

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 12/19/2007

Reviewed on 01/22/2007

1 Identification of substance:**Product details:****Product name:** Niobium powder**Stock number:** 40510**Manufacturer/Supplier:**

Alfa Aesar, A Johnson Matthey Company
 Johnson Matthey Catalog Company, Inc.
 30 Bond Street
 Ward Hill, MA 01835-8099
 Emergency Phone: (978) 521-6300
 CHEMTREC: (800) 424-9300
 Web Site: www.alfa.com

Information Department: Health, Safety and Environmental Department**Emergency information:**

During normal hours the Health, Safety and Environmental Department.
 After normal hours call Chemtrec at (800) 424-9300.

2 Composition/Data on components:**Chemical characterization:****Description: (CAS#)**

Niobium (CAS# 7440-03-1), 100%

Identification number(s):**EINECS Number:** 231-113-5**3 Hazards identification****Hazard description:**

F Highly flammable

Information pertaining to particular dangers for man and environment

R 11 Highly flammable.

Classification system**HMIS ratings (scale 0-4)****(Hazardous Materials Identification System)**

HEALTH	1
FIRE	2
REACTIVITY	1

Health (acute effects) = 1

Flammability = 2

Reactivity = 1

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.

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Product name: Niobium powder**After swallowing** Seek immediate medical advice.

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5 Fire fighting measures**Suitable extinguishing agents**

Special powder for metal fires. Do not use water.

For safety reasons unsuitable extinguishing agents

Water

Carbon dioxide

Halogenated extinguisher

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

Keep away from ignition sources

Measures for environmental protection:

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

Measures for cleaning/collecting:

Ensure adequate ventilation.

Keep away from ignition sources.

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:**

Handle under dry protective gas.

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Information about protection against explosions and fires:

Keep ignition sources away.

Protect against electrostatic charges.

Fumes can combine with air to form an explosive mixture.

Storage**Requirements to be met by storerooms and receptacles:**

Store in a cool location.

Information about storage in one common storage facility:

Store away from oxidizing agents.

Store away from halogens.

Do not store together with alkalis (caustic solutions).

Further information about storage conditions:

Store under dry inert gas.

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

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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:	Grey
Odor:	Odorless

Change in condition

Melting point/Melting range:	2468°C (4474°F)
Boiling point/Boiling range:	4742°C (8568°F)
Sublimation temperature / start:	Not determined

Flash point:	Not applicable
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Flammability (solid, gaseous)	Highly flammable.
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Ignition temperature:	Not determined
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Decomposition temperature:	Not determined
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Explosion limits:

Lower:	Not determined
Upper:	Not determined

Vapor pressure:	Not determined
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Density at 20°C (68°F):	8.57 g/cm ³
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Solubility in / Miscibility with Water:	Insoluble
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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:

Oxidizing agents

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Bases
Halogens
Interhalogens

Dangerous reactions

Reacts with oxidizing agents
Reacts violently with interhalogens.
Very fine powder: spontaneously flammable in air.
Dangerous products of decomposition: Metal oxide fume

11 Toxicological information**Acute toxicity:****Primary irritant effect:**

on the skin: Irritant to skin and mucous membranes.

on the eye: Irritating effect.

Sensitization: No sensitizing effects known.

Subacute to chronic toxicity:

Niobium compounds have caused liver damage in animal studies. Niobium metal has caused kidney damage in experimental animals and fibrogenic effects on the lungs of experimental animals.

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**DOT regulations:**

Hazard class:	4.1
Identification number:	UN3089
Packing group:	II
Proper shipping name (technical name):	METAL POWDER, FLAMMABLE, N.O.S.

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Label 4.1

Land transport ADR/RID (cross-border)


ADR/RID class: 4.1 (F3) Flammable solids, self-reactive substances and solid desensitised explosives

Danger code (Kemler): 40

UN-Number: 3089

Packaging group: II

Description of goods: 3089 METAL POWDER, FLAMMABLE, N.O.S. (niobium)

Maritime transport IMDG:


IMDG Class: 4.1

UN Number: 3089

Label 4.1

Packaging group: II

Proper shipping name: METAL POWDER, FLAMMABLE, N.O.S.

Air transport ICAO-TI and IATA-DGR:


ICAO/IATA Class: 4.1

UN/ID Number: 3089

Label 4.1

Packaging group: II

Proper shipping name: METAL POWDER, FLAMMABLE, N.O.S.

15 Regulations

Product related hazard informations:
Hazard symbols:
F Highly flammable

Risk phrases:

11 Highly flammable.

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.

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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.

Department issuing MSDS: Health, Safety and Environmental Department.

Contact: Paul V. Connolly

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