

Material Safety Data Sheet

• 1 Identification of substance

- **Product details**
- **Trade name Neodymium oxide**

• 2 Composition/Data on components:

- **Chemical characterization:**
Designation: (CAS#)
Neodymium oxide (CAS# 1313-97-9), 100%
- **Identification number(s):**
- **EINECS Number:** 215-214-1

• 3 Hazards identification

- **Hazard designation:** - void
- **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. Consult doctor if symptoms persist.
Seek immediate medical advice.
- **After skin contact**
Instantly 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 doctor.
- **After swallowing** Seek medical treatment.

- **5 Fire fighting measures**

- **Suitable extinguishing agents**

Use fire fighting measures that suit the environment.

- **Protective equipment:**

Wear self-contained breathing apparatus.

Wear full protective 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:** Collect mechanically.

- **Additional information:**

See Section 7 for information on safe handling

See section 8 for information on personal protection equipment.

See Section 13 for information on disposal.

- **7 Handling and storage**

- **Handling**

- **Information for safe handling:**

Keep containers tightly sealed.

Store in cool, dry place in tightly closed containers.

No special precautions necessary if used correctly.

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

The product is not flammable

- **Storage**

- **Requirements to be met by storerooms and containers:**

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 critical 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 should be adhered to in handling the chemicals.

Keep away from foodstuffs, beverages and food.

Instantly remove any soiled and impregnated garments.

Wash hands during breaks and at the end of the work.

• Breathing equipment: Use breathing protection with high concentrations.

• Protection of hands: Impervious gloves

• Eye protection: Safety glasses

• Body protection: Protective work clothing.

• 9 Physical and chemical properties:

• General Information

• Form: Lump

• Colour: Light blue

• Smell: Odourless

• Value/Range Unit Method

• Change in condition

• Melting point/Melting range: 2270 ° C

• Boiling point/Boiling range: 4118 ° C

• Sublimation temperature / start: Not determined

• Flash point: Not applicable

• Inflammability (solid, gaseous) Product is not inflammable.

• Ignition temperature: Not determined

• Decomposition temperature: Not determined

• Danger of explosion: Product is not explosive.

• Critical values for explosion:

• Lower: Not determined

• Upper: Not determined

- **Steam pressure:** Not determined
- **Density** at 20 ° C 7.24 g/cm³
- **Solubility in / Miscibility with**
- **Water:** Insoluble

● 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:**
No decomposition 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

● 11 Toxicological information

- **Acute toxicity:**
LD/LC50 values that are relevant for classification:
Oral: LD50: >5000 mg/kg (rat)
- **Primary irritant effect:**
- **on the skin:** Powder: irritant effect
- **on the eye:** Powder: irritant effect
- **Sensitization:** No sensitizing effect known.
- **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.
Generally not hazardous for water.

- **13 Disposal considerations**

- **Product:**

- **Recommendation**

Consult state, local or national regulations for proper disposal.
Hand over to disposers of hazardous waste.
Must be specially treated under adherence to official regulations.

- **Uncleaned packagings:**

- **Recommendation:**

Disposal must be made according to official regulations.

- **14 Transport information**

- **Land transport ADR/RID and GGVS/GGVE (cross-border/domestic)**

- **ADR/RID-GGVS/E Class:** None

- **Maritime transport IMDG/GGVSea:**

- **IMDG/GGVSea Class:** None

- **Air transport ICAO-TI and IATA-DGR:**

- **ICAO/IATA Class:** None

- **Transport/Additional information:**

Not dangerous according to the above specifications.

- **15 Regulatory information**

- **Designation according to EC guidelines:**

Observe the normal safety regulations when handling chemicals
The product is not subject to identification regulations under EC Directives and the Ordinance on Hazardous Materials (GefStoffV).

- **National regulations**

- **Information about limitation of use:**

For use only by technically qualified individuals.

- **Water hazard class:** Generally not hazardous for water.

- **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.

Recent Research & Development for Neodymium Oxide

- Use of luminescence probing for the study of the interaction of polytitanasiloxane with trivalent rare Earth ions. *J Phys Chem B Condens Matter Mater Surf Interfaces Biophys.* 2007 Jan 18;111(2):335-9.
- Magnetic characterization of superparamagnetic nanoparticles pulled through model membranes. *Biomagn Res Technol.* 2007 Jan 4;5(1):1 [Epub ahead of print]
- Potential interference of small neodymium magnets with cardiac pacemakers and implantable cardioverter-defibrillators. *Heart Rhythm.* 2007 Jan;4(1):1-4. Epub 2006 Sep 16.
- Malignant glaucoma after phacoemulsification: Treatment with diode laser cyclophotocoagulation. *J Cataract Refract Surg.* 2007 Jan;33(1):130-2.
- Outcome of posterior capsulotomy in late capsular block syndrome with posterior capsular opacification. *Clin Experiment Ophthalmol.* 2006 Dec;34(9):866-9.
- Optical absorption and NMR spectroscopic studies on paramagnetic neodymium(III) complexes with beta-diketone and heterocyclic amines The environment effect on 4f-4f hypersensitive transitions. *Spectrochim Acta A Mol Biomol Spectrosc.* 2006 Oct 13; [Epub ahead of print]
- Barium induced modulation of NIR emission in a neodymium cryptate complex. *Chem Commun (Camb).* 2006 Dec 28;(48):5048-50. Epub 2006 Oct 12.
- Sensitized near-infrared lanthanide luminescence from Nd(III)- and Yb(III)-based cyclen-ruthenium coordination conjugates. *Inorg Chem.* 2006 Dec 11;45(25):10040-2.
- Hyperopic shift in refraction associated with implantation of the single-piece Collamer intraocular lens. *J Cataract Refract Surg.* 2006 Dec;32(12):2110-2.
- Cumulative neodymium:YAG laser rates after bag-in-the-lens and lens-in-the-bag intraocular lens implantation: comparative study. *J Cataract Refract Surg.* 2006 Dec;32(12):2085-90.