



J.T. Baker Inc.
222 Red School Lane
Phillipsburg, NJ 08865

24-Hour Emergency Telephone 908-859-2151
National Response Center 800-424-8802
Chemtrec 800-424-9300

CANUTEC 613-996-6666
Outside U.S. and Canada
Chemtrec 202-483-7616

FICHE
SIGNALÉTIQUE

HOJAS DE DATOS
DE SEGURIDAD

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers are to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.
All non-emergency questions should be directed to Customer Service (1-800-JTBAKER) for assistance.

6 -04
Effective: 03/17/92

Buffered Oxide Etch

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J.T.BAKER INC., 222 Red School Lane, Phillipsburg, NJ 08865

SECTION I - PRODUCT IDENTIFICATION

Product Name: **Buffered Oxide Etch**
Common Synonyms: Aqueous $\text{NH}_4\text{-HF}$ Etchant Solns.
Chemical Family: Aqueous Solutions
Formula: N/A
Formula Wt.: N/A
CAS No.: N/A
NIOSH/RTECS No.: N/A
Product Use: Laboratory Reagent
Product Codes: 5323, 5362, 5324, 5363, 1177, 1178, 5098, 5109, 5173, 5175, 5192, 5252
5315, 5320, 5326, 5329, 5332, 5334, 5338, 5359, 5360, 5364, 5417, 5418
5419, 5547, 5439, 5361, 5843

10:1 SEMI GRADE
4 gal. CASE
KELLY

PRECAUTIONARY LABELING

SAF-T-DATA* System



Laboratory Protective Equipment



U.S. Precautionary Labeling

POISON! DANGER!
MAY BE FATAL IF SWALLOWED. REACTS VIOLENTLY WITH WATER, LIBERATING EXCESSIVE HEAT. EXTREMELY HAZARDOUS LIQUID AND VAPOR! CAUSES SEVERE BURNS, MAY NOT BE IMMEDIATELY PAINFUL OR VISIBLE. EXCEPTIONAL HEALTH & CONTACT HAZARD: READ MATERIAL SAFETY DATA SHEET.

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PRECAUTIONARY LABELING (CONTINUED)

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Do not get in eyes, on skin, on clothing. Do not breathe vapor. Keep in tightly closed container out of sun and away from heat. Use with adequate ventilation. Wash thoroughly after handling. In case of spill, neutralize spill with soda ash or lime. With clean shovel, carefully place material into clean, dry container. Flush spill area with water.

International Labeling

Avoid contact with eyes. After contact with skin, wash immediately with plenty of water. Keep container tightly closed.

SAF-T-DATA* Storage Color Code: White (corrosive)

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SECTION II - COMPONENTS

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Component	CAS No.	Weight %	OSHA/PEL	ACGIH/TLV
Ammonium Fluoride	12125-01-8	30-50	N/E	2.5 mg/m ³
Hydrofluoric Acid	7664-39-3	0.5-10	3 ppm	3 ppm
Water	7732-18-5	40-70	N/E	N/E

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SECTION III - PHYSICAL DATA

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Boiling Point: N/A

Vapor Pressure (mmHg): N/A

Melting Point: 18°C (64°F)
(at 760 mm Hg)

Vapor Density (air=1): N/A

Specific Gravity: 1.10
(H₂O=1)

Evaporation Rate: N/A

Solubility(H₂O): Complete (100%)

% Volatiles by Volume: 80
(21°C)

pH: 1.0 (0.10M HF)

Physical State: Liquid

Odor Threshold (ppm): N/A

Efficient Water/Oil Distribution: N/A

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SECTION III - PHYSICAL DATA (CONTINUED)

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Appearance & Odor: Colorless liquid.

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SECTION IV - FIRE AND EXPLOSION HAZARD DATA

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Flash Point (Closed Cup): N/A

Autoignition Temperature: N/A

Flammable Limits: Upper - N/A Lower - N/A

Fire Extinguishing Media

Use extinguishing media appropriate for surrounding fire.

Special Fire-Fighting Procedures

Firefighters should wear proper protective equipment and self-contained breathing apparatus with full facepiece operated in positive pressure mode. Move containers from fire area if it can be done without risk. Use water to keep fire-exposed containers cool.

Unusual Fire & Explosion Hazards

None identified.

Toxic Gases Produced

hydrogen fluoride, ammonia, oxides of nitrogen

Explosion Data-Sensitivity to Mechanical Impact

None identified.

Explosion Data-Sensitivity to Static Discharge

None identified.

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SECTION V - HEALTH HAZARD DATA

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Threshold Limit Value (TLV/TWA): 2.5 mg/m³ (3 ppm)

TLV is for Fluorides, as F.

Short-Term Exposure Limit (STEL): Not Established

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SECTION V - HEALTH HAZARD DATA (CONTINUED)

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Permissible Exposure Limit (PEL): (3 ppm)

PEL is for Hydrogen fluoride.

Toxicity of components

Intraperitoneal Rat LD ₅₀ for Ammonium Fluoride	32 mg/kg
Inhalation-1Hr Mouse LC ₅₀ for Hydrofluoric Acid	342 ppm
Inhalation-1Hr Rat LC ₅₀ for Hydrofluoric Acid	1276 ppm
Intraperitoneal Mouse LD ₅₀ for Water	190 g/kg
Intravenous Mouse LD ₅₀ for Water	25 g/kg
Carcinogenicity: NTP: No IARC: No Z List: No OSHA Reg: No	

Carcinogenicity

None identified.

Reproductive Effects

None identified.

Effects of Overexposure

INHALATION: irritation of mucous membranes, severe irritation or burns of respiratory system, pulmonary edema, lung inflammation

SKIN CONTACT: irritation, severe burns (may be delayed)

EYE CONTACT: irritation, severe burns (may be delayed)

SKIN ABSORPTION: attacks underlying tissues and bone

INGESTION: severe burns to mouth, throat, and stomach, kidney disfunction

CHRONIC EFFECTS: hypocalcemia, bone and joint damage

Target Organs

eyes, skin

Medical Conditions Generally Aggravated by Exposure

none identified

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SECTION V - HEALTH HAZARD DATA (CONTINUED)

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Primary Routes of Entry

eye contact, skin contact, ingestion, inhalation, absorption

Emergency and First Aid Procedures

- INGESTION: CALL A PHYSICIAN. If swallowed, do NOT induce vomiting. If conscious, give water, milk, or milk of magnesia.
- INHALATION: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
- SKIN CONTACT: FOR ACID BURNS TO THE BODY: 1) Remove the victim from the contaminated area and immediately place him under a safety shower or wash him with a water hose, whichever is available. 2) Remove all contaminated clothing. 3) Keep washing with large amounts of water for a minimum of 15 to 20 minutes. 4) Have someone make arrangements for medical attention while you continue flushing the affected area with water. 5) a) If available, after thorough washing, the burned area should be immersed in a solution of 0.2% iced aqueous Hyamine 1622== or 0.13% iced aqueous Zephiran Chloride==. If immersion is not practical, towels should be soaked with one of the above solutions and used as compresses for the burned area. Ideally compresses should be changed every 2 minutes. 5) b) An alternative treatment to 5a is for the physician to inject sterile 10% aqueous calcium gluconate solution subcutaneously beneath, around, and in the burned area. Initially use no more than 0.5 cc per square centimeter and do not distort appearance of skin. If pain is not completely relieved, additional treatment is indicated. 6) Seek medical attention as soon as possible for all burns regardless of how minor they may appear initially. == Hyamine 1622 is a trade name for Tetracaine Benzethonium Chloride, Merck Index Monograph 1078, a quaternary ammonium compound sold by Rohm & Haas, Philadelphia. === Zephiran Chloride is a trade name for Benzalkonium Chloride, Merck Index Monograph 1059, also a quaternary ammonium compound, sold by Winthrop Laboratories, N.Y.C.
- EYE CONTACT: FOR ACID IN THE EYES: 1) Irrigate eyes for at least 15 minutes with copious quantities of water, keeping eyelids apart and away from eye balls during irrigation. 2) Get competent medical attention immediately, preferably an eye specialist. 3) If a physician is not immediately available,

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SECTION V - HEALTH HAZARD DATA (CONTINUED)

apply one or two drops of 05% Pontocaine Hydrochloride solution followed by a second irrigation for 15 minutes. minutes. Use none of the solutions described for skin treatment. Use no oils or greases unless instructed to do so by a physician. = Pontocaine Hydrochloride is a trade name for Tetracaine Hydrochloride, Merck Index monograph 8904, sold by Winthrop Laboratories, N.Y.C.

SARA/TITLE III HAZARD CATEGORIES and LISTS

Acute: Yes Chronic: Yes Flammability: No Pressure: No Reactivity: No
Extremely Hazardous Substance: Yes Contains Hydrogen Fluoride (RQ = 100 LBS, TPQ = 100 LBS)
CERCLA Hazardous Substance: Yes Contains Ammonium Fluoride (RQ = 100 LBS) and Hydrogen Fluoride (RQ = 100 LBS)
SARA 313 Toxic Chemicals: Yes Contains Hydrogen Fluoride
Generic Class: Generic Class Removed from CFR: 7/1/91
TSCA Inventory: Yes

SECTION VI - REACTIVITY DATA

Stability: Stable Hazardous Polymerization: Will not occur
Conditions to Avoid: cold, light, heat
Incompatibles: alkalis, organic materials, most common metals, rubber, leather, fluorine, strong bases, carbonates, sulfides, cyanides, oxides of silicon, esp. glass, concrete, silica

Decomposition Products: hydrogen fluoride, ammonia, oxides of nitrogen

SECTION VII - SPILL & DISPOSAL PROCEDURES

Steps to be Taken in the Event of a Spill or Discharge

Wear self-contained breathing apparatus and full protective clothing. Stop leak if you can do so without risk. Ventilate area. Neutralize spill with soda ash or lime. With clean shovel, carefully place material into clean, dry container and cover; remove from area. Flush spill area with water.

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SECTION VII - SPILL & DISPOSAL PROCEDURES (CONTINUED)

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J. T. Baker TEAM^R 'Low Na+' acid neutralizer is recommended for spills of this product.

Disposal Procedure

Dispose in accordance with all applicable federal, state, and local environmental regulations.

EPA Hazardous Waste Number: U134 (Toxic Waste)

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SECTION VIII - INDUSTRIAL PROTECTIVE EQUIPMENT

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Ventilation: Use general or local exhaust ventilation to meet TLV requirements.

Respiratory Protection: Respiratory protection required if airborne concentration exceeds TLV. At concentrations up to 20 ppm, a chemical cartridge respirator with acid/organic cartridge and dust/mist filter is recommended. Above this level, a self-contained breathing apparatus is recommended.

Eye/Skin Protection: Safety goggles and face shield, uniform, protective suit, neoprene gloves are recommended.

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SECTION IX - STORAGE AND HANDLING PRECAUTIONS

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SAF-T-DATA* Storage Color Code: White (corrosive)

Storage Requirements

Keep container tightly closed. Store in corrosion-proof area. Keep containers out of sun and away from heat. Isolate from incompatible materials. Protect from freezing. Material should remain in the original polyethylene container.

Special Precautions

Hydrofluoric acid is incompatible with glass and all silicon-bearing materials and should never be transferred to glass containers. Material should remain in the original polyethylene container. Unlined steel tanks in Hydrofluoric Service are subject to indiscriminate hydrogen blistering and should routinely be inspected and repaired.

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SECTION X - TRANSPORTATION DATA AND ADDITIONAL INFORMATION

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Domestic (D.O.T.)

Proper Shipping Name: CORROSIVE LIQUIDS, POISONOUS, N.O.S. (CONTAIN
HYDROFLUORIC ACID, AMMONIUM FLUORIDE)
Hazard Class: 8, 6.1
UN/NA: UN2922 Reportable Quantity: 100 LBS. Packaging Group: II
Labels: CORROSIVE, POISON
Regulatory References: 49CFR 172.101

International (I.M.O.)

Proper Shipping Name: CORROSIVE LIQUIDS, POISONOUS, N.O.S. (CONTAIN
HYDROFLUORIC ACID, AMMONIUM FLUORIDE)
Hazard Class: 8, 6.1 I.M.O. Page: 8149
UN: UN2922 Marine Pollutants: No Packaging Group: II
Labels: CORROSIVE, POISON
Regulatory References: 49CFR 172.12(b); IMDG Code

AIR (I.C.A.O.)

Proper Shipping Name: CORROSIVE LIQUIDS, POISONOUS, N.O.S. (CONTAIN
HYDROFLUORIC ACID, AMMONIUM FLUORIDE)
Hazard Class: 8, 6.1 Packaging Group: II
UN: UN2922
Labels: CORROSIVE, POISON
Regulatory References: 49CFR 172.101; ICAO=== We believe the transportation
data and references contained herein to be factual and
the opinion of qualified experts. The data is meant as
a guide to the overall classification of the product
and is not package size specific, nor should it be
taken as a warranty or representation for which the
company assumes legal responsibility.=== The
information is offered solely for your consideration,
investigation, and verification. Any use of the
information must be determined by the user to be in
accordance with applicable Federal, State, and Local
laws and regulations. See shipper requirements 49CFR
172.3 and employee training 49CFR 173.1.

U.S. Customs Harmonization Number: 38239070005



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NOTE: When handling liquid products, secondary protective containers must be used for carrying.

-N/A = Not Applicable, or not Available;

N/E = Not Established.-

The information in this Material Safety Data Sheet meets the requirements of the United States OCCUPATIONAL SAFETY AND HEALTH ACT and regulations promulgated thereunder (29 CFR 1910.1200 et. seq.) and the Canadian WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM. This document is intended only as a guide to the appropriate precautionary handling of the material by a person trained in, or supervised by a person trained in, chemical handling. The user is responsible for determining the precautions and dangers of this chemical for his or her particular application. Depending on usage, protective clothing including eye and face guards and respirators must be used to avoid contact with material or breathing chemical vapors/fumes.

Exposure to this product may have serious adverse health effects. This chemical may interact with other substances. Since the potential uses are so varied, Baker cannot warn of all of the potential dangers of use

interaction with other chemicals or materials. Baker warrants that the chemical meets the specifications set forth on the label. BAKER DISCLAIMS ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED WITH REGARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MERCHANTABILITY OR ITS FITNESS FOR A PARTICULAR PURPOSE.

The user should recognize that this product can cause severe injury and even death, especially if improperly handled or the known dangers of use are not heeded. READ ALL PRECAUTIONARY INFORMATION. As new documented general safety information becomes available, Baker will periodically revise this Material Safety Data Sheet.

Note: CHEMTREC, CANUTEC, and NATIONAL RESPONSE CENTER emergency telephone numbers are to be used ONLY in the event of CHEMICAL EMERGENCIES involving a spill, leak, fire, exposure, or accident involving chemicals. All non-emergency questions should be directed to Customer Service (1-800-JTBAKER) for assistance.

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Approved by Quality Assurance Department.

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