Safety Data Sheet

Better Chemistry. **Better Business.**

Armour Etch **Revised: May 24, 2015**

1 IDENTIFICATION

Product Code: 15-0150, 15-0200, 15-0250, 15-0260, 15-0302, 15-0900
Other means of identification: N/A
Recommended use of the chemical and restrictions on use: Etching, polishing and frosting of glass
Armour Products
176-180 Fifth Avenue
Hawthorne, NJ 07506
Telephone: 973-427-8787
Fax number: 973-427-8823

Emergency Phone Number
CHEMTREC: 1 (800) 424-9300
International: 1(703) 527-3887

2 HAZARDS IDENTIFICATION

Hazard pictograms; Corrosive; Exclamation Mark
OSHA/HCS status: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture ACUTE TOXICITY: ORAL - Category 4
SKIN CORROSION/IRRITATION - Category 1B
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
Classification Code: Acute Tox. 4, H302
Skin Corr. 1B, H314 Eye Dam. 1, H318
Hazards not otherwise classified: None known
Signal word: Danger

Hazard statements: Harmful if swallowed. Causes severe skin burns and eye damage.
Precautionary statements
Prevention: Wear suitable gloves. Wear eye or face protection. Wear protective clothing. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.
Response :
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. **Immediately call a POISON CENTER or physician.**
IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. **Do NOT** induce vomiting.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse. **Immediately call a POISON CENTER or physician.**
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. **Immediately call a POISON CENTER or physician.**

3 COMPOSITION INFORMATION **(Except as provided for in paragraph (i) of § 1910.1200 on trade secrets.**

FOR SUBSTANCES

Chemical Name	Common Name And Synonyms	CAS No. and other Unique identifiers	Concentration %
Ammonium Bifluoride	**Ammonium Hydrogen Fluoride**	**215-676-4**	**20 - 40**
Sodium Bifluoride	**Sodium Hydrogen Fluoride**	**215-608-3**	**5 - 10**
Sulphuric Acid	**Oil of Vitriol**	**231-639-5**	**1 - 5**
Barium Sulfate	**Blanc Fix**	**231-784-4**	**1 - 5**

4 FIRST AID

After Inhalation: Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

After Skin Contact: Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

After Eye Contact: Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

After ingestion: Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most Important Symptoms/Effects

Acute: Causes serious eye damage. May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure. Causes severe burns. Harmful if swallowed. May cause burns to mouth, throat and stomach.

Delayed: Adverse symptoms may include the following: pain watering redness of the eyes stomach pains.

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

In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. If any of the above symptoms occur and or persist, seek medical attention immediately.

Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

5 FIRE FIGHTING MEASURES

Suitable and Unsuitable extinguishing media: Use an extinguishing agent suitable for the surrounding fire.

Specific hazards arising from the chemical (e.g., nature of any hazardous composition products): In a fire or if heated, a pressure increase will occur and the container may burst.

Special protective equipment and precautions for firefighters: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6 ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders: If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Methods and Materials for containment and cleaning up: Small spill: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Large spill: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas.
Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. **Note:** See Section 1 for emergency contact information and Section 13 for waste disposal.

7 HANDLING AND STORAGE

Precautions for safe handling: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any in compatibilities: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination**.**

8 EXPOSURE CONTROLS/ PERSONAL PROTECTION

Name	Std.	TWA-8hrs	STEL – 15 min.
Ammonium Bifluoride	See data below	See data below	See data below
Sodium Bifluoride	See data below	See data below	See data below
Sulphuric Acid	See data below	See data below	See data below
Barium Sulfate	See data below	See data below	See data below

ACGIH- American Control of Governmental Hygienists
OSHA- Occupational Safety and Health Administration

Ammonium Bifluoride
ACGIH TLV (United States, 3/2012).
TWA: 2.5 mg/m³, (as F) 8 hours.
OSHA PEL 1989 (United States, 3/1989).
TWA: 2.5 mg/m³, (as F) 8 hours.
OSHA PEL Z2 (United States, 11/2006).
TWA: 2.5 mg/m³ 8 hours. Form: Dust
OSHA PEL (United States, 6/2010).
TWA: 2.5 mg/m³, (as F) 8 hours.
Sodium Bifluoride
ACGIH TLV (United States, 3/2012).
TWA: 2.5 mg/m³, (as F) 8 hours.
OSHA PEL 1989 (United States, 3/1989).
TWA: 2.5 mg/m³, (as F) 8 hours.
OSHA PEL (United States, 6/2010).
TWA: 2.5 mg/m³, (as F) 8 hours.
OSHA PEL Z2 (United States, 11/2006).
TWA: 2.5 mg/m³ 8 hours. Form: Dust
Sulphuric Acid
OSHA PEL 1989 (United States, 3/1989).
TWA: 1 mg/m³ 8 hours.

NIOSH REL (United States, 6/2009).
TWA: 1 mg/m³ 10 hours.
ACGIH TLV (United States, 3/2012).
TWA: 0,2 mg/m³ 8 hours. Form: Thoracic fraction
OSHA PEL (United States, 6/2010).
TWA: 1 mg/m³ 8 hours.
ACGIH TLV (United States, 3/2012).
TWA: 10 mg/m³ 8 hours.
OSHA PEL 1989 (United States, 3/1989).
TWA: 5 mg/m³ 8 hours. Form: Respirable fraction

Barium Sulfate

TWA: 10 mg/m³ 8 hours. Form: Total dust
NIOSH REL (United States, 6/2009).
TWA: 5 mg/m³ 10 hours. Form: Respirable fraction
TWA: 10 mg/m³ 10 hours. Form: Total
OSHA PEL (United States, 6/2010).
TWA: 5 mg/m³ 8 hours. Form: Respirable fraction
TWA: 15 mg/m³ 8 hours. Form: Total dust

Appropriate Engineering Controls: If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures: (such as personal protective equipment)
Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye/Face protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.
Hand protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. **Recommended:** butyl rubber, Teflon, Viton®.
Body protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Liquid. [Gel] White., Light brown., Blue
Odor: Pungent
Odor Threshold: N/A
PH: Acidic
Melting Point/Freezing Point: Not determined
Initial Boiling Point and Boiling Range: N/A
Flash Point: Closed cup: Not applicable.
Evaporation Rate: N/A
Flammability (solid, gas):N/A
Upper/Lower flammability or explosive limits: N/A
Vapor Pressure: N/A
Vapor Density: N/A
Relative Density: N/A
Solubility (ies): Soluble
Partition Coefficient; n-octanol/water: N/A
Auto-ignition Temperature: N/A
Decomposition Temperature: N/A
Viscosity: N/A

10 STABILITY AND REACTIVITY

Reactivity: No specific test data related to reactivity available for this product or its ingredients.
Chemical Stability: The product is stable.
Possibility of Hazardous Reactions: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to Avoid: Avoid contact with incompatible chemicals and excessive heat.
Incompatible Materials: Carbides, chlorates, cyanides, metal powders, nitrates, acids, bases, aluminum, phosphorous, glass and most metals.

Hazardous Decomposition Products: If heated to decomposition, this product may produce sulfur oxides, nitric oxides, ammonia, barium oxides and hydrogen fluoride. This product may react with acids to liberate hydrogen fluoride and may react with basic materials to release ammonia. Solutions of the product can corrode glass, cement and most metals.

11 TOXICOLOGICAL INFORMATION

Acute toxicity
Oral administration: Not established for this mixture
Inhalation: Not established for this mixture
Dermal administration: Not established for this mixture
Irritation: Severe skin and eye irritation or burns
Sensitization: Not established
Symptoms related to the physical, chemical, and toxicological characteristics:
Delayed Effects: Skin burns and serious eye damage
Immediate Effects: Skin burns and serious eye damage
Short Term Exposure: Skin burns and serious eye damage
Long Term Exposure: Skin burns and serious eye damage
Numerical Measures of toxicity (such as toxicity measurements): Not known for this mixture
Whether the hazardous chemical is listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition), or by OSHA. (See section 15 Sulfuric acid)

12 ECOLOGICAL INFORMATION

Ecotoxicity:
Fish, Oncorhynchus mykiss, no data available
Fish, Oncorhynchus mykiss, no data available
Fish, Lepomis macrochirus, no data available
Lepomis macrochirus, no data available
Crustations, Daphnia magna, no data available
Daphnia magna, no data available
Persistence and Degradability
Abiotic degradability: Not available
Biotic degradability: Not available
Bioaccumulation potential: Not available
Mobility
Water Result: Pronounced solubility and mobility.
Soil/Sediment Result: Pronounced solubility and mobility.
Other Adverse effects (such as hazardous to the ozone layer): No known significant effects or critical hazards.

13 DISPOSAL CONSIDERATION

Dispose of in accordance with local, State, and Federal Regulations.

14 TRANSPORT INFORMATION

UN Number: UN3260
UN Proper Shipping Name: CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (AMMONIUM BIFLUORIDE, SULFURIC ACID, MIXTURE) RQ
Transport Hazard Class (es): 8
Packing Group: II
Environmental Hazards (e.g. Marine Pollutant (Yes/No): No

15 REGULATORY INFORMATION

HMIS (USA): Health Hazard: 3 Fire Hazard: 0 Reactivity: 1

Sulfuric Acid:
Illinois toxic substances disclosure to employee act: Sulfuric acid New York release reporting list: Sulfuric acid Rhode Island RTK hazardous substances: Sulfuric acid Pennsylvania RTK: Sulfuric acid Minnesota: Sulfuric acid Massachusetts RTK: Sulfuric acid New Jersey: Sulfuric acid California Director's List of Hazardous Substances (8CCR 339): Sulfuric acid Tennessee RTK: Sulfuric acid TSCA 8(b) inventory: Sulfuric acid SARA 302304/311/312 extremely hazardous substances. Sulfuric acid SARA 313 toxic chemical notification and release reporting: Sulfuric acid CERCLA: Hazardous substances: Sulfuric acid: 1000 lbs. (453.6 kg)
CARCINOGENIC EFFECTS: Classified 1 (Proven for human.) by IARC, + (Proven.) by OSHA [Sulfuric acid]. Classified A2 (Suspected for human.) by ACGIH [Sulfuric acid].
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Classified Reproductive system/toxin/female, Reproductive system/toxin/male [SUSPECTED] [Sulfuric Acid 50% (w/w) Solution]. The substance may be toxic to the reproductive system, teeth. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.
Other Regulations:
OSHA: Hazardous by definition of hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.
Other Classifications:
WHMIS (Canada):
Class D-1A: Material causing immediate and serious toxic effects (VERY TOXIC). CLASS E: Corrosive liquid.
DSCL (EEC):
R35- Causes severe burns. S2- Keep out of reach of children. S26- In case of contact with eyes rinse immediately with plenty of water and seek medical advice immediately (show the label where possible).
Specific Hazard:
Protective Equipment:

Gloves, Full suit, Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Face Shield.

Clean Air Act Section 112

(b) Hazardous Air Pollutants (HAPs): Not listed

Clean Air Act Section 602

Class I Substances: Not listed

Clean Air Act Section 602

Class II Substances: Not listed

DEA List I Chemicals

(Precursor Chemicals): Not listed

DEA List II Chemicals

(Essential Chemicals): Listed

SARA 311/312

Classification: Immediate (acute) health hazard

Ammonium Bifluoride; Sodium Bifluoride ; Sulphuric Acid; Barium Sulfate

Fire hazard: No

Sudden release of pressure: No

Reactive: No

Immediate acute health hazard: No

Delayed (chronic) health hazard: No

Health: 3 Flammability: 0 Physical Hazards: 1

16 OTHER INFORMATION

No RoHS or REACH SVHC are contained in this product.

N/A: Not Applicable

Further information

The information is based on our knowledge to date but does not constitute an assurance of product properties and does not imply a legal contractual relationship.

Changes from the previous data sheet with date of issue: New