

Section 1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name

Aluminium oxide – non metallurgical grade

Synonyms

Alumina, Calcined Alumina, Calcined Metallurgical Grade Alumina

Chemical name

aluminum oxide (CAS: 1344-28-1, EC: 215-691-6)

REACH Registration number

01-2119529248-35-0095

The product is in not a nanoform.

Unique Formula Identifier (UFI): not applicable.

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use

Industrial use, in production refractories, abrasives, ceramics, aluminum sulfate, fire retardant, and others.

Uses advised against

Do not use for purposes other than those prescribed.

1.3. Details of the supplier of the safety data sheet

Manufacturer

Nova Alumina doo

Karakaj 105-e, 75400 Zvornik, Bosnia and Herzegovina

Tel: +387 56 260435

e-mail: ddragojlovic@birac.ba

Only representative: BENS consulting d.o.o.

Telephone number: +386 41 979 800;

E-mail: info@bens-consulting.eu

1.4. Emergency telephone number

Emergency

112

Supplier

+387 56 260435

Section 2. Hazards identification

2.1. Classification of the substance or mixture:

Classification according to Reg. 1272/2008

This substance does not meet the criteria for classification in accordance with Regulation (EC) No 1272/2008.

2.2. Label elements :

2.2.1. Labelling according to Regulation (EC) No 1272/2008 (CLP)

Not classified as hazardous.

Hazard pictogram(s):

Pictograms not applicable according to Regulation 1272/2008.

Signal word(s):

No signal word.

Hazard statements:

No hazard statements.

Precautionary statements:

No Precautionary statements.

2.3. Other hazards:

According to the results of its assessment, this substance is not a PBT or a vPvB.

The substance is not considered to be an endocrine disrupter according to the criteria set out in EU regulations.

Section 3. Composition/information on ingredients

3.1. Substances

Chemical name	CAS, EC, Index	%	Classification according to Regulation (EC) No 1272/2008 [CLP]	REACH reg. number
Aluminium oxide	1344-28-1 215-691-6 -	≥ 99.5	not classified	01-2119529248-35-0095

3.2. Mixtures

For substances see 3.1.

Section 4. First aid measures

4.1. Description of first aid measures

General measures

In case of adverse health effects seek medical advice. Never give anything by mouth to an unconscious person.

Inhalation

Remove to fresh air. If difficulties with breathing do not stop, search for medical help.

Skin contact

Wash with plenty of running water. Immediately remove all contaminated clothing. If irritation persists, repeat flushing and seek medical attention.

Eye contact

Immediately flush eyes with plenty of water while keeping eyelids open (at least 15 minutes). Consult a physician.

Ingestion

Rinse mouth with water. Drink 2 glasses of water. If feeling unwell, seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Inhalation

Inhalation of the substance in the form of dust may cause respiratory irritation. No known significant effects or critical hazards.

Skin contact

Prolonged or repeated impact on the risk of unprotected skin may cause skin irritation. No known significant effects or critical hazards.

Eye contact

Impact on the unprotected eyes may cause mechanical irritation. No known significant effects or critical hazards.

Ingestion

No known significant effects or critical hazards.

4.3. Indication of any immediate medical attention and special treatment needed
If swallowed DO NOT induce vomiting.

Section 5. Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Not applicable. Inorganic material. Not combustible, therefore define extinguishing measures according to neighboring conditions.

Unsuitable extinguishing media

Do not use water jet for security reasons.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products

The substance is non-combustible. No specific fire or explosion hazard.

5.3. Advice for firefighters

Protective actions

The product is not combustible.

Special protective equipment for fire-fighters

Fire-fighters should wear appropriate protective clothing for fire-fighters (including helmets, protective boots and gloves) (EN 469) and self-contained breathing apparatus (SCBA) with a full face-piece (EN 137).

Section 6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment

Use personal protective equipment (Section 8).

Emergency procedures

Ensure adequate ventilation. Avoid dust generation. Avoid breathing dust.

6.1.2. For emergency responders

Use personal protective equipment.

6.2. Environmental precautions

Avoid dispersal of spilled material and runoff. Avoid creating dusty conditions and prevent wind dispersal. Collect material for recycling if possible. Not know environmental hazards. If accidental entry into water or ground occurs, inform responsible authorities.

6.3. Methods and material for containment and cleaning up

6.3.1. For containment

Take up mechanically.

6.3.2. For cleaning up

Take up mechanically. Use vacuum cleaner if possible.

6.3.3. Other information

Sweep up and shovel into suitable containers for disposal. Avoid dust.

6.4. Reference to other sections

See also sections 8 and 13.

Section 7. Handling and storage

7.1. Precautions for safe handling

7.1.1. Protective measures

Measures to prevent fire

Ensure adequate ventilation.

Measures to prevent aerosol and dust generation

Prevent dusting.

Measures to protect the environment

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7.1.2. Advice on general occupational hygiene

In accordance with good industrial hygiene and safety procedures. Use good personal hygiene practices-wash hands at breaks and when done working with material. Do not eat, drink or smoke while working. Avoid contact with skin and eyes. Do not breathe dust. Refer to instructions on label and regulations for safety and health at work. Use personal protective equipment.

7.2. Conditions for safe storage, including any incompatibilities

7.2.1. Technical measures and storage conditions

Store in a dry place.

Keep away from: oxidising agents, strong alkalis, and strong acids.

Store in a dry, cool and well-ventilated area; Keep container tightly closed.

Keep away from food, drink and animal feedingstuffs.

7.3. Specific end use(s)

Recommendations

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Industrial sector specific solutions

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Section 8. Exposure controls/personal protection

8.1. Control parameters

8.1.1. Occupational Exposure limit values

Chemical name (CAS)	Limit values		Short-term exposure limit		Remarks	Biological Tolerance Values
	ml/m ³ (ppm)	mg/m ³	ml/m ³ (ppm)	mg/m ³		
Product	-	5	-	-	TWA, respirable fraction	-
Product	-	10	-	-	TWA, inhalable fraction	-
Product	-	3	-	-	Germany OEL (TWA), respirable dust	-
Product	-	10	-	-	Germany OEL (TWA), inhalable dust	-
Product	-	15	-	-	US OSHA PEL-TWA, total dust	-
Product	-	5	-	-	US OSHA PEL-TWA, respirable dust	-

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8.1.2. Information on monitoring procedures

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.

8.1.3. DNEL values

No information.

8.1.4. PNEC values

No information.

8.2. Exposure controls

8.2.1. Appropriate engineering control

Substance/mixture related measures to prevent exposure during identified uses

Use good personal hygiene practices-wash hands at breaks and when done working with material. Do not eat, drink or smoke while working. Avoid contact with eyes and skin. Do not breathe dust.

Technical measures to prevent exposure

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

8.2.2. Personal protective equipment

Eye and face protection

Safety glasses with side protection (EN 166).

Hand protection

Protective gloves (EN 374).

Skin protection

Protective clothing (EN ISO 13688) and shoes that cover the entire foot (EN ISO 20345).

Respiratory protection

Use approved respiratory protection (if concentrations exceed the limits listed in Section 8.1. Wear particle filtration half mask FFP2 or FFP3 (EN 149) when handling aluminium oxide.

Thermal hazards

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8.2.3. Environmental exposure controls

Substance/mixture related measures to prevent exposure

Emission from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Section 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

-	Physical state	Powder
-	Colour	white
-	Odour	None
-	Melting point/freezing point	Approx. 300°C (at 1013 hPa)
-	Boiling point or initial boiling point and boiling range	> 2000°C (at 1013 hPa)
-	Flammability	Non-combustile
-	Lower and upper explosion limit	Do not apply to solids.
-	Flash point	Not applicable; The substance is inorganic solids.
-	Auto-ignition temperature	Do not apply to solids. Only applies to gases and liquids.
-	Decomposition temperature	Not relevant
-	pH	~9 at 20 °C, (10g/100ml – water dispersion)
-	Kinematic viscosity	Not relevant. Only applies to liquids.

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-	Solubility	Water: insoluble
-	Partition coefficient n-octanol/water (log value)	Not applicable; The substance is inorganic.
-	Vapour pressure	1 hPa at 2158°C
-	Relative density	3.2 – 4 g/cm ³
-	Relative vapour density	Not applicable; Only applies to gases and liquids.
-	Particle characteristics	Synthetic aluminium oxide produced by the Bayer process is not classified as nanomaterials. For more information on the particle characteristics, see the technical data sheet.

9.2. Other information

There is no additional information.

9.2.1. Information with regards to physical hazard classes

Explosive properties: Product is not explosive.

Oxidising properties: No oxidizing properties.

9.2.2. Other safety characteristics

There is no additional information.

Section 10. STABILITY AND REACTIVITY

10.1. Reactivity

The substance is insoluble in water. Aluminum oxide reacts violently with chlorine trifluoride producing flames. Ethylene oxide polymerizes violently when in contact with pure aluminum oxide.

10.2. Chemical stability

Stable under normal use and in accordance with working / handling / storage instructions (see section 7).

10.3. Possibility of hazardous reactions

The product is stable under normal use and in accordance with the instructions for use and storage.

10.4. Conditions to avoid

Follow directions for use and storage. Protect from moisture and water - keep in dry place. Incompatible materials.

10.5. Incompatible materials

Incompatible with strong acids, strong bases, halocarbons, sodium nitrate, vinyl acetate and hot chlorinated rubber. Incompatible with chlorine trifluoride (reacts violently, producing flame) and ethylene oxide (polymerises violently).

10.6. Hazardous decomposition products

Under normal use conditions no hazardous decomposition products expected.

Section 11. Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

This substance does not meet the criteria for classification in accordance with Regulation No 1272/2008/EC.

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Product name: **Aluminium oxide – non metallurgical grade**Creation date: **01.01.2025.**Version: **1**11.1.1. Acute toxicity

Chemical name	Exp. route	Type	species	Time	value	Method	Remark
Aluminum oxide (1344-28-1)	oral	LD ₅₀	rat	-	> 2000 mg/kg bw	OECD Guideline 420	-
Aluminum oxide (1344-28-1)	inhalation	LC ₅₀	rat	4 h	> 2.3 mg/L	OECD Guideline 403	-
Aluminum oxide (1344-28-1)	dermal	-	-	-	-	-	Data waiving. Aluminium oxide is insoluble in water under standard conditions. Study scientifically unjustified.

The product is not classified as acute toxic, due to data which are conclusive although insufficient for classification.

11.1.2. Skin corrosion/irritation

The product is not classified as corrosive/irritant to skin, due to data which are conclusive although insufficient for classification.

11.1.3. Serious eye damage/irritation

The product is not classified as seriously damaging to the eye or eye irritant, due to data which are conclusive although insufficient for classification.

11.1.4. Respiratory or skin sensitisation

Product not classified as a respiratory or skin sensitiser, due to data which are conclusive although insufficient for classification.

11.1.5. Germ cell mutagenicity

Product is not classified as germ cell mutagenic, due to data which are conclusive although insufficient for classification.

11.1.6. Carcinogenicity

Product is not classified as carcinogenic, due to data which are conclusive although insufficient for classification.

11.1.7. Reproductive toxicity

Product is not classified as a reproductive toxicant, due to data which are conclusive although insufficient for classification.

Summary of evaluation of the CMR properties

The product is not classified as carcinogenic, mutagenic or toxic for reproduction.

11.1.8. STOT-single exposure

Product not classified as a specific target organ toxicant (single exposure), due to data which are conclusive although insufficient for classification.

11.1.9. STOT-repeated exposure

Product not classified as a specific target organ toxicant (repeated exposure), due to data which are conclusive although insufficient for classification.

Chemical name	exp. route	Type	species	Time	Organs	Value	Result	Method	Exposure	Remark
Aluminum oxide (1344-28-1)	oral	NOAEL	Rat	-	-	30 mg Al /kg bw / day	-	-	Repeated exposure	As aluminium citrate

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Aluminum oxide (1344-28-1)	inhalation	LOAEC	Rat	-	-	70 mg Al/m ³	-	-	Repeated exposure	As aluminum oxide
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11.1.10. Aspiration hazard

Product not classified as presenting an aspiration hazard, due to data which are conclusive although insufficient for classification.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

For this substance is not identified to have endocrine disrupting properties in accordance with Regulations (EC) No 1907/2006, (EU) 2017/2100, (EU) 2018/605).

11.2.2. Other information

There is no additional information.

Section 12. Ecological information

12.1. Toxicity

12.1.1. Acute (short-term) toxicity

Substance (CAS Nr.)	Type	Value	Exposure time	Species	Organism	Method	Remark
Aluminum oxide (1344-28-1)	LC ₅₀	0,078 – > 218,6 mg/L	96 h	fish	-	-	-
	EC ₅₀	0,071 – > 99,6 mg/L	48 h	Invertebrates	-	-	-

Product not classified as hazardous to the aquatic environment, due to data which are conclusive although insufficient for classification

12.1.2. Chronic (long-term) toxicity

Product not classified as hazardous to the aquatic environment, due to data which are conclusive although insufficient for classification

12.2. Persistence and degradability

The relative inertness of this material indicates that it may be highly persistent in the environment. No information regarding any negative effects of this persistence has been noted. The degradability of the product has not been stated.

12.2.1. Abiotic degradation, physical- and photo-chemical elimination

No information.

12.2.2. Biodegradation

No information

12.3. Bioaccumulative potential

12.3.1. Partition coefficient n-octanol/water (log K_{ow})

Inorganic solid which is insoluble in n-octanol.

12.3.2. Bioconcentration factor (BCF)

No information

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12.4. Mobility in soil

12.4.1. Known or predicted distribution to environmental compartments

No information

12.4.2. Surface tension

No information

12.4.3. Adsorption/Desorption

No information

12.5. Results of PBT and vPvB assessment

The substance is not classified as PBT or vPvB.

12.6. Endocrine disrupting properties

For this substance is not identified to have endocrine disrupting properties in accordance with Regulations.

12.7. Other adverse effects

No information

Section 13. Disposal considerations

13.1. Waste treatment methods

13.1.1. Product / Packaging disposal

Waste treatment methods

Disposal must be made according to official regulations: to leave it to authorized collector/remover/transformer of waste. Do not allow product to reach drains/sewage systems. Dispose according to regulations.

Packaging

Completely emptied containers leave to approved waste disposal authorities in charge. The packaging must be disposed in accordance with local or national regulations.

13.1.2. Waste treatment-relevant information

Disposal in accordance with the Rules on the management of waste.

13.1.3. Sewage disposal-relevant information

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13.1.4. Other disposal recommendations

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Section 14. Transport information

14.1. UN number or ID number

Not applicable. Not subject to transport regulations.

14.2. UN proper shipping name

ADR, RID, IMDG, ADN, IATA: Not dangerous according to transport regulations. Not assigned.

14.3. Transport hazard class(es)

not applicable

14.4. Packing group

not applicable

14.5. Environmental hazards

NO

14.6. Special precautions for user

not applicable

14.7. Maritime transport in bulk according to IMO instruments

not applicable

Section 15. Regulatory information

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

- Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.
- REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.
- Seveso Directive / 2012/18/EU (Seveso III): not assigned
- VOC Directive (2004/42/EC): not applicable

15.2. Chemical Safety Assessment

CHEMICAL SAFETY REPORT is part of the documentation, dossier, submitted to the ECHA by REACH-IT.
Since aluminium oxide is not classified according to CLP and at the same time does not possess hazardous properties, an exposure assessment and risk characterisation is not required.

Section 16. Other information

Indication of changes

No changes.

Abbreviations and acronyms used in the safety data sheet

Abbr.	Descriptions of used abbreviations
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road)
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)
EC ₅₀	EC ₅₀ - median effective concentration: In ecotoxicity is the concentration of test substance which results in a 50 percent reduction in either algae growth (EbC ₅₀) or algae growth rate (ErC ₅₀) or Daphnia immobilization.
EINECS	European Inventory of Existing Commercial Chemical Substances

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ELINCS	European List of Notified Chemical Substances
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
IMDG	International Maritime Dangerous Goods Code
LC ₅₀	Lethal Dose 50 %. LC ₅₀ is a statistically derived dose at which 50% of the animals will be expected to die. For inhalation toxicity, air concentrations are used for exposure values.
LD ₅₀	Lethal Dose 50 %: the LD ₅₀ corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
LOAEC	Lowest-observed-adverse-effect concentration
NLP	No-Longer Polymer
NOAEL	No Observed Adverse Effect Level (NOAEL)
OECD	The Organisation for Economic Co-operation and Development
OEL	An occupational exposure limit
PBT	Persistent, Bioaccumulative and Toxic
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
TWA	Time-weighted average
US OSHA PEL	US Occupational Safety and Health Administration - permissible exposure limit (PEL)
VOC	Volatile Organic Compounds
vPvB	Very Persistent and very Bioaccumulative

Key literature references and sources for data

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List of relevant hazard statements and/or precautionary statements

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The information of this SDS is based on the present state of our knowledge and meets the requirements of EU and national laws. The user's working conditions however, are beyond our knowledge and control. The product is not to be used for purposes other than those specified under section 1 without a written permission. It remains the responsibility of the user to ensure that the necessary steps are taken to meet the laws and regulations. Handling of the product may only be done by people above 18 years of age, who are satisfactorily informed of how to do the work, the hazardous properties and necessary safety precautions. The information given in this SDS is to describe the product only in terms of health and safety requirements and should not, therefore, be construed as guaranteeing specific properties.