

**Safety Data Sheet
Aluminium Oxide, calcined**

according to Regulation (EC) No. 1907/2006

This generic Safety Data Sheet has been provided for information purposes only, since according to present legislation the producer is under no obligation to provide any SDS for this material.

1. Identification of the substance/preparation and of the company/undertaking

1.1 Product identifier

Aluminium oxide, Alumina

Additional trade names: calcined alumina

Article code: reference to materials standards

REACH Registration No.: 01-2119529248-35-0020

1.2 Use of the substance/ the preparation

Industrial use, further processing into a number of articles/products

Primary aluminium production

1.3 Manufacturer / Supplier:

1.3.1 Manufacturer

Company: Aluminium Oxid Stade GmbH
Street: Johann-Rathje-Köser-Straße
Location: 21683 Stade-Bützfleth
Country: Germany
Phone: +49 4146 92641
Fax: +49 4146 92377

1.3.2 Supplier

Company: Dadco (Suisse) S.A.
Street: Av. d'Ouchy 61
Location: 1006 Lausanne
Country: Switzerland
Phone: +41 21 6131370
Fax: +41 21 6013863

1.3.3 Further information obtainable from:

Phone: + 49 4146 92393
E-Mail (expert): b.petersen@aos-stade.de

1.3.4 Information in case of emergency

Call national emergency number

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2. Hazards Identification

2.1 Classification

Not classified.

2.2 Information concerning particular hazards for human and environment:

Does not pose any health hazard under normal conditions of use and as delivered.

High dust concentration may cause mechanical irritation of the eyes, skin and respiratory tract.

3. Composition/information on ingredients

3.1 Chemical characterisation:

Aluminium oxide content of > 95 weight by weight %

3.2 Ingredients:

CAS #	EC #	Component	Concentration %	Classification	R- phrase
1344-28-1	215-691-6	Aluminium oxide (non-fibrous)	> 95	---	---

3.3 Additional information:

Usually supplied to customers in bulk or big bags. Main impurities iron oxide, sodium oxide, silicon and calcium oxide

4. First-aid measures

4.1 General information:

First aide personnel: pay attention to self- protection!

- **After inhalation:** In case of dust inhalation remove to ventilated area and keep calm. In case of ongoing discomfort consult a physician.
- **After skin contact:** In case of large exposures wash with soap and water.
- **After eye contact:** If particles come into contact with eyes treatment for mechanical irritation or injury may be required; flush thoroughly with water, in case of ongoing discomfort consult a physician.
- **After swallowing:** Wash mouth with water.

4.2 Notes to physician:

None

5. Fire-fighting measures

Not flammable

5.1 Suitable extinguishing agents:

Use extinguishing agents appropriate for surrounding materials.

5.2 For safety reasons unsuitable extinguishing agents:

None

5.3 Special hazards caused by the substance, its products of combustion or resulting gases:

None

5.4 Protective equipment:

Fire fighters should wear approved personal protective equipment for the surrounding fired material.

5.5 Additional hints:

None

6. Accidental release measures

6.1 Person- related safety precautions:

See protection measures listed in section 8.

6.2 Environmental protection measures:

Avoid dispersal of spilled material and runoff. Avoid creating dusty conditions and prevent wind dispersal. Collect material for recycling if possible.

6.3 Measures for cleaning:

Use vacuum cleaner if possible.

6.4 Additional hints:

See section 13

7. Handling and storage

7.1 Handling:

Ensure good ventilation / local exhaust at the workplace in the case of operations generating dust. Avoid creating dusty conditions. Avoid inhalation and skin and eye contact. Wear appropriate personal protective equipment. Do not add wet alumina to electrolysis cells.

7.2 Storage

Requirements to be met by storerooms and receptacles:

Store in dry area.

Additional hints:

None

8. Exposure controls/personal protection

8.1 Exposure limits

Occupational exposure limits (air): generally same as for nuisance dust

Germany

10*/3** mg/m³ (*inhalable dust; ** respirable dust)

Great Britain

10*/4** mg/m³ (*inhalable dust; ** respirable dust)

United States

OSHA 15 mg/m³ (total dust); 5 mg/m³ TWA (respirable fraction)

Some additional EU countries: 10 mg/m³ (include national OEL if this exists)

8.2 Exposure controls:

Ensure good ventilation / local exhaust at the workplace in the case of operations generating dust. Avoid work practises which generate dust. Avoid inhalation and particles entering the eyes

8.3 Personal protective equipment:

Respiratory equipment: not required under recommended conditions of use. In case dust is generated, use personal protective equipment, dust filter P2 or if fine particles P3. Use protective goggles and gloves when handling the substance and appropriate work clothes.

8.4 Environmental exposure control:

Avoid creating dusty conditions and prevent wind dispersal and dust emissions.

9. Physical and chemical properties

9.1 General information:

Physical state:	solid powder
Colour:	white
Odour:	odourless
pH- value:	not relevant
Melting point/Melting range:	approx. 2030°C
Boiling Point/Boiling range:	not relevant
Flash point:	not relevant
Flammability:	not relevant
Explosive properties:	not relevant
Density at 20°C:	3,99 g/cm ³
Solubility in water (20 °C):	insoluble
Other physical–chemical properties:	not relevant

9.2 Important information on health and safety and environmental protection: Safety related basic data, methods, and comments

10. Stability and reactivity

Stable under normal conditions of use, storage, and transport

10.1 Conditions to be avoided:

None

10.2 Materials to be avoided:

None

10.3 Dangerous decomposition products:

None

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11. Toxicological information

11.1 Toxicokinetics, metabolism and distribution:

Oral uptake < 0.1%, nearly insoluble in lung fluids, most absorbed aluminium oxide is rapidly excreted through urine, main deposit in body is in bone structure.

11.2 Acute effects (acute toxicity, irritation and corrosivity):

No acute effects

11.2.1 Acute toxicity:

LD50 (oral):	> 5000mg/kg bwt (rats)
LD50 (dermal):	No effect
LD50 (inhalation):	> 2,3 mg/l(rats)

11.2.2 Specific symptoms in animal tests:

After swallowing:	None
After skin contact:	None
After inhalation:	None

11.2.3 Irritation and Corrosive effects:

Irritant effects on skin:	No effects
Irritant effect on eyes:	No effects apart from mechanical irritation.

11.3 Sensitisation:

After skin contact:	None
After inhalation:	None
Remarks:	

11.4 Toxicity after repeated intake (sub acute, sub chronic, chronic):

Sub acute oral Toxicity:	None, Calculated DNEL 6,2 mg/kg bwt/day
Sub acute inhalation Toxicity:	None, see occupational exposure limits
Calculated DNEL:15,6 mg/m ³	respirable
Assessment:	

11.5 CMR-effects (carcinogenic, mutagenic and reproductive effects)

Carcinogenicity:	None
Mutagenicity:	None
Reproductive toxicity:	None
Assessment of CMR properties:	Not classified for CMR

Product components not listed under IARC/NTP/ACGIH (ingredient carcinogenicity)

11.6 Practical experience:

Observations relevant for classification:	None
Other observations:	None

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12. Ecological Information

12.1 Ecotoxicity:

Product/ingredient name	test	result	Species	Exposure
Aluminium oxide	Fish - OECD TG 203	>100 mg/l	Salmo trutta	pH 8
Aluminium oxide	Daphnia - OECD TG 202	>100mg/l	Daphnia Magna	pH 8
Aluminium oxide	Algae - OECD TG 201	>100mg/l	Selenastrum Capricornutum	pH 8

12.2 Mobility:

Not mobile under normal environmental conditions may be leached from the ground at low pH (< 5.5) or high pH (> 8.5).

12.3 Persistence and degradability:

12.3.1 Persistence: Not relevant for metals

12.3.2 Biological degradability: Not degradable

12.4 Bioaccumulative potential: Not bio accumulative

12.5 Long term ecotoxicity: Not classified for ecotoxicity

12.6 Results of PBT assessment: Not relevant for metals

12.7 Other adverse effects: No

12.8 Final assessment:

No acute or chronic classification is appropriate for Al metal massive based on non toxic results below the Ecotoxicity Reference Value (ERV) of tests with aluminium metal, oxide and hydroxide at loadings of 100 mg/L at pH 8-8.5 (maximum solubility of Al expected). All aluminium in soil or the aquatic environment comes from natural sources. Local sources has an insignificant contribution and impact on environment

13. Disposal considerations

13.1 Disposal / Waste (Product):

Dispose of wastes and residues in accordance with local waste regulations

13.2 Packaging:

Not relevant

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14. Transport information

Not regulated

15. Regulatory Information

No classification or special regulations. Follow general rules for handling, transport and waste management.

Chemical Safety Assessment carried out.

Water hazard class: not hazardous to waters.

16. Other information

In dealing with chemicals the national laws and regulation must be observed and applied.

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Recommended limitations of use by manufacturer:

For industrial use and as component in consumer products

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Safety Data Sheet issued by:

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Abbreviations and acronyms:

ACGIH	American Conference of Governmental Industrial Hygienists
OSHA	Occupational Safety and Health Administration (US)
ADR:	Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID:	Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations concerning the International Transport of Dangerous Goods by Rail)
IMDG:	International Maritime Code for Dangerous Goods
IATA:	International Air Transport Association
IATA-DGR:	Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO:	International Civil Aviation Organization
ICAO-TI:	Technical Instructions by the "International Civil Aviation Organization" (ICAO)
GHS:	Globally Harmonized System of Classification and Labelling of Chemicals
EINECS:	European Inventory of Existing Commercial Chemical Substances
CAS:	Chemical Abstracts Service (division of the American Chemical Society)
Bwt	bodyweight
PNEC	Potential No Effect Concentration
DNEL	Derived No Effect Level
DOC	Dissolved Organic Compounds