



SAFETY DATA SHEET

1. PRODUCT AND MANUFACTURER IDENTIFICATION

Product Name: **H & M****Manufacturer Name & Address:**Arcal Chemicals, Inc.
223 West Hampton Avenue
Capitol Heights, MD 20743**General Information:**(Tel) 301-336-9300
(Fax) 301-336-6597**Emergency CHEMTREC:**In case of chemical emergencies
800-424-9300 (within USA)
703-527-3887 (outside of USA)

2. HAZARDS IDENTIFICATION



Emergency Overview: **DANGER:** Corrosive! Toxic! Toxic effects are principally related to its corrosive properties. May be fatal if swallowed. Ingestion will damage oral and gastric membranes. Vapors are extremely irritating to eyes and respiratory tract. While using the product, nitrogen oxide vapors may be produced that can irritate and seriously injure the lungs. If contaminated clothing is allowed to remain in contact with skin for a short to prolonged amount of time, serious damage may be caused by calcium fluoride precipitation in blood vessel capillaries and gangrene may result. Topical treatments include benzalkonium chloride solution (0.13%) and calcium gluconate gel (2.5%).

Exposure Routes: Eyes, skin, ingestion, inhalation

Eye contact: **H318:** Causes severe skin and eye burns. If splashed into the eyes, serious burns will occur.

Skin Contact: **H311:** Toxic in contact with skin. Contact with skin will cause burns and irritation. Continued contact, as from contaminated clothing, may result in capillary blockage and gangrene

Ingestion: **H304:** May be fatal if swallowed and enters airways. Ingestion will damage oral and gastric membranes.

Inhalation: **H332:** Harmful if inhaled. Inhalation of mist will cause nasal irritation; deeper penetration will harm the respiratory system.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Components	CAS Number	Concentration	ACGIH TWA	OSHA TWA
Ammonium bifluoride	1341-49-7	<8%	2.5 mg/m ³	2.5 mg/m ³
Nitric acid	7697-37-2	<30%	2 ppm	2 ppm

4. FIRST AID MEASURES

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Remove contact lenses, if present. Continue rinsing. Get medical attention immediately.

- Skin Contact:** As quickly as possible, remove contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Wash skin with soap and water. Obtain medical attention if necessary. Completely decontaminate clothing, shoes and leather goods before re-use.
- Ingestion:** Do not give anything by mouth if victim is unconscious or convulsing. Have victim rinse mouth thoroughly with water and administer antacids (not sodium bicarbonate) if available. Do not induce vomiting. If vomiting occurs naturally, have victim rinse mouth with water again. **IMMEDIATELY** transport victim to an emergency care facility.
- Inhalation:** Move exposed person to fresh air. Give artificial respiration **ONLY** if breathing has stopped. Oxygen administration may be beneficial in this situation but should only be administered by personnel trained in its use. Obtain medical attention **IMMEDIATELY**.

5. FIRE-FIGHTING MEASURES

- Flash point:** None
- Special firefighting procedures:** Not normally a fire hazard. Product contains nitric acid, a powerful oxidizer. If it is heated by nearby fire or heat, nitric acid and hydrofluoric acid vapors will be produced and should be avoided. Granulated limestone (agricultural lime) may be used to neutralize acid runoff from containers that are punctured or overfilled with water spray.

NFPA Flammable Liquids Classification

Health	Flammability	Reactivity
4	0	3

6. ACCIDENTAL RELEASE MEASURES

USE PERSONAL PROTECTION RECOMMENDED IN SECTION 8

- Environmental precautions:** For release to land, or storm water runoff, contain discharge by constructing dykes or applying inert absorbent; for release to water, utilize damming and/or water diversion to minimize the spread of contamination. Notify applicable government authority if release is reportable or could adversely affect the environment. Replace damaged containers immediately.
- Clean-up methods:** Protective clothing for skin and eye protection should be worn to protect against corrosive materials. Treat the area with an alkaline material like agricultural lime, carefully scoop up the result and dispose in a plastic container with hazardous waste. Lime will precipitate the fluoride ion and neutralize acid. Sodium bicarbonate may also be used to neutralize acid but produces a soluble fluoride which is toxic and more difficult to dispose.

7. HANDLING AND STORAGE

- Handling:** Containers exposed to heat may be under internal pressure. These should be cooled and carefully vented before opening. A face shield and apron should be worn. Ventilation Requirements: Use with proper ventilation.
- Storage:** Store in a cool dry place where moisture will not collect on containers and where heat from equipment or the sun will not expose the product to temperature extremes.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

SEE SECTION 3 FOR EXPOSURE LIMITS.

Product Name: H&M

- Exposure controls:** Contact with skin, eyes and mucous membranes can contribute to the overall exposure. Consider measures to prevent absorption by these routes.
- Respiratory protection:** Where ventilation is insufficient to insure low personal exposure, see Section 3 for Permissible Exposure Limit (PEL) and Time Weighted Average (TWA) and use appropriate monitoring equipment. Use of product in confined space requires breathing apparatus to prevent inhalation of vapors and mist.
- Eye protection:** Use full face-shield and chemical safety goggles when there is potential for contact. Approved acid-resistant monogoggles are required.
- Skin protection:** Splash-proof safety goggles and chemically resistant gloves (without tears, pinholes or other signs of wear) are highly recommended to protect personnel. A waterproof apron is recommended to protect against splashes.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid
Color:	Light amber
Odor:	Acidic
Boiling point/range:	100° C / 212° F
Flash point:	None
Solubility in water:	95% soluble
Volatile Organic Content (VOC):	None
Density:	9.7 lbs. / gal

10. STABILITY AND REACTIVITY

- Stability:** Product is not subject to polymerization.
- Incompatible materials:** Avoid inadvertent contact with metal and with any oxidizable material. The major hazard is the corrosive action of nitric and hydrofluoric acids and their vapors. Store and use product away from materials like structural elements and electrical equipment which could be affected by exposure to corrosive vapors.
- Conditions to avoid:** Extreme heat and cold. Environments which are not well ventilated.

11. TOXICOLOGICAL INFORMATION

The primary irritant effects are by contact of liquid with the skin (including the eye), and by inhalation of the acidic vapors, especially when large amounts of metal are being treated. A reaction by-product of metal cleaning is the reddish-brown gas nitrogen dioxide (NO₂) which yields nitric acid after contact with moisture. Serious lung injury can occur if this gas is inhaled.

12. ECOLOGICAL

Do not allow product to reach ground water or sewer. Harmful to aquatic life at low concentrations. Acidic soil conditions can develop with product present. Higher than normal toxic heavy metal concentrations can then occur in ground and surface waters.

13. DISPOSAL CONSIDERATIONS

- Recommended method of disposal:** Waste product is hazardous (US EPA: due to fluoride and acidity). Do not dispose with residential garbage or allow product to reach ground water or sewer. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Consult state and local regulations regarding the proper disposal of this material.

Product Name: H&M

14. TRANSPORT INFORMATION

APPLIES TO ALL MODES OF TRANSPORT

Proper shipping name: CORROSIVE LIQUID, TOXIC, N.O.S (NITRIC ACID, AMMONIUM HYDROGENDIFLUORIDE)
Hazard class or division: 8 (6.1)
Identification number: UN2922
Packing group: II

15. REGULATORY INFORMATION

TSCA All constituents of this product are included on the TSCA inventory.

16. OTHER INFORMATION

The information accumulated herein is believed to be accurate and are not a product specification. No warranty, either expressed or implied is made. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.