

# SternPAC™

## Specifications



Certified to  
ANSI/NSF 60

### Primary Parameters

<i>Appearance</i>		Clear amber to colourless liquid
<i>Specific Gravity</i>	(20°C)	1.205 ± 0.003
<i>Aluminum Concentration:</i>	% weight Al	5.40 ± 0.16
	% weight Al <sub>2</sub> O <sub>3</sub>	10.20 ± 0.30
<i>Chloride Concentration:</i>	% weight Cl	8.90 ± 0.50
<i>Sulphate Concentration:</i>	% weight SO <sub>4</sub>	2.95 ± 0.40
<i>Basicity:</i>	% OH/Al equivalence	50 ± 5
	OH:Al mole ratio	1.50 ± 0.15
<i>Turbidity (NTU)</i>		< 35

Primary parameters for SternPAC™ are defined as those viewed as directly influencing the performance of the product. The parameters listed above are measured on a regular basis, and are the basis for quality control on SternPAC™. Eaglebrook, Inc. will provide any and all procedures for the determination of any of the parameters if requested.

### Secondary Parameters

<i>pH as is</i>		2.6 ± 0.3
<i>pH of a 1% weight solution</i>		4.1 ± 0.5
<i>Brookfield Viscosity (cps)</i>	(sp.#1, 60 rpm, 20°C)	7 ± 3
<i>Freezing Point (°C)</i>		-12 ± 2

Secondary parameters for SternPAC™ are defined as those not influencing product performance, however, they may be of interest to persons responsible for transportation, storage, and handling of the product.

SternPAC™ conforms to AWWA Standard B408-98, Standard for Liquid Polyaluminum Chloride.

EAGLEBROOK, INC. OF CANADA  
Brantford, Ontario, CANADA, N3T 5V6  
Phone: (519) 759-7570 (800) 265-0712  
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**SternPAC™ MSDS**  
(Material Safety Data Sheet)

**SternPAC™**



**EMERGENCY NUMBERS**

**IN CASE OF EMERGENCIES SUCH AS PRODUCT SPILLS, CALL**  
**CHEMTREC (800) 424-9300 USA (TOLL FREE)**  
**CANUTEC (613) 996-6666 CANADA (CALL COLLECT)**

**1. PRODUCT AND COMPANY IDENTIFICATION**

	<u>USA</u>	<u>CANADA</u>
<b>Supplier:</b>	Eaglebrook, Inc. 4801 Southwick Drive Suite 200 Matteson, IL 60443	Eaglebrook, Inc. of Canada 626 Oak Park Road Brantford, Ontario N3T 5L8
<b>Telephone:</b>	(708) 747-5038 (800) 428-3311	(519) 759-7570 (800) 265-0712
<b>Product Name:</b>	SternPAC™	
<b>Chemical Family:</b>	Polynuclear inorganic salt	
<b>Formula:</b>	$Al_{13}(OH)_{20}(SO_4)_2Cl_{15}$	
<b>Synonym:</b>	Polyaluminum chloride, polyhydroxosulphatoaluminum chloride.	
<b>Product Use:</b>	Coagulant for potable water treatment.	

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2. **COMPOSITION / INFORMATION ON INGREDIENTS**

<u>Component</u>	<u>CAS #</u>	<u>WT/WT %</u>	<u>ACGIH/TLV</u>
Aluminum chloride hydroxide sulphate	39290-78-3	15 - 40	2 mg/m <sup>3</sup> (Al)

**WHMIS Classification:** Corrosive Liquid; CLASS E  
**OSHA Classification:** Physical: Corrosive Health: Corrosive  
Target Organs: None known.

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3. **HAZARDS IDENTIFICATION**

**Principal Risk:** Irritating of skin, eyes and mucous membranes.

**Potential Effects on Health:**

**SKIN CONTACT:** May cause irritation, swelling, or dermatitis. Prolonged exposure may cause skin irritation. A single, prolonged exposure is not likely to result in the materials being absorbed through the skin in harmful amounts.

**EYE CONTACT:** Will cause painful burning or stinging of eyes and lids, watering of eyes, and inflammation of the conjunctiva.

**INGESTION:** May be harmful if swallowed. May cause nausea and vomiting. May cause liver and kidney effects.

**INHALATION:** Not a likely route of entry, however, may irritate respiratory tract.

**EFFECTS OF ACUTE EXPOSURE:** *Small Quantities:* nausea, vomiting, stomach cramps, diarrhea. *Large Quantities:* Ulcerations and necrosis of the mucous membranes in the throat, mouth, and esophagi plus small quantity effects, liver or kidney damage, intense thirst.

**EFFECTS OF CHRONIC EXPOSURE:** Mist will irritate respiratory tract. Possible dermatitis.

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**4. FIRST AID MEASURES**

- First Aid:** In every case of overexposure seek medical attention. Move victim to fresh air.
- Skin Contact:** Remove all contaminated clothing. Wash affected area with soap and water. If irritation persists, seek medical attention.
- Eye Contact:** Flush immediately with water for 15 minutes. Seek immediate medical attention.
- Inhalation:** Remove to fresh air. Administer oxygen or artificial respiration if required.
- Ingestion:** *If conscious*, give two (2) glasses of water. **DO NOT INDUCE VOMITING.** Do not give anything by mouth to an unconscious person. Seek immediate medical attention.

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**5. FIRE FIGHTING MEASURES**

- Flash Point:** None      **Method:** PMCC
- Flammable Limits:** LOWER: Not flammable. UPPER: Not flammable.
- Autoignition:** Not flammable.
- Hazardous Combustion Product:** HCl gas may be released in a fire.
- Fire Fighting Instructions:** Extinguish main fire with appropriate firefighting media. Containers can build up pressure if exposed to heat (fire). Use dry chemical, CO<sub>2</sub> or water spray. As in any fire, wear self-contained breathing apparatus (SCBA), pressure-demand (MSHA/NIOSH approved or equivalent) and full protective equipment.



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## 6. ACCIDENTAL RELEASE MEASURES

### Spill, Leak, Accidental

Restrict access until clean-up operations are complete. Ensure clean up is conducted by trained personnel only. Wear adequate personal protective equipment. Ventilate spill area if possible. Dam to prevent spreading. Neutralize with soda ash and soak up with absorbent material. Transfer to metal drum for disposal. Wash affected area with water. Notify appropriate government occupational health and safety and environmental authorities when applicable. Contact an approved waste hauler for disposal of contaminated recovered material.

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## 7. HANDLING AND STORAGE

Ensure that all containers are labelled. Treat as any dilute acid. Avoid contact with metal. Store away from incompatible materials such as alkalis. Avoid skin and eye contact. Wear appropriate protective clothing. Store in dry rubber-lined, plastic or FRP vessels. Keep storage temperature between 10 and 30 °C. Keep containers tightly closed when not in use and when empty. Product should be used within one (1) year.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Due to its low volatility and toxicity, the hazard potential associated with this material is relatively low.

**Ventilation:** Local ventilation.

**Gloves:** Impervious gloves (neoprene recommended).

**Eyes:** Monogoggles or face shield.

**Respirator:** Not likely an inhalation hazard unless HCl mist forms. If so, use canister-type respirator at low concentration (<1%) and a MSHA or NIOSH-approved respirator.

**Clothing:** Rubber boots, pants, and coat depending on degree of exposure.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear amber to colourless
Odor:	Slight
Form:	Liquid
pH as is:	2.6 ± 0.3
Vapor Pressure (mm Hg):	17 mm Hg 20°C (68°F)
Boiling Point:	Approximately 102°C (215°F) @ 760 mm Hg
Freezing Point:	-12 ± 2 °C (10 ± 4 °F)
Specific Gravity (20°C):	1.205 ± 0.003 (H <sub>2</sub> O = 1)
Solubility (water):	Soluble in water
Vapor Density (Air=1): 1.3	Percent Volatile by Vol.: Not available

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## 10. STABILITY AND REACTIVITY

### Stability:

Does not undergo self-polymerization or decomposition.

### Hazardous Decomposition:

Under fire conditions, HCl gas may be released.

### Conditions to Avoid:

High temperature decomposition. Avoid contact with alkalis and metal.

### Incompatible Materials:

Reacts with zinc and aluminum to form hydrogen gas. Contact with strong alkalies (e.g. ammonia and its solutions, carbonates, sodium hydroxide (caustic), potassium hydroxide, chlorites) may generate heat, splattering or boiling and toxic vapors.

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**11. TOXICOLOGICAL INFORMATION**

**ACUTE ORAL TOXICITY:** LD<sub>50</sub>: 12.8 g/kg (rat)

**ACUTE INTRAPERITONEAL TOXICITY:** LD<sub>50</sub>: 1.9 g/kg (rat)

**CARCINOGENICITY:** Not considered carcinogenic by NTP, IARC, or OSHA.

**IRRITANCY OF PRODUCT:** Moderate skin and eye.

**TOXICOLOGICALLY SYNERGISTIC PRODUCTS:** None known.

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**12. ECOLOGICAL INFORMATION**

**TOTAL ORGANIC CARBON (TOC):** < 2.0 ppm

**DAPHNIA MAGNA:** 48 HR ACUTE LC<sub>50</sub>: 1400 ppm

**RAINBOW TROUT:** 96 HR ACUTE LC<sub>50</sub>: 1555 ppm

**FATHEAD MINNOW:** 96 HR ACUTE LC<sub>50</sub>: 870 ppm  
NOEC: 312 ppm LOEC: 625 ppm

**CERIODAPHNIA DUBIA:** 48 HR ACUTE LC<sub>50</sub>: 2000 ppm  
NOEC: 150 ppm LOEC: 300 ppm

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**13. DISPOSAL CONSIDERATIONS**

This material exhibits the RCRA characteristic of corrosivity and any disposal must comply with hazardous waste disposal requirements. Any residues and/or rinse waters from cleaning of tanks, containers, piping systems and accessories may be a hazardous characteristic waste and must be properly disposed of in accordance with all federal, state and local laws.

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**14. TRANSPORT INFORMATION**

**Shipping Name:** Corrosive liquid, acidic, inorganic, n.o.s.  
(Aluminum chloride hydroxide sulphate)

**Hazardous Class:** 8

**UN Number:** 3264

**Packing Group:** III    **IMO Class:** 8    **IATA/ICAO Class:** 8

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**15. REGULATORY INFORMATION**

**WHMIS:** CORROSIVE LIQUID; CLASS E  
This product has been classified in accordance with the hazard criteria of the CPR, and this MSDS contains all the information required by the CPR.

**HMIS/NFPA:** HEALTH: 2  
FLAMMABILITY: 0  
REACTIVITY: 1

**CEPA:** This substance or all ingredients of this product are listed on the DSL. The presence on this list does not require any legal reporting.

**NPRI:** Not reportable.

**NSF:** This product has received NSF Certification under ANSI/NSF Standard 60 in the Coagulation and Flocculation category under the official chemical name of SternPAC™. Only product supplied by Eaglebrook, Inc of Canada and whose container label bears the ANSI/NSF mark may be used in potable water treatment applications. The maximum product dosage level is 250 mg/L.





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**15. (cont'd)**

**SARA TITLE III HAZARD CATEGORIES AND LISTS:**

ACUTE (IMMEDIATE) HEALTH: Yes  
CHRONIC (DELAYED) HEALTH: No  
REACTIVITY: No  
EXTREMELY HAZARDOUS SUBSTANCE: No  
(40 CFR 355, SARA Title III Section 302)  
CERCLA HAZARDOUS SUBSTANCE: No (40 CFR 302.4)  
SUDDEN RELEASE OF PRESSURE: No  
(40 CFR 372.65, SARA Title III Section 313)  
FIRE: No  
TOXIC CHEMICAL: No

**TSCA:** This substance or all ingredients of this product are listed on the Chemical Substances Inventory of the TSCA. Does not require reporting.

**Risk Phrases:** R22 – Harmful if swallowed

**Safety Phrases:** S26 – In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S36/37/39 – Wear suitable protective clothing, gloves and eye protection.

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**16. OTHER INFORMATION**

**ACGIH:** American Conference of Government Industrial Hygienists  
**AWWA:** American Water Works Association  
**CAS:** Chemical Abstracts Service  
**CEPA:** Canadian Environmental Protection Act  
**CERCLA:** Comprehensive Environmental Response, Compensation and Liability Act  
**CFR:** Code of Federal Regulations  
**CIRC:** Cancer International Research Center  
**DOT:** Department of Transport  
**DSL:** Domestic Substance List  
**FRP:** Fiberglass Reinforced Plastic  
**HEPA:** High Efficiency Particulate Arresting  
**HMIS:** Hazardous Material Information System  
**LEL:** Lower Explosive Limit  
**LC<sub>50</sub>:** The concentration of material in air expected to kill 50% of a group of test animals.  
**LD<sub>50</sub>:** Lethal dose expected to kill 50% of a group of test animals.  
**LOEC:** Lowest observed effect concentration

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**16. (Cont'd)**

**IARC:** International Agency for Research on Cancer  
**MSHA:** Mine Safety and Health Administration  
**N/A:** Not Applicable  
**NFPA:** National Fire Protection Agency  
**NIOSH:** National Institute for Occupational Safety and Health  
**NPRI:** National Pollutant Release Inventory  
**NSF:** National Sanitation Foundation  
**NTP:** National Toxicology Program  
**OSHA:** Occupation Health and Safety Administration  
**RCRA:** Resource Conservation and Recovery Act  
**RTECS:** Registry of Toxic Effects of Substances  
**SARA:** Superfund Amendments and Reauthorization Act of the US EPA  
**TDG:** Transport of Dangerous Goods  
**TLV:** Threshold Limit Value  
**TSCA:** Toxic Substances Control Act  
**TWA:** Time Weight Average  
**UEL:** Upper Explosive Limit  
**WHMIS:** Workplace Hazardous Material Information System

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