



# Polyaluminum Chlorosulfate Solution

## PRODUCT DESCRIPTION

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Polyaluminum Chlorosulfate Solution is a polymerized aluminum compound containing both chloride ( $\text{Cl}^-$ ) and sulfate ( $\text{SO}_4^{2-}$ ). The basicity (degree of acid neutralization) is 50%, resulting in only minimal impact on the pH of the receiving water.

The chemistry of this solution produces a rapid forming and settling floc. PAC works well in extreme conditions such as low temperature, low alkalinity, and physically challenged plants where only a minimal amount of mixing and/or settling time is possible.

Gulbrandsen's Polyaluminum Chlorosulfate Solution Product Line is NSF approved and meets AWWA standards for municipal and industrial drinking water applications.

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### APPLICATIONS AND BENEFITS

The Polyaluminum Chlorosulfate Solution product line offers a broad range of products that have unique performance characteristics when compared to the more conventional coagulants like alum, aluminum chloride, ferric chloride, ferric sulfate, etc. Polyaluminum Chlorosulfate Solution is often the product of choice in the following applications.

#### Municipal and Industrial Water Treatment

Polyaluminum Chlorosulfate Solution is often employed as the primary coagulant in potable water and industrial water treatment plants, replacing the need for other coagulants such as alum, and in many cases also eliminating or at least greatly reducing the need for pH adjustment chemicals, coagulant aids and filter aids. The benefits of this Polyaluminum Chlorosulfate Solution Product Line are most apparent when used in difficult treatment conditions; low temperature, low raw turbidities and low alkalinity, but can be effective in all types of waters. Consistently recognized benefits of converting to Polyaluminum Chlorosulfate Solution are:

- Improved turbidity removal
- Improved color removal
- Increased TOC (Total Organic Carbon) removal
- Lower filter turbidities
- Increased filter run length
- Sludge reduction of over 25-75%
- Simplified operations by eliminating pH and secondary polyelectrolyte feed
- Lower overall treatment costs
- Increase treatment plant through put rate

#### Municipal and Industrial Wastewater Treatment

Polyaluminum Chlorosulfate Solution is also used in wastewater treatment applications for:

- TSS (Total Suspended Solids) removal
- Enhanced Solids Setting
- Phosphate removal
- COD (Chemical Oxygen Demand) reduction in industrial wastewater treatment
- BOD (Biological Oxygen Demand) and TOC (Total Organic Carbon) removal in municipal wastewater treatment

#### Pulp and Paper (On-Machine Applications)

Polyaluminum Chlorosulfate Solution is used extensively in several on machine applications as a:

- Size bonding agent
- Anionic trash scavenger
- Retention and drainage aid
- Pitch and stickies control additive

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### SAFETY

Polyaluminum Chlorosulfate Solution is a corrosive mineral acid that has the following ratings:

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	0	1	2	3
HEALTH			▲	
FLAMMABILITY	▲			
REACTIVITY		▲		
CONTACT			▲	
	NONE	SLIGHT	MODERATE	SERIOUS

**Protective Equipment:** Goggles, Long Sleeves and Gloves

Thoroughly read and understand the information presented in the Material Safety Data Sheet prior to using Polyaluminum Chlorosulfate Solution in laboratory, pilot plant and/or full plant applications.

### STORAGE AND HANDLING

Storage tanks and piping for Polyaluminum Chlorosulfate Solution should be constructed of materials recommended for corrosive products. FRP, PVC, HDPE and/or rubber are the materials of choice for piping and storage tanks.

Metering pumps and other equipment that comes in contact with concentrated solutions of Polyaluminum Chlorosulfate must also be constructed of acid resistant materials such as PVC, rubber, Teflon<sup>®</sup>, ceramic, and Hastolly C<sup>®</sup>. No wetted parts should contain any metals such as carbon steel, stainless steel, brass or aluminum.

Hazard class: 8-Corrosive

Label: Corrosive

ID Number: UN2581

Packing group: III



### PRODUCT ADDITION CONSIDERATIONS

Poyaluminum Chlorosulfate Solution should be fed as a concentrated solution provided that there is adequate mixing to disperse the concentrated solution with the stream being treated. If there is not sufficient mixing, then clean dilution water can be used to insure thorough distribution.

### PRODUCTION & PACKAGING

Poyaluminum Chlorosulfate Solution is available in the following factory packed containers from our manufacturing sites in Phillipsburg, NJ, LaPorte, TX and Orangeburg, SC and our warehouse in San Juan, PR:

- **Bulk:** 500 - 4,000 gallon quantities
- **Tote:** 275 or 330 non-returnable totes
- **Drum:** 55 gallon, plastic, non-returnable drums (550 lb. net)

### ADDITIONAL INFORMATION

Please contact Gulbrandsen Technologies Corporate Service Center at 908.735.5458 or 800.255.7759.

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