



# HYDRABOND<sup>®</sup> HB-2205

***Cationic powder polymer for flocculation and dewatering in water treatment***

## Description

HYDRABOND<sup>®</sup> HB-2205 is a general purpose cationic powder polymer used for water clarification, sludge thickening and sludge dewatering in industrial and municipal water treatment. HB-2205 is characterised as being a high molecular weight linear polymer of low-medium cationic charge.

## Product Benefits

- » Effective over a wide pH range (4–9)
- » High molecular weight for robust floc formation
- » Forms a large & dense floc promoting settling rates
- » Low-medium cationic charge to minimise dose rate and improve solids removal
- » Produces good quality supernatant when used for sludge dewatering

## Product Use

HYDRABOND HB-2205 is a cationic powder polymer with a range of uses in water treatment including:

- » primary polymer based flocculant for DAF, clarifier and inclined-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-2205 should be made-down and activated at a strength between 0.1–1.0% with purpose built make-down equipment. For general application, Hydroflux recommends make-down at 0.2%.

The dissolution speed of HB-2205 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-2205 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:	0.85
Viscosity:	220 cP (0.25% solution)

To minimise polymer hydrolysis and improve the stability of the final solution, the pH can be adjusted down to 5.5 if needed. A 0.5% solution at pH 5–5.5 should be stable for up to 48 hours. Weaker solutions with higher pH values may begin to deteriorate after a few hours.

## Product Application

A solution of HB-2205 can be dosed as made up. Alternatively in-line post dilution by 5–20 times, just prior to application may improve polymer/suspended solids 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-2205 will improve mixing. Using two separated dose points may reduce overall consumption.

When HB-2205 is used as a primary flocculant, product dose rates of 2–25 mg/L are expected. Dosing into purpose built flocculating chambers or close to the final solids/liquid separation device is recommended, since chemical flocs produced by coagulant/polymer combinations are shear sensitive and can break apart if traversing long pipe lengths or in high shear mixing chambers.

For sludge dewatering and thickening applications the dose rate is highly dependent on the type of sludge to be treated. Primary sludge may require 0.5–5 kg/dry tonne sludge, while secondary and digested sludge may require 1–10 kg/dry tonne sludge. The dosing point should be as close to the sludge dewatering unit as possible while still achieving good mixing.