



Material Safety Data Sheet

LA1949 Ammonium Bifluoride

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Id: LA1949

Product Name: Ammonium Bifluoride

Synonyms: Ammonium Hydrogen Fluoride ; Ammonium Difluoride ; Acid Ammonium Fluoride.

Chemical Family: None Known

Application: Not Available.

Distributed By:

Univar Canada Ltd.
9800 Van Horne Way
Richmond, BC
V6X 1W5

Prepared By: The Safety, Health and Environment Department of Univar Canada Ltd.

Preparation date of MSDS: 14 September 2006

Telephone number of preparer: 1-866-686-4827

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2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	Percentage (W/W)	LD50s and LC50s Route & Species:
Ammonium Bifluoride 1341-49-7	60-100	Oral LD50 (Rat) 130 mg/kg (unverified)
Ammonium Fluoride 12125-01-8	1-5	Not available.

Note: No additional remark.

3. HAZARDS IDENTIFICATION

Potential Acute Health Effects:

Eye Contact: Causes eye irritation. Resulting in stinging, reddening, tearing and swelling. May cause eye burns. May cause permanent eye damage.

Skin Contact: May cause skin irritation. May cause skin burns. May cause permanent damage.

Inhalation: May cause irritation and burns to the respiratory tract, symptoms may include coughing, sore throat and labored breathing. Irritation and burning effects may not appear immediately. May produce signs and symptoms of toxicity similar to those described for swallowing.

3. HAZARDS IDENTIFICATION

Ingestion: May cause abdominal discomfort, nausea, vomiting and diarrhea. Symptoms may also include weakness, tremors, shallow respiration, carpopedal spasm, convulsions and coma. May cause brain and kidney damage. Affects heart and circulatory system. Death may be caused by respiratory paralysis. Lethal dose estimated at between 1 teaspoonful and 1 oz.

4. FIRST AID MEASURES

Eye Contact: Flush eyes with gently flowing water for at least 15 minutes or until the chemical is removed, while holding the eyelid(s) open. Take care not to rinse the contaminated water into the unaffected eye or face. Seek immediate medical attention. Seek immediate medical attention.

Skin Contact: For skin contact, wipe away excess material with dry towel. Flush skin with plenty of water for at least 15 minutes. Apply Calcium Gluconate gel to the affected area, rub in until locally free of pain and then continue for 15 minutes. If possible apply a dressing soaked in 20% calcium gluconate solution. If burns cover large areas, the patient should be completely bathed in at least 1% calcium gluconate solution. Obtain immediate medical attention.

Inhalation: Remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, get immediate medical attention.

Ingestion: Do NOT induce vomiting. Never give anything by mouth to an unconscious or convulsing person. Seek immediate medical attention. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.

Notes to Physician: For large exposures, systemic effects (hypocalcemia and hypomagnesia) may occur.

5. FIRE FIGHTING MEASURES

Flash Point: None.

Flash Point Method: Not applicable.

Autoignition Temperature: Not Available.

Flammable Limits in Air (%): Not Available.

Extinguishing Media: Not flammable. Use extinguishing media appropriate for surrounding fire.

Special Exposure Hazards: Flammable hydrogen gas may be produced on prolonged contact with metals and moisture. Water run-off and vapour cloud may be corrosive.

Hazardous Decomposition/Combustion Materials (under fire conditions): Ammonia. Hydrogen. Oxides of nitrogen. Hydrofluoric Acid

Special Protective Equipment: Fire fighters should wear full protective clothing, including self-contained breathing equipment.

NFPA RATINGS FOR THIS PRODUCT ARE: HEALTH 3, FLAMMABILITY 1, INSTABILITY 0

HMIS RATINGS FOR THIS PRODUCT ARE: HEALTH 3, FLAMMABILITY 1, REACTIVITY 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures: Wear appropriate protective equipment.

Environmental Precautionary Measures: Prevent entry into sewers or streams, dike if needed. Consult local authorities.

Procedure for Clean Up: Ventilate area. Isolate hazard area and restrict access. Scoop up or vacuum up and place in an appropriate closed container. Avoid raising dust. Flush area with water to remove trace residue.

7. HANDLING AND STORAGE

Handling: For industrial use only. Handle and open containers with care. Avoid contact with eyes, skin and clothing. Do not ingest. Avoid inhalation of chemical. Empty containers may contain hazardous product residues. Keep the containers closed when not in use. Protect against physical damage. Use appropriate personnel protective equipment.

Storage: Store in a cool, dry, well ventilated area. Do not store in metal containers, as contact with moisture and metal at the same time may release flammable hydrogen gas. Isolate from acids, alkali and other incompatible substances. Do not store above 50 °C/122 °F.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls:

In confined areas, local and general ventilation should be provided to maintain airborne concentrations below permissible exposure limits. Localized ventilation should be used to control dust levels.

Respiratory Protection: If the exposure limit is exceeded and engineering controls are not feasible, a half facepiece particulate respirator (NIOSH type N95 or better filters) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece particulate respirator (NIOSH type N100 filters) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Gloves:

Appropriate chemical resistant gloves should be worn. Neoprene gloves. Rubber gloves. Viton gloves.

Skin Protection: Skin contact should be prevented through the use of suitable protective clothing, gloves and footwear, selected for conditions of use and exposure potential. Consideration must be given both to durability as well as permeation resistance.

Eyes: Chemical goggles; also wear a face shield if splashing hazard exists.

Other Personal Protection Data: Ensure that eyewash stations and safety showers are proximal to the work-station location.

Ingredients	Exposure Limit - ACGIH	Exposure Limit - OSHA	Immediately Dangerous to Life or Health - IDLH
Ammonium Bifluoride	2.5 mg/m ³ (TWA-TLV)	2.5 mg/m ³ (TWA-PEL)	Not Available.
Ammonium Fluoride	2.5 mg/m ³ (TWA-TLV)	2.5 mg/m ³ (TWA-PEL- 8H)	Not Available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid Flakes

Colour: White.

Odour: Pungent

pH 3.5 (5% solution)

Specific Gravity: 1.51

Boiling Point: 230 °C / 446 °F

Freezing/Melting Point: 120 °C / 248 °F

Vapour Pressure: <1 mbar @ 20°C

Vapour Density: Not Available.

% Volatile by Volume: 0

Evaporation Rate: Not Available.

Solubility: Soluble in water.

VOCs: Not Available.

Viscosity: Not Available.

Molecular Weight: Not Available.

10. STABILITY AND REACTIVITY

Chemical Stability: Stable.

Hazardous Polymerization: Will not occur.

Conditions to Avoid: None known.

Materials to Avoid: Acids or alkalis. When combined with water, will corrode glass, cement and most metals.

Hazardous Decomposition Products: Hydrogen fluoride. Oxides of nitrogen. Ammonia.

Additional Information:

No additional remark.

11. TOXICOLOGICAL INFORMATION

Principle Routes of Exposure

11. TOXICOLOGICAL INFORMATION

Ingestion: May cause abdominal discomfort, nausea, vomiting and diarrhea. Symptoms may also include weakness, tremors, shallow respiration, carpopedal spasm, convulsions and coma. May cause brain and kidney damage. Affects heart and circulatory system. Death may be caused by respiratory paralysis. Lethal dose estimated at between 1 teaspoonful and 1 oz.

Skin Contact: May cause skin irritation. May cause skin burns. May cause permanent damage.

Inhalation: May cause irritation and burns to the respiratory tract, symptoms may include coughing, sore throat and labored breathing. Irritation and burning effects may not appear immediately. May produce signs and symptoms of toxicity similar to those described for swallowing.

Eye Contact: Causes eye irritation. Resulting in stinging, reddening, tearing and swelling. May cause eye burns. May cause permanent eye damage.

Additional Information: Chronic exposure may cause mottling of teeth and bone damage (osteosclerosis) and fluorosis. Symptoms of fluorosis include brittle bones, weight loss, anemia, calcified ligaments, general ill health and joint stiffness.

Acute Test of Product:

Acute Oral LD50: Not Available.

Acute Dermal LD50: Not Available.

Acute Inhalation LC50: Not Available.

Carcinogenicity:

Ingredients	IARC - Carcinogens	ACGIH - Carcinogens
Ammonium Bifluoride	Not listed.	Not listed.
Ammonium Fluoride	Not listed.	Not listed.

Carcinogenicity Comment: No additional information available.

Reproductive Toxicity/ Teratogenicity/ Embryotoxicity/ Mutagenicity: Not Available.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information:

Ingredients	Ecotoxicity - Fish Species Data	Acute Crustaceans Toxicity:	Ecotoxicity - Freshwater Algae Data
Ammonium Bifluoride	Not Available.	Not Available.	Not Available.
Ammonium Fluoride	LC50 (Pimephales promelas) 364.0 mg/L	Not Available.	Not Available.

Other Information:

Not expected to be harmful to fish. This material is not expected to significantly bioaccumulate. When released into water, this material may biodegrade to a moderate extent.

13. DISPOSAL CONSIDERATIONS

Disposal of Waste Method: Disposal of all wastes must be done in accordance with municipal, provincial and federal regulations.

Contaminated Packaging: Empty containers should be recycled or disposed of through an approved waste management facility.

14. TRANSPORT INFORMATION

DOT (U.S.):

DOT Shipping Name: AMMONIUM HYDROGENDIFLUORIDE, SOLID

DOT Hazardous Class 8

DOT UN Number: UN1727

DOT Packing Group: II

DOT Reportable Quantity (lbs): Not Available.

Note: No additional remark.

14. TRANSPORT INFORMATION

Marine Pollutant: No.

TDG (Canada):

TDG Proper Shipping Name: AMMONIUM HYDROGEN DIFLUORIDE, SOLID

Hazard Class: 8

UN Number: UN1727

Packing Group: II

Note: No additional remark.

Marine Pollutant: No.

15. REGULATORY INFORMATION

U.S. TSCA Inventory Status: All components of this product are either on the Toxic Substances Control Act (TSCA) Inventory List or exempt.

Canadian DSL Inventory Status: All components of this product are either on the Domestic Substances List (DSL), the Non-Domestic Substances List (NDSL) or exempt.

Note: Not available.

U.S. Regulatory Rules

Ingredients	CERCLA/SARA - Section 302:	SARA (311, 312) Hazard Class:	CERCLA/SARA - Section 313:
Ammonium Bifluoride	Not Listed.	Listed	Not Listed.
Ammonium Fluoride	Not Listed.	Listed	Not Listed.

California Proposition 65: Not Listed.

MA Right to Know List: Listed.

New Jersey Right-to-Know List: Listed.

Pennsylvania Right to Know List: Listed.

WHMIS Hazardous Class:

D2B TOXIC MATERIALS

E CORROSIVE MATERIAL



16. OTHER INFORMATION

Additional Information:

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

Disclaimer:

NOTICE TO READER:

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Do not use ingredient information and/or ingredient percentages in this MSDS as a product specification. For product specification information refer to a Product Specification Sheet and/or a Certificate of Analysis. These can be obtained from your local Univar Sales Office.

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*****END OF MSDS*****