Revision Date**:** 06/21/2013

POTASSIUM ALUMINIUM FLUORIDE

1. PRODUCT AND COMPANY IDENTIFICATION

1.1. Identification of the substance or mixture

Product name	:	POTASSIUM ALUMINIUM FLUORIDE
Chemical Name	:	Aluminium potassium fluoride
Structural formula		K(x)Al(y)F(z)
Molecular Weight	:	142 g/mol

1.2. Use of the Substance/Mixture

Recommended use	:	- Welding and soldering agents - Abrasive - Domestic use
Recommended use		- Abrasive

1.3. Company/Undertaking Identification

Address	:	SOLVAY FLUORIDES, LLC 3333 RICHMOND AVENUE HOUSTON TX 77098-3099 United States

1.4. Emergency and contact telephone numbers

Emergency telephone number	:	**1 (800) 424-9300 CHEMTREC ® (USA & Canada)** **01-800-00-214-00 (MEX. REPUBLIC)**
Contact telephone number (product information):	:	**US: +1-800-765-8292 (Product information)** **US: +1-713-525-6500 (Product information)**

2. HAZARDS IDENTIFICATION

2.1. Emergency Overview:

NFPA	:	H= 2 F= 0 I= 0 S= None
HMIS	:	H= 2 F= 0 R= 0 PPE = Supplied by User; dependent on local conditions

General Information

Appearance	:	powder
Colour	:	white
Odour	:	odourless

Main effects

- Harmful by inhalation.
- Irritating to eyes.
- Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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- Hazardous decomposition products
- Hydrogen fluoride
- none

2.2. Potential Health Effects:

Inhalation
- Irritating to mucous membranes
- Cough
- Repeated or prolonged exposure: Risk of sore throat, nose bleeds, chronic bronchitis, Risk of chronic pulmonary inflammation.
- (in case of higher concentration): chemical pneumonitis.

Eye contact
- Moderate eye irritation

Skin contact
- slight irritation
- Repeated exposure may cause skin dryness or cracking.
- Chronic exposure may cause dermatitis.

Ingestion
- risk of hypocalcemia with nervous problems (tetany) and cardiac arrhythmia
- Symptoms: Nausea, Vomiting, Abdominal pain, Diarrhoea.

Other toxicity effects
- See section 11: Toxicological Information

2.3. Environmental Effects:
- See section 12: Ecological Information

3. COMPOSITION/INFORMATION ON INGREDIENTS

Aluminium potassium fluoride

CAS-No.	:	60304-36-1
Concentration	:	**>= 95.0 %**

4. FIRST AID MEASURES

4.1. Inhalation
- Remove the subject from dusty environment and let him blow his nose.
- Oxygen or artificial respiration if needed.
- If symptoms persist, call a physician.

4.2. Eye contact
- Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
- If eye irritation persists, consult a specialist.

4.3. Skin contact
- Take off contaminated clothing and wash before reuse.
- Wash off with plenty of water.

- If symptoms persist, call a physician.

4.4. Ingestion

- Immediate medical attention is required.

If victim is conscious:

- If swallowed, rinse mouth with water (only if the person is conscious).
- Give to drink a 1% aqueous calcium gluconate solution.
- Do NOT induce vomiting.

If victim is unconscious but breathing:

- Artificial respiration and/or oxygen may be necessary.

4.5. Notes to physician

Exposure to decomposition products :

- Indication of immediate medical attention and special treatment needed, if necessary

5. FIREFIGHTING MEASURES

5.1. Suitable extinguishing media

- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2. Extinguishing media which shall not be used for safety reasons

- None known.

5.3. Special exposure hazards in a fire

- The product is not flammable.
- Not combustible.
- Heating can release hazardous gases.

5.4. Hazardous decomposition products

- Hydrogen fluoride

5.5. Special protective equipment for firefighters

- In the event of fire, wear self-contained breathing apparatus.
- Fire fighters must wear fire resistant personnel protective equipment.
- Wear chemical resistant oversuit

5.6. Other information

- Control the use of water due to environmental risk (see section 6).

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. Advice for non-emergency personnel

- Keep people away from and upwind of spill/leak.
- Avoid dust formation.

6.1.2. Advice for emergency responders

- Wear self-contained breathing apparatus and protective suit.
- Sweep up to prevent slipping hazard.
- Prevent further leakage or spillage.

6.2. Environmental precautions

- Discharge into the environment must be avoided.
- If the product contaminates rivers and lakes or drains inform respective authorities.
- Prevent product from entering drains.

6.3. Methods and materials for containment and cleaning up

- Avoid dust formation.
- Sweep up and shovel into suitable containers for disposal.
- Keep in properly labelled containers.
- Keep in suitable, closed containers for disposal.
- Treat recovered material as described in the section "Disposal considerations".

6.4. Reference to other sections

- Refer to protective measures listed in sections 7 and 8.

7. HANDLING AND STORAGE

7.1. Handling

- Use only in well-ventilated areas.
- Use only equipment and materials which are compatible with the product.
- Keep away from heat.

7.2. Storage

- Keep in a dry place.
- Store in original container.
- Keep container closed.
- Keep away from Incompatible products.

7.3. Packaging material

- Paper + PE.

7.4. Other information

- Avoid dust formation.
- Refer to protective measures listed in sections 7 and 8.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure Limit Values

Aluminium potassium fluoride

- SAEL (Solvay Acceptable Exposure Limit) 2012
  TWA = 0.14 mg/m3
- US. ACGIH Threshold Limit Values 03 2012
  time weighted average = 2.5 mg/m3

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Remarks: as F
- US. OSHA Table Z-2 (29 CFR 1910.1000) 02 2006
time weighted average = 2.5 mg/m3
Remarks: Dust
- US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) 02 2006
Permissible exposure limit = 2.5 mg/m3
Remarks: as F
- US. OSHA Table Z-1-A (29 CFR 1910.1000) 1989
time weighted average = 2.5 mg/m3
Remarks: as F
- US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A 06 2008
time weighted average = 2.5 mg/m3
Remarks: as F
- US. ACGIH Threshold Limit Values 03 2012
time weighted average = 1 mg/m3
Remarks: respirable dust fraction

Soluble inorganic fluorides
- US. ACGIH Threshold Limit Values 2008
time weighted average = 2.5 mg/m3
Remarks: as F
- US. OSHA Table Z-2 (29 CFR 1910.1000) 02 2006
time weighted average = 2.5 mg/m3
Remarks: Dust
- US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) 02 2006
Permissible exposure limit = 2.5 mg/m3
Remarks: as F
- US. OSHA Table Z-1-A (29 CFR 1910.1000) 1989
time weighted average = 2.5 mg/m3
Remarks: as F
- US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A 06 2008
time weighted average = 2.5 mg/m3
Remarks: as F
- US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) 09 2008
Short-Term ESL: = 25 µg/m3
- US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) 02 2009
Short-Term ESL: = 30 ppb
- US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) 09 2008
Annual ESL: = 2.5 µg/m3
- US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) 02 2009
Annual ESL: = 3 ppb
- US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) 02 2009
Annual ESL: = 0.6 ppb
Remarks: Short Term ESL is 3-12 micrograms/m3 for a 24-hour average; Long Term ESL is 0.5 micrograms/m3 for a 30-day average.

SAEL = Solvay Acceptable Exposure Limit, Time Weighted Average for 8 hour workdays. No Specific TLV STEL (Short Term Exposure Level) has been set. Excursions in exposure level may exceed 3 times the TLV TWA for no more than a total of 30 minutes during a workday and under no circumstances should they exceed 5 times the TLV TWA.

8.2. Engineering controls

- Ensure adequate ventilation.
- Refer to protective measures listed in sections 7 and 8.

8.3. Personal protective equipment

8.3.1. Respiratory protection

- When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
- In case of insufficient ventilation, wear suitable respiratory equipment.
- Self-contained breathing apparatus in confined spaces/insufficient oxygen/in case of large uncontrolled emissions/in all circumstances when the mask and cartridge do not give adequate protection.
- Use only respiratory protection that conforms to international/ national standards.
- Use NIOSH approved respiratory protection.

8.3.2. Hand protection

- Protective gloves - impervious chemical resistant:
- PVC

8.3.3. Eye protection

- Dust proof goggles obligatory.

8.3.4. Skin and body protection

- Long sleeved clothing

8.3.5. Hygiene measures

- Use only in an area equipped with a safety shower.
- When using do not eat, drink or smoke.
- Handle in accordance with good industrial hygiene and safety practice.
- Eye wash bottle with pure water

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. General Information

Appearance	:	powder
Colour	:	white
Odour	:	odourless

9.2. Important health safety and environmental information

pH	:	5 - 7 *Remarks*: saturated aqueous solution *Concentration*: 50 g/l *Temperature*: 20 °C (68 °F)
Boiling point/boiling range	:	*Remarks*: not applicable

Flash point	:	*Remarks*: not applicable
Flammability	:	*Remarks*: not applicable
Explosive properties	:	*Explosion danger*: *Remarks*: Not explosive
Oxidizing properties	:	*Remarks*: Non oxidizer
Vapour pressure	:	*Remarks*: not applicable
Relative density / Density	:	2.94 *Temperature*: 20 °C (68 °F)
Bulk density	:	350 - 550 kg/m3 *Temperature*: 20 °C (68 °F)
Solubility(ies)	:	Water 4.57 g/l(pH 5.8) *Temperature*: 20 °C (68 °F)
Partition coefficient: n-octanol/water	:	*Remarks*: not applicable

9.3. Other data

Melting point/range	:	> 550 °C (1,022 °F)
Auto-flammability	:	*Remarks*: not applicable
Granulometry	:	50 % 2 - 6 µm
Decomposition temperature	:	> 700 °C (1,292 °F)

10. STABILITY AND REACTIVITY

10.1. Stability

- Stable under recommended storage conditions.

10.2. Conditions to avoid

- none

10.3. Materials to avoid

- Strong acids and strong bases

10.4. Hazardous decomposition products

- Hydrogen fluoride

11. TOXICOLOGICAL INFORMATION

Toxicological data

Acute oral toxicity
- LD50, rat, > 2,000 mg/kg

Acute inhalation toxicity
- LC0, 1 h, rat, >= 4.92 mg/l

Acute dermal irritation/corrosion
- LD50, rabbit, > 2,000 mg/kg

Skin irritation
- rabbit, No skin irritation

Eye irritation
- rabbit, Eye irritation

Sensitisation
- guinea pig, Did not cause sensitization.

Chronic toxicity
- Inhalation, 90-day, rat, Target Organs**:** Respiratory system, Lungs, NOEL**:** 1.21 mg/m3, NOAEC

Carcinogenicity
- rat, Animal testing did not show any carcinogenic effects., (fluoride)

Reproductive toxicity
- Oral, rat, > 128 mg/kg, Effect on fertility, NOAEL, (Cryolite)

Remarks
- Information given is based on data obtained from similar substances.
- Harmful by inhalation.
- Irritating to eyes.
- Chronic exposure may entail dental or skeletal fluorosis
- no data available
- Chronic exposure may entail dental or skeletal fluorosis
- In vitro tests did not show mutagenic effects
- In vivo tests did not show mutagenic effects, (Cryolite)

12. ECOLOGICAL INFORMATION

12.1. Ecotoxicity effects

Acute toxicity
- Fishes, Brachydanio rerio, LC50, > 10 mg/l
- Crustaceans, Daphnia magna, EC50, 48 h, 22.8 mg/l

Chronic toxicity
- Pseudokirchneriella subcapitata (green algae), ErC50, 72 h, 33.5 mg/l

12.2. Mobility
- Air
  Remarks: mobility as solid aerosols
- Water
  Remarks: low solubility and mobility

- Soil/sediments
  Remarks: adsorption on mineral and organic soil constituents
- Soil/sediments, log KOC:3.18

12.3. Persistence and degradability

Abiotic degradation

- Water, Soil
  Result: acid/base equilibrium as a function of pH
- Water, Soil
  Result: complexation/precipitation of inorganic and organic materials

Biodegradation

- Remarks: The methods for determining the biological degradability are not applicable to inorganic substances.

12.4. Bioaccumulative potential

- Remarks: Bioaccumulation is unlikely.

12.5. Other adverse effects

12.6. Remarks

- Harmful to aquatic organisms.
- Product fate is highly dependent on environmental conditions: pH, temperature, redox potential, mineral and organic content of the medium,...
- no data available

13. DISPOSAL CONSIDERATIONS

13.1. Waste from residues / unused products

- In accordance with local and national regulations.
- Refer to manufacturer/supplier for information on recovery/recycling.
- Dispose of wastes in an approved waste disposal facility.

13.2. Packaging treatment

- Where possible recycling is preferred to disposal or incineration.
- If recycling is not practicable, dispose of in compliance with local regulations.
- Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities.

13.3. RCRA Hazardous Waste

- Listed RCRA Hazardous Waste (40 CFR 302) - No
- Unlisted RCRA Hazardous Waste (40 CFR 302) - No

14. TRANSPORT INFORMATION

- Not a DOT Hazardous Material (49 CFR 172.101)
- May be exempted from this classification following the prescriptions of the multilateral agreement M80
- DOT permits classification of this material as an Environmentally Hazardous Substance (UN 3077) if other regulatory bodies so designate (49 CFR 172.401(c) & 172.202(e)).

- Canadian Transportation of Dangerous Goods
- not regulated
- not subject

15. REGULATORY INFORMATION

15.1. Inventory Information

Australia. Inventory of Chemical Substances (AICS)	: -	One or more components not listed on inventory.
Canada. Domestic Substances List (DSL)	: -	In compliance with inventory.
Inventory of Existing Chemical Substances (China) (IECS)	: -	One or more components not listed on inventory.
Japan. Inventory of Existing & New Chemical Substances (ENCS)	: -	One or more components not listed on inventory.
New Zealand. Inventory of Chemicals (NZIOC)	: -	One or more components not listed on inventory.
USA. Toxic Substances Control Act (TSCA)	: -	In compliance with inventory.
EU list of existing chemical substances (EINECS)	: -	In compliance with inventory.
Korea. Existing Chemicals Inventory (KECI (KR))	: -	In compliance with inventory.
Philippine. Inventory of Chemicals and Chemical Substances (PICCS)	: -	One or more components not listed on inventory.

15.2. Other regulations

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A)

- not regulated.

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required

- not regulated.

US. EPA CERCLA Hazardous Substances (40 CFR 302)

- not regulated.

US. New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

- not regulated.

US. Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

- yes.

US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)

- not regulated.

16. OTHER INFORMATION

Ratings :

NFPA (National Fire Protection Association)
Health = 2 Flammability = 0 Instability = 0 Special =None

HMIS (Hazardous Material Information System)
Health = 2 Fire = 0 Reactivity = 0 PPE : Supplied by User; dependent on local conditions

Further information

- Update
  This data sheet contains changes from the previous version in section(s): 8.1, 12.1, 15.2
- Distribute new edition to clients

Material Safety Data Sheets contain country specific regulatory information; therefore, the MSDS's provided are for use only by customers of the company mentioned in section 1 in North America. If you are located in a country other than Canada, Mexico or the United States, please contact the Solvay Group company in your country for MSDS information applicable to your location.

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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