

## SAFETY DATA SHEET

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifiers

Product name            Aluminum Metal Etchant  
CAS number             See Section 3  
Synonyms                N/A

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses            Laboratory chemicals.

#### 1.3 Details of the supplier of the safety data sheet

Company                    Lab Alley, LLC  
                                  12501 Pauls Valley Road  
                                  Austin, Texas 78737  
                                  U.S.A.  
  
Telephone                 512-668-9918  
Fax                            512-886-4008

#### 1.4 Emergency telephone

**Emergency Phone #**            US & Canada: 1-800-535-5053            INFOTRAC  
  International 1-352-323-3500            INFOTRAC

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture


##### GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Corrosive to Metals	Category 1
Acute Oral Toxicity	Category 5
Acute Dermal Toxicity	Category 5
Acute Inhalation Toxicity	Category 3
Skin Corrosion/Skin Irritation	Category 1
Serious Eye Damage/Eye Irritation	Category 1

Specific Target Organ Toxicity (single exposure)  
Specific Target Organ Toxicity (repeated exposure)

Category 2  
Category 2

## 2.2 GHS Label elements, including precautionary statements

Pictogram	
Signal Word	Danger
Hazard statements	May be corrosive to metals. Harmful if swallowed or in contact with skin. Toxic if mist is inhaled. Causes severe skin burns and serious eye damage. Health hazard. May cause damage to lungs, eyes, and mucous membranes through prolonged or repeated exposure.
Precautionary statements	<p>Prevention: Keep only in original container. Do not breathe dusts or mist. Avoid breathing fumes, mist, or vapors. Wash thoroughly after handling. Do not eat, drink, or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves and eye protection.</p> <p>Response: Get medical advice/attention if you feel unwell. Seek medical assistance if not breathing. If exposed or concerned, call a physician.</p> <p>IF SWALLOWED: Rinse mouth. Do not induce vomiting.</p> <p>IF ON SKIN: Take off immediately all contaminated clothing. Rinse skin with water. Wash contaminated clothes before reuse.</p> <p>IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>Spills: Absorb spillage to prevent material damage.</p> <p>Storage: Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant container.</p> <p>Disposal: Dispose of content/container in accordance with local/regional/national/international regulations.</p>

## 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

No information available.

## SECTION 3: Composition/information on ingredients

### 3.1 Components

Chemical name	Common name and synonyms	CAS number	Concentration
Nitric Acid	-	7697-37-2	1-5%
Phosphoric Acid	-	7664-38-2	50-70%
Acetic Acid	-	64-19-7	3-10%
Water	-	7732-18-5	15-46%
Surfactant	-	Proprietary	<0.1%

## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### General advice

<b>If inhaled</b>	If mist or fumes are inhaled, remove to fresh air. If not breathing, give artificial respiration. Seek medical attention. Effects may be delayed. May cause chemical burns to the respiratory tract.
<b>In case of skin contact</b>	Obtain medical attention. Corrosive to exposed skin. Flush skin well with water for 15 minutes, wash with soap and water. Remove affected clothing, get medical attention.
<b>In case of eye contact</b>	Corrosive to naked eye; in case of contact flush eyes well for 15 minutes, lifting the lower and upper eyelids occasionally. May cause blindness. Seek medical attention.
<b>If swallowed</b>	May cause severe and permanent damage to the digestive tract. Causes gastrointestinal burns and preformation of the digestive tract. Get medical attention immediately.

### 4.2 Most important symptoms and effects, both acute and delayed

No information available.

### 4.3 Indication of any immediate medical attention and special treatment needed

No information available.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

<b>Suitable extinguishing media</b>	Water spray or fog, Carbon dioxide, and dry chemical.
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**Unsuitable extinguishing media**

Do not use organic media.

## 5.2 Specific hazards arising from the substance or mixture

Thermal decomposition produces irritating and toxic fumes. Contact with oxidizing reagents may cause extremely violent combustion.

## 5.3 Special protective equipment and precautions for firefighters

Wear chemically retardant gear and NIOSH approved self-contained breathing apparatus.

## 5.4 Further information

**Flash Point**

No information available.

**Autoignition Temperature**

No information available.

**Explosion limits**

**Upper** No data available.

**Lower** No data available.

**Sensitivity to Mechanical Impact** No information available.

**Sensitivity to Static Discharge** No information available.

**NFPA**

Health	Flammability	Instability	Physical hazards
3	0	1	N/A

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

### 6.2 Environmental precautions

Do not let product enter drains.

### 6.3 Methods and materials for containment and cleaning up

Ventilate area of leak or spill. Clean up personnel should wear protective clothing and NIOSH approved respirator. Dike and cover the contaminated areas with absorbent, non-combustible material, such as earth, sand, or vermiculite.

### 6.4 Reference to other sections

See Section 2 for full list of hazard and precaution statements.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

#### Precautions on safe handling

Wash thoroughly after handling. Remove contaminated clothing and wash before re-use. Do not breathe dust, mist, or vapor. Do not expose eyes, skin, or clothing.

#### Hygiene measures

Handle in accordance with good industrial hygiene and safety practice.

### 7.2 Conditions for safe storage, including any incompatibilities

#### Storage conditions

Keep container closed tightly. Avoid contact with combustibles. Do not use with metal tools or items. Use with adequate ventilation or respiratory protection. Do not store near combustibles or in direct sunlight. Store in a cool, dry, well-ventilated area away from incompatible substances. Separate from metals, alkali, and organics.

#### Incompatibilities

Metals/metal powders, reducing agents, strong bases, acetic acid, alcohol, acetone, aniline, hydrogen sulfide, carbides, organic solvents, combustibles, chromic acid, flammables, cyanides, sulfides.

## SECTION 8: Exposure controls/personal protection

### 8.1 Occupational exposure limits

#### US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Component	Type	Value
Phosphoric acid	TWA	1 mg/m <sup>3</sup>
Acetic acid	TWA	10 ppm 25 mg/m <sup>3</sup>
Nitric acid	TWA	2 ppm 5 mg/m <sup>3</sup>

#### US. ACGIH Threshold Limit Values

Component	Type	Value
Phosphoric acid	TWA	1 mg/m <sup>3</sup>
	STEL	3 mg/m <sup>3</sup>
Acetic acid	TWA	10 ppm
	STEL	15 ppm
Nitric acid	TWA	2 ppm
	STEL	4 ppm

#### US. NIOSH: Pocket Guide to Chemical Hazards

Component	Type	Value
Phosphoric acid	TWA	1 mg/m <sup>3</sup>
	STEL	3 mg/m <sup>3</sup>

Acetic acid	TWA	10 ppm	25 mg/m <sup>3</sup>
	STEL	15 ppm	37 mg/m <sup>3</sup>
Nitric acid	TWA	2 ppm	5 mg/m <sup>3</sup>
	STEL	4 ppm	10 mg/m <sup>3</sup>

### Biological occupational exposure limits

No information available.

## 8.2 Exposure controls

### Appropriate engineering controls

Where adequate ventilation is not available, use NIOSH approved vapor respirator with dust, fume, and mist filters. Local ventilation through fume hoods or laminar flow stations is also preferred. Keep fumes away from strong bases.

### Personal protective equipment

#### Eye/face protection

Safety goggles / face shield.

#### Skin protection

Skin contact should be minimized through use of rubber gloves.

#### Body Protection

Steel tipped shoes/eye wash station/chemical safety chemical retardant clothing.

#### Respiratory protection

Wear NIOSH/MESA approved full or half face piece (with goggles) respiratory protective equipment to avoid exposure to vapors. A respiratory protection program complying with requirements of 29 CFR 1910.134 is recommended.

#### Control of environmental exposure

Do not let product enter drains.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Physical State	Liquid
Appearance	Syrupy, colorless
Odor	Vinegar
Odor Threshold	No data available
pH	<2
Melting Point/Range	No data available
Boiling Point/Range	100°C
Evaporation Rate	<1

Flammability (solid)	No data available
Flammability or explosive limit	No data available
Upper	
Lower	
Vapor Pressure	51 mmHg at 25°C
Vapor Density	No data available
Density	1.45 g/cc
Solubility	Completely miscible in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temp	No data available
Decomposition Temp	>150°C
Viscosity	No data available
Molecular Formula	N/A
Molecular Weight	N/A
VOC Content(%)	No data available
Oxidizing properties	No data available

## 9.2 Other safety information

No information available.

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Stable under normal conditions of use and storage.

### 10.2 Chemical stability

Stable under normal conditions of use and storage.

### 10.3 Possibility of hazardous reactions

Data not available.

### 10.4 Conditions to avoid

Excess heat, damp, light, confined spaces, incompatible materials.

### 10.5 Incompatible materials

Metals/metal powders, reducing agents, strong bases, acetic acid, alcohol, acetone, aniline, hydrogen sulfide, carbides, organic solvents, combustibles, chromic acid, flammables, cyanides, sulfides.

### 10.6 Hazardous decomposition products

Nitrogen oxides, phosphorous oxides, organic fumes.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

## Product Information, Component Information

### Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Phosphoric acid	1250 mg/kg (Rat)	-	-
Acetic acid	3310 mg/kg (Rat)	-	2819 mg/L (Mouse) 4h
Nitric acid	-	-	2.65 mg/L 4h

### Skin corrosion/irritation

Corrosive to skin/burns skin.

### Serious eye damage/eye irritation

Mixture causes serious eye damage. Risk of blindness

### Respiratory or skin sensitization

No information available.

### Germ cell mutagenicity

Ames test: negative.

### Carcinogenicity

Component	CAS	IARC	NTP	ACGIH	OSHA	Mexico
Phosphoric acid	7664-38-2	Not listed	Not listed	Not listed	Not listed	Not listed
Acetic acid	64-19-7	Not listed	Not listed	Not listed	Not listed	Not listed
Nitric acid	7697-37-2	Not listed	Not listed	Not listed	Not listed	Not listed

### Specific target organ toxicity - single exposure

No information available.

### Specific target organ toxicity - repeated exposure

No information available.

### Reproductive toxicity

No information available.

### Chronic effects

Corrosive. Vapor inhalation burns mucous membranes; causes coughing, dyspnoea. Inhalation may lead to oedemas in the respiratory tract. Burns skin, eyes (risk of blindness). Swallowing results in damage to mouth esophagus, and gastrointestinal tract; risk of perforation; bloody vomiting; death.

## 11.2 Additional Information

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Other dangerous properties can not be excluded.

## SECTION 12: Ecological information



## 12.1 Toxicity

Toxic effect on fish and plankton. Harmful effect due to pH shift. Forms corrosive mixtures with water even when diluted. Does not cause biological oxygen deficit. Hazardous to drinking water supplies.

Product		Species	Test Results
Aluminum Metal Etchant	LC50	Gambusia affinis	756 mg/L/96 h
	LC50	Fish	> 1500 mg/L

## 12.2 Persistence and degradability

No information available.

## 12.3 Bio accumulative potential

There is no evidence of bioaccumulation.

## 12.4 Mobility in soil

When released into the soil, this material may leach into groundwater. When released to water, acidity may be readily reduced by natural water hardness minerals, but the phosphate may persist indefinitely.

## 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

## 12.6 Endocrine disrupting properties

No information available.

## 12.7 Other adverse effects

No information available.

## SECTION 13: Disposal considerations

### 13.1 Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

## SECTION 14: Transport information

### DOT (US)

UN-no	UN3264
Proper Shipping Name	Corrosive Liquid, Acidic, Inorganic, N.O.S. (Phosphoric Acid and Nitric Acid)
Hazard Class	8
Packing Group	II

**IMDG**

UN-no UN3264  
Proper Shipping Name Corrosive Liquid, Acidic, Inorganic, N.O.S. (Phosphoric Acid and Nitric Acid)  
Hazard Class 8  
Packing Group II

**IATA**

UN-no UN3264  
Proper Shipping Name Corrosive Liquid, Acidic, Inorganic, N.O.S. (Phosphoric Acid and Nitric Acid)  
Hazard Class 8  
Packing Group II

**SECTION 15: Regulatory information**

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**  
Not applicable.

**CERCLA Hazardous Substance List (40 CFR 302.4)**  
Listed substances in the product are at low enough levels to not be expected to exceed the RQ.

**SARA 304 Emergency release notification**  
Listed substances in the product are at low enough levels to not be expected to exceed the RQ.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)**  
Not regulated.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**SARA 302 Extremely hazardous substance**  
Listed, Nitric acid (CAS #7697-37-2), TPQ: 1000 lb.

**SARA 311/312 Hazardous**  
See Section 2 for more information.

**SARA 313 (TRI reporting)**  
Listed, Nitric acid (CAS #7697-37-2).

**Other federal regulations**

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**  
Listed, Acetic acid (CAS #64-19-7).

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Not regulated.

**Clean Water Act (CWA) - Hazardous Substances**

Listed, Phosphoric acid (CAS #7664-38-2).

Listed, Acetic acid (CAS #64-19-7).

Listed, Nitric acid (CAS #7697-37-2).

**FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace**

Listed, Phosphoric acid (CAS #7664-38-2).

Listed, Acetic acid (CAS #64-19-7).

**US state regulations**

**US. Massachusetts RTK - Substance List**

Listed, Phosphoric acid (CAS #7664-38-2).

Listed, Acetic acid (CAS #64-19-7).

Listed, Nitric acid (CAS #7697-37-2).

**US. New Jersey Worker and Community Right-to-Know Act**

Listed, Phosphoric acid (CAS #7664-38-2).

Listed, Acetic acid (CAS #64-19-7).

Listed, Nitric acid (CAS #7697-37-2).

**US. Pennsylvania Worker and Community Right-to-Know Law**

Listed, Phosphoric acid (CAS #7664-38-2).

Listed, Acetic acid (CAS #64-19-7).

Listed, Nitric acid (CAS #7697-37-2).

**California Proposition 65**

Not listed.

**SECTION 16: Other information**

Issue date: 04/23/2024

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**SECTION 17: Disclaimer**

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.