



# SAFETY DATA SHEET

Revision Date: 1/5/2014 / Printed Date 4/23/2015

Product Code: 1004R3

Product Name: Alume Kleen

## 1. Product Identification

Algonquin Products Company  
770-578-4240  
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<b>Product Code:</b>	1057
<b>Product Name:</b>	Alume Kleen
<b>Product Use:</b>	Heavy Duty Aluminum Brightener
<b>Emergency Phone:</b>	CHEMTREC: 800-424-9300

## 2. Hazard Identification

NOTE: MSDS data pertains to the product as delivered in the original shipping container(s).



### GHS Labeling:

#### GHS Classification:

Skin Corrosion: Category 1b

Eye Damage: Category 1

Acute Toxicity: Category 2

Signal Word: Danger

#### Hazard Statements:

H318-Causes Serious Eye Damage

H314-Causes severe skin burns and eye damage

H300-Fatal if swallowed.

H310-Fatal in contact with skin.

H331-Toxic if inhaled.

H317-May cause an allergic skin reaction.

H290-May be corrosive to metals.

### GHS Precautionary Statement(s) – Prevention

P102- Keep out of reach of children

P101- If medical advice is needed, have product container or label at hand.

P103- Read label before use.

P264 - Wash skin and contaminated clothing thoroughly after handling.

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

P234 - Keep only in original container.

P280 - Wear gloves, protective clothing, eye and face protection.

P260 - Do not breathe mist, vapors, or spray.

P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.

P304 + P340 IF INHALED: Remove victim 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.

P312 Call a POISON CENTER or doctor/ physician if you feel unwell.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

### GHS Precautionary Statement(s) – Response

IF IN EYES - Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do.

Continue rinsing. Immediately call a physician if irritation persists.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Call poison control/physician immediately.



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**IF ON SKIN (or hair):** Remove immediately all contaminated clothing. Rinse skin with water. Contact a physician immediately if irritation persists. Wash contaminated clothing before reuse.

**IF INHALED:** Remove victim to fresh air and keep at rest in a position comfortable for breathing  
Specific treatment (see First Aid information on product label and/or Section 4 of the SDS)

## GHS Precautionary Statement(s) - Storage

Store in a secure manner.

Store in a well-ventilated place.

Keep cool.

## GHS Precautionary Statement(s) - Disposal

Dispose of contents and container in accordance with applicable local, regional, national, and/or international regulations.

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## Potential Health Effects

**Eyes:** Exposure to particulates or solution of this product may cause redness, pain and blurred vision. Prolonged contact may cause corneal injury or, in severe cases, blindness. Effects may be delayed.

**Skin:** This product can cause irritation of the skin with pain, itching and redness. Ammonium Bifluoride can cause severe necrosis to tissue, with symptoms such as redness, itching, burns and scarring. Burns may not be immediately visible or painful. Ammonium Bifluoride can cause a unique, large, pustular skin rash, which is apparently not an irritant or allergic dermatitis. As a fluoride compound, Ammonium Bifluoride has the potential to decompose upon contact with moisture to form hydrofluoric acid, which can penetrate the skin, causing destruction of the deep tissue layers, including bone tissue. This damage to the body's tissues may continue for days, as the fluoride ion reacts with the calcium in the skin and bone. Severe skin-contact exposures (especially when the skin contamination exceeds 160 cm<sup>2</sup>) can lead to hypocalcemia, a life-threatening lowering of serum calcium in the body. Ammonium Bifluoride may be systematically absorbed in lethal amounts through intact skin. Effects may be delayed **and not felt for hours.**

**Ingestion:** Harmful if swallowed. Data indicate that ingestion of between 1 teaspoon and 1 ounce may be fatal. This product may cause corrosive damage to gastrointestinal tract, symptoms of such over-exposure include, salivation, nausea, vomiting, diarrhea, hypocalcemia, burning pain, convulsions, shock, muscle spasms, coma, cardiac arrhythmias, cardio and pulmonary arrest, and possibly, death. At high concentrations, there is a risk of hypocalcemia.

**Inhalation:** This product is irritating to the nose, throat and respiratory tract. Symptoms can include sore throat, coughing and shortness of breath. In severe cases, ulceration and perforation of the nasal septum and upper respiratory tract can occur. Inhalation of high concentrations can lead to chemical pneumonia, pulmonary edema, and hypocalcemia. Effects may be delayed.

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**ECOLOGICAL HAZARDS:** Keep out of water supplies and sewers. This material is alkaline and may raise the pH of surface waters. This material has exhibited moderate toxicity to aquatic organisms.

**PRECAUTIONARY STATEMENTS:** Avoid breathing vapors or mist. Avoid contact with skin, eyes, and clothing. Keep container tightly closed. Wash thoroughly after handling/ Use only with adequate ventilation.

## 3. Composition / Information on Ingredients

Chemical Name:	CAS Number	% By Weight
Sulfuric Acid	7664-93-9	15-20
Ammonium Bifluoride	1341-49-7	10-15



Unless listed immediately above, the product contains no hazardous ingredients as listed on the Massachusetts Hazardous Substance List or under §1910.1200 of Title 29 of the Code of Federal Regulations.

## 4. First Aid Measures

<b>Eyes</b>	In case of contact with eyes, rinse immediately with plenty of water for at least 20 minutes. If there is a difficulty in keeping eyes open during irrigation, administer anesthetic drops. If calcium gluconate 1% solution is available, it should be administered. Seek immediate medical attention, preferably an ophthalmologist.
<b>Skin</b>	Remove all contaminated clothing. For skin contact, wash thoroughly with soap and water for at least 20 minutes. Apply calcium gluconate gel (2.5%) and massage into affected area (hands must be gloved); continue massage while repeatedly applying gel until 15 minutes after pain has ceased. Seek immediate medical attention.
<b>Ingestion</b>	DO NOT INDUCE VOMITING. Never give anything by mouth to a victim who is unconscious or having convulsions. Have victim rinse mouth thoroughly with water, if conscious. Attempt immediate administration of a fluoride binding substance with oral exposures. Options include milk (4 to 8 ounces), chewable calcium carbonate tablets or Milk of Magnesia. Avoid large amounts of liquid, since this may induce vomiting. Contact a physician or poison control center immediately.
<b>Inhalation</b>	Remove source of contamination or move victim to fresh air. Apply artificial respiration if victim is not breathing. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Administer oxygen if breathing is difficult. Get immediate medical attention.

**Notes to Physician:** Provide general supportive measures and treat symptomatically. For eye contamination rinse eye(s) with a calcium gluconate 1% solution in physiological serum (10 mL of calcium gluconate 10% in 90 mL of physiological serum). In case of difficulty of opening lids, administer an analgesic eye wash (oxybuprocaine). For skin contact, application of calcium gluconate gel (2.5%) should occur 4 to 6 times per day. If victim suffers second or third degree burns, subcutaneous injection of 10% calcium gluconate at a distance of 7 mm around the affected area. If fingers or toes have been contaminated, dip in a bath of 5% calcium gluconate for 15 to 20 minutes. For severe burns of the digits, slow intraarterial infusion (over a 4 hour period) of 10 mL of a 10% calcium gluconate solution diluted in 40 mL of physiological serum. Phlyctenae and necrotic tissue should be debrided (warning: liquid in phlyctenae is corrosive). For ingestion exposure, provide oxygen therapy via intratracheal intubation, if breathing is difficult or victim is not breathing. If throat is constricted due to burns, perform tracheotomy. Careful gastric lavage should be performed after administration of 10 vials of calcium gluconate. Repeat as often as necessary. In case of intense pain, inject an I.M. morphomimetic analgesic drug (e.g. piritramide) prior to transport. Prevention and treatment for shock, pulmonary edema and esophageal stenosis, as well as hypocalcemia should occur. Examination by digestive tract endoscopy should be performed in all cases. In case of hypocalcemia, administer I.V. perfusion of 20 mL of a 10% calcium gluconate solution diluted in 1 liter of physiological serum. Surveillance of hyperfluoremia should occur, with possible treatment with hemodialysis should occur, as well as surveillance of cardiac ECG, and respiratory and renal function.

## 5. Fire Fighting Measures

### **Suitable extinguishing media:**

Use water fog, foam, dry chemical or carbon dioxide (CO<sub>2</sub>) to extinguish flames.

### **Special remarks on fire hazards:**

Non combustible. Calcium carbide reacts with hydrogen chloride gas with incandescence. Uranium phosphide reacts with hydrochloric acid to release spontaneously flammable phosphine. Rubidium acetylene carbides burns with slightly warm hydrochloric acid. Lithium silicide in contact with hydrogen chloride becomes incandescent.



When dilute hydrochloric acid is used, gas spontaneously flammable in air is evolved. Magnesium boride treated with concentrated hydrochloric acid produces spontaneously flammable gas. Cesium acetylene carbide burns hydrogen chloride gas. Cesium carbide ignites in contact with hydrochloric acid unless acid is dilute. Reacts with most metals to produce flammable Hydrogen gas.

## 6. Accidental Release Measures

**Protective Measures:** Eliminate all sources of ignition in the vicinity of the spill or released vapor. If this material is released into the work area, evacuate the area immediately. Monitor area with combustible gas indicator. Wear appropriate personal protective equipment when cleaning up spills. Refer to Section 8. Eliminate potential sources of ignition. Handling equipment must be bonded and grounded to prevent sparking.

**Spill Management:** Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible sorbent materials or pumping. All equipment used when handling the product must be grounded. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

**Reporting:** U.S.A. regulations may require reporting spills of this material that could reach any surface waters. Report spills to local authorities and/or the National Response Center at (800) 424-8802 as appropriate or required.

## 7. Handling and Storage

**General Storage Information:** Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner, or disposed of properly. DO NOT USE OR STORE near heat, sparks or open flames. USE AND STORE ONLY IN WELL VENTILATED AREA. Keep container closed when not in use.

Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials and food and drink. Store between the following temperatures: 45°F - 120°F (7°C - 49°C). Keep out of the reach of children.

## 8. Exposure Controls / Personal Protection

Chemical Name:	PEL (OSHA)	TWA (ACGIH)	TLV (ACGIH)
Sulfuric Acid	1mg/m3		
Ammonium Bifluoride	2.5 mg / m3 (ceiling)	2.5 mg / m3 (ceiling)	Not Established

**VENTILATION SYSTEM:** A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details.

**PERSONAL RESPIRATORS (NIOSH Approved):** If exposure is anticipated to be greater than applicable exposure limits, wear a NIOSH approved respirator that provides adequate protection from measured concentrations of this material. Use the following elements for air-purifying respirators: Air-Purifying Respirator for Organic Vapors Use a



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positive pressure, air-supplying respirator if there is potential for uncontrolled release, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.

SKIN PROTECTION: Wear chemical resistant protective clothing, including apron, boots or safety shoes depending on the concentration and quantity of the hazardous substance handled. The chemical resistance of the protective equipment should be inquired at the equipment supplier.

EYE PROTECTION: Use chemical safety glasses and/or full face shield where splashing is possible. Maintain eye wash fountain and quick drench facilities in work area.

## 9. Physical and Chemical Properties

Appearance	Red Liquid
pH	1
Volatile (% V.O.C. by volume):	0.00
Flashpoint	>200F
Freezing Point	32F
Vapor Pressure (mm Hg)	Not Known
Lower Explosion Limits	Not Determined

Odor	Acidic
Specific Gravity	1.07
Solubility In Water	Complete
Melting Point	Not Known
Vapor Density (Air=1):	Not Know
Evaporation Rate (BuAc=1):	Slower Than Water
Upper Explosion Limits	Not Determined

## 10. Stability & Reactivity

Stability: Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products: Ammonia. Hydrogen fluoride.

Hazardous Polymerization: Will not occur.

Incompatibilities: Incompatible with acids, bases, glass, metals, and moisture.

## 11. Toxicological Information

**Routes of Entry:** Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.

**Toxicity to Animals:** Acute toxicity of the vapor (LC50): 342 1 hours [Mouse].

**Chronic Effects on Humans:** May cause damage to the following organs: lungs, mucous membranes, skin, eyes, bones, teeth.

**Other Toxic Effects on Humans:**

Extremely hazardous in case of inhalation (lung corrosive). Very hazardous in case of skin contact (corrosive, irritant, permeator), of eye contact (corrosive), of ingestion, .

**Special Remarks on Toxicity to Animals:** Not available.

**Special Remarks on Chronic Effects on Humans:**

May cause adverse reproductive effects (Fetotoxicity) based on animal data. May affect genetic material based on animal data. (Hydrogen fluoride)

**Special Remarks on other Toxic Effects on Humans:**

Acute Potential Health Effects: Skin: Causes severe irritation and burns/irreversible destruction of skin. Readily penetrates skin and mucous membranes. Eyes: Causes severe irritation and burns/irreversible destruction of eyes. Inhalation: Causes severe irritation and burns/irreversible destruction of respiratory tract/lungs. May also affect behavior (change in motor activity, coma), blood, metabolism, sense organs, cardiovascular system (lowering of blood pressure, arrhythmia), urinary system, gastrointestinal tract, respiration, and urinary system. Symptoms may include severe throat irritation, cough, dyspnea, cyanosis, lung injury, and noncardiogenic pulmonary edema.

Acute inhalation also depletes calcium levels in the body when can lead to hypocalcemia. Inhalation exposure of 50



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ppm for 5 min. may be fatal. Ingestion: Causes severe irritation and burns/irreversible destruction of digestive tract/stomach. Serious gastrointestinal effects may include hematemesis, nausea, and severe abdominal pain, painful necrotic lesions, hemorrhagic gastritis, pancreatitis, local caustic effects to mouth and gastrointestinal tract. Severe systemic toxicity including hypocalcemia, hypomagnesemia, hyperkalemia, ventricular dysrhythmia and death may also occur. Chronic Potential Health Effects: Repeated exposure to airborne concentrations of 3 ppm or less could be tolerated with no apparent ill effects for 6 hours/day for up to 50 days; redness of the skin and irritation and burning of the eyes and nose were noted at airborne concentrations between 3 ppm and 4.7 ppm (ACGIH, 1992). No significant changes in pulmonary function occurred with occupational exposure to airborne levels averaging 1.03 ppm (ACGIH). Effects of chronic exposure by inhalation and ingestion include systemic fluoride toxicity (FLUOROSIS), skeletal/ bone structure abnormalities (osteosclerosis, and mottling of the teeth (Clayton & Clayton, 1994; White, 1980; Waldbott & Lee, 1978). Hypocalcemia), metabolic acidosis, chronic bronchitis, pulmonary edema, and death can occur from high-level chronic exposure.

## 12. Ecological Information

**Ecotoxicity** Avoid contaminating waterways.



**Aquatic toxicity:** Harmful to aquatic organisms.

96hr LC50 (fish): 51 mg/L (fluorides) (*Salmo gairdneri*)

## 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Large amounts should be given to a licensed disposal agency. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local regulations.

## 14. Transportation Information

<b>Transportation Hazard Class</b>	Corrosive, Poison
<b>Placard Required</b>	 
<b>DOT Classification (Domestic, Land)</b>	UN 2922, Corrosive Liquids, Toxic, N.O.S, (Contains Ammonium Bifluoride & Sulfuric Acid) 8, 6.1, PGIII Emergency Response Guide: 154

## 15. Regulatory Information

Not Known

Not Known.

## 16. Regulatory Information



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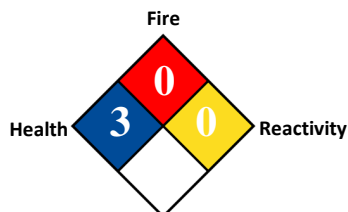
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## DISCLAIMER:

See the product label for proper use directions.

## HMIS (U.S.A.):



0= None  
1=Slight  
2=Moderate  
3=Serious  
4=Extreme

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