



HYDRAPRIME[®] HP-1420

Aluminium based coagulant blend for water treatment

Description

HYDRAPRIME[®] HP-1420 is a concentrated, high basicity, 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
- » Non-corrosive
- » Minimal pH suppression
- » Minimise the increase of TDS
- » Helps remove colour, colloidal and suspended solids, fats, oils & grease (FOG)
- » Dose up to 250 mg/L for potable water applications

Product Background

HYDRAPRIME HP-1420 is a concentrated, pre-hydrolysed polyaluminium chloride (PAC) liquid coagulant blend that has a range of uses in water treatment including:

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

HP-1420 is manufactured to have a high degree of basicity resulting in lower alkalinity consumption by the coagulant. This means lower consumption of alkalinity boosters such as sodium hydroxide.

HP-1420 has the highest fraction of polymeric aluminium species of all the PAC'S and alum. These polymeric aluminium species are considered responsible for the superior coagulation abilities of HP-1420.

As a coagulant and dependent on operating pH, HP-1420 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.

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.

Properties

Form:	Liquid
Colour:	Clear
SG:	1.35 ± 0.05
pH:	3–4
Viscosity:	15–30 cP @ 20°C

Product Application

For optimum performance HP-1420 should be fed as a neat product. Dilution in a dosing or day tank is not recommended as this may reduce product activity.

HP-1420 should be dosed to a well-mixed and highly turbulent location of the water circuit. For optimum results HP-1420 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 1–10 mg/L, as a coagulant for low turbidity waters expect 5–50 mg/L and for wastewaters 100–500 mg/L. For sludge dewatering typical doses are between 400–1,000 mg/L. The use of two separate dose points for sludge dewatering applications will help minimise consumption.