JMN SPECIALTIES, INC.

Safety Data Sheet
ALUM BRITE 2

SECTION 1: Identification

1.1 GHS Product identifier

Product name	ALUM BRITE 2
Product number	ALUM BRITE 2
Brand	JMN

1.2 Other means of identification

1.3 Recommended use of the chemical and restrictions on use

Recommended Use: Industrial acidic cleaner, descaler, and tank cleaning formulation
Restrictions on Use: For industrial and professional use only. Not for household, food, or pharmaceutical use.

1.4 Supplier's details

Name	JMN Specialties, Inc.
Address	1100 Victory Drive Westwego LA 70094 USA
Telephone	504-341-3749
Fax	504-341-5868
email	sales@jmnspecialties.com

1.5 Emergency phone number

US & Canada: (800) 255-3924
Outside USA +01-813-248-0585.

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

GHS classification in accordance with: OSHA (29 CFR 1910.1200)

- Skin corrosion/irritation, Cat. 1A
- Eye damage/irritation, Cat. 1
- Acute toxicity, oral, Cat. 4
- Specific target organ toxicity (single exposure), Cat. 3

2.2 GHS label elements, including precautionary statements

Pictograms

Signal word **Danger**

Hazard statement(s)

H314	Causes severe skin burns and eye damage
H302	Harmful if swallowed
H335	May cause respiratory irritation

Precautionary statement(s)

P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P264	Wash hands and clean any skin contact thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
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 person to fresh air and keep 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/doctor/emergency room.
P330	Rinse mouth.
P363	Wash contaminated clothing before reuse.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P501	Dispose of container and unused contents in accordance with federal, state and local requirements.

2.3 Other hazards which do not result in classification

Repeated skin contact may cause defatting and dermatitis. Vapors or mists may accumulate in confined or poorly ventilated areas. Contact with metals may generate hydrogen gas. Spilled material may create a slip hazard. Contains ammonium bifluoride. Exposure may result in delayed systemic fluoride toxicity, including hypocalcemia.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Component	Identification	Weight %	Classifications
Sulfuric acid	CAS no.: 7664-93-9 EC no.: 231-639-5 Index no.: 016-020-00-8	7 - 10 %	CLASSIFICATIONS: Skin corrosion/irritation, Cat. 1A. HAZARDS: H314 - Causes severe skin burns and eye damage. [SCLs/M-factors/ATEs]: Skin Corr. 1A; H314: C ≥ 15 %; Skin Irrit. 2; H315: 5 % ≤ C < 15 %; Eye Irrit. 2; H319: 5 % ≤ C < 15 %

Component	Identification	Weight %	Classifications
Phosphoric acid	CAS no.: 7664-38-2 EC no.: 231-633-2 Index no.: 015-011-00-6	> 10 - 15 %	CLASSIFICATIONS: Skin corrosion/irritation, Cat. 1B. HAZARDS: H314 - Causes severe skin burns and eye damage. [SCLs/M-factors/ATEs]: Skin Corr. 1B; H314: C ≥ 25 %; Skin Irrit. 2; H315: 10 % ≤ C < 25 %; Eye Irrit. 2; H319: 10 % ≤ C < 25 %
Ammonium bifluoride	CAS no.: 1341-49-7 EC no.: 215-676-4 Index no.: 009-009-00-4	6 - 8 %	CLASSIFICATIONS: Acute toxicity, oral, Cat. 3; Skin corrosion/irritation, Cat. 1B. HAZARDS: H301 - Toxic if swallowed; H314 - Causes severe skin burns and eye damage. [SCLs/M-factors/ATEs]: *; Skin Corr. 1B; H314: C ≥ 1 %; Skin Irrit. 2; H315: 0,1 % ≤ C < 1 %; Eye Irrit. 2; H319: 0,1 % ≤ C < 1 %
Butoxyethanol	CAS no.: 111-76-2 EC no.: 203-905-0 Index no.: 603-014-00-0	1 - 5 %	CLASSIFICATIONS: Flammable liquids, Cat. 4; Acute toxicity, dermal, Cat. 4; Acute toxicity, inhalation, Cat. 4; Acute toxicity, oral, Cat. 4; Skin corrosion/irritation, Cat. 2; Eye damage/irritation, Cat. 2A. HAZARDS: H227 - Combustible liquid; H302 - Harmful if swallowed; H312 - Harmful in contact with skin; H315 - Causes skin irritation; H319 - Causes serious eye irritation; H332 - Harmful if inhaled. [SCLs/M-factors/ATEs]: Oral: ATE = 1200 mg/kg

Trade secret statement (OSHA 1910.1200(i))
Any concentration shown as a range is to protect confidentiality or is due to batch variation. When not listed, mixtures may contain water [CAS No. 7732-18-5] to 100%. The chemical identity and/or percentage of composition of other components is being withheld as a trade secret.

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

General advice

Immediate medical attention is required for all significant exposures. This product is strongly acidic and contains ammonium bifluoride, which may result in both corrosive injury and systemic fluoride toxicity. Ensure that medical personnel are aware of the presence of fluoride compounds. Prompt treatment is essential.

If inhaled

Remove person to fresh air immediately. Keep at rest in a position comfortable for breathing. If breathing is difficult, administer oxygen if trained personnel are available. If breathing has stopped, provide artificial respiration. Exposure to mists or vapors may cause irritation to the nose, throat, and respiratory tract. Seek immediate medical attention if symptoms persist or worsen.

In case of skin contact	Immediately remove contaminated clothing, shoes, and leather goods. Rinse affected skin with large amounts of water for at least 15 minutes. Do not delay rinsing. Wash thoroughly with mild soap after initial flushing if available. Chemical burns may develop rapidly and may not be immediately painful. Due to the presence of ammonium bifluoride, fluoride ions may penetrate tissue and cause deep tissue damage and systemic toxicity. For suspected fluoride exposure, apply calcium gluconate gel if available and seek immediate medical attention. Seek immediate medical attention for all significant exposures. Launder contaminated clothing before reuse and discard contaminated footwear if necessary.
In case of eye contact	Immediately flush eyes with large amounts of water for at least 15 minutes, holding eyelids open and away from the eyeball to ensure thorough rinsing. Remove contact lenses if present and easy to do, then continue rinsing. Do not allow the victim to rub eyes. This product causes severe eye damage and potential permanent injury. Seek immediate medical attention.
If swallowed	Do NOT induce vomiting. Rinse mouth thoroughly with water if the person is conscious. Never give anything by mouth to an unconscious person. If vomiting occurs spontaneously, keep head below hips to reduce the risk of aspiration. This product may cause severe burns to the mouth, throat, and stomach and may result in systemic fluoride toxicity, including hypocalcemia. Seek immediate medical attention or contact a poison center.
Personal protective equipment for first-aid responders	Wear suitable protective clothing. Wear gloves and eye/face protection.

4.2 Most important symptoms/effects, acute and delayed

Exposure to this product may result in severe corrosive injury to skin and eyes, including burns, tissue destruction, and potential permanent eye damage or vision loss. Inhalation of mists or vapors may cause irritation to the respiratory tract, leading to coughing, throat irritation, or difficulty breathing. Ingestion may result in severe gastrointestinal irritation, including nausea, vomiting, and abdominal pain, along with chemical burns to the mouth, throat, and stomach. Due to the presence of ammonium bifluoride, systemic fluoride toxicity may occur following significant exposure, which can lead to delayed effects such as hypocalcemia, muscle cramps, weakness, and, in severe cases, cardiac irregularities.

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Treat symptomatically. For significant exposure to ammonium bifluoride, medical monitoring of calcium, magnesium, and potassium levels may be required. Calcium supplementation (such as calcium gluconate) may be indicated in cases of fluoride exposure. Burns should be treated as chemical burns. Ensure adequate hydration and supportive care. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Suitable Extinguishing Media: Use extinguishing media appropriate for the surrounding fire, including water spray, dry chemical, carbon dioxide (CO_2), or alcohol-resistant foam.
Unsuitable Extinguishing Media: Do not use direct high-pressure water streams, as this may spread the material and increase the potential for splashing of corrosive liquid.

5.2 Specific hazards arising from the chemical

This product is not flammable; however, it is a strongly acidic solution that may react with certain metals to generate flammable hydrogen gas, which can form explosive mixtures with air. In a fire situation, thermal decomposition may produce hazardous fumes and gases, including sulfur oxides (SOx), phosphorus oxides (POx), hydrogen fluoride (HF), and ammonia or nitrogen oxides. Contact with incompatible materials such as bases, cyanides, sulfides, or reactive metals may result in violent reactions or release of toxic gases. Containers exposed to heat may rupture due to pressure buildup.

5.3 Special protective actions for fire-fighters

Firefighters should wear full self-contained breathing apparatus (SCBA) and full protective chemical-resistant clothing. Avoid inhalation of fumes, vapors, or combustion products. Use water spray to cool fire-exposed containers and to disperse vapors. Prevent runoff from fire control or dilution from entering drains, sewers, or waterways. Approach fire from upwind and avoid low-lying areas where vapors may accumulate.

Further information

This product does not burn but may contribute to hazardous conditions in a fire due to corrosivity, toxic decomposition products, and potential hydrogen gas evolution upon contact with metals.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Evacuate non-essential personnel from the area. Ensure adequate ventilation. Avoid breathing mists or vapors and prevent contact with skin, eyes, and clothing. Wear appropriate personal protective equipment, including acid-resistant gloves, chemical goggles and face shield, and chemical-resistant clothing. For large spills or confined space situations, use appropriate respiratory protection. Approach spill from upwind and avoid low-lying areas where vapors or mists may accumulate.

6.2 Environmental precautions

Prevent release to the environment. Avoid discharge into surface waters, storm drains, or sanitary sewers. This product may cause localized acidification and environmental harm. Notify appropriate authorities if a significant release occurs.

6.3 Methods and materials for containment and cleaning up

Contain spill to prevent spreading. Do not allow material to enter drains, sewers, or waterways. Dike the spill area if necessary. Carefully neutralize with an appropriate alkaline material such as soda ash, lime, or sodium bicarbonate, taking care to control heat and potential splattering during neutralization. Absorb the neutralized material with inert absorbents such as sand, vermiculite, or universal absorbent. Collect material into suitable, labeled containers for proper disposal. Flush residual area with water after complete cleanup, if appropriate and permitted. Where applicable, fluoride-containing waste may require treatment with calcium salts (e.g., lime) to precipitate fluoride as calcium fluoride.

Reference to other sections

See protective measures in Sections 7 and 8. Disposal considerations in Section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practices. Avoid contact with skin, eyes, and clothing. Do not breathe mists or vapors. Use only with adequate ventilation or local exhaust. Wash thoroughly after handling and before eating, drinking, or smoking. Do not ingest. Keep containers tightly closed when not in use. Use corrosion-resistant equipment and materials when handling this product. Avoid mixing with incompatible materials, including bases, oxidizers, reactive metals, cyanides, and sulfides. This product may react with metals to produce hydrogen gas, which can form flammable or explosive mixtures in confined spaces. Avoid conditions that may generate mist or aerosol. Do not mix with bleach (hypochlorite solutions), as toxic chlorine gas may be released.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, and well-ventilated area in tightly closed, properly labeled, corrosion-resistant containers. Keep away from heat, direct sunlight, and incompatible materials such as bases, oxidizers, and reactive metals. Store away from food, beverages, and animal feed. Protect containers from physical damage. Do not store in metal containers unless properly lined and compatible with acidic materials. Protect from freezing; product may become more viscous or partially solidify at low temperatures. Secondary containment is recommended to prevent environmental release.

Specific end use(s)

This product is intended for industrial and professional use as a heavy-duty acidic cleaner and descaler for the removal of mineral scale, rust, iron deposits, and inorganic fouling from tanks, pipelines, heat exchangers, and process equipment. It is particularly suited for tank cleaning operations in oil and gas production, refining, and industrial maintenance applications where rapid dissolution of scale and deposits is required. The formulation may also be used in circulation cleaning, soak cleaning, or pigging operations depending on system design and operational requirements. In addition, this product can be used to clean and brighten stainless steel and aluminum surfaces when applied under controlled conditions. Use concentrations and application methods should be determined based on the severity of fouling, system materials of construction, and operational conditions.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

1. Sulfuric acid (CAS: 7664-93-9 EC: 231-639-5)
PEL (Inhalation): 1 mg/m3 (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

PEL (Inhalation): 0.1 mg/m3, (ST) 3 mg/m3 (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

REL (Inhalation): 1 mg/m3; USA (NIOSH)
OSHA Annotated Table Z-1, www.osha.gov

TLV® (Inhalation): 0.2 mg/m3, (Thor.); USA (ACGIH)
OSHA Annotated Table Z-1, www.osha.gov

TWA (Inhalation): 0.2 mg/m3; USA (ACGIH)
USA. ACGIH Threshold Limit Values (TLV)

TWA (Inhalation): 1 mg/m3; USA (OSHA)
USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000

2. Phosphoric acid (CAS: 7664-38-2 EC: 231-633-2)
PEL (Inhalation): 1 mg/m3; USA (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

PEL (Inhalation): 1 mg/m3, (ST) 3 mg/m3; USA (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

REL (Inhalation): 1 mg/m3, (ST) 3 mg/m3; USA (NIOSH)
OSHA Annotated Table Z-1, www.osha.gov

TLV® (Inhalation): 1 mg/m3, (ST) 3 mg/m3; USA (ACGIH)
OSHA Annotated Table Z-1, www.osha.gov

3. Ammonium bifluoride (CAS: 1341-49-7 EC: 215-676-4)
TWA (Inhalation): 2.5 mg/m3 (OSHA)

4. Butoxyethanol (CAS: 111-76-2 EC: 203-905-0)
PEL (Inhalation): 50 ppm (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

PEL (Inhalation): 240 mg/m3 (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

PEL (Inhalation): 20 ppm (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

REL (Inhalation): 5 ppm (NIOSH)
OSHA Annotated Table Z-1, www.osha.gov

PEL (Inhalation): 20 ppm, 97 mg/m3
California permissible exposure limits for chemical contaminants
(Title 8, Article 107)/Skin

TWA (Inhalation): 50 ppm, 240 mg/m3; USA (OSHA)
USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air
Contaminants/Skin designation
The value in mg/m3 is approximate

TWA (Inhalation): 5 ppm, 24 mg/m3; USA (NIOSH)
USA. NIOSH Recommended Exposure Limits/Potential for dermal absorption

TWA (Inhalation): 20 ppm; USA (ACGIH)
USA. ACGIH Threshold Limit Values (TLV)/Upper Respiratory Tract irritation Eye irritation Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Confirmed animal carcinogen with unknown relevance to humans

TLV® (Inhalation): 20 ppm; USA (ACGIH)
OSHA Annotated Table Z-1, www.osha.gov

8.2 Appropriate engineering controls

Use local exhaust ventilation or general dilution ventilation to maintain airborne concentrations below applicable exposure limits. Provide adequate ventilation in confined or enclosed areas. Use corrosion-resistant ventilation systems where necessary. Emergency eyewash stations and safety showers should be readily accessible in all areas where the product is handled. Due to the presence of ammonium bifluoride, avoid all skin contact. Appropriate emergency response materials (e.g., calcium gluconate) should be available where large-scale use occurs.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Pictograms

Eye/face protection

Wear chemical safety goggles and a face shield where splashing is possible. Eye protection must comply with ANSI Z87.1 or equivalent standards.

Skin protection

Hand Protection: Wear acid-resistant gloves such as nitrile, neoprene, PVC, or other chemically resistant materials. Inspect gloves prior to use and replace if damaged.
Body Protection: Wear chemical-resistant clothing such as an acid-resistant apron, suit, and boots to prevent skin contact. Use materials compatible with strong acids. Remove contaminated clothing promptly and launder before reuse.

Body protection

Wear full chemical-resistant protective clothing to prevent skin contact, including acid-resistant suit, apron, and boots constructed of materials such as PVC, neoprene, or other compatible materials. Where splashing or heavy exposure is possible, use fully encapsulating chemical protective suits. Due to the presence of ammonium bifluoride, protection against skin exposure is critical, as fluoride ions may penetrate tissue and cause delayed deep tissue injury. Contaminated clothing must be removed immediately and laundered before reuse. Do not reuse contaminated leather items such as boots or belts.

Respiratory protection
If ventilation is insufficient to maintain airborne concentrations below exposure limits, use a NIOSH-approved respirator suitable for acid gases and mists. In high concentration or emergency situations, use a self-contained breathing apparatus (SCBA). Selection of respiratory protection should be based on exposure assessment and applicable regulations.

Thermal hazards
Not applicable under normal conditions of use.

Control banding approach
Not determined.

Environmental exposure controls
Prevent release to the environment. Avoid discharge to surface waters, storm drains, and sanitary sewer systems. Implement appropriate containment measures such as secondary containment, spill control systems, and controlled drainage. This product may cause localized acidification and environmental harm if released in significant quantities. Ensure that all emissions from ventilation or process equipment comply with applicable environmental regulations. Dispose of waste and rinse water in accordance with federal, state, and local regulatory requirements.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

Physical state	Liquid
Appearance	Clear to light amber liquid
Color	Water white to pale straw/amber
Odor	Sharp Acidic
Odor threshold	Not determined
Melting point/freezing point	20 – 30°F (estimated)
Boiling point or initial boiling point and boiling range	>212°F (>100°C)
Flammability	Not applicable
Lower and upper explosion limit/flammability limit	Not applicable
Flash point	Not applicable (non-flammable)
Explosive properties	Product is not explosive
Auto-ignition temperature	Not applicable
Decomposition temperature	Not determined
Oxidizing properties	Not oxidizing
pH	< 1
Kinematic viscosity	Not determined
Solubility	Complete
Partition coefficient n-octanol/water (log value)	Not determined

Vapor pressure	Not determined
Evaporation rate	Similar to water
Density and/or relative density	9.80 - 10.00 pounds per gallon
Relative vapor density	> 1 (air=1)
Particle characteristics	Not applicable for this product

Further safety characteristics (supplemental)
VOC Content: 1 – 5%
Surface Tension: ~28–34 mN/m at 25°C (estimated)

SECTION 10: Stability and reactivity

10.1 Reactivity
This product is a strongly acidic aqueous mixture and will react with alkaline materials. It may react with certain metals, including aluminum, zinc, and mild steel, to produce hydrogen gas, which can form flammable or explosive mixtures in confined spaces. The presence of ammonium bifluoride may result in the release of hydrogen fluoride under acidic conditions or when heated.

10.2 Chemical stability
Stable under normal conditions of storage and use when handled in accordance with recommended practices.

10.3 Possibility of hazardous reactions
Hazardous reactions may occur upon contact with bases, oxidizing agents, reactive metals, cyanides, or sulfides. Reactions with cyanides or sulfides may release highly toxic gases. Contact with metals may generate hydrogen gas. Mixing with incompatible materials may result in heat generation, splattering, or violent reactions.

10.4 Conditions to avoid
Avoid excessive heat, freezing conditions, and contact with incompatible materials. Avoid conditions that generate mists or aerosols. Do not mix with other chemicals unless compatibility has been confirmed.

10.5 Incompatible materials
Strong bases, oxidizers (including hypochlorites/bleach), reactive metals (such as aluminum, zinc, and mild steel), cyanides, sulfides, and materials not resistant to acidic conditions. Contact with hypochlorite solutions (bleach) may release chlorine gas.

10.6 Hazardous decomposition products
Thermal decomposition or reaction with incompatible materials may produce sulfur oxides (SOx), phosphorus oxides (POx), hydrogen fluoride (HF), ammonia, and nitrogen oxides (NOx).

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
Acute Toxicity Estimate (ATE), Oral, Product Mixture: ~1,300 mg/kg
Classification: Acute Toxicity (Oral), Category 4

Skin corrosion/irritation
Category 1 – Causes serious eye damage, including risk of permanent injury or blindness.

Serious eye damage/irritation
Category 1A – Causes severe skin burns and destruction of tissue.

Respiratory or skin sensitization
Not classified based on available data.

Germ cell mutagenicity
Not classified based on available data.

Carcinogenicity
Not classified. Sulfuric acid mists (not the liquid solution) are classified by IARC as Group 1 (carcinogenic to humans) following chronic inhalation exposure; this classification does not apply to liquid or non-aerosol forms.

Reproductive toxicity
Not classified based on available data.

Summary of evaluation of the CMR properties
This product is not classified as carcinogenic, mutagenic, or toxic to reproduction (CMR) under OSHA 29 CFR 1910.1200 and GHS criteria.
Carcinogenicity: Not classified. Sulfuric acid mists (not the liquid solution) are listed by IARC as Group 1 – Carcinogenic to humans following chronic inhalation exposure; this classification does not apply to liquid or non-aerosol forms. Urea is not present in this product.
Germ Cell Mutagenicity: Not classified. No evidence of mutagenic effects for components.
Reproductive Toxicity: Not classified. No adverse reproductive or developmental effects observed in available studies.
Based on available data for ingredients, this mixture is not expected to exhibit CMR hazards under normal industrial use conditions.

Specific target organ toxicity (STOT) - single exposure
Category 3: May cause respiratory irritation.

Specific target organ toxicity (STOT) - repeated exposure
The effects of long-term, low-level exposures to this product have not been fully determined. Safe handling should emphasize avoidance of repeated or prolonged exposure. Repeated exposure may aggravate existing skin, eye, and respiratory conditions.

Aspiration hazard
Not classified.

Additional information
Contains ammonium bifluoride. Fluoride exposure may result in hypocalcemia in severe cases.

SECTION 12: Ecological information

Toxicity
FISH: Product: Fish: Expected to have low acute toxicity: >10 - <100 mg/L (based on similar products / components)
AQUATIC INVERTEBRATES: Product: Daphnia magna: Expected to have low acute toxicity: >10 - <100 mg/L (based on similar products / components) (based on similar products / components)
CHRONIC TOXICITY FISH Product: NOEC/NOEL: >10 - <100 mg/L (based on similar products / components)
AQUATIC INVERTEBRATES Product: NOEC/NOEL: >10 - <100 mg/L (based on similar products / components)
TOXICITY TO AQUATIC PLANTS Product: Algae: Expected to have low acute toxicity: >10 - <100 mg/L (based on similar products / components)
May cause adverse effects to aquatic organisms due to low pH and fluoride content; toxicity estimates are based on similar products/components.

Persistence and degradability
Not expected to persist in the environment as a defined compound. This product dissociates into inorganic ions including sulfate, phosphate, ammonium, and fluoride species, which are subject to natural environmental processes. The primary environmental concern is localized acidification and nutrient loading (phosphorus), rather than long-term persistence.

Bioaccumulative potential
This product is not expected to bioaccumulate. Components are either highly water-soluble inorganic species or substances with low bioaccumulation potential.

Mobility in soil
Highly mobile in soil due to complete water solubility. May migrate through soil and enter groundwater systems. Can cause localized pH reduction in soil and water environments.

Results of PBT and vPvB assessment
Not fulfilling PBT (persistent/bioaccumulative/toxic) criteria. Not fulfilling vPvB (very persistent, very bioaccumulative) criteria.

Endocrine disrupting properties
Based on available data for the components, this product is not expected to cause endocrine disruption. None of the ingredients are known or listed as endocrine disruptors by recognized regulatory authorities under normal conditions of use.

Other adverse effects
Release to the environment may result in localized acidification of water and soil. Elevated phosphate levels may contribute to eutrophication in aquatic environments. Fluoride-containing compounds may present localized toxicity concerns at elevated concentrations.

SECTION 13: Disposal considerations

Disposal methods

Product disposal
Dispose of this material as a hazardous waste due to its corrosive properties. Waste should be managed at an approved and permitted hazardous waste treatment, storage, or disposal facility. Where possible, neutralization under controlled conditions may be performed prior to disposal, in accordance with applicable regulations and with appropriate safety precautions. Do not dispose of untreated material directly to the environment.

Packaging disposal
Empty containers may contain residual hazardous material. Do not reuse containers. Triple rinse (if appropriate) and dispose of containers in accordance with federal, state, and local regulations. Rinsate should be handled as hazardous waste unless properly treated.

Waste treatment
Waste material should be treated as a hazardous corrosive waste. Where permitted, controlled neutralization with alkaline materials such as sodium hydroxide, soda ash, or lime may be performed to adjust pH to a neutral range (typically pH 6–9). Neutralization should be conducted slowly with adequate mixing and cooling, as the reaction is exothermic and may generate heat and splattering. Due to the presence of ammonium bifluoride, treatment may generate soluble fluoride ions; appropriate measures such as calcium addition (e.g., lime or calcium chloride) may be required to precipitate fluoride as insoluble calcium fluoride (CaF_2) prior to discharge or disposal. Resulting solids and sludges should be collected and disposed of in accordance with applicable regulations. Following treatment, disposal options may include discharge to a permitted industrial wastewater treatment system, off-site disposal at a licensed hazardous waste facility, or further treatment depending on local regulatory requirements. All waste handling must comply with federal, state, and local environmental regulations. The waste generator is responsible for proper characterization and determination of disposal methods.

Sewage disposal
Not approved for disposal in sewage systems. Avoid release to the environment. Considered hazardous waste due to corrosivity and aquatic toxicity; handle through an authorized waste treatment or disposal facility.

Other disposal recommendations
Treatment, storage, transportation, and disposal must be in accordance with applicable federal, state, and local regulations. Regulations may vary by location. The waste generator is responsible for proper characterization of the waste stream. Processing, use, or contamination of this product may alter disposal requirements. Recycling or recovery should be considered where feasible.

SECTION 14: Transport information

DOT (US)
UN Number: 3264
Class: 8
Packing Group: II
Proper Shipping Name: Corrosive Liquid, n.o.s., Contains (Sulfuric and Phosphoric Acid and Ammonium Bifluoride)
Reportable quantity (RQ): Approximately 12,500–16,500 lb of product (based on ammonium bifluoride content; exact reporting threshold depends on concentration). A release of this material exceeding the RQ may trigger reporting requirements under CERCLA (40 CFR 302).
Marine pollutant: No
Poison inhalation hazard: No

IMDG
UN Number: UN3264
Proper Shipping Name: Corrosive Liquid, Acidic, Inorganic, n.o.s. (Contains Sulfuric Acid, Phosphoric Acid)
Class: 8
Packing Group: II
EMS Number: F-A, S-B

IATA
UN Number: UN3264
Proper Shipping Name: Corrosive Liquid, Acidic, Inorganic, n.o.s. (Contains Sulfuric Acid, Phosphoric Acid)
Class: 8
Packing Group: II

SECTION 15: Regulatory information

Component	CAS no.	RTK (US) for state:	TSCA (US)[1]	CA Prop. 65[2]	pfas[3]
Sulfuric acid	7664-93-9	MA, NJ, PA	-	c	-
Phosphoric acid	7664-38-2	MA, NJ, PA	-	c, r	-
Ammonium bifluoride	1341-49-7	MA, NJ, PA	-	-	-
Butoxyethanol	111-76-2	MA, NJ, PA	-	-	-

[1] "P"—Public list, "C"—Confidential list. [2] "c"—cancer, "r"—reproductive harm. [3] "pfas"—Per- and polyfluoroalkyl substances.

Regulation	Applicability
SARA 302 Components	The following components are subject to reporting levels established by SARA Title III, Section 302: Sulfuric acid CAS number: 7664-93-9
SARA 313 Components	The following components are subject to reporting levels established by SARA Title III, Section 313: Sulfuric acid CAS number: 7664-93-9
SARA 311/312 Hazards	Acute Health Hazard, Chronic Health Hazard

Regulation	Applicability
Canadian Domestic Substances List (DSL)	Chemical name: Sulfuric acid CAS: 7664-93-9
SARA 302 Components	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 Components	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
Canadian Domestic Substances List (DSL)	Chemical name: Phosphoric acid CAS: 7664-38-2
SARA 311/312 Hazards	Acute Health Hazard
SARA 313 Components	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
Canadian Domestic Substances List (DSL)	Chemical name: Ammonium fluoride ((NH4)(HF2)) CAS: 1341-49-7
SARA 311/312 Hazards	Fire Hazard, Acute Health Hazard, Chronic Health Hazard
SARA 313 Components	The following components are subject to reporting levels established by SARA Title III, Section 313: Ethylene glycol monobutyl ether CAS: 111-76-2
Canadian Domestic Substances List (DSL)	Chemical name: Ethanol, 2-butoxy- CAS: 111-76-2

15.2 Chemical Safety Assessment

A Chemical Safety Assessment (CSA) has not been carried out for this mixture. (Under EU REACH, CSAs are performed for substances; this product is a mixture formulated from registered substances.)

Annex: Voluntary Chemical Safety Assessment (summary)
Ingestion: Ingestion of this product may cause severe irritation and corrosive burns to the mouth, throat, and gastrointestinal tract, potentially resulting in nausea, vomiting, and abdominal pain. Due to the presence of ammonium bifluoride, systemic fluoride toxicity may occur following significant exposure, which can lead to hypocalcemia and other systemic effects. Immediate medical attention is required.
Eye Contact: This product causes severe eye irritation and burns, which may result in redness, tearing, pain, and potential permanent damage, including vision impairment or loss. Immediate and prolonged flushing is required, followed by prompt medical attention.
Skin Contact: Prolonged or short-term contact with concentrated product may cause severe irritation and chemical burns to the skin. The presence of ammonium bifluoride presents an additional hazard, as fluoride ions may penetrate tissue and cause delayed deep tissue injury. Immediate decontamination is essential. Repeated exposure may result in dermatitis or defatting.
Respiratory Issues: Inhalation of mists or vapors may cause irritation to the respiratory tract, resulting in coughing, throat irritation, or difficulty breathing. In confined or poorly ventilated areas, exposure may be more significant. Individuals with pre-existing respiratory conditions may be more susceptible to irritation.

HMIS Rating

ALUM BRITE 2	
HEALTH	3
FLAMMABILITY	0
PHYSICAL HAZARD	0
PERSONAL PROTECTION	C

NFPA Rating

SECTION 16: Other information

This Safety Data Sheet has been revised as of the issue date indicated in the footer. Changes may include updates to composition, hazard classification, physical and chemical properties, toxicological information, and regulatory data. Previous versions should be discarded. Users are advised to review the entire document to ensure awareness of current information.

16.1 Further information/disclaimer

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, the Company makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the recipients will make their own determination as to its suitability for their intended purposes prior to use. The conditions of use, handling, storage, and disposal of this product are beyond the control of the Company and may involve variables and conditions that cannot be anticipated. The user is solely responsible for determining safe and appropriate conditions of use, including compatibility with other materials and compliance with all applicable federal, state, and local regulations. This product may react with other materials or under certain conditions to produce hazardous or unintended results. It is the responsibility of the user to evaluate and control such risks prior to use. The information provided in this Safety Data Sheet is based on current knowledge and is intended solely as guidance for safe handling, use, processing, storage, transportation, and disposal. It is not to be construed as a guarantee or specification or quality specification and does not establish a legally binding contractual relationship. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE WITH RESPECT TO THE INFORMATION OR THE PRODUCT TO WHICH THE INFORMATION REFERS.

16.2 Preparation information

Prepared in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200), as revised in 2024, and aligned with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS), Revision 7.