and severe metabolic acidosis. Without treatment, death may occur in 8 to 24 hours. Victims who survive the initial toxicity period usually develop renal failure along with brain and liver damage., Exposure to and/or consumption of alcohol may increase toxic effects.

Potential Health Effects

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Eyes May cause eye irritation.

Ingestion May be harmful if swallowed.

Target Organs Liver, Cardiovascular system., Eyes, Kidney, Central nervous system,

12 Ecological information:

Elimination information (persistence and degradability)

no data available

Bioaccumulation Remarks: Does not bioaccumulate.

other fish - 61 d

Bioconcentration factor (BCF): 0.60

Ecotoxicity effects

Toxicity to fish

LC50 - *Oncorhynchus mykiss* (rainbow trout) - 18,500 mg/l - 96 h

LC50 - *Leuciscus idus* (Golden orfe) - > 10,000 mg/l - 48 h

NOEC - *Pimephales promelas* (fathead minnow) - 32,000 mg/l - 7 d

NOEC - *Pimephales promelas* (fathead minnow) - 39,140 mg/l - 96 h

EC50 - *Daphnia magna* (Water flea) - 74,000 mg/l - 24 h

Toxicity to daphnia and other aquatic invertebrates.

NOEC - *Daphnia* - 24,000 mg/l - 48 h

LC50 - *Daphnia magna* (Water flea) - 41,000 mg/l - 48 h

Further information on ecology

no data available

13 Disposal considerations

Product

Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

14 Transport information

DOT (US)

UN-No.: 3082 Class: 9 Packing group: III

Proper shipping name: Environmentally hazardous substances, liquid, n.o.s. (Ethylene glycol)

IMDG

UN-No.: 3082 Class: 9 Packing group: III

Proper shipping name: Environmentally hazardous substances, liquid, n.o.s. (Ethylene glycol)

IATA

UN-No.: 3082 Class: 9 Packing group: III

Proper shipping name: Environmentally hazardous substances, liquid, n.o.s. (Ethylene glycol)

15 Regulations

OSHA Hazards

Delayed target organ effects, Mild eye irritant, Teratogen, Reproductive hazard

TSCA Status

On TSCA Inventory

DSL Status

All components of this product are on the Canadian DSL list.

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

Ethylene glycol	CAS-No.
	107-21-1

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.