

Material Safety Data Sheet for NuEtch

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Date: Mar. 9, 2009 ver 1.2
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Section 1: IDENTIFICATION

Trade Names: NuEtch --- Ammonium Acid Fluoride---10% solution for etching.
NuEtch Prime -- adds primer for organic coatings
NuEtch Vivid -- adds primer and pigments for concrete or stone coloring

Formula: $\text{NH}_4\text{F HF}$

Molecular Weight: 57.05

Synonyms: Ammonium Bifluoride; Acid Ammonium Fluoride; ammonium hydrogen fluoride

Section 2: HAZARDOUS INGREDIENT INFORMATION

Ingredient	CAS #	PEL-OSHA	TLV-ACGIH	% Wt.
Ammonium Hydrogen Fluoride	1341-49-7	2.5mg/m3 as F	2.5mg/m3 as F*	7-13
F= fluoride * = as dust NuEtch is a liquid solution.				

The TLV's are always given for guidance; local applicable regulations should always be followed. Ingredients are those present at 1% or greater, or at 0.1% or greater if listed as potential carcinogens by OSHA/IARC/NTP. Proprietary ingredient identities are available in accordance with 29 CFR 1910.1200.

CARCINOGEN: NTP-No IARC- No OSHA-No

SECTION 3: PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point: >200°F; Decomposes at 230 C

Specific Gravity (H2) = 1): 1.5

Vapor Pressure (mm - Hg): <0.75 At 20 Deg. C

Vapor Density (Air = 1): ND

Water Solubility: (% by wt.) 41.5 at 25C

Volatiles (% by wt) NA

Evaporation rate (Butyl Acetate = 1) : ND

Ph of solution: 4.6

Appearance and odor: Clear liquid with pungent odor

SECTION 4: PHYSICAL HAZARD DATA

Ammonium Hydrogen Fluoride is not considered to be a fire hazard.

Flash Point: NA

Test Method: NA

Flammable Limits: NA

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Auto - Ignition: NA

EXTINGUISHING MEDIA Use carbon dioxide, dry chemical, foam, or water spray. This acid salt forms a very corrosive solution in water. Avoid flushing solution to sewer or stream.

SPECIAL FIRE FIGHTING PROCEDURES Use NIOSH approved self-contained breathing apparatus operated in the positive-pressure or other pressure demand mode. Use protective clothing appropriate to the surrounding fire.

UNUSUAL FIRE OR EXPLOSION HAZARDS Thermal decomposition or exposure to acids may release hydrogen fluoride gas.

SECTION 5: REACTIVITY DATA

THERMAL STABILITY: Stable under ordinary conditions of use and storage.

INCOMPATIBILITY: Acids, alkalis, metals. Do not use glass containers.

CONDITIONS TO AVOID: Avoid heat, moisture and exposure to incompatible materials.

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION PRODUCTS: Reacts violently with alkalis releasing ammonia. Forms hydrogen fluoride with concentrated acids. Evolves hydrogen gas on contact with non-noble metals (iron, zinc, aluminum). Do not use glass containers.

SECTION 6: HEALTH HAZARD INFORMATION

Emergency Overview

DANGER! MAY BE FATAL IF SWALLOWED OR INHALED. AFFECTS RESPIRATORY SYSTEM, HEART, SKELETON, CIRCULATORY SYSTEM, CENTRAL NERVOUS SYSTEM AND KIDNEYS. CAUSES IRRITATION AND BURNS TO SKIN, EYES AND RESPIRATORY TRACT. IRRITATION AND BURN EFFECTS MAY BE DELAYED. HARMFUL IF ABSORBED THROUGH SKIN.

Health Rating: 3 - Severe (Poison)

Flammability Rating: 0 - None

Reactivity Rating: 2 - Moderate

Contact Rating: 4 - Extreme (Corrosive)

EFFECTS OF OVEREXPOSURE

SYMPTOMS OF INGESTION: Toxic! Corrosive! Fluoride containing dust may cause a salty or soapy taste, vomiting, pain, diarrhea, weakness, loss of consciousness and death. Kidney injury and stomach bleeding may occur.

SYMPTOMS OF INHALATION: Corrosive! Harmful to mucous membranes. Causes irritation of the upper respiratory tract. Symptoms may include coughing, sore throat, lung congestion and rapid breathing. Nasal perforation possible. Also see ingestion.

SYMPTOMS OF SKIN CONTACT: Corrosive! May be harmful to the skin. May cause poisoning from absorption through injured skin. May cause irritation, redness and pain. Also see ingestion. Symptoms may be delayed.

SYMPTOMS OF EYE CONTACT: Corrosive! Harmful to the eyes. Causes irritation, redness, pain, discoloration and may cause permanent damage. Also see ingestion.

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CHRONIC EXPOSURE: Prolonged or repeated skin exposure to fluoride containing dust may cause excessive calcification of bone, ligament of ribs, pelvis and spinal column. May aggravate other pre-existing disorders, to include diseases of the eye, skin, respiratory tract, central nervous system, skeletal system and kidneys.

TOXICITY DATA: Inhalation: LD50 1276 PPM/ 1 HR (RAT) Corrosive
LC50 342 PPM/ 3 HR (MOUSE) Corrosive

SECTION 7: EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT: immediately flush with copious amounts of water for at least 15 minutes while holding eyelids apart. Washing within one minute is essential to achieve maximum effectiveness. Get medical attention after flushing.

SKIN CONTACT: remove contaminated clothing immediately. Wash effected area thoroughly with water, then apply calcium gluconate gel to the effected area and rub in for at least 15 minutes. If possible, apply a dressing soaked in 20% calcium gluconate solution and if burns cover more than the area of a hand, administer six effervescent calcium pills (400mg calcium per pill) dissolved in water. Transport immediately for medical attention.

INHALATION: remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.

INGESTION: never give anything by mouth to an unconscious person. Call a physician immediately. Do not induce vomiting. Give two glasses of lime water, milk of magnesia or milk if available. Administer calcium pills as described in skin contact section. Medical treatment possibly including gastric lavage is required as soon as possible.

Notes to physician: take appropriate action to counteract symptoms.

SECTION 8: INDUSTRIAL HYGIENE & OCCUPATIONAL CONTROL PROCEDURES

VENTILATION: A system of local exhaust is recommended to keep employee exposure below the Airborne Exposure Limits. Local exhaust is usually preferred because it controls the emission at its source, preventing dispersion of it into the general work area. Refer to the ACGIH DOCUMENT "INDUSTRIAL VENTILATION, a manual of Recommended Practices" for details.

RESPIRATORY PROTECTION: NIOSH / MSHA approved respirator if exposure may, or does exceed occupational exposure limits. Generally, a dust mist respirator may be worn in areas where the TLV is exceeded up to ten times. Alternatively, a supplied air full-face piece respirator or air-lined hood may be worn.

EYE PROTECTION: Chemical splash goggles and / or face shield. Contact lenses should not be worn when working with this material. An eye wash fountain and quick drench facilities should be maintained in the work area.

SKIN PROTECTION: Use rubber or gauntlet type neoprene gloves and body covering clothing.

PERSONAL HYGIENE: Wash thoroughly after handling.

SECTION 9: SAFE HANDLING, STORAGE AND USE PRECAUTIONS

PRECAUTIONARY MEASURES: Avoid contact with skin, eyes and clothing. Wear protective clothing, gloves and splash goggles or shield. Open containers carefully. Avoid breathing dust or mist. Use with adequate ventilation. Wash thoroughly after using.

STORAGE AND HANDLING: Keep in a tightly closed plastic, rubber, wood or paraffined

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container. Store in a cool, dry place and isolated from incompatible materials. Areas in which exposure to acid salts may occur should be clearly identified and access to the area should be limited to authorized personnel.

PROTECT FROM PHYSICAL DAMAGE: roll or pad apply to surface to be etched. Keep film thin. Do not spray.

SECTION 10: REGULATORY INFORMATION AND DISPOSAL PROCEDURES

SPILL / LEAK CLEAN-UP PROCEDURES: remove combustibles and sources of heat or ignition. Sweep, scoop or pick up spilled material. Avoid dusting. Package for reclamation or recovery. Whatever cannot be recovered may be neutralized with dry lime. Do not flush into sewer or stream.

DISPOSAL METHOD: Dispose of in accordance with applicable Federal, State and local environmental and regulatory requirements.

TOXIC SUBSTANCES CONTROL ACT (TSCA): Chemical ingredients are on the TSCA inventory.

SUPERFUND REPORTABLE QUANTITY (RQ): 100 LBS. / 45.4 KG.

HAZARDOUS WASTE NO: D002 (Unlisted hazardous waste Characteristics of corrosivity) RQ = 100 lbs.

SARA TITLE III (Section 313): Please check with the appropriate agencies.

CANADIAN (WHMIS) LIST: Ammonium difluoride is listed on the DSL.

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