Materials Safety Data Sheet

Gadolinium Oxide (Sputtering Target)

1. Product and Company Identification

Product Name: Gadolinium oxide
Formula: Gd_2O_3
CAS: 12064-62-9
EC No.: 235-060-9
Synonyms: Gadolinium(III) oxide

Recommended Use: Laboratory chemicals, Scientific research
Uses advised against: No specific uses advised against.

Supplier: UltraPurMat Group Co., Ltd
Address: Room 307, Building 2, Tengfei Innovation Center, No38 Gaoxin 6th Road, High-tech Zone, Xi'an Shaanxi China
Tel: +86-29-88993870
Email: sales@ulpmat.com
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2. Hazards Identification

Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008 (CLP)
The substance is not classified as hazardous

GHS Label elements, including precautionary statements
Pictogram: None
Signal Word: None
Hazard statement(s): None
Precautionary Statement(s): None

Other hazards: The product does not contain substances identified as PBT, vPvB, or endocrine disruptors according to applicable regulations.

3. Composition

Components	CAS	Classification (H)	Concentration
Gadolinium oxide (Gd_2O_3)	12064-62-9	Not classified	≤ 100%

4. First Aid Procedures

Description of first aid measures

General Treatment: If symptoms persist, call a physician.

Inhalation: Remove victim to fresh air. If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions.

Ingestion: Never give anything by mouth to an unconscious person. Rinse mouth with water. Seek medical attention if symptoms occur.

Skin: Take off immediately all contaminated clothing. Rinse skin with water/shower. Seek medical attention.

Eyes: Rinse with pure water for at least 15 minutes. Remove contact lenses, if present and easy to do. Seek medical attention.

Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.

Indication of any immediate medical attention and special treatment needed

Based on the symptoms that appear, provide targeted treatment. Be aware that symptoms may be delayed.

5. Firefighting Measures

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

Unsuitable extinguishing media: N/A

Special hazards arising from the substance or mixture

The substance is non-flammable. Fire involving surrounding materials may produce hazardous fumes containing metal oxides.

Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Fight fire from a safe distance and with adequate protection. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately.

Further information

No data available.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Remove persons to safety. Use personal protective equipment as required. Avoid dust formation.
For emergency responders: Wear breathing apparatus if exposed to vapours/dust/spray/gases.

Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

Methods and materials for containment and cleaning up

Advice on how to contain a spill: Covering of drains, Take up mechanically.
Advice on how to clean up a spill: Take up mechanically. Take care not to raise dust.

Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

7. Handling and Storage

Precautions for safe handling

Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid ingestion and inhalation. Avoid dust formation. Do not get in eyes, on skin, or on clothing. Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feedingstuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place.
Storage class (TRGS510): Class 13.
Packaging compatibilities: See Section 10.

Specific end use(s)

Apart from the uses mentioned in section 1 no other specific uses are stipulated.

8. Exposure Controls/Personal Protection

Exposure controls

Appropriate engineering controls

Ensure adequate ventilation, especially in confined areas. Ensure that eye wash stations and safety showers are close to the workstation location.

Personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles) (European standard - EN166) and face protection.

Skin protection

Hand Protection: Protective gloves (The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN374 derived from it).

Body Protection

Wear appropriate protective clothing to prevent skin exposure.

Respiratory protection

No respiratory protection is required under normal handling conditions. If dust is generated during processing, use appropriate respiratory protection.

Control of environmental exposure

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and groundwater.

9. Physical and Chemical Characteristics

Information on basic physical and chemical properties

Appearance

Form: Solid (Sputtering Target)

Colour: Beige

Odor: Odorless

pH: Not applicable

Melting point/range: 1900-2330 °C

Boiling point/range: No data available

Flash point: No data available

Evaporation rate: Not applicable - Solid

Flammability (solid, gas): No data available

Upper/lower flammability or explosive limits: No data available

Vapor pressure: No data available

Relative density: 7.4 g/cm^3

Water solubility: No data available

Partition coefficient: No data available

Auto-ignition temperature: No data available

Decomposition temperature: No data available

Viscosity: Not applicable

Other information

Molecular formula: Gd_2O_3

Molecular weight: 362.5 g/mol

10. Stability and reactivity

Reactivity

None known, based on information available.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

No data available.

Conditions to avoid

No data available.

Incompatible materials

Strong acids.

Hazardous decomposition products

In the event of fire: see section 5.

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Oral: LD50 - Rat - > 5,000 mg/kg.

Skin corrosion/irritation

No data available.

Serious eye damage/eye irritation

No data available.

Respiratory or skin sensitisation

No data available.

Germ cell mutagenicity

No data available.

Carcinogenicity

This product is not classified as carcinogenic under Regulation (EC) No 1272/2008 (CLP).

Reproductive toxicity

No data available.

Specific target organ toxicity - single exposure

No data available.

Specific target organ toxicity - repeated exposure

Not classified.

Aspiration hazard

Not applicable. Solid.

Additional Information

This product does not contain any known or suspected endocrine disruptors.

12. Ecological Information

Toxicity

No data available.

Persistence and degradability

No data available.

Bioaccumulative potential

No data available.

Mobility in soil

No data available.

Results of PBT and vPvB assessment

In accordance with Annex XIII of the REACH Regulation, inorganic substances do not require assessment.

Other adverse effects

This product does not contain substances identified as persistent organic pollutants according to applicable regulations.

13. Disposal Considerations

Waste treatment methods

Dispose of in accordance with all applicable local and national regulations. Use recovery/recycling where feasible. Empty containers may contain hazardous residues. Do not cut, puncture or weld on or near the container. Labels should not be removed from containers until they have been cleaned. Contaminated containers must not be treated as household waste. Containers should be cleaned by appropriate methods and then re-used or disposed of by landfill or incineration as appropriate. Do not incinerate closed containers.

14. Transportation Information

ADR

Not classified as hazardous for transport.

IMDG

Not classified as hazardous for transport.

IATA

Not classified as hazardous for transport.

15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

Regulation (EC) 1907/2006, REACH, Annex XIV list of substances subject to authorisation: Not applicable

Regulation (EC) 1907/2006, REACH, Annex XVII restrictions on the manufacture, placing on the market and use of certain dangerous substances: Not applicable

Regulation (EC) 1005/2009 on substances that deplete the ozone layer: Not applicable

Regulation (EC) 850/2004 on persistent organic pollutants, amended by (EU) No 2019/1021: Not applicable

Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

16. Other information

Revision Date:

2026-10-14

Version:

1.0

Disclaimer

The information of this safety data sheet is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended.

This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.
This Safety Data Sheet is prepared in accordance with Regulation (EC) No 1907/2006 (REACH), Annex II.