



Safety Data Sheet

Revision date 05/01/2020

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Yttrium Oxide Powder
Product Number : 5650YS
CAS-No. : 1314-36-9

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Nanostructured & Amorphous Materials Inc.
1526 Katy Gap Rd, STE 302
Houston, TX 77494, USA

Telephone : +1 281-858-6571
Fax : +1 281-858-6507

1.4 Emergency telephone number

Emergency Phone # : +1 832-800-0355

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Not a hazardous substance or mixture.

2.2 GHS Label elements, including precautionary statements

Not a hazardous substance or mixture.

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula : Y_2O_3
Molecular weight : 225.81 g/mol
CAS-No. : 1314-36-9
EC-No. : 215-233-5

Hazardous components

| Component | Classification | Concentration |
|---------------|----------------|---------------|
| Yttrium Oxide | | <= 100 % |

4. FIRST AID MEASURES**4.1 Description of first aid measures****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.

In case of eye contact

Flush eyes with water as a precaution

If swallowed

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

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labeling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING 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

No data available

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

6. ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures**

Avoid dust formation. Avoid breathing vapours, mist or gas.
For personal protection see section 8.

6.2 Environmental precautions

No special environmental precautions required.

6.3 Methods and materials for containment and cleaning up

Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

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. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.
Handle and store under inert gas. Hygroscopic. Keep in a dry place

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

| Component | CAS-No | Value | Control Parameters | Basis |
|---------------|-----------|--------------------|--------------------|---|
| Yttrium oxide | 1314-36-9 | TWA | 1.000000 mg/m3 | USA. ACGIH Threshold Limit Values (TLV) |
| | Remarks | Pulmonary fibrosis | | |
| | | TWA | 1.000000 mg/m3 | USA. NIOSH Recommended Exposure Limits |
| | | TWA | 1 mg/m3 | USA. ACGIH Threshold Limit Values (TLV) |
| | | Pulmonary fibrosis | | |
| | | TWA | 1 mg/m3 | USA. NIOSH Recommended Exposure Limits |
| | | PEL | 1 mg/m3 | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |

8.2 Exposure controls

Appropriate engineering controls

General industrial hygiene practice.

Personal protective equipment

Eye/face protection

Use equipment for eye protection 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.

Full contact

Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: Dermatril®

Splash contact

Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: Dermatril®

Test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

No special environmental precautions required

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- | | |
|---------------------------------|---|
| a) Appearance | Form: powder |
| b) Odour | No data available |
| c) Odour Threshold | No data available |
| d) pH | No data available |
| e) Melting point/freezing point | Melting point/freezing point: > 400 °C (> 752 °F) - OECD Test Guideline 102 |
| f) Initial boiling point and | > 400 °C (> 752 °F) - OECD Test Guideline 103 |

boiling range

- | | |
|---|--|
| g) Flash point | No data available |
| h) Evaporation rate | No data available |
| i) Flammability (solid, gas) | not auto-flammable |
| j) Upper/lower flammability or explosive limits | No data available |
| k) Vapour pressure | No data available |
| l) Vapour density | No data available |
| m) Relative density | 5.01 g/cm ³ at 20 °C (68 °F) |
| n) Water solubility | 0.0007 g/l at 20 °C (68 °F) - OECD Test Guideline 105 - slightly soluble |
| o) Partition coefficient: n-octanol/water | No data available |
| p) Auto-ignition temperature | > 400 °C (> 752 °F) |
| q) Decomposition temperature | No data available |
| r) Viscosity | No data available |
| s) Explosive properties | No data available |
| t) Oxidizing properties | The substance or mixture is not classified as oxidizing. |

9.2 Other safety information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Water, Strong acids, Carbon dioxide (CO₂), Ammonium salts

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Yttrium oxides

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - male and female - > 5,000 mg/kg
(OECD Test Guideline 401)

LC50 Inhalation - Rat - male and female - 4 h - > 5.09 mg/l
(OECD Test Guideline 436)

Dermal: No data available

LD50 Intraperitoneal - Rat - 230 mg/kg

Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Mild eye irritant

Respiratory or skin sensitisation

Maximisation Test - Guinea pig

Result: Did not cause sensitisation on laboratory animals.
(Directive 67/548/EEC, Annex V, B.6.)

Germ cell mutagenicity

Chromosome aberration test in vitro

Chinese hamster fibroblasts

Result: negative

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by IARC.

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: ZG3850000

Rare earth compounds may cause delayed blood clotting leading to hemorrhages. Inhalation of rare earths may cause sensitivity to heat, itching, and increased awareness of odor and taste., Coagulation abnormalities., Gastrointestinal disturbance, Skin contact or inhalation may result in: Asthma, Cough, muscles, Damage to the lungs., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION**12.1 Toxicity**

No data available

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods****Product**

Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION**DOT (US)**

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

15. REGULATORY INFORMATION

SARA 302 Components

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

No SARA Hazards

Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

| | CAS-No. | Revision Date |
|---------------|-----------|---------------|
| Yttrium oxide | 1314-36-9 | 1993-02-16 |

New Jersey Right To Know Components

| | CAS-No. | Revision Date |
|---------------|-----------|---------------|
| Yttrium oxide | 1314-36-9 | 1993-02-16 |

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

| | |
|------------------------|---|
| Health hazard: | 2 |
| Chronic Health Hazard: | * |
| Flammability: | 0 |
| Physical Hazard: | 1 |

NFPA Rating

| | |
|--------------------|---|
| Health hazard: | 2 |
| Fire Hazard: | 0 |
| Reactivity Hazard: | 1 |

Further information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment 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 Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.