



HYDRAPRIME® HP-1225

Polyaluminium chloride powder coagulant for water treatment

Description

HYDRAPRIME® HP-1225 is a general purpose polyaluminium chloride powder coagulant suitable for potable and wastewater clarification. It can be used as a primary coagulant for DAF and clarifier, as a filter aid for multimedia and ultrafiltration, and as a sludge conditioning agent to improve sludge dewaterability and provide a less turbid supernatant.

Product Benefits

- » Eliminate the use of alum resulting in lower Al³⁺ residuals, lower sludge volumes and no sulfates
- » Helps remove colour, colloidal and suspended solids, fats, oils & grease
- » Greater than 99% active

Product Background

HYDRAPRIME HP-1225 is a concentrated polyaluminium chloride (PAC) powder coagulant with an Al₂O₃ content of greater than 29%.

HP-1225 has a range of uses in water treatment including:

- » primary coagulant
- » filter aid
- » phosphate precipitation
- » sludge dewatering
- » emulsion breaking

HP-1225 is a partially polymerised, low basicity PAC that produces tight floc structures that settle quickly. Compared to simple electrolytes such as ferric chloride and aluminium sulfate (alum), HP-1225 requires less than half the dose rate and produces lower sludge volumes.

When operating at pH's < 5, HP-1225 acts through charge destabilisation. At pH's between 5–6.5, HP-1225 acts using both charge destabilisation & sweep flocculation; at pH's above 6.5, HP-1225 acts via sweep flocculation.

As a filter aid HP-1225 will increase the size of colloidal particles and this will improve filter capture rate giving a cleaner filtrate. Furthermore larger particles will create more void space between these particles as they cake on the filter and this will help keep the pressure drop low. This in turn will increase run time between backwashes.

HP-1225 will effectively precipitate phosphate over a wide pH range (5–9). Optimum results at the lowest dose rates are achieved at pH's between 5.5–7.5.

HP-1225 exhibits other useful properties for water treatment applications. This includes acting as a sludge

Properties

Form:	Powder
Colour:	Pale yellow
Bulk density:	0.75 ± 0.1 g/cm ³
pH:	3–4 (1% w/w solution)

preconditioner before dewatering (helps reduce polymer based flocculant consumption); as a wetting agent for belt and sludge press applications (thus allowing the polymer based flocculant to dewater more extensively and to yield higher sludge solids content); and as a cost-effective emulsion breaker (often outperforming many 'purpose-built' emulsion breakers).

Product Make-down

HP-1225 can be prepared as a liquid at varying strengths between 3–33% w/w. Add HP-1225 to the vortex of a well-mixed tank to avoid clumping and stir until dissolved.

When preparing, wear safety goggles, coveralls, gloves and a dust mask. Take care to minimise dusting and avoid getting on your skin or in your eyes. Refer to the Safety Data Sheet for more information.

Product Application

For optimum performance in water treatment applications, HP-1225 should be fed as a liquid product. When prepared at concentrations of less than 5% w/w, we recommend fresh make-down every few days to help maximise performance.

HP-1225 should be dosed to a well-mixed and highly turbulent location of the water circuit. For optimum results HP-1225 requires a few seconds of high mixing energy to ensure a high collision rate between HP-1225 and the particulate or dissolved matter in the water.

For most applications a typical addition point may be on the suction side of a water pump, or upstream of an in-line static mixer, or before pipework with elbows & bends and long straight runs.