

## Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

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### Backbrite Plus

#### SECTION 1: Identification

##### Product Identifier

**Product Name:** Backbrite Plus

**Product code:** QW-0210P

##### Recommended Use of the Product and Restriction on Use

**Relevant Identified Uses:** Aluminum and Wheel Cleaning - Commercial Vehicle Wash

**Uses Advised Against:** Use on polished aluminum and glass

**Reasons Why Uses Advised Against:** Can permanently damage.

##### Manufacturer or Supplier Details

###### Manufacturer:

###### United States

Quest Car Care Products

3333 Production Ct.

Zeeland, Michigan 49464

616-772-5100

www.questcarcare.com

##### Emergency Telephone Number:

###### United States

CHEMTREC

1-800-424-9300 (24 hrs)

1-800-262-8200 (24 hrs)

1-703-527-3887 (24 hrs (international))

#### SECTION 2: Hazard(s) Identification

##### GHS Classification:

Corrosive to metals, category 1

Acute toxicity (oral), category 3

Acute toxicity (dermal), category 3

Acute toxicity (inhalation), category 3

Skin corrosion, category 1A

Serious eye damage, category 1

##### Label elements

###### Hazard Pictograms:



**Signal Word:** Danger

##### Hazard statements:

H290 May be corrosive to metals

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H314 Causes severe skin burns and eye damage

H318 Causes serious eye damage

H301 Toxic if swallowed

H311 Toxic in contact with skin

H331 Toxic if inhaled

### Precautionary Statements:

P234 Keep only in original container

P260 Do not breathe dust/fume/gas/mist/vapors/spray

P264 Wash hands/skin thoroughly after contact with or handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection

P270 Do not eat, drink or smoke when using this product

P261 Avoid breathing dust/fume/gas/mist/vapors/spray

P271 Use only outdoors or in a well-ventilated area

P390 Absorb spillage to prevent material-damage

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

P363 Wash contaminated clothing before reuse

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

P310 Immediately call a POISON CENTER/911/PHYSICIAN IF: swallowed, eye contact, skin burns/rash or breathing difficulties.

P321 Specific treatment (see first aid procedures on the product label in section 4 of this SDS)

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor/911 and follow first aid procedures on this SDS.

P330 Rinse mouth

P312 Call a POISON CENTER/911/PHYSICIAN if you feel unwell.

P302+P352 IF ON SKIN: WASH WITH PLENTY OF SOAP AND WATER.

P361+P364 Take off immediately all contaminated clothing and wash it before reuse

P311 Call a POISON CENTER/911/PHYSICIAN IF: swallowed, eye contact, skin burns/rash or breathing difficulties.

P406 Store in corrosive resistant/or heavy duty plastic container using a chemical resistant inner liner.

P405 Store locked up

P403+P233 Store in a well-ventilated place. Keep container tightly closed

P501 Dispose of contents/container in accordance with local, state and federal regulations.

**Hazards Not Otherwise Classified:** None

## SECTION 3: Composition/Information on Ingredients

Identification	Name	Weight %
CAS Number: 7732-18-5	Water	60-80
CAS Number: 7664-93-9	Sulfuric acid	10-20
CAS Number: 1341-49-7	Ammonium hydrogendifluoride	1-5
CAS Number: 77-92-9	Citric acid	1-5

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CAS Number: 12125-01-8	Ammonium fluoride	0.05-0.25
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**Additional Information:** None

## SECTION 4: First Aid Measures

### Description of First Aid Measures

#### General Notes:

Show this Safety Data Sheet to the doctor in attendance.

Show this Safety Data Sheet to the doctor in attendance. This product is toxic by one or more routes of exposure (inhalation, ingestion, skin contact). Take precautions to ensure your own safety before attempting rescue. Wear appropriate safety eyewear, gloves, protective clothing and respiratory protection to prevent exposure. See Section 8 of this SDS for personal protective equipment recommendations. Do not use the mouth to mouth method if victim has ingested or inhaled the product. Give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper device.

#### After Inhalation:

If inhaled, remove person to fresh air and place in a position comfortable for breathing. Keep person at rest. If breathing is difficult, administer oxygen. If breathing has stopped, provide artificial respiration. If symptoms develop or persist, seek medical advice/attention.

If inhaled, remove person to fresh air and place in a position comfortable for breathing. Keep person at rest. If breathing is difficult, administer oxygen. If breathing has stopped, provide artificial respiration. If experiencing respiratory symptoms, seek medical advice/attention.

#### After Skin Contact:

Remove contaminated clothing and shoes. Rinse skin with copious amounts of water [shower] for several minutes. Launder contaminated clothing before reuse. If symptoms develop or persist, seek medical advice/attention.

Treatment is urgent. Seek emergency medical treatment. Remove contaminated clothing and shoes. Rinse skin with copious amounts of water [shower] for several minutes. Launder contaminated clothing before reuse.

#### After Eye Contact:

Rinse eyes with plenty of water for several minutes. Remove contact lenses if present and easy to do so. Protect unexposed eye. If symptoms develop or persist, seek medical advice/attention.

Immediately rinse eyes with plenty of gently flowing lukewarm water for 15 minutes. Remove contact lenses if present and easy to do so. Protect unexposed eye. Seek immediate medical attention, preferably from an ophthalmologist.

Rinse eyes with plenty of water for several minutes. Remove contact lenses, if present and easy to do so. Protect unexposed eye. If symptoms develop or persist, seek medical advice/attention.

#### After Swallowing:

If swallowed, DO NOT induce vomiting unless told to do so by a physician or poison control center. Rinse mouth with water. Never give anything by mouth to an unconscious person. If spontaneous vomiting occurs, place on the left side with head down to prevent aspiration of liquid into the lungs. If symptoms develop or persist, seek medical advice/attention.

If swallowed, DO NOT induce vomiting unless told to do so by a physician or poison control center. Rinse mouth with water. Never give anything by mouth to an unconscious person. If spontaneous vomiting occurs, place on the left side with head down to prevent aspiration of liquid into the lungs. Seek immediate medical attention.

### Most Important Symptoms and Effects, Both Acute and Delayed

#### Acute Symptoms and Effects:

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Products that are corrosive to metals are often corrosive to the skin, eyes and the respiratory tract. Exposure to skin may result in redness, pain, burning, inflammation and tissue damage. Exposure to eyes may result in irritation, redness, pain, inflammation, itching, burning, tearing, corneal damage and loss of vision. Exposure via inhalation may result in cough, sore throat, burning sensation and shortness of breath. Exposure via ingestion may result in burns of the mouth and throat, abdominal pain, burning sensation in the throat and chest, nausea, vomiting, shock or collapse.

Eye contact may result in irritation, redness, pain, inflammation, itching, burning, tearing, corneal damage and loss of vision.

Acute oral exposure may lead to dizziness, drowsiness, headache, breathing difficulties, nausea, vomiting, abdominal pain, and lowering of consciousness. Adverse effects are dependent on exposure (dose, concentration, contact time).

Acute dermal exposure may lead to dizziness, drowsiness, headache, breathing difficulties, nausea, vomiting, abdominal pain, and lowering of consciousness. Adverse effects are dependent on exposure (dose, concentration, contact time).

Acute inhalation exposure may lead to dizziness, drowsiness, headache, breathing difficulties, nausea, vomiting, abdominal pain, and lowering of consciousness. Adverse effects are dependent on exposure (dose, concentration, contact time).

### Delayed Symptoms and Effects:

Effects are dependent on exposure (dose, concentration, contact time).

Symptoms of exposure may be delayed.

### Immediate Medical Attention and Special Treatment

#### Specific Treatment:

In case of eye contact, seek prompt medical attention while rinsing is continued.

In case of skin contact, seek prompt medical attention while rinsing is continued.

In case of ingestion, seek prompt medical attention.

#### Notes for the Doctor:

Treat symptomatically.

## SECTION 5: Firefighting Measures

### Extinguishing Media

#### Suitable Extinguishing Media:

Water mist/fog, carbon dioxide, dry chemical or alcohol resistant foam.

#### Unsuitable Extinguishing Media:

Do not use water jet.

### Specific Hazards During Fire-Fighting:

Contact with metals may evolve flammable hydrogen gas. Thermal decomposition may produce irritating/toxic fumes/gases.

Thermal decomposition may produce irritating/toxic fumes/gases.

### Special Protective Equipment for Firefighters:

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full-face piece operated in positive pressure mode.

### Special precautions:

DO NOT GET WATER INSIDE CONTAINERS. Avoid contact with skin, eyes, hair and clothing. Do not breathe fumes/gas/mists/aerosols/vapors/dusts. Move containers from fire area if safe to do so. Use water spray/fog for cooling fire exposed containers. Avoid unnecessary run-off of extinguishing media which may cause pollution.

Avoid contact with skin, eyes, hair and clothing. Do not breathe fumes/gas/mists/aerosols/vapors/dusts.

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Move containers from fire area if safe to do so. Use water spray/fog for cooling fire exposed containers. Avoid unnecessary run-off of extinguishing media which may cause pollution.

### SECTION 6: Accidental Release Measures

#### Personal Precautions, Protective Equipment, and Emergency Procedures:

Evacuate unnecessary personnel. Ventilate area. Extinguish any sources of ignition. Wear recommended personal protective equipment (see Section 8). Avoid contact with skin, eyes and clothing. Avoid breathing mist, vapor, dust, fume and spray. Do not walk through spilled material. Wash thoroughly after handling.

Evacuate unnecessary personnel. Ventilate area. Extinguish any sources of ignition. Wear recommended personal protective equipment (see Section 8). Do not get on skin, eyes or on clothing. Avoid breathing mist, vapor, dust, fume and spray. Do not walk through spilled material. Wash thoroughly after handling. Remove contaminated clothing with proper techniques in order to prevent contact with skin or eyes. Place contaminated clothing in a sealed container for future disposal.

Evacuate unnecessary personnel. Ventilate area. Extinguish any sources of ignition. Wear recommended personal protective equipment (see Section 8). Do not get on skin, eyes or on clothing. Avoid breathing mist, vapor, dust, fume and spray. Do not walk through spilled material. Wash thoroughly after handling. Remove contaminated clothing with proper techniques in order to prevent contact with skin or eyes. Place contaminated clothing in a sealed container for future disposal.

Evacuate unnecessary personnel and prevent entry. Ventilate area. Extinguish any sources of ignition. Wear recommended personal protective equipment (see Section 8). Do not get on skin, eyes or on clothing. Avoid breathing mist, vapor, dust, fume and spray. Do not walk through spilled material. Wash thoroughly after handling. Remove contaminated clothing with proper techniques in order to prevent contact with skin or eyes. Place contaminated clothing in a sealed container for future disposal.

#### Environmental Precautions:

Prevent further leakage or spillage if safe to do so. Prevent from reaching drains, sewers and waterways. Discharge into the environment must be avoided.

#### Methods and Material for Containment and Cleaning Up:

Do not touch damaged containers or spilled material unless wearing appropriate personal protective clothing. Stop leak if you can do it without risk. Contain and collect spillage and place in suitable corrosive resistant containers for future disposal. Do not get water in containers as reaction with water or moist air may release toxic, corrosive or flammable gases. Dispose of in accordance with all applicable regulations (see Section 13).

Do not touch damaged containers or spilled material unless wearing appropriate personal protective clothing. Stop leak if you can do it without risk. Contain and collect spillage and place in suitable container for future disposal. Dispose of in accordance with all applicable regulations (see Section 13).

Toxic if swallowed. Do not touch mouth or face with contaminated gloves or clothing. Do not ingest. Avoid breathing dust, mist, fumes, vapors or spray. Do not touch damaged containers or spilled material unless wearing appropriate personal protective clothing. Stop leak if you can do it without risk. Contain and collect spillage and place in suitable container for future disposal. Dispose of in accordance with all applicable regulations (see Section 13).

Toxic in contact with skin. Do not touch damaged containers or spilled material unless wearing appropriate personal protective clothing. Avoid breathing dust, mist, fumes, vapors or spray. Stop leak if you can do it without risk. Contain and collect spillage and place in suitable container for future disposal. Dispose of in accordance with all applicable regulations (see Section 13).

Toxic if inhaled. Put on appropriate personal protective equipment, including a self-contained breathing apparatus (see Section 8) before entering area of spill or leak. Avoid breathing dust, mist, fumes, vapors or spray. Do not touch damaged containers or spilled material unless wearing appropriate personal protective clothing. Stop leak if you can do it without risk. Contain and collect spillage and place in suitable container for future disposal. Dispose of in accordance with all applicable regulations (see Section 13).

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### Reference to Other Sections:

For personal protective equipment see Section 8. For disposal see Section 13.

## SECTION 7: Handling and Storage

### Precautions for Safe Handling:

Use appropriate personal protective equipment (see Section 8). Prevent skin contact. Do not get in eyes. Use only with adequate ventilation. Do not add water to the corrosive product. If it is necessary to mix a corrosive product with water, do so slowly adding the corrosive to cold water, in small amounts, and stir frequently. Avoid breathing mist/vapor/spray/dust. Do not eat, drink, smoke, or use personal products when handling chemical substances. Wash affected areas thoroughly after handling. Keep away from incompatible materials (See Section 10). Keep containers tightly closed when not in use. Keep only in original packaging. Use appropriate personal protective equipment (see Section 8). Use only with adequate ventilation. Avoid breathing mist/vapor/spray/dust. Do not eat, drink, smoke, or use personal products when handling chemical substances. Do not get in eyes. Avoid contact with skin and clothing. Wash affected areas thoroughly after handling. Keep away from incompatible materials (See Section 10). Keep containers tightly closed when not in use.

Toxic if swallowed. Do not handle material unless wearing appropriate personal protective equipment (see Section 8). Use only with adequate ventilation. Avoid breathing mist/vapor/spray/dust. Do not eat, drink, smoke, or use personal products when handling chemical substances. Prevent contact with skin, eyes and clothing. Handle with caution. Do not handle broken or punctured containers. Immediately report spills, leaks or problems with hazard control measures. Wash thoroughly after handling. Keep away from incompatible materials (See Section 10). Keep containers tightly closed when not in use.

Toxic in contact with skin. Do not handle material unless wearing appropriate personal protective equipment (see Section 8). Use only with adequate ventilation. Avoid breathing mist/vapor/spray/dust. Do not eat, drink, smoke, or use personal products when handling chemical substances. Prevent contact with skin, eyes and clothing. Handle with caution. Do not handle broken or punctured containers. Immediately report spills, leaks or problems with hazard control measures. Wash thoroughly after handling. Keep away from incompatible materials (See Section 10). Keep containers tightly closed when not in use.

Toxic if inhaled. Do not handle material unless wearing appropriate personal protective equipment, including respiratory protection (see Section 8). Use only with adequate ventilation. Do not breathe mist/vapor/spray/dust. Do not eat, drink, smoke, or use personal products when handling chemical substances. Open container slowly to prevent dispersal of material into the air. Prevent contact with skin, eyes and clothing. Handle with caution. Do not handle broken or punctured containers. Immediately report spills, leaks or problems with hazard control measures. Wash thoroughly after handling. Keep away from incompatible materials (See Section 10). Keep containers tightly closed when not in use.

### Conditions for Safe Storage, Including Any Incompatibilities:

Store in cool, dry, well-ventilated location out of direct sunlight and away from exit paths. Store in a corrosion-resistant container with a resistant inner liner. Inspect containers and storage area regularly for signs of leak and damage. Store containers at a convenient height for handling, below eye level if possible. High shelving increases the risk of dropping containers, personal injury and exposure. Ensure that appropriate fire fighting and spill-clean up equipment is readily available. Keep away from food and beverages. Protect from freezing and physical damage. Store away from heat, open flames and other sources of ignition. Store separately. Keep container tightly sealed. Store away from incompatible materials (See Section 10).

Store in cool, dry, well-ventilated location out of direct sunlight. Keep away from food and beverages. Protect from freezing and physical damage. Store away from heat, open flames and other sources of ignition. Keep container tightly sealed. Store away from incompatible materials (See Section 10).

Store in cool, dry, well-ventilated location out of direct sunlight and away from exit paths. Inspect containers and storage area regularly for signs of leak and damage. Store containers at a convenient height for handling, below eye level if possible. High shelving increases the risk of dropping containers, personal injury and exposure. Ensure that appropriate fire fighting and spill-clean up equipment is readily available. Keep

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away from food and beverages. Protect from freezing and physical damage. Store away from heat, open flames and other sources of ignition. Store separately. Keep container tightly sealed. Store away from incompatible materials (See Section 10).

### SECTION 8: Exposure Controls/Personal Protection

Only those substances with limit values have been included below.

#### Occupational Exposure Limit Values:

Country (Legal Basis)	Substance	Identifier	Permissible concentration
ACGIH	Sulfuric acid	7664-93-9	8-Hour TWA: 0.2 mg/m <sup>3</sup> (thoracic fraction)
	Ammonium hydrogendifluoride	1341-49-7	8-Hour TWA: 2.5 mg/m <sup>3</sup> (Fluorides, as F)
	Ammonium fluoride	12125-01-8	8-Hour TWA: 2.5 mg/m <sup>3</sup> (Fluorides, qw F)
NIOSH	Sulfuric acid	7664-93-9	REL-TWA: 1 mg/m <sup>3</sup> (10 hr)
	Sulfuric acid	7664-93-9	IDLH: 15 mg/m <sup>3</sup>
	Ammonium hydrogendifluoride	1341-49-7	REL-TWA: 2.5 mg/m <sup>3</sup> (Fluorides, solid inorganic, as F [up to 10 hr])
	Ammonium hydrogendifluoride	1341-49-7	IDLH: 250 mg/m <sup>3</sup> (Fluorides, solid, inorganic, as F)
	Ammonium fluoride	12125-01-8	REL-TWA: 2.5 mg/m <sup>3</sup> (Fluorides, solid, inorganic, as F)
	Ammonium fluoride	12125-01-8	IDLH: 250 mg/m <sup>3</sup> (Fluorides, as F)
OSHA	Sulfuric acid	7664-93-9	8-Hour TWA-PEL: 1 mg/m <sup>3</sup>
	Ammonium hydrogendifluoride	1341-49-7	8-Hour TWA-PEL: 2.5 mg/m <sup>3</sup> (Fluorides, as F)
	Ammonium fluoride	12125-01-8	8-Hour TWA-PEL: 2.5 mg/m <sup>3</sup> (Fluorides, as F)
United States(California)	Sulfuric acid	7664-93-9	8-Hour TWA-PEL: 0.1 mg/m <sup>3</sup>
	Sulfuric acid	7664-93-9	15-Minute STEL: 3 mg/m <sup>3</sup>
	Ammonium hydrogendifluoride	1341-49-7	8-Hour TWA-PEL: 2.5 mg/m <sup>3</sup> (Fluorides, as F)
	Ammonium fluoride	12125-01-8	8-Hour TWA: 2.5 mg/m <sup>3</sup> (Fluorides, as F)

#### Biological Limit Values:

Country (Legal Basis)	Substance	Identifier	Determinant	Specimen	Sampling time	Permissible limits
ACGIH	Ammonium hydrogendifluoride	1341-49-7	Fluoride	Urine	Prior to shift	2 mg/L
	Ammonium hydrogendifluoride	1341-49-7	Fluoride	Urine	End of shift	3 mg/L
	Ammonium fluoride	12125-01-8	Fluoride	Urine	Prior to Shift	2 mg/L
	Ammonium fluoride	12125-01-8	Fluoride	Urine	End of shift	3 mg/L



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### Information on Monitoring Procedures:

Not determined or not applicable.

### Appropriate Engineering Controls:

Emergency eye wash stations and safety showers should be available in the immediate vicinity of use or handling. Provide adequate ventilation to maintain the airborne concentrations of vapor, mists, and/or dusts below the applicable workplace exposure limits, while observing recognized national standards (or equivalent).

Toxic if swallowed. Emergency eye wash stations and safety showers should be available in the immediate vicinity of use or handling. Provide adequate ventilation to maintain the airborne concentrations of vapor, mists, and/or dusts below the applicable workplace exposure limits, while observing recognized national standards (or equivalent).

Toxic in contact with skin. Emergency eye wash stations and safety showers should be available in the immediate vicinity of use or handling. Provide adequate ventilation to maintain the airborne concentrations of vapor, mists, and/or dusts below the applicable workplace exposure limits, while observing recognized national standards (or equivalent).

Toxic if inhaled. Emergency eye wash stations and safety showers should be available in the immediate vicinity of use or handling. Provide adequate ventilation to maintain the airborne concentrations of vapor, mists, and/or dusts below the applicable workplace exposure limits, while observing recognized national standards (or equivalent).

### Personal Protection Equipment

#### Eye and Face Protection:

Use safety glasses with side shields or goggles. Consider the use of a face shield for splash protection.

Use eye protection equipment that has been tested and approved by recognized national standards (or equivalent).

Use safety glasses with side shields or goggles. Use eye protection equipment that has been tested and approved by recognized national standards (or equivalent).

#### Skin and Body Protection:

Chemical resistant, impervious gloves approved by the appropriate standards. Gloves must be inspected prior to use. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. Avoid skin contact with used gloves. Appropriate techniques should be used to remove used gloves and contaminated clothing. Full body protection should be worn. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Ensure that all personal protective equipment is approved by recognized national standards (or equivalent).

Chemical resistant, impervious gloves approved by the appropriate standards. Gloves must be inspected prior to use. Avoid skin contact with used gloves. Appropriate techniques should be used to remove used gloves and contaminated clothing. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Ensure that all personal protective equipment is approved by recognized national standards (or equivalent).

#### Respiratory Protection:

If engineering controls do not maintain airborne concentrations below the applicable workplace exposure limits, or to an acceptable level (if exposure limits have not been established), a respirator approved by recognized national standards (or equivalent) must be worn.

### General Hygienic Measures:

When handling chemical products, do not eat, drink or smoke. Wash hands after handling, before breaks, and at the end of the workday. Avoid contact with skin, eyes and clothing. Wash contaminated clothing



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before reuse. Perform routine housekeeping.

### SECTION 9: Physical and Chemical Properties

#### Information on Basic Physical and Chemical Properties

<b>Appearance</b>	Orange liquid
<b>Odor</b>	Pungent - Sharply acrid
<b>Odor threshold</b>	Not determined or not available.
<b>pH</b>	<1.0
<b>Melting point/freezing point</b>	Not determined or not available.
<b>Initial boiling point/range</b>	Not determined or not available.
<b>Flash point (closed cup)</b>	None
<b>Evaporation rate</b>	Not determined or not available.
<b>Flammability (solid, gas)</b>	Not determined or not available.
<b>Upper flammability/explosive limit</b>	Not determined or not available.
<b>Lower flammability/explosive limit</b>	Not determined or not available.
<b>Vapor pressure</b>	Not determined or not available.
<b>Vapor density</b>	Not determined or not available.
<b>Density</b>	Not determined or not available.
<b>Relative density</b>	1.10-1.15
<b>Solubilities</b>	Water
<b>Partition coefficient (n-octanol/water)</b>	Not determined or not available.
<b>Auto/Self-ignition temperature</b>	Not determined or not available.
<b>Decomposition temperature</b>	Not determined or not available.
<b>Dynamic viscosity</b>	Not determined or not available.
<b>Kinematic viscosity</b>	Not determined or not available.
<b>Explosive properties</b>	Not determined or not available.
<b>Oxidizing properties</b>	Not determined or not available.

### SECTION 10: Stability and Reactivity

#### Reactivity:

Not reactive under recommended handling and storage conditions.

#### Chemical Stability:

Stable under recommended handling and storage conditions.

#### Possibility of Hazardous Reactions:

Hazardous reactions are not anticipated under recommended conditions of handling and storage.

#### Conditions to Avoid:

Avoid generation of aerosols and mists, extreme heat, open flames, hot surfaces, sparks, ignition sources and incompatible materials.

Extreme heat, open flames, hot surfaces, sparks, ignition sources and incompatible materials.

Avoid confined spaces, extreme heat, open flames, hot surfaces, sparks, ignition sources and incompatible materials.

#### Incompatible Materials:

None known.

#### Hazardous Decomposition Products:

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Under normal conditions of storage and use, hazardous decomposition products should not be produced.

### SECTION 11: Toxicological Information

#### Acute Toxicity

##### Assessment:

Toxic if swallowed  
Toxic in contact with skin.  
Toxic if inhaled.

**Product Data:** No data available.

##### Substance Data:

Name	Route	Result
Sulfuric acid	oral	LD50 Rat: 2140 mg/kg
Citric acid	oral	LD50 Mouse: 5400 mg/kg
	dermal	LD50 Rat: > 2000 mg/kg
Ammonium hydrogendifluoride	oral	LD50 Rat: 130 mg/kg
Ammonium fluoride	oral	LD50 Rat: 223 mg/kg
	inhalation	LC50 Rat: 1 mg/L
	dermal	LD50 Rabbit: 300 mg/kg

#### Skin Corrosion/Irritation

##### Assessment:

Causes severe skin burns and eye damage.

##### Product Data:

No data available.

##### Substance Data:

Name	Result
Sulfuric acid	Causes severe skin burns.
Ammonium hydrogendifluoride	Causes severe skin burns.

#### Serious Eye Damage/Irritation

##### Assessment:

Causes serious eye damage.

##### Product Data:

No data available.

##### Substance Data:

Name	Result
Sulfuric acid	Causes serious eye damage.
Citric acid	Causes serious eye irritation.
Ammonium hydrogendifluoride	Causes serious eye damage.

#### Respiratory or Skin Sensitization

**Assessment:** Based on available data, the classification criteria are not met.

##### Product Data:

No data available.

**Substance Data:** No data available.

#### Carcinogenicity

**Assessment:** Based on available data, the classification criteria are not met.

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**Product Data:** No data available.

**Substance Data:** No data available.

### International Agency for Research on Cancer (IARC):

Name	Classification
Water	Not Applicable
Sulfuric acid	Group 1
Citric acid	Not Applicable
Ammonium hydrogendifluoride	Group 3
Ammonium fluoride	Not Applicable

### National Toxicology Program (NTP):

Name	Classification
Water	Not Applicable
Sulfuric acid	Known to be human carcinogens
Citric acid	Not Applicable
Ammonium hydrogendifluoride	Not Applicable
Ammonium fluoride	Not Applicable

**OSHA Carcinogens:** Not applicable

### Germ Cell Mutagenicity

**Assessment:** Based on available data, the classification criteria are not met.

**Product Data:**

No data available.

**Substance Data:** No data available.

### Reproductive Toxicity

**Assessment:** Based on available data, the classification criteria are not met.

**Product Data:**

No data available.

**Substance Data:** No data available.

### Specific Target Organ Toxicity (Single Exposure)

**Assessment:** Based on available data, the classification criteria are not met.

**Product Data:**

No data available.

**Substance Data:**

Name	Result
Citric acid	May cause respiratory irritation.

### Specific Target Organ Toxicity (Repeated Exposure)

**Assessment:** Based on available data, the classification criteria are not met.

**Product Data:**

No data available.

**Substance Data:**

Name	Result
Sulfuric acid	Repeated or prolonged inhalation may damage the lungs. Risk of tooth erosion upon repeated or prolonged exposure to an aerosol of this substance.

### Aspiration toxicity

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**Assessment:** Based on available data, the classification criteria are not met.

**Product Data:**

No data available.

**Substance Data:** No data available.

**Information on Likely Routes of Exposure:**

No data available.

**Symptoms Related to the Physical, Chemical, and Toxicological Characteristics:**

No data available.

**Other Information:**

No data available.

## SECTION 12: Ecological Information

### Acute (Short-Term) Toxicity

**Assessment:** Based on available data, the classification criteria are not met.

**Product Data:** No data available.

**Substance Data:**

Name	Result
Sulfuric acid	Aquatic Plants EC50 Algae: >100 mg/L (72 hr [growth rate])
	Fish LC50 Lepomis macrochirus: >16 - <28 mg/L (96 hr)
	Aquatic Invertebrates EC50 Daphnia magna: >100 mg/L (48 hr [mobility])
Citric acid	Fish LC50 Pimephales promelas: >100 mg/L (96 hr)
	Aquatic Invertebrates EC50 Dreissena polymorpha: >50 mg/L (48 hr)
Ammonium hydrogendifluoride	Fish LC50 Pimephales promelas: 0.75 - 3.4 mg/L (96 hr)
	Aquatic Invertebrates LC50 Daphnia magna: 101 mg/L (48 hr [read-across substance])
Ammonium fluoride	Aquatic Plants EC50 Selenastrum capricornutum: 43 mg/L (96 hr [biomass])
	Fish LC50 Oncorhynchus mykiss: 107.5 mg/L (96 hr)
	Aquatic Invertebrates EC50 Daphnia magna: 2.94 mg/L (48 hr [mortality])

### Chronic (Long-Term) Toxicity

**Assessment:** Based on available data, the classification criteria are not met.

**Product Data:** No data available.

**Substance Data:** No data available.

### Persistence and Degradability

**Product Data:** No data available.

**Substance Data:**

Name	Result
Citric acid	Readily biodegradable in water (97% degradation measured by CO2 evolution after 28 days).
Ammonium fluoride	This endpoint is not relevant for an inorganic substance.

### Bioaccumulative Potential

**Product Data:** No data available.

**Substance Data:**

Name	Result
Citric acid	Low potential for bioaccumulation (BCF: 3.2 L/kg).

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Name	Result
Ammonium hydrogendifluoride	The limited data indicate that fluoride biomagnification in the aquatic environment is of little significance. Fluoride accumulates in aquatic organisms predominantly in the exoskeleton of crustacea and in the skeleton of fish; no accumulation was reported for edible tissue.
Ammonium fluoride	The limited data indicate that fluoride biomagnification in the aquatic environment is of little significance. Fluoride accumulates in aquatic organisms predominantly in the exoskeleton of crustacea and in the skeleton of fish. No accumulation was reported for edible tissue.

### Mobility in Soil

**Product Data:** No data available.

#### Substance Data:

Name	Result
Ammonium hydrogendifluoride	The behaviour of fluoride in water is dependent on pH and mineral content. Fluoride is deposited to sediment as insoluble complexes and is essentially immobile in soil due to its incorporation into insoluble complexes.
Ammonium fluoride	Adsorption to the soil solid phase is stronger at slightly acidic pH values (5.5 - 6.5). Fluoride is not readily leached from soil.

### Results of PBT and vPvB assessment

#### Product Data:

**PBT assessment:** This product does not contain any substances that are assessed to be a PBT.

**vPvB assessment:** This product does not contain any substances that are assessed to be a vPvB.

#### Substance Data:

##### PBT assessment:

Sulfuric acid	PBT assessment does not apply to inorganic substances.
Citric acid	Substance is not PBT
Ammonium hydrogendifluoride	The substance is not PBT.
Ammonium fluoride	PBT assessment does not apply to inorganic substances.

##### vPvB assessment:

Sulfuric acid	vPvB assessment does not apply to inorganic substances.
Citric acid	Substance is not vPvB
Ammonium hydrogendifluoride	The substance is not vPvB.
Ammonium fluoride	vPvB assessment does not apply to inorganic substances.

**Other Adverse Effects:** No data available.

## SECTION 13: Disposal Considerations

### Disposal Methods:

It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities

### Contaminated packages:

Not determined or not applicable.

## SECTION 14: Transport Information

### United States Transportation of Dangerous Goods (49 CFR DOT)


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<b>UN Number</b>	3264		
<b>UN Proper Shipping Name</b>	Corrosive, Liquid, Acidic, Inorganic, N.O.S. (Sulfuric Acid, Ammonium Bi Fluoride)		
<b>UN Transport Hazard Class(es)</b>	8		
<b>Packing Group</b>	II		
<b>Environmental Hazards</b>	None		
<b>Special Precautions for User</b>	None		

**International Maritime Dangerous Goods (IMDG)**

<b>UN Number</b>	3264		
<b>UN Proper Shipping Name</b>	Corrosive, Liquid, Acidic, Inorganic, N.O.S. (Sulfuric Acid, Ammonium Bi Fluoride)		
<b>UN Transport Hazard Class(es)</b>	8		
<b>Packing Group</b>	II		
<b>Environmental Hazards</b>	None		
<b>Special Precautions for User</b>	None		

**International Air Transport Association Dangerous Goods Regulations (IATA-DGR)**

<b>UN Number</b>	3264		
<b>UN Proper Shipping Name</b>	Corrosive, Liquid, Acidic, Inorganic, N.O.S. (Sulfuric Acid, Ammonium Bi Fluoride)		
<b>UN Transport Hazard Class(es)</b>	8		
<b>Packing Group</b>	II		
<b>Environmental Hazards</b>	None		
<b>Special Precautions for User</b>	None		

**SECTION 15: Regulatory Information**

**United States Regulations**

**Inventory Listing (TSCA):** All ingredients are listed-active or exempt.

**Significant New Use Rule (TSCA Section 5):** None of the ingredients are listed.

**Export Notification under TSCA Section 12(b):** None of the ingredients are listed.

**SARA Section 302 Extremely Hazardous Substances:**

7664-93-9	Sulfuric acid	Listed
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**SARA Section 313 Toxic Chemicals:**

7664-93-9	Sulfuric acid	Listed
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**CERCLA:**

7664-93-9	Sulfuric acid	Listed	1000 lbs
1341-49-7	Ammonium hydrogendifluoride	Listed	100 lbs
12125-01-8	Ammonium fluoride	Listed	100 Lbs.

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### RCRA:

1341-49-7	Ammonium hydrogendifluoride	Listed	F039
12125-01-8	Ammonium fluoride	Listed	F038

### Section 112(r) of the Clean Air Act (CAA):

7664-93-9	Sulfuric acid	Listed
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### Massachusetts Right to Know:

7664-93-9	Sulfuric acid	Listed
1341-49-7	Ammonium hydrogendifluoride	Listed
12125-01-8	Ammonium fluoride	Listed

### New Jersey Right to Know:

7664-93-9	Sulfuric acid	Listed
1341-49-7	Ammonium hydrogendifluoride	Listed
12125-01-8	Ammonium fluoride	Listed

### New York Right to Know:

7664-93-9	Sulfuric acid	Listed
1341-49-7	Ammonium hydrogendifluoride	Listed
12125-01-8	Ammonium fluoride	Listed

### Pennsylvania Right to Know:

7664-93-9	Sulfuric acid	Listed
1341-49-7	Ammonium hydrogendifluoride	Listed
12125-01-8	Ammonium fluoride	Listed

### California Proposition 65:

**⚠️WARNING:** This product can expose you to Strong inorganic acid mists containing sulfuric acid; which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

**Additional information:** Not determined.

## SECTION 16: Other Information

**Abbreviations and Acronyms:** None

### Disclaimer:

This product has been classified in accordance with OSHA HCS 2012 guidelines. The information provided in this SDS is correct, to the best of our knowledge, based on information available. The information given is designed only as a guidance for safe handling, use, storage, transportation and disposal 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, unless specified in the text. The responsibility to provide a safe workplace remains with the user.

**NFPA:** 0-0-0

**HMIS:** 3-0-0-X

**Initial Preparation Date:** 02.01.2023

**End of Safety Data Sheet**