



HYDRAPRIME[®] HP-1720

Aluminium based coagulant blend for water treatment

Description

HYDRAPRIME[®] HP-1720 is a concentrated general purpose aluminium based liquid coagulant blend 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 for a host of other water treatment applications including phosphate precipitation, defoaming and emulsion breaking.

Product Benefits

- » Easy to use liquid formulation
- » Concentrated for low dose rates
- » Helps remove colour, colloidal & suspended solids, fats, oils & grease
- » Suitable for phosphate precipitation
- » Effective emulsion breaker

Product Background

HYDRAPRIME HP-1720 has a range of uses in water treatment including:

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

As a coagulant HP-1720 produces a tight pin-floc that settles on standing leaving a clear supernatant. When operating at pH's < 5, HP-1720 acts through charge destabilisation. At pH's between 5–6.5, HP-1720 acts using both charge destabilisation and sweep flocculation; at pH's above 6.5, HP-1720 acts via sweep flocculation.

As a filter aid HP-1720 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-1720 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-1720 exhibits other useful properties for water treatment applications. This includes acting as a defoamer (reducing the need to add silica or oil-based defoamers to the treatment plant); as a wetting agent

Properties

Form:	Liquid
Colour:	Clear
SG:	1.33 ± 0.05
pH:	2–3
Viscosity:	20–25 cP @ 20°C

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

Product Application

HP-1720 should be dosed to a well-mixed and highly turbulent location of the water circuit. For optimum results at the lowest dose rate, on application HP-1720 requires an initial short period of high mixing energy (a few seconds) followed by a longer period of lower energy mixing to allow particle or floc growth.

HP-1720 can be fed as a neat product or it can be diluted before application in a dosing or day tank (up to 1:100 dilution ratio). This may help improve mixing and lower consumption. We recommend changing diluted solutions every few days to help maximise product performance.

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.

Dose rates are best determined by jar testing as they can vary dependent on the type of application, feed water quality and final desired results. As a coagulant for low turbidity waters expect dose rates of 10–50 mg/L. For wastewaters dose rates between 100–1,000 mg/L are typical. As a filter aid expect dose rates of 5–25 mg/L. Dose rates for other uses are applications specific.