

## Trade Name: Calcined Yttrium Oxide

### 1 IDENTIFICATION

**Product Identifier:** Calcined Yttrium Oxide

**Synonyms:** Y<sub>2</sub>O<sub>3</sub>, Dyttrium oxide, Yttrium oxide, Yttrium(III) oxide

**CAS No./EC No.:** 1314-36-9 / 215-233-5

**Recommended Use(s):** Product as supplied is intended for use in crystalline ferrite materials, gemstone synthesis, optical property modification of glass, specialty lenses, refractory and conductive ceramics, oxygen sensors, ceramic pigment, and pole impregnation applications.

**Use(s) Advised Against:** Contact manufacturer if using product outside of recommended uses.

**Manufacturer/Supplier:**

GNPGraystar	GNPGraystar
37 John Glenn Dr.	9 Simmonsville Road
Amherst, NY 14228	Bluffton, SC 29910
Ph: 716-759-6600	Ph: 843-815-5600

**Emergency Telephone No.:** CHEMTREC (US): 1-800-424-9300  
All other regions contact your local poison control center or local chemical authority.

### 2 HAZARD(S) IDENTIFICATION

**Classification of the substance or mixture:**  
Classification has been determined in accordance with United States OSHA HCS (29 CFR 1910.1200) requirements and any corresponding Globally Harmonized System (GHS) classification parameters.

**Additional Information:**

**LABEL ELEMENTS**

**GHS Label Elements** Not classified as a hazardous substance under GHS standards.

**Pictograms:** None

**Signal Word:** None

**Hazard-determining components of labeling:** See Section 3 for more information.

**Hazard Statements:** N/A

**Precautionary Statements:** N/A

**HMIS Ratings (scale 0-4):**

Health:	0
Fire:	0
Reactivity:	0
PPE:	N/A

**NFPA Ratings (scale 0-4):**

Health:	0
Fire:	0
Reactivity:	0
Specific Hazard:	N/A

**Legend**

4 - Extreme  
3 - Serious  
2 - Moderate  
1 - Slight  
0 - Minimal

\* Indicates a long term health hazard from repeated or prolonged exposures

**Other Hazards:** No other hazard information available.

### 3 COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Characterization: substance

Identifier	Chemical Name/Description	GHS Hazard(s)	Wt. %
CAS No.: 1314-36-9 EC No.: 215-233-5	Yttrium(III) oxide	N/A	> 99

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Traces of other mineral components may be present as contaminants. Trace mineral contaminants may be hazardous on their own but present in concentrations below reporting and hazard classification levels. Product as sold is not classifiable as a hazardous substance or mixture.

### 4 FIRST AID MEASURES

**General Information:** Seek medical advice if symptoms occur.

**After inhalation:** Supply fresh air. Get medical help if symptoms occur.

**After contact with eyes:** Not considered to be an eye irritant. Irrigate with large quantities of water for at least 10 minutes. Remove contact lenses if present and easy to do so. Seek medical help if persistent irritation or tissue damage occur.

**After skin contact:** Wash thoroughly with soap and water. Seek medical advice if any symptoms occur.

**After swallowing:** If swallowed, rinse mouth with plenty of water if affected person is fully conscious. Induce vomiting if affected person is fully conscious. Do not give anything by mouth or induce vomiting in an unconscious person.

**Key symptoms and effects, both acute and delayed:** No relevant information available.

**Indication(s) of need for immediate medical help:** Any indication of tissue damage, respiratory distress, or distress of the digestive system from exposure.

### 5 FIREFIGHTING MEASURES

**Flash point:** N/A      **UEL:** N/A      **LEL:** N/A

**Auto-ignition temperature:** N/A

**Extinguishing media:** Use any suitable media for the environment in which the fire or conflagration is taking place. Be mindful of any surrounding flammable/combustible materials. High volume water jet not preferred.

**Hazardous decomposition products:** None anticipated.

**Firefighting instructions:** Firefighters and other involved individuals should wear self-contained breathing apparatuses and be aware of any flammable/combustible substances involved in the fire.

### 6 ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment, and emergency procedures:** No special measures required. Per general best practices: wear protective clothing, ensure adequate ventilation, avoid dust formation, use respiratory protective devices when anticipating fumes or dusts, and avoid contact with the eyes and skin where possible.

**Environmental precautions:** Prevent from entering drains or water courses. Do not allow to enter soil.

**Methods and material for containment and cleanup:** Avoid formation of dust. Pick up mechanically. Ensure adequate ventilation. Store in suitable receptacles for recovery or disposal. Verify compliance with local regulations for waste disposal.

**Other information:** See Section 7 for additional information on safe handling.  
See Section 8 for additional information on personal protective equipment.  
See Section 13 for additional information on disposal.

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### 7 HANDLING AND STORAGE

**Precautions for safe handling:**

Wear protective clothing. Prevent formation of dust. Any deposit of dust which cannot be avoided must be regularly removed. Provide suction extractors if dust is formed. Handle only in well-ventilated areas. Avoid product contact with the eyes or skin. Wash hands and face after handling.

**Information about protection against explosions and fires:**

No special measures required.

**Requirements for storerooms and receptacles:**

Storage should occur in cool, dry, well-ventilated areas.

**Information regarding storage in common storage facility:**

No special measures required.

**Further information about storage conditions:**

No additional information available.

### 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

**Applicable component occupational exposure limits requiring monitoring at the workplace:**

Yttrium, Y (CAS No. 7440-65-5)

OSHA PEL, TWA (8-hr): 1 mg/m<sup>3</sup>

NIOSH REL, TWA (10-hr): 1 mg/m<sup>3</sup>

ACGIH TLV, TWA (8-hr): 1 mg/m<sup>3</sup>

California: CAL/OSHA PEL, TWA (8-hr): 1 mg/m<sup>3</sup>

**Additional limit information:** No additional relevant information available at this time.

**Engineering controls:** Ensure good ventilation/exhaustion in the workplace.

**Risk management:** No special measures required.

#### PERSONAL PROTECTIVE EQUIPMENT

**Breathing equipment:** Use suitable respiratory protective devices when high dust levels present.

**Hand protection:** Wear protective gloves to ensure against mechanical hazards.

**Eye protection:** Wear safety glasses or goggles to protect against eye exposure.

**Body protection:** Wear general protective work clothing.

### 9 PHYSICAL AND CHEMICAL PROPERTIES

**Physical state:** Solid powder

**Color:** White

**Odor:** Odorless

**Odor threshold:** N/A

**pH:** 6 - 8 in 250 g/L product-in-water suspension

**Melting/Freezing point:** 4370°F (2410°C)

**Initial boiling point:** No data available

**Boiling point range:** No data available

**Flash point:** No data available

**Flammability:** Not ignitable

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Upper explosive limit:	N/A
Lower explosive limit:	N/A
Auto-ignition temperature:	N/A
Evaporation rate:	N/A
Vapor pressure:	N/A
Vapor density:	N/A
True density:	5.05 g/cm <sup>3</sup>
Water solubility:	0.0007 g/L
Partition coefficient:	N/A
Kinematic viscosity:	N/A
Particle characteristics:	Granule size: variable

### 10 STABILITY AND REACTIVITY

Thermal decomposition / conditions to be avoided:	No known thermal decomposition effects.
Hazardous reaction potential:	No known hazardous reactions. Product is highly chemically stable.
Incompatible materials:	No relevant information available.
Hazardous decomposition products:	No known hazardous decomposition products.
Other Information:	No additional information available at time of document authoring.

### 11 TOXICOLOGICAL INFORMATION

#### Component LC<sub>50</sub>/LD<sub>50</sub> values relevant for classification:

Yttrium(III) oxide, CAS No. 1314-36-9

LD<sub>50</sub>, Oral (rat): > 5,000 mg/kg

LC<sub>50</sub>, Inhalation (rat): > 5.09 mg/L

**Probable routes of exposure:** Dust inhalation, accidental ingestion, direct skin/eye contact

**Effects on skin:** No relevant effects known

**Effects on eye:** No relevant effects known

**Inhalation effects:** No relevant effects known

**Ingestion effects:** No relevant effects known

**Sensitization effects:** No relevant effects known

**Subacute/chronic toxicity:** No relevant effects known

#### Carcinogenicity:

**NTP Listing Status:** Substance is not listed

**IARC Listing Status:** Substance is not listed

**OSHA Listing Status:** Substance is not listed

**Cell mutagenicity:** No relevant effects known

**Reproductive effects:** No relevant effects known

### 12 ECOLOGICAL INFORMATION

Product not determined to be toxic to the aquatic environment.

**Aquatic toxicity:** LL50, fish (96-hr): > 100 mg/L

EL50, algae/cyanobacteria (72-hr): > 100 mg/L

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<b>Persistence and degradability:</b>	Inorganic product, not eliminable from water by biological means.
<b>Results of PBT assessment:</b>	No data available
<b>Results of vPvB assessment:</b>	No data available
<b>LogK<sub>ow</sub> , BCF values:</b>	No data available
<b>Bioaccumulative potential:</b>	No significant accumulation in organisms
<b>Mobility in soil:</b>	Soil to solution ratio 1/50: K <sub>oc</sub> at 20°C = 5480283 Testing performed with analogous test material Lanthanum oxide
<b>Other adverse effects:</b>	No relevant information available at time of document authoring.
<b>Additional information:</b>	No relevant information available at time of document authoring.

### 13 DISPOSAL CONSIDERATION

<b>Waste treatment methods:</b>	Do not dispose of product via sewage system or other liquid waste streams. Product not typically designable as household or general waste. Contact your local hazardous waste disposal authority to determine necessary steps for disposal in your locality.
<b>Contaminated packaging:</b>	Contaminated packaging should be scrubbed clean prior to disposal if possible. Else follow all applicable guidelines for product.
<b>Additional information:</b>	Refer to Section 8 for exposure controls, personal protective equipment

### 14 TRANSPORT INFORMATION

<b>DOT (US)</b>	Not regulated for transport
<b>IMDG/IMO</b>	Not regulated for transport
<b>IATA</b>	Not regulated for transport
<b>General Information:</b>	No additional information.

### 15 REGULATORY INFORMATION

<b>SARA 355 Components:</b>	Not listed
<b>SARA 313 Components:</b>	Not listed
<b>TSCA listing status:</b>	Listed
<b>Determinations of carcinogenic status:</b>	
<b>California Prop. 65:</b>	Not listed as a carcinogen or reproductive toxin
<b>EPA:</b>	Not listed as a carcinogen
<b>IARC:</b>	Not listed as a carcinogen
<b>ACGIH:</b>	Not listed as a carcinogen
<b>NIOSH:</b>	Not listed as a carcinogen
<b>Other state right-to-know listings:</b>	New Jersey: Yttrium (CAS No. 7440-65-5) New York City: Yttrium (CAS No. 7440-65-5) Rhode Island: Yttrium (CAS No. 7440-65-5)
<b>Information pertaining to Canadian regulations:</b>	
<b>Canadian Domestic Substances List:</b>	Listed
<b>Other regulations, limitations, and prohibitive regulations:</b>	This product has been classified in accordance with hazard criteria of the Hazardous Products Regulations, SOR/2015-17.

### 16 OTHER INFORMATION

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All information provided is based on GNPGraystar's present knowledge and understanding of this product and any applicable regulations and data. Any information provided does not constitute a guarantee for specific product features nor does it establish a legally valid contractual relationship.

### Abbreviations and acronyms:

ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstracts Service
DOT (US)	Department of Transportation (United States)
EPA	Environmental Protection Agency (United States)
HMIS	Hazardous Materials Identification System (United States)
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG/IMO	International Maritime Dangerous Goods / International Maritime Organization
NFPA	National Fire Protection Association (United States)
NIOSH	National Institute for Occupational Safety and Health (United States)
NTP	National Toxicology Program (United States)
OSHA	Occupational Safety and Health Administration (United States)
PEL	Permissible Exposure Limit
SARA	Superfund Amendment and Reauthorization Act
TLV	Threshold Limit Value
TSCA	Toxic Substance Control Act
TWA	Time-Weighted Average

**NOTICE:** This safety data sheet complements technical data sheets but does not replace them. The information contained within is based on our present knowledge of the product on the document revision date. All information provided is done so in good faith. Product users should be warned about the risks associated with using the product for a different purpose than that for which it was intended as stated within this safety data sheet and any associated technical data sheets. GNPGraystar does not provide advice or indicate qualification for giving advice for uses outside of stated intended use cases. Statements regarding applicable regulations are provided to help users meet their regulatory obligations when using this product. Statements are not exhaustive of all potential regulatory parameters a user may be bound by and does not exempt users from ensuring their own compliance with applicable regulations regarding handling, use, and storage of the product, for which they are solely responsible.

**Date of Preparation:** March 13, 2023