SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Material name : ZEP ALUME-E 55GL

Material number : 000000000000106285

Manufacturer or supplier's details

Company : Zep Inc.

Address : 350 Joe Frank Harris Parkway, SE
Emerson, GA 30137

Telephone : 404-352-1680

Emergency telephone numbers		
For SDS Information	:	Compliance Services 1-877-428-9937
For a Medical Emergency	:	877-541-2016 Toll Free - All Calls Recorded
For a Transportation Emergency	:	CHEMTREC: 800-424-9300 - All Calls Recorded. In the District of Columbia 202-483-7616

Recommended use of the chemical and restrictions on use

Recommended use : Transportation Wash

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	liquid
Colour	colourless, clear
Odour	strong

GHS Classification

Acute toxicity (Oral) : Category 3
Acute toxicity (Inhalation) : Category 4
Acute toxicity (Dermal) : Category 2
Skin corrosion : Category 1
Serious eye damage : Category 1

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : H301 Toxic if swallowed.
H310 Fatal in contact with skin.
H314 Causes severe skin burns and eye damage.
H332 Harmful if inhaled.

Precautionary statements : **Prevention:**

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P262 Do not get in eyes, on skin, or on clothing.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
SPECIAL HANDLING INSTRUCTIONS - Due to the unique hazards associated with hydrogen fluoride (HF), facilities need to have access to emergency showers, proper personal protective equipment (PPE), a supply of calcium gluconate gel, and complete training of all individuals on proper PPE and procedures.
Response:
P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302 + P350 + P310 IF ON SKIN: Gently wash with plenty of soap and water. Immediately call a POISON CENTER or doctor/ physician.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
P305 + P351 + P338 + P310 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/doctor.
P362 Take off contaminated clothing and wash before reuse.
SUPPLEMENTAL MEDICAL TREATMENT - Get immediate medical attention while applying and massaging in 2.5% calcium gluconate gel to the skin.
Storage:
P405 Store locked up.
Disposal:
P501 Dispose of contents/container in accordance with local regulation.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration [%]
sulphuric acid	7664-93-9	>= 5 - < 10
hydrogen fluoride	7664-39-3	>= 1 - < 5
2-butoxyethanol	111-76-2	>= 1 - < 5
4-Nonylphenol branched, ethoxylated	127087-87-0	>= 1 - < 5
orthophosphoric acid	7664-38-2	>= 1 - < 5

The exact percentages of disclosed substances are withheld as trade secrets.

SECTION 4. FIRST AID MEASURES

General advice	:	Get medical attention immediately. Show this safety data sheet to the doctor in attendance. Symptoms of poisoning may appear several hours later. Do not leave the victim unattended.
If inhaled	:	Consult a physician after significant exposure. If unconscious, place in recovery position and seek medical advice.
In case of skin contact	:	Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty. Wash off immediately with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash contaminated clothing before reuse. If skin irritation persists, call a physician.
In case of eye contact	:	Small amounts splashed into eyes can cause irreversible tissue damage and blindness. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Continue rinsing eyes during transport to hospital. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
If swallowed	:	Keep respiratory tract clear. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. Take victim immediately to hospital.
Most important symptoms and effects, both acute and delayed	:	Effects are immediate and delayed. Symptoms may include blistering, irritation, burns, and pain. Effects are dependent on exposure (dose, concentration, contact time). Fatal in contact with skin. Harmful if inhaled. Causes severe skin burns and eye damage. Toxic if swallowed. Review section 2 of SDS to see all potential hazards.
Notes to physician	:	Treat symptomatically. Symptoms may be delayed. Delayed treatment may result in hypoglycemia, begin treatment with topical application calcium gluconate, and monitor blood chemistry. Contact a poison treatment specialist immediately if large quantities have been ingested or inhaled, or contact with large

portions of the body have occurred.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Dry chemical Foam Water spray
Unsuitable extinguishing media	:	High volume water jet
Specific hazards during firefighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	Fluorine compounds Carbon dioxide (CO2) Carbon monoxide Smoke Phosphorus compounds
Specific extinguishing methods	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Standard procedure for chemical fires.
Special protective equipment for firefighters	:	Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Ensure adequate ventilation.
Environmental precautions	:	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Technical measures	:	Due to the unique hazards associated with hydrogen fluoride (HF), it is highly recommended that emergency pre-planning

and training of employees occur to mitigate and facilitate rapid response to an exposure. Facilities need to have access to emergency showers, proper personal protective equipment (PPE), a supply of calcium gluconate gel, and complete training of all individuals on proper PPE and procedures.

Advice on safe handling : Avoid formation of aerosol.
Do not breathe vapours/dust.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Provide sufficient air exchange and/or exhaust in work rooms.
To avoid spills during handling keep bottle on a metal tray.
Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage : Prevent unauthorized access.
Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Observe label precautions.
Electrical installations / working materials must comply with the technological safety standards.

Materials to avoid : Keep away from oxidizing agents and strongly acid or alkaline materials.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
sulphuric acid	7664-93-9	TWA (Thoracic fraction)	0.2 mg/m3	ACGIH
		TWA	1 mg/m3	NIOSH REL
		TWA	1 mg/m3	OSHA Z-1
		TWA	1 mg/m3	OSHA P0
		PEL	0.1 mg/m3	CAL PEL
		STEL	3 mg/m3	CAL PEL
hydrogen fluoride	7664-39-3	TWA	0.5 ppm	ACGIH
		C	2 ppm	ACGIH
		TWA	3 ppm 2.5 mg/m3	NIOSH REL
		C	6 ppm 5 mg/m3	NIOSH REL
		TWA	3 ppm	OSHA Z-2
		TWA	3 ppm	OSHA P0
		STEL	6 ppm	OSHA P0

		TWA	0.5 ppm	ACGIH
		C	2 ppm	ACGIH
		TWA	3 ppm	OSHA P0
		STEL	6 ppm	OSHA P0
		PEL	0.4 ppm 0.33 mg/m3	CAL PEL
		STEL	1 ppm 0.83 mg/m3	CAL PEL
2-butoxyethanol	111-76-2	TWA	20 ppm	ACGIH
		TWA	5 ppm 24 mg/m3	NIOSH REL
		TWA	50 ppm 240 mg/m3	OSHA Z-1
		TWA	25 ppm 120 mg/m3	OSHA P0
		PEL	20 ppm 97 mg/m3	CAL PEL
orthophosphoric acid	7664-38-2	TWA	1 mg/m3	ACGIH
		STEL	3 mg/m3	ACGIH
		TWA	1 mg/m3	NIOSH REL
		ST	3 mg/m3	NIOSH REL
		TWA	1 mg/m3	OSHA Z-1
		TWA	1 mg/m3	OSHA P0
		STEL	3 mg/m3	OSHA P0
		PEL	1 mg/m3	CAL PEL
		STEL	3 mg/m3	CAL PEL

Biological occupational exposure limits

Component	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
HYDROFLUORIC ACID	7664-39-3	Fluoride	Urine	Prior to shift (16 hours after exposure ceases)	2 mg/l	ACGIH BEI
HYDROFLUORIC ACID		Fluoride	Urine	End of shift (As soon as possible after exposure ceases)	3 mg/l	ACGIH BEI
2-BUTOXYETHANOL	111-76-2	Butoxyacetic acid (BAA)	Urine	End of shift (As soon as possible after exposure ceases)	200.mg/g Creatinine	ACGIH BEI

Engineering measures : effective ventilation in all processing areas

Personal protective equipment

Respiratory protection	:	Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.
Hand protection		
Material	:	Protective gloves
Remarks	:	The suitability for a specific workplace should be discussed with the producers of the protective gloves.
Eye protection	:	Access to clean water to rinse eyes must be available, options include: eye wash stations or showers, or eye wash bottles with pure water. Tightly fitting safety goggles Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection	:	Impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Hygiene measures	:	Avoid contact with skin, eyes and clothing. When using do not eat or drink. When using do not smoke. Wash hands before breaks and immediately after handling the product.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Colour	:	colourless, clear
Odour	:	strong
Odour Threshold	:	No data available
pH	:	< 1
Melting point/freezing point	:	No data available
Boiling point	:	104.44 °C
Flash point	:	does not flash
Evaporation rate	:	1
Upper explosion limit	:	No data available
Lower explosion limit	:	No data available
Vapour pressure	:	No data available
Relative vapour density	:	No data available
Density	:	1.06 g/cm3
Solubility(ies)		

Water solubility	:	soluble in cold water
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	not determined
Thermal decomposition	:	No data available
Viscosity		
Viscosity, kinematic	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Stable
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No decomposition if stored and applied as directed.
Conditions to avoid	:	No data available
Incompatible materials	:	Oxidizing agents Alkali metals
Hazardous decomposition products	:	Hydrogen fluoride Sulphur oxides Carbon dioxide (CO2) Carbon monoxide Phosphorus compounds

SECTION 11. TOXICOLOGICAL INFORMATION

Potential Health Effects

Aggravated Medical Condition	:	None known.
Symptoms of Overexposure	:	Effects are immediate and delayed. Symptoms may include blistering, irritation, burns, and pain. Effects are dependent on exposure (dose, concentration, contact time).

Carcinogenicity:

IARC	Group 1: Carcinogenic to humans	
	sulphuric acid	7664-93-9
ACGIH	Suspected human carcinogen	
	sulphuric acid	7664-93-9
OSHA	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.	

NTP	Known to be human carcinogen	
	sulphuric acid	7664-93-9

Acute toxicity

Product:

Acute oral toxicity	:	Acute toxicity estimate : 141.72 mg/kg Method: Calculation method
Acute inhalation toxicity	:	Acute toxicity estimate : 13.78 mg/l Exposure time: 4 h Test atmosphere: vapour Method: Calculation method
Acute dermal toxicity	:	Acute toxicity estimate : 141.62 mg/kg Method: Calculation method

Components:

2-butoxyethanol:

Acute oral toxicity	:	LD50 Oral Rat: 880 mg/kg
Acute dermal toxicity	:	LD50 Dermal Rabbit: 1,060 mg/kg

4-Nonylphenol branched, ethoxylated:

Acute oral toxicity	:	LD50 Oral Rat: 16,000 mg/kg
Acute dermal toxicity	:	LD50 Rabbit: 2,573 mg/kg

Skin corrosion/irritation

Product:

Remarks: Extremely corrosive and destructive to tissue.

Components:

hydrogen fluoride:
Remarks: Causes skin burns. Harmful if absorbed through the skin. Contact results in immediate skin absorption which may cause hypocalcemia (calcium loss). This effect may be delayed for several hours after exposure. Severe over-exposure by absorption can result in death. Get immediate medical attention.

Serious eye damage/eye irritation

Product:

Remarks: May cause irreversible eye damage.

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

STOT - single exposure

No data available

STOT - repeated exposure

No data available

Aspiration toxicity

No data available

Further information

Product:

Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

No data available

Persistence and degradability

No data available

Bioaccumulative potential

Product:

Partition coefficient: n-octanol/water	:	Remarks: No data available

Mobility in soil

No data available

Other adverse effects

No data available

Product:

Regulation	40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks	This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological	:	An environmental hazard cannot be excluded in the

information | event of unprofessional handling or disposal., Harmful to aquatic life.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Dispose of in accordance with local regulations.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

Transportation Regulation: 49 CFR (USA):
UN2922, Corrosive liquids, toxic, n.o.s., (HYDROFLUORIC ACID, SULFURIC ACID), 8, (6.1), II

Transportation Regulation: IMDG (Vessel):
UN2922, CORROSIVE LIQUID, TOXIC, N.O.S., (HYDROFLUORIC ACID, SULFURIC ACID), 8, (6.1), II

Transportation Regulation: IATA (Cargo Air):
UN2922, Corrosive liquid, toxic, n.o.s., (HYDROFLUORIC ACID, SULFURIC ACID), 8, (6.1), II

Transportation Regulation: IATA (Passenger Air):
UN2922, Corrosive liquid, toxic, n.o.s., (HYDROFLUORIC ACID, SULFURIC ACID), 8, (6.1), II

Transportation Regulation: TDG (Canada):
UN2922, CORROSIVE LIQUID, TOXIC, N.O.S., (HYDROFLUORIC ACID, SULFURIC ACID), 8, (6.1), II

The product as delivered to the customer conforms to packaging requirements for shipment by road under US Department of Transportation (DOT) regulations. Additional transportation classifications noted above are for reference only, and not a certification or warranty of the suitability of the packaging for shipment under these alternative transport regulations.

SECTION 15. REGULATORY INFORMATION

TSCA list : No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
hydrogen fluoride	7664-39-3	100	2845

SARA 304 Extremely Hazardous Substances Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
hydrogen fluoride	7664-39-3	100	2845

SARA 311/312 Hazards : Acute toxicity (any route of exposure)
Skin corrosion or irritation
Serious eye damage or eye irritation

SARA 302 : The following components are subject to reporting levels established by SARA Title III, Section 302:

sulphuric acid	7664-93-9	4.3051 %
hydrogen fluoride	7664-39-3	3.514 %

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

hydrogen fluoride	7664-39-3	3.514 %
2-butoxyethanol	111-76-2	2.5298 %

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

DSL All components of this product are on the Canadian DSL
TSCA On TSCA Inventory

For information on the country notification status for other regions please contact the manufacturer's regulatory group.

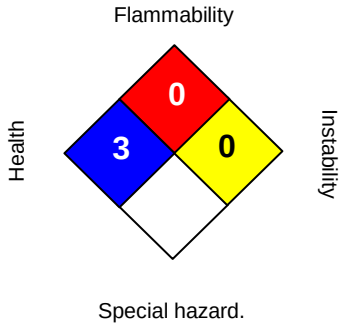
Inventory Acronym and Validity Area Legend:

TSCA (USA), DSL (Canada), NDSL (Canada)

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

HEALTH	3
FLAMMABILITY	0
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

OSHA - GHS Label Information:

Hazard pictograms :

Signal word : **Danger:**

Hazard statements : Toxic if swallowed. Fatal in contact with skin. Causes severe skin burns and eye damage. Harmful if inhaled.

Precautionary statements :

Prevention: Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Do not get in eyes, on skin, or on clothing. Wash skin 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/ protective clothing/ eye protection/ face protection. SPECIAL HANDLING INSTRUCTIONS - Due to the unique hazards associated with hydrogen fluoride (HF), facilities need to have access to emergency showers, proper personal protective equipment (PPE), a supply of calcium gluconate gel, and complete training of all individuals on proper PPE and procedures.
Response: IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN: Gently wash with plenty of soap and water. Immediately call a POISON CENTER or doctor/ physician. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. 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/doctor. Take off contaminated clothing and wash before reuse. SUPPLEMENTAL MEDICAL TREATMENT - Get immediate medical attention while applying and massaging in 2.5% calcium gluconate gel to the skin.
Storage: Store locked up.
Disposal: Dispose of contents/container in accordance with local regulation.

Version:	2.1
Revision Date:	05/11/2018
Print Date:	06/13/2019

We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. Users should make their own investigations to determine the suitability and applicability of the information for their particular purposes.

This SDS has been prepared by the Compliance Services organization supporting this manufacturer, supplier or distributor.

Zep Inc. markets products under well recognized and established brand names such as Zep®, Zep Commercial®,Zep Professional®, Enforcer®, National Chemical™, Selig™, Misty®, Next Dimension™, Petro®, i-Chem®, TimeMist®, TimeWick™, MicrobeMax®, Country Vet®, Konk®, Original Bike Spirits®, Blue Coral®, Black Magic®, Rain-X®, Niagara National™, FC Forward Chemicals®,Rexodan®, Mykal™, and a number of private labeled brands.