Safety Data Sheet

Issue Date: 11-Jul-2019 **Revision Date:** 11-Jul-2019

1. IDENTIFICATION

Product identifier
Product Name ZAP

Other means of identification
SDS # SDS0005

Product Code 107705

UN/ID No UN2922

Recommended use of the chemical and restrictions on use
Recommended Use Cleaner / Degreaser.

Details of the supplier of the safety data sheet
Manufacturer Address
Zenex International
One Zenex Circle
Cleveland, Ohio 44146
440-232-4155

Emergency telephone number
Emergency Telephone INFOTRAC 1-352-323-3500 (International)
1-800-535-5053 (North America)

2. HAZARDS IDENTIFICATION

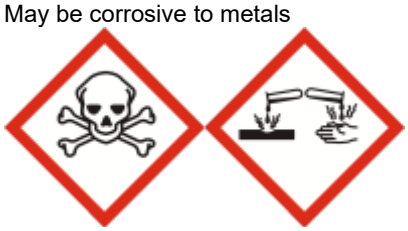
Appearance Pink liquid **Physical state** Liquid **Odor** Acid odor

Classification

Acute toxicity - Oral	Category 3
Acute toxicity - Dermal	Category 3
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin corrosion/irritation	Category 1 Sub-category A
Serious eye damage/eye irritation	Category 1
Corrosive to metals	Category 1

Signal Word
Danger

Hazard statements
Toxic if swallowed
Toxic in contact with skin
Harmful if inhaled
Causes severe skin burns and eye damage
May be corrosive to metals



Precautionary Statements - Prevention
Wear protective gloves, protective clothing, eye protection and face protection.
Wash face, hands and any exposed skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Do not breathe mist, vapors or spray.
Use only outdoors or in a well-ventilated area.
Keep only in original container.

Precautionary Statements - Response
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 doctor.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
Wash contaminated clothing before reuse.
Call a POISON CENTER or doctor if you feel unwell.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Immediately call a POISON CENTER or doctor.
IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting.
IN CASE OF SPILL: Absorb spillage to prevent material damage.

Precautionary Statements - Storage
Store in corrosive resistant container with a resistant inner liner.
Store locked up.

Precautionary Statements - Disposal
Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards
Harmful to aquatic life with long lasting effects.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No	Weight-%
Sulfuric Acid	7664-93-9	15-30
Phosphoric Acid	7664-38-2	5-10
Ammonium Fluoride	12125-01-8	<4
Glycol Ether EB	111-76-2	<5
Hydrofluoric Acid	7664-39-3	<2

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of first aid measures

General Advice — In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

Eye Contact — 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 doctor/physician.

Skin Contact — IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a poison center or doctor/physician.

Inhalation — IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.

Ingestion — IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor/physician.

Most important symptoms and effects, both acute and delayed

Symptoms

CONTAINS HYDROFLUORIC ACID
EYES: Corrosive; causes immediately severe burns of the eye and eyelids. If not quickly removed by thorough irrigation with water, there may be prolonged or permanent visual impairment or total loss of sight.
SKIN: Corrosive and extremely irritating; may produce severe chemical burns which are slow in healing. Subcutaneous tissue may be affected, becoming blanched and bloodless. Concentrations of less than 20% HF may cause delayed painful erythema up to 24 hours after contact. Latent skin burns and necrosis with slow healing can occur even at concentrations of 2% HF. Delayed burns begin with itching sensation and proceed to burning and pain.
INHALATION: Inhaling HF can seriously damage the lungs. Delayed reactions up to and including fatal pulmonary edema may be not apparent for hours after the initial exposure. High airborne concentrations may be fatal.
INGESTION: Corrosive; swallowing hydrofluoric acid causes severe burns of the mucous membranes of the mouth, throat, esophagus, and stomach.

Indication of any immediate medical attention and special treatment needed

Notes to Physician

Treat symptomatically and supportively. This product contains hydrofluoric acid. Contact your poison center for the latest advice on treatment.
For eye contact: Carefully evaluate for eye damage. Exposure to dilute solutions may result in delayed symptoms of ocular damage.
For skin contact: decontamination of the contact area is of primary importance. Symptoms may be delayed for several hours. Specific treatment is controversial with no single treatment clearly superior. Topical calcium gluconate gel or magnesium oxide paste have been successful. Calcium gluconate infiltration may be considered in some cases. Systemic absorption may occur and may require treatment with parenteral calcium salts.
For ingestion: Administer fluoride binding substance. Consider ng or soft orogastric suction and lavage with 10% calcium gluconate if the ingestion is recent and spontaneous emesis has not occurred. Monitor and treat hypocalcemia and hypomagnesemia, parenterally as needed. Observe and evaluate patient for oral and GI burns.
For inhalation: Monitor respiratory distress. Respiratory symptoms may be delayed up to 24 hours.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical
None known.

Hazardous combustion products Smoke, fumes or vapors, and oxides of carbon.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Do not breathe mist/vapors/spray. Wear protective gloves/protective clothing and eye/face protection.

For Emergency Responders Use personal protection recommended in Section 8. Follow all firefighting procedures in Section 5.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Clean-Up Keep in suitable, closed containers for disposal. For waste disposal, see section 13 of the SDS.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling Use personal protective equipment as required. Do not breathe mist/vapors/spray. Wash face, hands and any exposed skin thoroughly after handling. Wash contaminated clothing before reuse.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed and store in a cool, dry and well-ventilated place. Store locked up.

Incompatible Materials Strong oxidizing agents. Bases.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Sulfuric Acid 7664-93-9	TWA: 0.2 mg/m^3 thoracic particulate matter	TWA: 1 mg/m^3 (vacated) TWA: 1 mg/m^3	IDLH: 15 mg/m^3 TWA: 1 mg/m^3
Phosphoric Acid 7664-38-2	STEL: 3 mg/m^3 TWA: 1 mg/m^3	TWA: 1 mg/m^3 (vacated) TWA: 1 mg/m^3 (vacated) STEL: 3 mg/m^3	IDLH: 1000 mg/m^3 TWA: 1 mg/m^3 STEL: 3 mg/m^3
Ammonium Fluoride 12125-01-8	TWA: 2.5 mg/m^3 F	TWA: 2.5 mg/m^3 F (vacated) TWA: 2.5 mg/m^3	IDLH: 250 mg/m^3 F TWA: 2.5 mg/m^3 F
Glycol Ether EB 111-76-2	TWA: 20 ppm	TWA: 50 ppm TWA: 240 mg/m^3 (vacated) TWA: 25 ppm (vacated) TWA: 120 mg/m^3 (vacated) S* S*	IDLH: 700 ppm TWA: 5 ppm TWA: 24 mg/m^3
Hydrofluoric Acid 7664-39-3	TWA: 0.5 ppm F TWA: 2.5 mg/m^3 F S* Ceiling: 2 ppm F	TWA: 3 ppm F TWA: 2.5 mg/m^3 F (vacated) TWA: 3 ppm F (vacated) TWA: 2.5 mg/m^3 (vacated) STEL: 6 ppm F	IDLH: 30 ppm IDLH: 250 mg/m^3 F Ceiling: 6 ppm 15 min Ceiling: 5 mg/m^3 15 min TWA: 3 ppm TWA: 2.5 mg/m^3

Appropriate engineering controls

Engineering Controls Apply technical measures to comply with the occupational exposure limits.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Wear safety glasses with side shields (or goggles). Refer to 29 CFR 1910.133 for eye and face protection regulations.

Skin and Body Protection Wear protective gloves and protective clothing. Refer to 29 CFR 1910.138 for appropriate skin and body protection.

Respiratory Protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations. Refer to 29 CFR 1910.134 for respiratory protection requirements.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid		
Appearance	Pink liquid	**Odor**	Acid odor
Color	Pink	**Odor Threshold**	Not determined

Property	**Values**	**Remarks • Method**
pH	1	
Melting point / freezing point	Not determined	
Boiling point / boiling range	Not determined	
Flash point	Will not burn	
Evaporation Rate	Not determined	
Flammability (Solid, Gas)	Not determined	
Flammability Limit in Air		
Upper flammability or explosive limits	Not determined	
Lower flammability or explosive limits	Not determined	
Vapor Pressure	Not determined	
Vapor Density	Not determined	
Relative Density	1.237	
Water Solubility	Not determined	
Solubility in other solvents	Not determined	
Partition Coefficient	Not determined	
Autoignition temperature	Not determined	
Decomposition temperature	Not determined	
Kinematic viscosity	Not determined	
Dynamic Viscosity	Not determined	
Explosive Properties	Not determined	
Oxidizing Properties	Not determined	

Other information

VOC Content	2.5%
Liquid Density	10.32 lbs/gal

10. STABILITY AND REACTIVITY

Reactivity
Not reactive under normal conditions.

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
None under normal processing.

Hazardous Polymerization Hazardous polymerization does not occur.

Conditions to Avoid
Keep out of reach of children.

Incompatible materials
Strong oxidizing agents. Bases.

Hazardous decomposition products
Smoke, fumes or vapors, and oxides of carbon.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye Contact Causes serious eye damage.

Skin Contact Toxic in contact with skin. Causes severe skin burns.

Inhalation Harmful by inhalation.

Ingestion Toxic if swallowed.

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Sulfuric Acid 7664-93-9	= 2140 mg/kg (rat)	-	85 - 103 mg/m^3 (rat) 1 h
Phosphoric Acid 7664-38-2	= 1530 mg/kg (rat)	= 2740 mg/kg (rabbit)	> 850 mg/m^3 (rat) 1 h
Glycol Ether EB 111-76-2	= 1414 mg/kg (rat)	= 99 mg/kg (rabbit)	= 486 ppm (rat) 4 h = 450 ppm (rat) 4 h
Hydrofluoric Acid 7664-39-3	-	-	= 0.79 mg/L (rat) 1 h

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Please see section 4 of this SDS for symptoms.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Carcinogenicity Based on the information provided, this product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.
IARC has classified "strong inorganic acid mist containing sulfuric acid" as a Category 1 carcinogen, substance that is carcinogenic to humans. This classification does not apply to liquid forms of sulfuric acid. Inorganic mist is not generated under normal use of this product.

Numerical measures of toxicity
The following values are calculated based on chapter 3.1 of the GHS document.

Oral LD50 249.29 mg/kg
Dermal LD50 209.10 mg/kg
ATEmix (inhalation-dust/mist) 1.36 mg/L

12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic life with long lasting effects.

Component Information

Chemical name	Algae/aquatic plants	Fish	Crustacea
Sulfuric Acid 7664-93-9		LC50 static 500 mg/L (96 h) *Brachydanio rerio*	EC50 29 mg/L (24 h) *Daphnia magna*
Phosphoric Acid 7664-38-2		LC50 3 - 3.5 mg/L (96 h) *Gambusia affinis*	EC50 4.6 mg/L (12 h) *Daphnia magna*
Ammonium Fluoride 12125-01-8		LC50 static 364.0 mg/L (96 h) *Pimephales promelas*	
Glycol Ether EB 111-76-2		LC50 static 1490 mg/L (96 h) *Lepomis macrochirus* LC50 2950 mg/L (96 h) *Lepomis macrochirus*	EC50 1000 mg/L (48 h) *Daphnia magna* EC50 1698 - 1940 mg/L (24 h) *Daphnia magna*
Hydrofluoric Acid 7664-39-3		LC50 660 mg/L (48 h) *Leuciscus idus*	EC50 270 mg/L (48 h) *Daphnia* sp.

Persistence/Degradability

Not determined.

Bioaccumulation

There is no data for this product.

Mobility

Chemical name	Partition coefficient
Glycol Ether EB 111-76-2	0.81
Hydrofluoric Acid 7664-39-3	-1.4

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging Disposal should be in accordance with applicable regional, national and local laws and regulations.

US EPA Waste Number

Chemical name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Hydrofluoric Acid 7664-39-3	U134			U134

California Hazardous Waste Status

Chemical name	California Hazardous Waste Status
Sulfuric Acid 7664-93-9	Toxic Corrosive
Phosphoric Acid 7664-38-2	Corrosive
Ammonium Fluoride 12125-01-8	Toxic Corrosive

14. TRANSPORT INFORMATION

Note Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT

UN/ID No	UN2922
Proper Shipping Name	Corrosive liquid, toxic, n.o.s. (Hydrofluoric acid, Sulfuric acid, Phosphoric acid)
Hazard class	8
Subsidiary Hazard Class	6.1
Packing Group	II

IATA

UN number	UN2922
Proper Shipping Name	Corrosive liquid, toxic, n.o.s. (Hydrofluoric acid, Sulfuric acid, Phosphoric acid)
Transport hazard class(es)	8
Subsidiary hazard class	6.1
Packing Group	II

IMDG

UN number	UN2922
Proper Shipping Name	Corrosive liquid, toxic, n.o.s. (Hydrofluoric acid, Sulfuric acid, Phosphoric acid)
Transport hazard class(es)	8
Subsidiary Hazard Class	6.1
Packing Group	II

15. REGULATORY INFORMATION

International Inventories

Chemical name	TSCA	TSCA Inventory Status	DSL/NDSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Sulfuric Acid	X	ACTIVE	X	X	X	X	X	X	X
Phosphoric Acid	X	ACTIVE	X	X	X	X	X	X	X
Ammonium Fluoride	X	ACTIVE	X	X	X	X	X	X	X
Glycol Ether EB	X	ACTIVE	X	X	X	X	X	X	X
Hydrofluoric Acid	X	ACTIVE	X	X	X	X	X	X	X

Legend:

TSCA *- United States Toxic Substances Control Act Section 8(b) Inventory*

DSL/NDSL *- Canadian Domestic Substances List/Non-Domestic Substances List*

EINECS/ELINCS *- European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances*

ENCS *- Japan Existing and New Chemical Substances*

IECSC *- China Inventory of Existing Chemical Substances*

KECL *- Korean Existing and Evaluated Chemical Substances*

PICCS *- Philippines Inventory of Chemicals and Chemical Substances*

AICS *- Australian Inventory of Chemical Substances*

US Federal Regulations

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Sulfuric Acid 7664-93-9	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ
Phosphoric Acid 7664-38-2	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ
Ammonium Fluoride 12125-01-8	100 lb		RQ 100 lb final RQ RQ 45.4 kg final RQ
Hydrofluoric Acid 7664-39-3	100 lb	100 lb	RQ 100 lb final RQ RQ 45.4 kg final RQ

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical name	CAS No	Weight-%	SARA 313 - Threshold Values %
Sulfuric Acid - 7664-93-9	7664-93-9	15-30	1.0
Ammonium Fluoride – 12125-01-8	1341-49-7	<4	1.0
Glycol Ether EB - 111-76-2	111-76-2	<5	1.0
Hydrofluoric Acid - 7664-39-3	7664-39-3	<2	1.0

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Sulfuric Acid	1000 lb			X
Phosphoric Acid	5000 lb			X
Ammonium Fluoride	100 lb			X
Hydrofluoric Acid	100 lb			X

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals.

Chemical name	California Proposition 65
Sulfuric Acid - 7664-93-9	Carcinogen

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Sulfuric Acid 7664-93-9	X	X	X
Phosphoric Acid 7664-38-2	X	X	X
Ammonium Fluoride 12125-01-8	X	X	X
Glycol Ether EB 111-76-2	X	X	X
Hydrofluoric Acid 7664-39-3	X	X	X

16. OTHER INFORMATION

NFPA	**Health Hazards**	**Flammability**	**Instability**	**Special Hazards**
	3	0	1	None
HMIS	**Health Hazards**	**Flammability**	**Physical hazards**	**Personal Protection**
	3	0	1	D

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Disclaimer

The information provided in 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text.

End of Safety Data Sheet