

Safety Data Sheet

Sandstone Stimulation Tube

Version 2.0

Revision Date: 09/02/2026

SECTION 1. IDENTIFICATION

Product name: Sandstone Stimulation Tube

Recommended use: Oilfield Industrial cleaning agent, rust remover, or scale descaler.

Other Means of Identification: Dissolvable Tube Acid Mixture.

Restricted Uses: Professional/Industrial use only. Do not break open the outer sleeve manually. Avoid contact with moisture before use.

Supplier Details:

Prepared in accordance with Canadian Hazardous Products Regulations (HPR) WHMIS 2015 requirements.

SECTION 2: HAZARD IDENTIFICATION

(Note: Hazards apply if the PVA tube punctures, tears, or dissolves prematurely. Intact tubes limit direct dust contact but remain a severe hazard upon release.)

- **Classification of the Substance or Mixture:**
 - Acute Toxicity, Oral – Category 4
 - Skin Corrosion/Irritation – Category 1B
 - Serious Eye Damage/Eye Irritation – Category 1
- **Label Elements:**
 - **Signal Word:** DANGER

- **Hazard Pictograms:**



- **Hazard Statements:**

- H302: Harmful if swallowed.
- H314: Causes severe skin burns and eye damage.

- **Precautionary Statements:**

- *Prevention:*

- P260: Do not breathe dust/fume/gas/mist/vapours/spray.
- P264: Wash hands and exposed skin thoroughly after handling.
- P270: Do not eat, drink or smoke when using this product.
- P280: Wear protective gloves, protective clothing, eye protection, and face protection.

- *Response:*

- P301+P312+P330+P331: **IF SWALLOWED:** Call a POISON CENTER or doctor if you feel unwell. Rinse mouth. Do NOT induce vomiting.
- P303+P361+P353: **IF ON SKIN (or hair):** Take off immediately all contaminated clothing. Rinse skin with water. *(Note: See Section 4 for critical Calcium Gluconate treatment due to fluoride content).*
- P363: Wash contaminated clothing before reuse.
- P304+P340+P310: **IF INHALED:** Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor.

- P305+P351+P338+P310: **IF IN EYES:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.
- *Storage:*
 - P405: Store locked up.
- *Disposal:*
 - P501: Dispose of contents/container to an approved waste disposal plant in accordance with local regulations.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

The product is a solid mixture contained within a water-soluble film wrapper.

Chemical Name	Common Name / Synonyms	CAS Number	Concentration (% w/w)
Citric Acid Anhydrous	2-Hydroxy-1,2,3-propanetricarboxylic acid	77-92-9	>50%
Ammonium Bifluoride	Ammonium hydrogen fluoride	1341-49-7	<50%
Polyvinyl Alcohol	PVA Outer Film / Tube	9002-89-5	<i>Exempt (article/wrapper)</i>

SECTION 4: FIRST-AID MEASURES

- **Inhalation:** Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or inhaled the substance. Seek immediate medical attention.
- **Skin Contact:** Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing. **CRITICAL:** For Ammonium Bifluoride exposure, rub **Calcium Gluconate gel (2.5%)** continuously into the affected skin area until pain subsides. Seek immediate medical intervention.

- **Eye Contact:** Flush immediately with a directed stream of water for at least 15–20 minutes, forcibly holding eyelids apart. Remove contact lenses if easy to do. Seek immediate specialized medical care (ophthalmologist).
 - **Ingestion:** Never give anything by mouth to an unconscious person. Do NOT induce vomiting. If conscious, rinse mouth with water, then give large amounts of water or milk to drink. Call a POISON CENTER or doctor immediately.
 - **Most Important Symptoms/Effects:** Causes severe chemical burns to eyes, skin, and mucous membranes. Fluoride ions penetrate tissue rapidly, causing deep-seated, painful destruction and systematic hypocalcemia.
 - **Immediate Medical Attention / Special Treatment:** Treat symptomatically. Monitor for hypocalcemia. Ensure first-aid kits are stocked with **Calcium Gluconate gel** wherever this product is handled raw.
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SECTION 5: FIRE-FIGHTING MEASURES

- **Suitable Extinguishing Media:** Use water spray, dry chemical, carbon dioxide CO₂, or alcohol-resistant foam. Use extinguishing measures appropriate to the surrounding environment.
 - **Unsuitable Extinguishing Media:** Avoid high-volume water jets directly on breached powder, which can cause violent splattering or spread the acidic runoff.
 - **Specific Hazards Arising from the Chemical:** Product is not flammable but decomposes at high temperatures. Thermal decomposition or contact with strong acids can release highly toxic and corrosive gases, including **Hydrogen Fluoride (HF)**, ammonia, and nitrogen oxides NO_x.
 - **Special Protective Equipment and Precautions for Fire-Fighters:** Wear self-contained breathing apparatus (SCBA) approved by NIOSH/MSHA and full protective chemical turn-out gear. Prevent firefighting water from entering drains or watercourses.
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SECTION 6: ACCIDENTAL RELEASE MEASURES

- **Personal Precautions, Protective Equipment, and Emergency Procedures:** Evacuate unnecessary personnel. Wear full chemical-resistant PPE (see Section 8). Avoid generating dust. Do not touch spilled material. Keep unprotected people away.

- **Environmental Precautions:** Prevent material from entering public sewers, water basins, or soil.
 - **Methods and Materials for Containment and Cleaning Up:** If intact tubes are spilled, gather them mechanically using dry tools. If tubes are breached, sweep up the solid mixture carefully using plastic shovels and place them in clean, dry, labeled plastic containers for disposal. Do not use water to clean up spilled powder, as moisture dissolves the water-soluble wrapper and activates the corrosive acid blend.
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SECTION 7: HANDLING AND STORAGE

- **Precautions for Safe Handling:** Handle with dry hands only. Do not puncture, cut, or open the water-soluble tubes. Avoid dust generation if a tube is compromised. Prevent contact with eyes, skin, and clothing. Wash hands thoroughly after use.
 - **Conditions for Safe Storage:** Store in original, tightly closed containers in a cool, dry, well-ventilated area. **Keep strictly away from moisture, water, and high humidity** to avoid premature degradation of the PVA film. Keep separate from bases, strong oxidizing agents, glass, and strong acids. Protect from physical damage.
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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

- **Control Parameters (Occupational Exposure Limits):**
 - *Ammonium Bifluoride (as F):*
 - **ACGIH TLV-TWA:** 2.5 (mg/m³)
 - **Canada OELs (Provincial):** 2.5 (mg/m³) (Applies across AB, BC, ON, QC)
 - **Appropriate Engineering Controls:** Use local exhaust ventilation or process enclosure to maintain airborne dust levels below recommended exposure limits. Ensure eye wash stations and safety showers are close to the workstation.
 - **Individual Protection Measures (PPE):**
 - **Eye/Face Protection:** Not required during normal handling of intact PVA tubes. If tubes are broken or dust is generated, wear tightly fitting chemical safety goggles and a full-face shield.
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- **Skin Protection:** Wear neoprene, nitrile, or PVC chemical-resistant gloves when handling pods. If handling bulk breached product, wear full dust-impervious protective clothing.
 - **Respiratory Protection:** None required under standard operational use of intact pods. If a dust hazard exists, use a NIOSH-approved particulate respirator equipped with N95 or P100 filters.
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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

- **Appearance:** White crystalline powder enclosed in a transparent solid PVA tube/film.
- **Odour:** Odourless / slightly pungent.
- **Odour Threshold:** No data available.
- **pH:** Highly acidic (Typically 1.0–2.5 in 1% aqueous solution).
- **Melting Point/Freezing Point:** Not determined for mixture.
- **Initial Boiling Point and Boiling Range:** Not applicable (solid blend).
- **Flash Point:** Not applicable.
- **Evaporation Rate:** Not applicable.
- **Flammability (solid, gas):** Non-flammable.
- **Upper/Lower Flammability or Explosive Limits:** Not applicable.
- **Vapour Pressure:** Negligible.
- **Vapour Density:** Not applicable.
- **Relative Density:** No data available.
- **Solubility:** Powders and PVA film are **fully soluble in water**. Powder is incompatible with glass.
- **Partition Coefficient (n-octanol/water):** No data available.
- **Auto-ignition Temperature:** Not applicable.
- **Decomposition Temperature:** >240 C (Ammonium bifluoride begins decomposing).
- **Viscosity:** Not applicable (solid).

SECTION 10: STABILITY AND REACTIVITY

- **Reactivity:** Corrosive to metals and reacts aggressively with bases. **Reacts with glass and silicate-containing materials due to the fluoride component.**
 - **Chemical Stability:** Stable under dry, normal ambient storage conditions.
 - **Possibility of Hazardous Reactions:** Contact with strong bases triggers an exothermic reaction and releases ammonia gas. Contact with strong acids releases toxic Hydrogen Fluoride HF gas.
 - **Conditions to Avoid:** Moisture, high humidity, water contact during storage (dissolves outer PVA tube), excessive heat, and dust generation.
 - **Incompatible Materials:** Strong bases, strong oxidizing agents, glass, stoneware, metals, and strong acids.
 - **Hazardous Decomposition Products:** Hydrogen fluoride, ammonia, nitrogen oxides (NO_x), carbon oxides (CO, CO₂).
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SECTION 11: TOXICOLOGICAL INFORMATION

- **Likely Routes of Exposure:** Skin contact, eye contact, ingestion (if PVA pod ruptures).
 - **Acute Toxicity:**
 - *Ammonium Bifluoride:* Oral (LD50 Rat) approx 130 mg/kg)
 - *Citric Acid:* Oral (LD50 Rat) (approx 5400\ mg/kg)
 - *Calculated Mixture ATE (Oral):* (approx 650 mg/kg) (**Harmful if swallowed – Category 4**)
 - **Skin Corrosion/Irritation:** Highly corrosive. Causes severe burns and deep tissue ulceration.
 - **Serious Eye Damage/Irritation:** Corrosive to eyes. Causes permanent damage or blindness if not rinsed instantly.
 - **STOT (Specific Target Organ Toxicity) - Single Exposure:** May cause respiratory tract irritation if dust is inhaled.
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- **Carcinogenicity:** None of the ingredients are listed as carcinogens by IARC, ACGIH, NTP, or OSHA.
 - **Reproductive Toxicity / Germ Cell Mutagenicity:** No data indicating hazards.
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SECTION 12: ECOLOGICAL INFORMATION

- **Ecotoxicity:** Avoid discharging large volumes directly into aquatic systems without treatment. The product will lower aquatic pH significantly and release fluoride ions, which can be toxic to marine life.
 - **Persistence and Degradability:** Citric acid and the PVA outer film are readily biodegradable. Ammonium bifluoride is inorganic and dissociates into ammonium and fluoride ions.
 - **Bioaccumulative Potential:** Low potential to bioaccumulate.
 - **Mobility in Soil:** Soluble in water; expected to have high mobility in soil layers.
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SECTION 13: DISPOSAL CONSIDERATIONS

- **Disposal Methods:** Waste should be handled as hazardous due to its corrosivity. Neutralization and disposal must comply with regional, provincial, and federal Canadian environmental regulations. Do not discharge into surface waters or municipal sewage networks.
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SECTION 14: TRANSPORT INFORMATION

(Note: Because the active materials inside are corrosive solids, the mixture must be shipped under a corrosive class identifier if it exceeds consumer commodity limits.)

- **UN Number:** UN 3260
 - **UN Proper Shipping Name:** CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (Contains Ammonium Bifluoride)
 - **Transport Hazard Class:** Class 8 (Corrosive)
 - **Packing Group:** Packing Group II
 - **Environmental Hazards:** Not classified as a Marine Pollutant.
 - **Special Precautions for User:** Keep dry during transit to prevent the destruction of the water-soluble tube.
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SECTION 15: REGULATORY INFORMATION

- **Canadian Federal Regulations:**
 - **WHMIS Classification:** This product has been classified in accordance with the hazard criteria of the *Hazardous Products Regulations* (HPR) (WHMIS 2022 / GHS Rev. 7).
 - **CEPA (Canadian Environmental Protection Act):** All ingredients are listed on the Domestic Substances List (DSL).
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SECTION 16: OTHER INFORMATION

- **Revision Date:** September 2, 2026 (Updated to fulfill current WHMIS HPR mandates).
 - **Disclaimer:** The information provided above is correct to the best of our knowledge at the date of publication. It serves as a safety guide and does not constitute a warranty or product specification.
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