



HYDRAPRIME[®] HP-1220

Aluminium based coagulant blend for water treatment

Description

HYDRAPRIME[®] HP-1220 is a general purpose concentrated 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 as a sludge conditioning agent to improve sludge dewaterability and provide a less turbid supernatant.

Product Benefits

- » Concentrated for low dose rates
- » Eliminate the use of alum
- » Minimise the increase of TDS
- » Helps remove colour, colloidal and suspended solids, fats, oils & grease
- » No sulfates

Product Background

HYDRAPRIME HP-1220 is a concentrated polyaluminium chloride (PAC) liquid coagulant blend with a range of uses in water treatment including:

- » primary coagulant
- » filter aid
- » thickening of sludge's
- » phosphate precipitation

HP-1220 is a highly polymerised, low basicity PAC blend that produces tight floc structures which settle quickly. Compared to simple electrolytes such as ferric chloride, aluminium chloride and aluminium sulfate (alum), HP-1220 requires less than half the dose rate and produces less sludge mass.

HP-1220 exhibits other properties that are useful in wastewater applications. This includes acting as a defoamer thus reducing the need for the addition of silica or oil-based compounds to the treatment plant; and acting as a wetting agent for belt and sludge press applications thus allowing the flocculant (long chained polymer) to dewater more extensively and yield a higher solids content.

As a coagulant and dependent on operating pH, HP-1220 can act via charge destabilisation and sweep flocculation. At pH's < 5 charge destabilisation is the main mechanism; at pH's between 5–6.5 both charge destabilisation and sweep flocculation will take place; at pH's above 6.5 then sweep flocculation is the dominant mechanism.

Properties

Form:	Liquid
Colour:	Clear
SG:	1.18 ± 0.05
pH:	2.7 ± 0.2
Viscosity:	10–20 cP @ 20 °C

Precipitation of anions such as phosphate can occur over a wide pH range with optimum results being achieved at pH's between 5.5–7.

Product Application

For optimum performance HP-1220 should be fed as a neat product, although dilution in a dosing or day tank is possible up to a 1 in 10 dilution ratio. We recommend changing diluted solutions every few days to help maximise performance.

HP-1220 should be dosed to a well-mixed and highly turbulent location of the water circuit. For optimum results HP-1220 requires a short period of initial high mixing energy (a few seconds) followed by a longer period of lower energy mixing to allow particle or floc growth.

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 filter aid expect dose rates of 5–25 mg/L, as a coagulant for low turbidity waters expect 10–100 mg/L and for wastewaters 100–1,000 mg/L. For sludge dewatering typical doses are between 500–2,000 mg/L. The use of two separate dose points for sludge dewatering applications will help minimise consumption.