



ARCAL CHEMICALS, INC.

SAFETY DATA SHEET H & M

Revised June 24, 2015

1. IDENTIFICATION OF THE PRODUCT AND MANUFACTURER H & M

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2. HAZARDS IDENTIFICATION



Corrosive! Toxic! Toxic effects are principally related to its corrosive properties. May be fatal if swallowed. Causes severe skin and eye burns. Vapours are extremely irritating to eyes and respiratory tract. If contaminated clothing is allowed to remain in contact with skin for many minutes or hours, 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%). When metals are being cleaned in H & M, nitrogen oxide vapors may be produced that can irritate and seriously injure the lungs.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

<u>Hazardous Component</u>	<u>CAS #</u>	<u>Conc.</u>	<u>OSHA PEL</u>	<u>ACGIH TWA</u>
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: Flush with clean water for 15 minutes or until irritation subsides. If irritation persists, seek medical advice.

Inhalation: Move the exposed person to fresh air. Administer oxygen or begin resuscitation if necessary.

Skin contact: Remove contaminated clothing and launder before reuse. Wash skin with soap and water.

Ingestion: In case of this unlikely event, administer antacids (not sodium bicarbonate). Do not

induce vomiting (to avoid getting material into the lungs) and obtain medical help immediately.

5. FIRE-FIGHTING MEASURES

NFPA FIRE HAZARDS:	HEALTH	FLAMMABILITY	REACTIVITY
	4 (serious)	0 (insignificant)	3 (high)

H & M contains nitric acid, a powerful oxidizer. If H & M 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 which are punctured or overfilled with water spray.

6. ACCIDENTAL RELEASE MEASURES

In case H & M is spilled, 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 but produces a soluble fluoride which is toxic and more difficult to dispose.

7. HANDLING AND STORAGE

Store H & M 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 AND PERSONAL 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. H & M should not be used in confined spaces.

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 should be used when large metal pieces are dipped into and withdrawn from H & M.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Light amber liquid

Odor: Acidic - caution; avoid breathing vapors

Density: 9.7 pounds per gallon

Boiling point: 212 F

Volatile Organic Content: (VOC): none

Solubility in water: Completely soluble

Flash point: Non-flammable

10. STABILITY AND REACTIVITY

H & M is not subject to polymerization. Avoid inadvertent contact with metals, and with any oxidizable material. The major hazard is the corrosive action of nitric and hydrofluoric acids and

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their vapors, so store and use H & M away from materials like structural elements and electrical equipment which could be affected by exposure to corrosive vapors.

11. TOXICOLOGICAL INFORMATION

The primary irritant effects of H & M 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 INFORMATION

Do not allow liquid product to reach ground water, water course or sewer.

13. DISPOSAL CONSIDERATIONS

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.

14. TRANSPORT INFORMATION

ID No.	Proper Shipping Name	Hazardous Class	Packing Group
UN 2922	Corrosive Liquid, Toxic, N.O.S. (Nitric Acid, Ammonium Hydrogen difluoride Solution)	8, 6.1	II

15. REGULATORY INFORMATION

TSCA: All ingredients are listed.

16. OTHER INFORMATION

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.