

SAFETY DATA SHEET

Product Trade Name: **Vertex**

Revision Date: 01-15-18

Revision Number: 1

11. Identification

1.1. Product Identifier Product

Trade Name: Vertex

Synonyms:

Chemical Family: Inorganic acid

Internal ID Code 888

1.2 Recommended use and restrictions on use Application:

Adjuvent

1.3 Manufacturer's Name and Contact Details

Manufacturer/Supplier Aquapproach LLC.
18 Park Place Dr.
Gonzales , TX 78629

1.4. Emergency telephone number

Emergency Telephone Number 1-800-633-8253

2. Hazard(s) Identification

2.1 Classification in accordance with paragraph (d) of §1910.1200

| | |
|-------------------------------------|---------------------|
| Skin Corrosion / Irritation | Category 1 B - H314 |
| Serious Eye Damage / Eye Irritation | Category 1 - H318 |
| Corrosive to Metals. | Category 1 - H290 |

2.2. Label Elements

Hazard Pictograms



Signal Word

Danger

Hazard Statements H290 - May be corrosive to metals
 H314 - Causes severe skin burns and eye damage
 H318 - Causes serious eye damage

Precautionary Statements

Prevention P234 - Keep only in original container
 P260 - Do not breathe dust/fume/gas/mist/vapors/spray
 P264 - Wash face, hands and any exposed skin thoroughly after handling
 P280 - Wear protective gloves/protective clothing/eye protection/face protection

Response P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
 P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
 P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 P310 - Immediately call a POISON CENTER or doctor/physician
 P363 - Wash contaminated clothing before reuse
 P390 - Absorb spillage to prevent material damage

Storage P405 - Store locked up
 P406 - Store in corrosive resistant container with a resistant inner liner.

Disposal P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

Contains Substances
 Hydrochloric acid

CAS Number 7647-01-

0

2.3 Hazards not otherwise classified

None known

3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - US |
|-------------------|------------|---------------|---|
| Hydrochloric acid | 7647-01-0 | 5% - 20% | Skin Corr. 1B (H314) Eye Corr. 1 (H318) STOT SE 3 (H335) Met. Corr. 1 (H290) |

The exact percentage (concentration) of the composition has been withheld as proprietary.

4. First-Aid Measures

4.1. Description of first aid measures

Inhalation If inhaled, move victim to fresh air and seek medical attention.
Eyes In case of contact, immediately flush eyes with plenty of water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Seek immediate medical attention/advice. Suitable emergency eye wash facility should be immediately available
Skin In case of contact, immediately flush skin with plenty of soap and water for at least 30 minutes and remove contaminated clothing, shoes and leather goods immediately. Get medical attention immediately.

Ingestion Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

4.2 Most important symptoms/effects, acute and delayed

Causes severe skin irritation with tissue destruction. Causes severe eye irritation which may damage tissue.

4.3. Indication of any immediate medical attention and special treatment needed Notes to Physician Treat symptomatically.

5. Fire-fighting measures

5.1. Extinguishing media

Suitable Extinguishing Media

Water fog, carbon dioxide, foam, dry chemical.

Extinguishing media which must not be used for safety reasons

None known.

5.2 Specific hazards arising from the substance or mixture

Special Exposure Hazards

May form explosive mixtures with strong alkalis. Decomposition in fire may produce toxic gases. Reaction with steel and certain other metals generates flammable hydrogen gas. Do not allow runoff to enter waterways.

5.3 Special protective equipment and precautions for fire-fighters

Special Protective Equipment for Fire-Fighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures Use appropriate protective equipment.

See Section 8 for additional information

6.2. Environmental precautions

Prevent from entering sewers, waterways, or low areas.

6.3. Methods and material for containment and cleaning up

Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Neutralize to pH of 6-8. Scoop up and remove.

7. Handling and storage

7.1. Precautions for Safe Handling Handling

Precautions

Wash hands after use. Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Launder contaminated clothing before reuse. **Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Information

Store away from alkalis. Store in a cool well ventilated area. Keep container closed when not in use.

8. Exposure Controls/Personal Protection

8.1 Occupational Exposure Limits

| Substances | CAS Number | OSHA PEL-TWA | ACGIH TLV-TWA |
|-------------------|------------|--------------|---------------|
| Hydrochloric acid | 7647-01-0 | TWA: 5 ppm | TWA: 2 ppm |

8.2 Appropriate engineering controls

Engineering Controls Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

8.3 Individual protection measures, such as personal protective equipment

Personal Protective Equipment If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

Respiratory Protection Acid gas respirator.

Hand Protection Impervious rubber gloves.

Skin Protection Full protective chemical resistant clothing. Rubber boots.

Eye Protection Chemical goggles; also wear a face shield if splashing hazard exists.

Other Precautions Eyewash fountains and safety showers must be easily accessible.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

No

Physical State: Liquid

Odor: Pungent acrid

Color: Clear colorless
Odor information available

Threshold:

Property

Remarks/ - Method

pH:

Freezing Point/Range

Melting Point/Range

Boiling Point/Range

Flash Point

Flammability (solid, gas)

upper flammability limit

lower flammability limit

Evaporation rate

Vapor Pressure

Vapor Density

Specific Gravity

Water Solubility

Solubility in other solvents

Partition coefficient: n-octanol/water

Autoignition Temperature

Decomposition Temperature

Viscosity

Explosive Properties

Oxidizing Properties

Values

0.8

-46 °C / -50 °F

No data available

110 °C / 230 °F

No data available

No data available

No data available

No data available

No data available

26 mmHg

No data available

1.16

Soluble in water

No data available

No data available

No data available

No data available

No data available

No information available

No information available

9.2. Other information

Molecular Weight

VOC Content (%)

36.5 g/mol

No data available

10. Stability and Reactivity

10.1. Reactivity

Not expected to be reactive.

10.2. Chemical Stability Stable

10.3. Possibility of Hazardous Reactions Will

Not Occur

10.4. Conditions to Avoid None

anticipated

10.5. Incompatible Materials Strong

alkalis.

10.6. Hazardous Decomposition Products

Flammable hydrogen gas. Chlorine. Hydrogen sulfide.

11. Toxicological Information

11.1 Information on likely routes of exposure

Principle Route of Exposure Eye or skin contact, inhalation.

11.2 Symptoms related to the physical, chemical and toxicological characteristics Acute

Toxicity

| | |
|---------------------|---|
| Inhalation | Causes severe respiratory irritation. |
| Eye Contact | Causes severe eye irritation. May cause eye burns. |
| Skin Contact | Causes severe skin irritation. May cause skin burns on prolonged contact. |
| Ingestion | Causes burns of the mouth, throat and stomach. |

Chronic Effects/Carcinogenicity Prolonged, excessive exposure may cause erosion of the teeth.

11.3 Toxicity data

Toxicology data for the components

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|-------------------|------------|---------------------------|---|---|
| Hydrochloric acid | 7647-01-0 | No data available | 5010 mg/kg (Rabbit) > 5010 mg/kg (Rabbit) 1449 mg/kg (Mouse) | 3124 mg/L (Rat) 1h 3.2 mg/L (Mouse) 8.3 mg/L (Rat) 1405 mg/L (Rat) 554 mg/L (Mouse) |
| Substances | CAS Number | Skin corrosion/irritation | | |
| Hydrochloric acid | 7647-01-0 | Causes severe burns | | |

| Substances | CAS Number | Eye damage/irritation |
|-------------------|------------|-----------------------|
| Hydrochloric acid | 7647-01-0 | Causes severe burns |

| Substances | CAS Number | Skin Sensitization |
|-------------------|------------|--|
| Hydrochloric acid | 7647-01-0 | Did not cause sensitization on laboratory animals (guinea pig) |

| Substances | CAS Number | Respiratory Sensitization |
|-------------------|------------|---------------------------|
| Hydrochloric acid | 7647-01-0 | No information available |

| Substances | CAS Number | Mutagenic Effects |
|-------------------|------------|----------------------------|
| Hydrochloric acid | 7647-01-0 | Not regarded as mutagenic. |

| Substances | CAS Number | Carcinogenic Effects |
|-------------------|------------|--|
| Hydrochloric acid | 7647-01-0 | No data of sufficient quality are available. |

| Substances | CAS Number | Reproductive toxicity |
|-------------------|------------|--|
| Hydrochloric acid | 7647-01-0 | Embryo and fetotoxicity has been observed in female rats exposed to maternally toxic levels of hydrogen chloride (450 mg/m ³ , 1hr.). |

| Substances | CAS Number | STOT - single exposure |
|-------------------|------------|-----------------------------------|
| Hydrochloric acid | 7647-01-0 | May cause respiratory irritation. |

| Substances | CAS Number | STOT - repeated exposure |
|-------------------|------------|---|
| Hydrochloric acid | 7647-01-0 | No significant toxicity observed in animal studies at concentration requiring classification. |

| Substances | CAS Number | Aspiration hazard |
|-------------------|------------|-------------------|
| Hydrochloric acid | 7647-01-0 | Not applicable |

12. Ecological Information

12.1. Toxicity

Ecotoxicity Effects

Product Ecotoxicity Data

No data available

Substance Ecotoxicity Data

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|-------------------|------------|--------------------------|--|---|-------------------------------------|
| Hydrochloric acid | 7647-01-0 | No information available | LC50 282 mg/L (Gambusia affinis) LC50 20.5 mg/L (Lepomis macrochirus) LC50 (96h) 3.25 – 3.5 (pH) (Lepomis macrochirus) | EC50 (3h) >= 5 and <= 5.5 (pH) (Activated sludge, domestic) | EC50 (48h) 4.9 (pH) (Daphnia magna) |

12.2. Persistence and degradability

| Substances | CAS Number | Persistence and Degradability |
|-------------------|------------|--|
| Hydrochloric acid | 7647-01-0 | The methods for determining biodegradability are not applicable to inorganic substances. |

12.3. Bioaccumulative potential

| Substances | CAS Number | Log Pow |
|-------------------|------------|---------|
| Hydrochloric acid | 7647-01-0 | 0.25 |

12.4. Mobility in soil

| Substances | CAS Number | Mobility |
|-------------------|------------|--------------------------|
| Hydrochloric acid | 7647-01-0 | No information available |

12.5 Other adverse effects

No information available

13. Disposal Considerations

13.1. Waste treatment methods

Disposal Method Disposal should be made in accordance with federal, state, and local regulations.

Contaminated Packaging Follow all applicable national or local regulations.

14. Transport Information

US DOT

UN Number: UN1789
UN Proper Shipping Name: Hydrochloric Acid Solution
Transport Hazard Class(es): 8
Packing Group: II
Environmental Hazards: Not applicable
Reportable Quantity: RQ (Hydrochloric Acid - 15153 kg.)
NAERG: NAERG 157

US DOT Bulk DOT (Bulk) Not applicable

Canadian TDG

UN Number: UN1789
UN Proper Shipping Name: Hydrochloric Acid Solution
Transport Hazard Class(es): 8
Packing Group: II
Environmental Hazards: Not applicable

IMDG/IMO

UN Number: UN1789
UN Proper Shipping Name: Hydrochloric Acid Solution
Transport Hazard Class(es): 8
Packing Group: II
Environmental Hazards: Not applicable
Reportable Quantity: RQ (Hydrochloric Acid - 15153 kg.)
EMS: EmS F-A, S-B

IATA/ICAO

UN Number: UN1789
UN Proper Shipping Name: Hydrochloric Acid Solution
Transport Hazard Class(es): 8
Packing Group: II
Environmental Hazards: Not applicable
Reportable Quantity: RQ (Hydrochloric Acid - 15153 kg.)

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable

Special Precautions for User: None

15. Regulatory Information US Regulations

| | |
|--|--|
| US TSCA Inventory | All components listed on inventory or are exempt. |
| EPA SARA Title III Extremely Hazardous Substances | Not applicable |
| EPA SARA (311,312) Hazard Class | Additional information Acute Health Hazard |
| EPA SARA (313) Chemicals | This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372). |
| EPA CERCLA/Superfund Reportable Spill Quantity | EPA Reportable Spill Quantity is 3450 Gallons based on Hydrochloric acid (CAS: 7647-01-0). |
| EPA RCRA Hazardous Waste Classification | If product becomes a waste, it does meet the criteria of a hazardous waste as defined by the US EPA, because of: Corrosivity D002 |
| California Proposition 65 MA | All components listed do not apply to the California Proposition 65 Regulation. |
| Right-to-Know Law | One or more components listed. |
| NJ Right-to-Know Law | One or more components listed. |
| PA Right-to-Know Law | One or more components listed. |

Canadian Regulations

Canadian DSL Inventory

All components listed on inventory or are exempt.

16. Other information

For additional information on the use of this product, contact Aquaproach LLC.

Key or legend to abbreviations and acronyms bw

– body weight

CAS – Chemical Abstracts Service

EC50 – Effective Concentration 50%

ErC50 – Effective Concentration growth rate 50%

LC50 – Lethal Concentration 50%

LD50 – Lethal Dose 50% LL50

– Lethal Loading 50% mg/kg –

milligram/kilogram mg/L – milligram/liter

NIOSH – National Institute for Occupational Safety and Health

NTP – National Toxicology Program

OEL – Occupational Exposure Limit

PEL – Permissible Exposure Limit ppm

– parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
UN – United Nations
h - hour
mg/m³ - milligram/cubic meter
mm - millimeter mmHg -
millimeter mercury w/w -
weight/weight d - day

Key literature references and sources for data

www.ChemADVISOR.com/
OSHA
ECHA C&L

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End of Safety Data Sheet