FLUORSID

Material Safety Data Sheet

In accordance with Regulation (EC) 1907/2006

Issued: 07-11-2016 Rev: 01

ALUMINIUM FLUORIDE

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

1.1 Product identifier

Chemical name	:	ALUMINIUM FLUORIDE
Commercial name	:	ALUMINIUM FLUORIDE
C.A.S. Nr.	:	7784-18-1
EINECS Nr.	:	232-051-1
Synonyms	:	Aluminium trifluoride
Chemical formula	:	AlF_3
Molecular weight	:	83,98
Registration number	:	01-2119485977-13-0005

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

Uses by workers in industrial settings: Manufacture of substances, uses in alluminium industry as smelter, uses in alluminium industry, uses in casting industry as flux, uses in ceramic industry, manufacture of abrasives, distribution of substance, uses in alluminium alloys, uses as agent of mineralizing in industrial process, production of fluxes for foundries and smelter, ceramic tiles, production of glassware, enamel lining and metal surface treatment and planting agent, welding and soldering products, flux products, catalyst in chemical reactions and organic synthesis, intermediates, laboratory chemicals, inhibitors of fermentation, processing regulators and processing aid, not otherwise stated.
Uses by professional workers: uses in ceramic tiles, uses in abrasive paper, uses in ceramic tiles.
Uses by consumers: uses in ceramic tiles, uses in abrasive paper.

1.3 Details of the supplier of the safety data sheet

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Website: www.fluorsid.com

1.4 Emergency telephone number

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2. Hazards identification

Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008:

This substance is not classified as hazardous according to Regulation (EC) No 1272/2008 and 790/2009 and subsequent amendments.

2.2 Label elements

Pictogram, Signal Word Code(s):

None

Hazard statement Code(s):

None

Precautionary statements:

None

2.3 Other hazards

No special remarkable hazards.

3. Composition/information on ingredients

Name	Concentration (C)	Classification Regulation EC/1272/2008
Aluminium fluoride Cas No 7784-18-1 CE No 232-051-1	90 < C < 95	none
Aluminium oxide Cas No 1344-28-1 CE No 215-691-6	5 < C < 10	none

4. First-aid measures

4.1. Description of first aid measures

Inhalation

Remove the person to fresh air, seek medical attention.

Skin contact

Rinse with plenty of water. Wash exposed area thoroughly with soap and water.

Eye contact

Rinse eyes immediately with plenty of water for at least 15 minutes, keeping the eyelids well open, seek medical attention.

Ingestion
Dilute immediately by drinking large amounts of water or milk. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed
not available

4.3. Indication of any immediate medical attention and special treatment needed
not available

5. Firefighting measures

5.1. Extinguishing media

Advised extinguishing agents:
CO2, nebulized water, foam, chemical powder

Unappropriate extinction methods:
none

5.2. Special hazards arising from the substance or mixture
The product under fire condition may develop irritant/toxic gas
The compound can evolve toxic gases when heated above 600 °C during fire (HF)

5.3. Advice for firefighters
Wear the fire equipment all the time. Water used in fire-fighting has to be disposed following Local regulation.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Avoid dusting. Wear personal protective equipment for dust handling. Avoid the contact with skin and eyes

6.2. Environmental precautions
Collect the product in suitable container for disposal. Notify authorities if product enters sewer or public waters.

6.3. Methods and material for containment and cleaning up
Collect as far as possible the resulting mass and discard the remainder by spraying water.

6.4. Reference to other sections
Refer to paragraphs 8 and 13 for more information

7. Handling and storage

7.1 Precautions for safe handling

Follow the good industrial hygiene and safety procedures.
Avoid dusting. Make sure that the ventilation is sufficient.
Eating and smoking should be avoided during handling.

7.2 Conditions for safe storage, including any incompatibilities

Store in a dry, well ventilated area and protect product containers from physical damage.
Do not store close to products destined for human or animal consumption.
The substance must be kept in tightly closed containers, clearly and prominently labelled and kept away from other incompatible substances. This product should be kept away from foodstuffs and pharmaceuticals.

7.3. Specific end use(s)

For particular uses of the product, is necessary to refer to the specific information or contact the technical service of the Company.

8. Exposure controls/personal protection

8.1 Control parameters

Limits of professional exposure

Aluminium oxide: Inhalable aerosol 10 mg/m³, Respirable aerosol 4 mg/m³
Aluminium fluoride
TLV - TWA = 2,5 mg/m^3 (as F)
DNEL: 0.068 mg/kg bw/day Long-term exposure - systemic effects- dermal
DNEL: 0.047 mg/kg bw/day Long-term exposure - systemic effects- inhalation
PNEC freshwater: 0.106 mg/L
PNEC marine water: 0.0106 mg/L
PNEC intermittent releases: 0.042 mg/L
PNEC STP: 5 mg/L
PNEC sediment (freshwater): 0.28 mg/kg sediment dw
PNEC sediment (marine water): 0.028 mg/kg sediment dw

8.2 Exposure controls

Avoid all unnecessary exposure, handle in accordance with good industrial hygiene and safety procedures. Avoid contact with the eyes and skin. Do not eat, drink or smoke while handling it. Accurately wash the hands with soap and water before meals.

Individual protection

The DPI's choise must be done on the basis of the test's results obtained according to the rule EN 374

Hand protection : protective gloves

Eye protection	: protective goggles
Skin protection	: suitable protective clothing
Respiratory protection	: mask with filter P2, P3 in case of dust

Control of the environmental exposure
Respect current Local or National Laws for the environmental protection

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical and chemical properties	Value	Determination method
Appearance	White Powder	
Odour	Odourless	
Odour threshold	not available	
pH	4, 5-5, 0	in sat. sol.
Melting point/freezing point	1291° C	
Initial boiling point and boiling range	1537° C	
Flash point	not pertinent	
Evaporation rate	not pertinent	
Flammability (solid, gas)	not available	
Upper/lower flammability or explosive limits	not pertinent	
Vapour pressure	not available	
Vapour density	not available	
Density	3.1 g/cm3	
Solubility	Slightly soluble in water	
Water solubility	Slightly soluble	
Partition coefficient: n-octanol/water	not available	
Auto-ignition temperature	not available	
Decomposition temperature	not available	
Viscosity	not available	
Explosive properties	not explosive	
Oxidising properties	not oxidising	

9.2. Other information
VOC (Directive 1999/13/CE): 0%

10. Stability and reactivity

10.1 Reactivity

Aluminium fluoride may dissolve slowly in strong sulphuric acid with the liberation of hydrogen fluoride and in strong aqueous alkalies with the formation of aluminate

10.2 Chemical stability

The product is stable under normal conditions.

10.3 Possibility of hazardous reactions

The product may evolve toxic hydrogen fluoride gas when heated until decomposition, especially in presence of water.

10.4. Conditions to avoid

Avoid high temperatures (above 600 °C when dry, 300 °C in the presence of water), unless when in professional use.

10.5. Incompatible materials

Aluminium fluoride is slowly attacked by fused alkalies, with formation of fluoride and aluminate.

10.6. Hazardous decomposition products

The compound can evolve toxic gases when heated above 600 °C during fire (HF)

11. Toxicological information

11.1. Information on toxicological effects

Endpoint	Dose descriptor	Remarks
Acute toxicity oral	LD50 > 2000 mg/kg bw (rat)	No treatment-related effects were observed in all parameters examined.
Acute toxicity dermal	n/a	
Acute toxicity inhalation	n/a	
Irritation / Corrosivity-skin		not irritating. Study in rabbits has demonstrated that the substance is not a skin irritant.
Irritation / Corrosivity-eye		not irritating. Study in rabbits has demonstrated that the substance does not classify as an eye irritant according to CLP (1272/2008).
Sensitisation-skin		not sensitizing. No skin sensitisation studies on aluminum fluoride were identified
Repeated dose toxicity: sub-acute / sub-chronic / chronic-inhalation	NOAEC: 7mg/m3	The key 28-day inhalation study was a GLP rat study conducted according to OECD 412

Mutagenicity		it is technically not possible to conduct the test due to the formation of precipitation at the required concentrations.
Carcinogenicity		there is no evidence from the 28-day and 5-month inhalational repeat dose toxicity study findings that exposure to the test compound results in hyperplasia or pre-neoplastic lesions and the current classification as a non-genotoxic compound.
Reproductive toxicity: fertility impairment	n/a	
Reproductive toxicity: developmental toxicity	n/a	

12. Ecological information

12.1 Toxicity

Use this product according to good working practices. Avoid litter. Inform the competent authorities, should the product reach waterways or sewers or contaminate soil or vegetation.

Zebra fish: No signs of acute toxicity were observed following exposure to water saturated with aluminum fluoride.

Daphnia magna: No signs of acute toxicity were observed following exposure to water saturated with aluminium fluoride.

Selenastrum capricornutum: Slight growth inhibition was observed, but it was not possible to determine the EC50. The effect is most likely due to fluoride exposure. The relationship between inhibition and concentration is strongly influenced by the formation of fluoride complexes with constituents of the dilution water.

12.2 Persistence and degradability

biodegradability studies are not required for inorganic chemicals

12.3. Bioaccumulative potential

none data available

12.4. Mobility in soil

none data available

12.5. Results of PBT and vPvB assessment

none data available

12.6. Other adverse effects

none data available

This product doesn't contain AOX

13. Disposal considerations

13.1. Waste treatment methods

Operate following the current Local or National Laws.
The non reclaimed containers have to be disposed as the product.

14. Transport information

The product is not classified dangerous under transport regulation.

15. Regulatory information

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

Regulation	Cas	Substance
428/2009 ex CE 1334/2000 Ann.1	-	-
273/04 Tab.1 Cat.1	-	-
273/04 Tab.1 Cat.2	-	-
273/04 Tab.1 Cat.3	-	-
Reg. CE 1907/2006 Ann. XIV	-	-
Reg. CE 1907/2006 Substances SVHC	-	-
552/2009 (amending Reg. CE 1907/2006 as regards Ann. XVII)	-	-
276/2010 (amending Reg. CE 1907/2006 as regards Ann. XVII)	-	-
238/05 (Seveso ter) Ann.1 part 1	-	-
238/05 (Seveso ter) Ann.1 part 2	-	-

15.2. Chemical safety assessment

The supplier has made an assessment of chemical safety

16 Other information

This substance does not legally require an MSDS. This document has been prepared to fulfill the manufacturer duty to communicate information down the supply chain in accordance with Article 32 of Regulation EC 1907/2006.

Caution Advices
P270 - Do not eat, drink or smoke when using this product
P260 - Do not breath dust
P262 - Do not get in eyes, on skin, or on clothing
P305 +P351 +P313 - IF IN EYES: Rinse cautiously with water for several minutes. Get medical advice/attention.

Revision
First revision that amends sections 1.3 company identification. This MSDS has been completely revised in accordance with regulation (EU) 1907/2006/EC.

GENERAL BIBLIOGRAPHY:

1. Regulation (EC) 1907/2006 of the European Parliament (REACH)
2. Regulation (EC) 1272/2008 of the European Parliament (CLP)
3. Regulation (EC) 790 / 2009
4. Regulation (EU) 453/2010
5. The Merck Index. Ed 10
6. Handling Chemical Safety
7. NIOSH - Registry of Toxic Effects of Chemical Substances
8. INRS - Fiche Toxicologique
9. Patty - Industrial Hygiene and Toxicology
10. NI Sax - Dangerous Properties of Industrial Materials-7, 1989 Edition
11. CSR of Aluminium Fluoride
12. Test report, “Solubility of AlF3”, DHI Water & Environment, Annette Behrens, 2002

Note for users:
The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product .This document must not be regarded as a guarantee on any specific product property. The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.

This sheet cancels and substitutes any previous edition.