

Terbium Oxide Nanoparticles (Tb4O7)

US Research Nanomaterials, Inc.

Material Safety Data Sheet

acc. to OSHA and ANSI

1 Identification of substance:

Product details:

Trade name: Terbium (III,IV) oxide

Stock number: US3455

Manufacturer/Supplier:

US Research Nanomaterials, Inc.

3302 Twig Leaf Lane

Houston, TX 77084, USA

www.us-nano.com

2 Composition/Data on components:

Chemical characterization:

Description: (CAS#)

Terbium (III,IV) oxide (CAS# 12037-01-3), 100%

Identification number(s):

EINECS Number: 234-856-3

3 Hazards identification

Hazard description: · Not applicable

Information pertaining to particular dangers for man and environment

Not applicable

4 First aid measures

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly. Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing Seek medical treatment.

5 Fire fighting measures

Suitable extinguishing agents

Product is not flammable. Use fire fighting measures that suit the surrounding fire.

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures

Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation

Measures for environmental protection:

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

Measures for cleaning/collecting: Pick up mechanically.

Additional information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

Handling

Information for safe handling:

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers. No

special precautions are necessary if used correctly.

- Information about protection against explosions and fires:**
The product is not flammable

- Storage**

- Requirements to be met by storerooms and receptacles:**
No special requirements.

- Information about storage in one common storage facility:**
Do not store together with acids.

- Further information about storage conditions:**
This product is hygroscopic.
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.

8 Exposure controls and personal protection

- Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

- Components with limit values that require monitoring at the workplace:**

Not required.

- Additional information:** No data

- Personal protective equipment**

- General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.
Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

- Breathing equipment:**

Use suitable respirator when high concentrations are present.

- Protection of hands:** Impervious gloves

- Eye protection:** Safety glasses

Body protection: Protective work clothing.

9 Physical and chemical properties:

General Information

Form: Powder

Color: Brown

Odor: Odorless

	Value/Range	Unit	Method
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Change in condition

Melting point/Melting range: 2340 ° C

Boiling point/Boiling range: Not determined

Sublimation temperature / start: Not determined

Flash point: Not applicable

Flammability (solid, gaseous) Product is not flammable.

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: ~ 7.7 g/cm³ at 20 °C

Solubility in / Miscibility with

Water: Insoluble

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:

Acids

Air

Dangerous reactions No dangerous reactions known

Dangerous products of decomposition: Metal oxide fume

11 Toxicological information

Acute toxicity:

Primary irritant effect:

on the skin: May cause irritation

on the eye: May cause irritation

Sensitization: No sensitizing effects known.

Subacute to chronic toxicity:

Lanthanons can cause delayed blood clotting leading to hemorrhages. Exposure may also lead to sensitivity to heat, itching, increased awareness of odor and taste, and liver damage.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

12 Ecological information:

General notes:

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

13 Disposal considerations

- Product:**
- Recommendation**
Consult state, local or national regulations to ensure proper disposal.
- Uncleaned packagings:**
- Recommendation:**
Disposal must be made according to official regulations.

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.

15 Regulations

- Product related hazard informations:**
Observe the general safety regulations when handling chemicals
- National regulations**
All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory.
- Information about limitation of use:**
For use only by technically qualified individuals.

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.