

Aluminum Fluoride

Aluminum Fluoride Material Safety Data Sheet

Chemical: Aluminum Fluoride

NFPA: H=1 F=0 I=0 S=None

HMIS: H=1 F=0 R=0 PPE= Supplied by user;
dependent on conditions

MSDS Number: ALF-0004

Effective Date: 26 December 2008

Issued by: Power Up / Ning Xia King Chemicals

Not valid three years after effective date or after issuance of superseding MSDS, whichever is earlier.

Material Safety Data Sheets contain country specific regulatory information. Therefore, the MSDS's provided are for use only by customers of Solvay Fluorides, LLC in North America. If you are located in a country other than Canada, Mexico or the United States, please contact the Power Up / Ning Xia King Chemicals in your country for MSDS information applicable to your location.

1. Company and Product Identification

1.1 Product Name: Aluminum Fluoride

Chemical Name: Aluminum fluoride

Synonyms: Aluminum trifluoride

Chemical Formula: AlF_3

Molecular Weight: 83.98

CAS Number: 7784-18-1

EINECS Number: Unknown

Grade/Trade Names: None

1.2 Recommended Uses: Welding and soldering agents

1.3 Supplier: Power Up / Ning Xia King Chemicals
China

1.4 Emergency Telephone Numbers
Emergencies (China): 86 21-6279 8699

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2. Composition/Information on Ingredients

INGREDIENTS	FORMULA	WT. PERCENT	CAS #
Aluminum Fluoride	AlF ₃	≥ 90	7784-18-1
Aluminum Oxide	Al ₂ O ₃	≤ 9	1344-28-1

3. Hazards Identification

Emergency Overview:

3.1 Route of Entry: Inhalation: Yes Skin: Yes Ingestion: Yes

3.2 Potential Effects of exposure:

- Irritating to skin, eyes, and respiratory tract
- Product is toxic by ingestion

Inhalation:

- Nose and throat irritation
- In case of repeated or prolonged exposure: risk of sore throat, nose bleeds, respiratory sensitization

Eyes: Eye irritation, watering and redness

Skin contact: In case of prolonged contact: irritation

Ingestion:

- Irritation of the mouth and throat
- Abundant salivation
- Nausea, vomiting, abdominal cramps and diarrhea
- By ingestion of large quantities: risk of hypocalcemia with nervous disorders (tetany) and cardiac rhythm disorders

Carcinogenicity: See section 11.3

4. First-Aid Measures

General Recommendations:

4.1 Inhalation:

- Remove the subject to fresh air
- Get medical attention immediately

Eyes:

- Flush eyes with running water for at least 15 minutes, while keeping the eyelids wide open.
- Get medical attention immediately

Skin:

- Wash the affected skin with soap and water
- Get medical attention



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Ingestion: Consult a physician immediately in all cases.

If the subject is completely conscious: Do not induce vomiting

If the subject is unconscious:

- NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON
- Classical resuscitation measures.

4.2 Medical Treatment/Notes to Physician: None

5. Fire-Fighting Measures

5.1 Flash point: Not applicable

5.2 Auto-ignition Temperature: Not applicable

5.3 Flammability Limits: Non-flammable

5.4 Unusual Fire and Explosion Hazards: None

5.5 Extinguishing Methods

Common: In case of fire in close proximity, all means of extinguishing are acceptable

Inappropriate extinguishing means: No restriction

5.6 Fire Fighting Procedures

Specific hazards: Does not burn or support combustion

Protective measures in case of intervention:

- Intervention only by capable personnel who are trained and aware of the hazards of the product.
- Wear self-contained breathing apparatus when in close proximity or in confined spaces
- When intervention in close proximity, wear full protective acid resistant suit
- After intervention, proceed to clean the equipment (take a shower, remove clothing carefully, clean and check)

Other precautions:

- If safe to do so, remove the exposed containers or cool with large quantities of water
- After the fire, proceed rapidly to clean the surfaces exposed to the fumes in order to limit the damage to the equipment
- As for any fire, ventilate and clean the rooms before re-entry

6. Accidental Release Measures

6.1 Precautions:

- Follow the protective measures given in sections 5 and 8
- Keep away materials and products which are incompatible with the product (see section 10)
- Avoid dispersing the dust into a cloud

6.2 Cleanup methods:

- Collect the product with suitable means avoiding dust formation
- Place everything into a closed, labeled container compatible with the product
- For disposal methods, refer to section 13
- Clean the area with large quantities of water

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- 6.3 Precautions for protection of the environment:**
- Prevent discharges into the environment (sewers, rivers, soils, etc)
 - Immediately notify the appropriate authorities in case of significant discharge

7. Handling and Storage

- 7.1 Handling:**
- Carry out industrial operations in closed, but ventilated, piping circuits and equipment
 - Handle small quantities under a lab hood
 - Operate in well ventilated area
 - Keep away from heat sources and reactive products (see section 10)
- 7.2 Storage:**
- In a ventilated, cool and dry area
 - Keep away from heat sources and reactive products (see section 10)
 - Keep in original packaging, closed
- 7.3 Specific Uses:** See Section 1.2
- 7.4 Other precautions:**
- Avoid dust and formation of dust clouds
 - Warn people about the dangers of the product
 - Follow the protective measures given in section 8
- 7.5 Packaging:** Contact supplier

8. Exposure Controls/Personal Protection

8.1 Exposure Limit Values

Authorized limit Values	TLV® ACGIH®-USA (2002)
Fluorides	2.5 mg/m ³ (F)

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8.2 Exposure Controls:

- Premises ventilation
- Maintain employee exposures to levels below the applicable exposure limits

8.2.1 Occupational Exposure Controls:

8.2.1.1 Ventilation: Provide local ventilation suitable for the dust risk

8.2.1.2 Respiratory protection: NIOSH approved respirator for dusts

8.2.1.3 Hand protection: Protective gloves - chemical resistant: PVC, neoprene, rubber

8.2.1.4 Eye protection: Wear chemical safety goggles for all industrial operations

8.2.1.5 Skin protection: No data

8.3 Other precautions:

- Do not smoke, eat or drink in the working area
- Shower and eye wash stations.
- Consult the industrial hygienist or the safety manager for the selection of personal protective equipment suitable for the working conditions



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9. Physical and Chemical Properties

9.1 Appearance: Solid crystals

Color: White

Odor: Odorless

9.2 Important Health, Safety and Environmental information:

pH: No data

Change of state:

Melting point: 2356°F (1291°C)

Boiling point: No data

Decomposition Temperature: No data

Flash Point: No data

Flammability: Non-flammable
(solid, gas)

Explosive Properties: No data

Oxidizing Properties: Not applicable

Vapor Pressure: Not applicable

Relative Density:

Specific gravity (H₂O=1): 2.9

Solubility:

Water: Slight

Fat: No data

Partition coefficient: No data

Viscosity: No data

Vapor Density (air=1): Not applicable

Evaporation Rate: Not applicable

10. Stability and Reactivity

Stability:

10.1 Conditions to avoid: High temperatures

10.2 Materials and substances to avoid:

- Potassium
- Sodium

10.3 Hazardous decomposition products: Thermal oxidative degradation can produce toxic fumes of aluminum or oxides of fluorine

10.4 Hazardous Polymerization: Will not occur

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11. Toxicological Information

11.1 Acute toxicity:

Inhalation: No data

Oral: No data

Dermal: No data

Irritation: No data

Sensitization: No data

Comments: None

11.2 Chronic toxicity: No data

11.3 Carcinogenic Designation: None

12. Ecological Information

12.1 Acute ecotoxicity: No data

12.2 Chronic ecotoxicity: No data

12.3 Mobility: No data

12.4 Degradation

Abiotic: No data

Biotic: No data

12.5 Potential for bioaccumulation: No data

12.6 Other adverse effects /Comments: None

13. Disposal Considerations

13.1 Waste treatment: Consult current federal, state and local regulations regarding the proper disposal of this material.

13.2 Packaging treatment: Consult current federal, state and local regulations regarding the proper disposal of emptied containers.

13.3 RCRA Hazardous Waste: Not Listed

14. Transport Information

Mode	DOT	IMDG	IATA
UN Number	Not a regulated hazardous material	Not a regulated hazardous material	Not a regulated hazardous material
Other	It is recommended that ERG Guide # 111 be used for all non DOT regulated material.		

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15. Regulatory Information

National Regulations (US)

TSCA Inventory 8(b): Yes

SARA Title III Sec. 302/303 Extremely Hazardous Substances (40 CFR 355): No

SARA Title III Sec. 311/312 (40 CFR 370):

Hazard Category: None

SARA Title III Sec. 313 Toxic Chemical Emissions Reporting (40 CFR 372): No

CERCLA Hazardous Substance (40CFR Part 302)

Listed: Yes, Reportable Quantity 5,000 lbs

Unlisted Substance: No

State Component Listing:

State	Comment
CA	Airborne Contaminants & Emissions Inventory
CA	Hazardous Substance List
IL	Toxic Substances Disclosure to Employees Act
IN	Occupational Health & Safety Standards - Air
KY	Occupational Health & Safety Standards - Air
MN	Hazardous Substance List
NJ	Right to Know Substance List
NC	Exposure Limits for Air Contaminants
PA	Right to Know
RI	Right to Know

National Regulations (Canada)

Canadian DSL Registration: DSL

WHMIS Classification: Unknown

This product has been classified in accordance with the hazard criteria of the *Controlled Products Regulations* and the MSDS contains all the information required by the *Controlled Products Regulations*.

16. Other Information

16.1 Ratings:

NFPA (NATIONAL FIRE PROTECTION ASSOCIATION)

Health = 1 Flammability = 0 Instability = 0 Special = None

HMIS (HAZARDOUS MATERIAL INFORMATION SYSTEM)

Health = 1 Fire = 0 Reactivity = 0 PPE = Supplied by User; dependent on local conditions



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16.2 Other Information:

The previous information is based upon our current knowledge and experience of our product and is not exhaustive. It applies to the product as defined by the specifications. In case of combinations or mixtures, one must confirm that no new hazards are likely to exist. In any case, the user is not exempt from observing all legal, administrative and regulatory procedures relating to the product, personal hygiene, and integrity of the work environment. (Unless noted to the contrary, the technical information applies only to pure product).

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