

# Material Safety Data Sheet

acc. to OSHA and ANSI

## **1 Identification of substance:**

- **Product details:**
- **Trade name:** Aluminum oxide (gamma) Dispersion in Ethylene Glycol
- **Stock number:** 7016WJEG
- **Manufacturer/Supplier:**  
Nanostructured & Amorphous Materials, Inc.  
16840 Clay Road, Suite #113  
Houston, TX 77084, USA

## **2 Composition/Data on components:**

- **Chemical characterization:**  
Description: (CAS#)  
Aluminum oxide (CAS# 1344-28-1), 20%  
Ethylene Glycol (CAS# 107-21-1), ~80%

## **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 <sup>3</sup>	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

### 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:** Milky white

#### 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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**Skin** May be harmful if absorbed through skin. May cause skin irritation.

**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.