



Materials Safety Data Sheet

Niobium(V) Oxide Powder

1. Product and Company Identification

Product Name: Niobium(V) Oxide

Formula: Nb_2O_5

CAS: 1313-96-8

EC No.: 215-213-6

Synonyms: Niobium pentoxide, Niobium oxide

Recommended Use: Laboratory chemicals, Scientific research

Uses advised against: N/A

Supplier: UltraPurMat Group Co., Ltd

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Xi'an Shaanxi China

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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:

3. Composition

Components	CAS	Classification (H)	Concentration
Niobium(V) oxide (Nb ₂ O ₅)	1313-96-8	Not classified	≤100%

4. First Aid Procedures

Description of first aid measures

General Treatment: Seek medical attention if symptoms persist.

Inhalation: Remove victim to fresh air. Supply oxygen if breathing is difficult.

Ingestion: Seek Medical Attention.

Skin: Wash affected area with mild soap and water. Remove any contaminated clothing.

Eyes: Flush eyes with water, blinking often for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Seek medical attention if symptoms persist .

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

No data available

5. Firefighting Measures

Extinguishing media

Use dry powder, sand, or appropriate extinguishing media suitable for the surrounding fire.

Unsuitable extinguishing media: Avoid direct water jet.

Special hazards arising from the substance or mixture

Niobium oxides are stable and does not generate hazardous decomposition products under normal fire conditions.

Advice for firefighters

Use full-face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. See section 10 for decomposition products.

Further information

No data available

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Avoid generating dust. Wear appropriate personal protective equipment. Avoid contact with eyes and skin during handling. Ensure adequate ventilation. For personal protection see section 8.

Environmental precautions

Prevent large quantities of material from entering drains or the environment.

Methods and materials for containment and cleaning up

Collect spilled material carefully and place into suitable containers. Avoid generating dust during cleanup. Reuse or dispose of material according to applicable local regulations.

Reference to other sections

For disposal see section 13.

7. Handling and Storage

Precautions for safe handling

Ensure adequate ventilation. Avoid ingestion and inhalation. Avoid formation of dust. 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 feeding stuffs. For precautions see section 2.

Conditions for safe storage, including any incompatibilities

Store in a cool dry place in a tightly sealed container.

Storage class : Class 13

Store apart from materials and conditions listed in 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

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Use eye protection equipment tested and approved according to appropriate standards such as ANSI Z87.1 (US) or EN 166 (EU).

Skin protection

Wear protective gloves compliant with Regulation (EU) 2016/425 and EN ISO 374.

Body Protection

Protective work clothing. Wear close-toed shoes and long sleeves/pants.

Respiratory protection

Use a respirator with type N95 (USA) or P1/P2/P3 cartridges as a backup to engineering controls. Risk assessment should be performed to determine if purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. Physical and Chemical Characteristics

Information on basic physical and chemical properties

Appearance

Form: Powder
Colour: White
Odor: Odorless
pH: Not applicable (solid substance)
Melting point/range: 1512 °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: 4.47 g/cm³
Water solubility: insoluble
Partition coefficient: n-octanol/water: not relevant (inorganic)
Auto-ignition temperature: > 420 °C
Decomposition temperature: No data available
Viscosity: No data available
Other information
Molecular formula: Nb₂O₅
Molecular weight: 265.81 g/mol

10. Stability and reactivity

Reactivity

No hazardous reactivity under normal conditions of use and storage.

Chemical stability

The product is stable under normal storage and handling conditions.

Possibility of hazardous reactions

No known hazardous reactions

Conditions to avoid

Avoid excessive heat and contact with strong oxidizing agents.

Incompatible materials

Strong oxidizing agents.

Hazardous decomposition products

In the event of fire: see section 5

11. Toxicological Information

Information on toxicological effects

Acute toxicity

No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

Respiratory: No data available.

Skin: No data available

Germ cell mutagenicity

No data available

Carcinogenicity

IARC: Not listed.

OSHA: Not listed.

Reproductive toxicity

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

No data available

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

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

Other adverse effects

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

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 to the container. Labels should not be removed from containers until they have been cleaned. Contaminated containers must not be treated as household waste.

14. Transportation Information

ADR

Not regulated as dangerous goods for transport.

IMDG

Not regulated as dangerous goods for transport.

IATA

Not regulated as dangerous goods 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

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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.