

MATERIAL SAFETY DATA SHEET

In accordance with Regulation (CE) No. 1907/2006
Version 2.0. Revision date: 31.10.2016



SINGLE CRYSTAL ALUMINUM OXIDE

SECTION 1: Identification of the substance or mixture and the company

1.1 Product identification

Product name : Alumina fibers
Brand : NKR®
No. REACH : Registration number not available for this product because the product or its use are exempted from registration, the annual tonnage does not require registration or the registration is envisaged for a later date
No. CAS : 1344-28-1
No. CE : 215-691-6

1.2 Relevant identified uses of the substance or mixtures and uses advised against

Identified uses : Fabrication of composite materials (MMC, CMC, PMC)
For more information visit Neoker official website (www.neoker.org)

1.3 Details of the supplier of the safety data sheet

Company : Neoker, S.L.
Pol. Ind. Novo Milladoiro, C/ Xesta, 78-A1
O Milladoiro, Ames
ES-15895 A Coruña (Spain)
Telephone : +34 981 533 949
E-mail address : info@neoker.org

1.4 Emergency telephone

Only toxicological emergencies : +34 91 562 04 20 National Institute of Toxicology (Madrid - Spain)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

It is not a hazardous substance or mixture according to the legislation of the European Union (Regulation (CE) No. 1272/2008 and Directive 67/548/CEE).

2.2 Label elements

Labelled according to Regulation (CE) No. 1272/2008



Attention

H315: causes skin irritation

H319: causes serious eye irritation

H332: harmful if inhaled

H335: may cause respiratory irritation

H373: May cause damage to organs through prolonged or repeated exposure

P261: Avoid breathing dust/fume/gas/mist/vapours/spray

P280: Wear protective gloves/protective clothing/eye protection/face protection

2.3 Other hazards

It can be irritating and harmful by contact with skin or mucous membranes. Some studies have suggested carcinogenic potential after long-term exposure without adequate protection of EPIS, in the presence of high concentrations.

Short single crystal alumina fibers (whisker) are a fibrous form of aluminum oxide single crystal having an aspect ratio of 3:1 or greater. Hazardous whiskers are those that are in the breathable size range.

The alumina whisker is not classified by OSHA and NTP as carcinogens. Family IARC classified ceramic fibers, including aluminum oxide whiskers as a group 2B: possibly carcinogenic to humans (group 2B: there are studies that show carcinogenicity in vivo tests performed in laboratory animals, but not in humans).

ACGIH® has classified the aluminum oxide fibers as A2: Suspected human carcinogen. "Aluminum oxide: TLV® Chemical Substances 7th Edition Documentation, ACGIH® Publication No.7 DOC-530, 2003." ("The appointment of carcinogen A2 suspected human carcinogen, is recommended for fibrous forms, based on inhalation experiments in several animal species showing pulmonary and pleural carcinogenic potential, and limited human data for lung cancer ...")

SECTION 3: Composition/information about the ingredients

3.1 Substances

Synonyms : Short Alumina fibers, Sapphire fibers, Corundum fibers, Aluminum oxide fibers, single crystals Alumina fibers, etc.

Formula : Al_2O_3
Molecular weight : 101,96 g/mol
No. CAS : 1344-28-1
No. CE : 215-691-6

According to the applicable legislation is not required to disclose any other component.

SECTION 4: First aid

4.1 Description of the first aid measures

If inhaled

If breathed in, move person into fresh air. Go to the nearest medical centre as a precaution. If breathing is irregular or has stopped, administer artificial respiration and seek medical advice.

In case of skin contact

Immediately wash with plenty of water and soap, then rinse thoroughly

In case of contact with eyes

Rinse opened eye for several minutes under running water. Go to the nearest medical centre as a precaution.

If swallowed

Rinse mouth with water. Never administer any substance by mouth to an unconscious person. The product is normally eliminated from the intestinal track. Go to the nearest medical centre/hospital as a precaution.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the Section 2.2, 2.3 and 11.

4.3 Indication of any immediate medical attention and special treatment needed immediately

No data available

SECTION 5: Fire-fighting measures

- 5.1 Extinguishing media**
Suitable extinguishing media
 Use water spray, foam, dry chemical or carbon dioxide.
- 5.2 Special hazards arising from the substance or mixture**
 Aluminium oxides.
- 5.3 Advice for firefighters**
 If necessary, wear self-contained breathing apparatus for firefighting.
- 5.4 Other information**
 Fireproof material

SECTION 6: Measures in case of accidental spill

- 6.1 Personal precautions, protective equipment and emergency procedures**
 Avoid dust formation. Avoid breathing dust.
 For personal protection, see Section 8
- 6.2 Environmental precautions**
 Prevent product from entering drains.
- 6.3 Methods and materials for containment and cleaning**
 Wet sweeping and shovel. Keep in suitable and closed containers for its disposal.
- 6.4 Reference to other sections**
 For disposal see Section 13.

SECTION 7: Handling and storage

- 7.1 Precautions for safe handling**
 Provide appropriate exhaust ventilation at places where dust is formed. See precautions in section 2.2 and 2.3. See also section 8.2.
- 7.2 Conditions for safe storage, including any incompatibilities**
 Keep container tightly closed.
- 7.3 Specific end use**
 Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls / personal protection

8.1 Control parameters

Components with values for occupational exposure.

Component	No. CAS	Control parameters	Value	Base
Aluminum oxide	1344-28-1	VLA-ED	10 mg/m ³	Occupational exposure limits for chemical agents - Table 1: Environmental occupational exposure limits

8.2 Exposure controls

Appropriate technical controls

General industrial hygiene

Personal protection

Eye/Face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

Skin care

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands after handling.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/CEE and the standard EN 374 derived from it.

If used in solution, or mixed with other substances, and under different conditions of EN 374, contact the supplier of CE approved gloves. This recommendation is merely desirable and should be evaluated by a security and industrial hygiene familiar with the specific situation of intended use for our customers. Should not be construed as an endorsement of an offer to any specific usage scenario.

Body protection

Choose body protection according to their characteristics, the concentration and amount of dangerous substances and specific workplace. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

It is sufficient to use masks with approved dust filter.

Control of environmental exposure

Do not let product enter drains. See Section 13.

SECTION 9: Physical and chemical properties

9.1 Information about basic physical and chemical properties

a) Appearance	Form: fiber powder Colour: grey/white
b) Odour	Odourless
c) Odour threshold	Not applicable
d) PH	No information available
e) Melting point	2.004°C - 2.096°C
f) Point/boiling range	2.980°C at 1.013 hPa
g) Flash point	Not applicable
h) Evaporation rate	Not applicable
i) Flammability (solid, gas)	Not applicable
j) Flammability limits explosives	Not applicable
k) Vapour pressure	No information available
l) Vapour density	No information available
m) Relative density	3,93 – 4,01 g/cm ³
n) Water solubility	Insoluble
o) Octanol/water partition coefficient	No information available
p) Auto inflammation temperature	Not applicable
q) Decomposition temperature	No information available
r) Viscosity	Not applicable
s) Explosive properties	Not classified as explosive
t) Reactive properties	None

9.2 Other safety information

Ignition temperature

Not applicable

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under the recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

No data available

10.6 Hazardous decompositions products

No data available

SECTION 11: Toxicological information

11.1 Information about the toxicological effects

Acute oral toxicity

No data available

Corrosion or skin irritation

No data available

Lesions or severe eye irritation

No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

IARC: IARC classified ceramic fibers, including aluminum oxide whiskers as a group 2B: possibly carcinogenic to humans (group 2B: there are studies that show carcinogenicity in laboratory animals but not in humans).

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

11.2 Further information

Based on its morphological composition, the hazardous properties should not be expected to properly handle it.

SECTION 12: Ecological information

12.1 Toxicity

ALUMINUM OXIDE WHISKERS

No data available

12.2 Persistence and degradability

No data available

12.3 Potential for bioaccumulation

No data available

12.4 Mobility in the soil

No data available

12.5 Results PBT and mPmB evaluation

PBT / mPmB evaluation is not available because the chemical safety evaluation is not required/has not been made.

12.6 Other adverse effects

Additional ecological information

Maintaining proper handling conditions, ecological problems are not expected.

SECTION 13: Considerations concerning to the elimination

13.1 Methods for treating waste

Waste must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Leave the chemical products in their original containers. No mixing with other waste. Handle unclean containers like the product itself.

SECTION 14: Transport information

14.1 ONU number

ADR/RID: - IMDG: - IATA: -

14.2 Transport official designation of the United Nations

ADR/RID: Not dangerous goods

IMDG: Not dangerous goods

IATA: Not dangerous goods

14.3 Class of transport hazard

ADR/RID: - IMDG: - IATA: -

14.4 Packaging group

ADR/RID: - IMDG: - IATA: -

14.5 Environmental hazards

ADR/RID: no IMDG: no IATA: no

14.6 Special precautions for user

Product no hazardous according to criteria of transport regulation.

SECTION 15: Regulatory information

The safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.1 Safety, health and environment specific regulations and legislation for the substance or mixture

No data available

15.2 Chemical safety evaluation

It is not required to perform the chemical safety assessment of the product due to the annual quantity manufactured.

SECTION 16: Other information

Other data

ALUMINUM OXIDE WHISKERS

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The above information is believed to be correct but does not intend to be all inclusive and shall be used only as a guide. The information contained here is based on the present state of our knowledge and is applicable to appropriate safety precautions for this product. It does not represent any guarantee of the properties of the product. The company Neoker, S.L. is not liable for any damage resulting from handling or from contact with the above product. If you need more information on our material, please contact us: info@neoker.org.
