



HYDRABOND[®] HB-4405

Anionic powder polymer for flocculation, sludge thickening and dewatering in water treatment

Description

HYDRABOND[®] HB-4405 is a general purpose anionic powder polymer used for water clarification, sludge thickening and sludge dewatering in industrial and municipal water treatment. HB-4405 is characterised as being a very high molecular weight linear polymer of high anionic charge.

Product Benefits

- » Effective over a wide pH range and in alkaline waters
- » Forms a large & dense floc that promotes high settling rates
- » High molecular weight for robust floc formation and to maximise cake solids
- » Achieves high solids capture

Product Use

HYDRABOND HB-4405 is an anionic powder polymer with a range of uses in water treatment including:

- » primary flocculant for water clarification using clarifier and laminar plate separators
- » sludge thickening using gravity settling, gravity belt, rotary drum and centrifuge
- » sludge dewatering using belt press, screw press, centrifuge and plate & frame separators

Product Activation

HB-4405 should be made-down and activated at a strength between 0.05–0.3% with purpose built make-down equipment. At strengths greater than 0.3% the resulting solution will become very viscous and hard to stir and pump.

The dissolution speed of HB-4405 is between 30–90 minutes dependent on agitation speed, make-down strength and water temperature. Higher agitation speeds, higher water temperature and lower make-down strength contribute to lower dissolution times.

HB-4405 powder should be added slowly to a vortex or highly turbulent area of the polymer make-down tank. The aim is to wet (or hydrate) each polymer grain individually to avoid their agglomeration into a mass of dry polymer surrounded by a viscous gel, and to stop the formation of 'fish eyes'.

High quality make-up water, low in hardness and free of turbidity, with low ferrous iron concentrations (< 0.2 mg/L) and low residual chlorine (< 0.5 mg/L) is recommended.

Properties

Form:	Powder
Colour:	Off-white
Bulk density:	0.80
Viscosity:	800 cP (0.25% solution)

Product Application

A solution of HB-4405 can be dosed as made-up. Alternatively in-line post dilution by 5–20 times, just prior to application can be used as this may improve mixing and ensure optimum dose rates.

Dose rates and dose locations are best determined by jar testing and on-site optimisation. Dosing with diluted solutions of HB-4405 will improve mixing. Using two separated dose points may reduce overall consumption.

When HB-4405 is used as a primary flocculant, neat product dose rates of 0.2–10 mg/L are common. Application should be in a low shear environment such as a flocculating tank or in a medium shear environment just prior to the solids/liquid separation equipment.

For sludge thickening applications, and dependent on the type of sludge to be treated, dose rates between 0.5–5 kg dry polymer/dry tonne sludge are expected.

For sludge dewatering applications the dose rate is highly dependent on the type of sludge to be treated. Primary sludge may require 1–4 kg dry polymer/dry tonne sludge, while secondary and digested sludge may require 2–8 kg dry polymer/dry tonne sludge.

Spills of neat HB-4405 should be swept up and contained for disposal. Do NOT wash spills with water as the resultant area will become very slippery and product clean up will be more difficult and time consuming.