



# HYDRABOND<sup>®</sup> HB-4302

## *Anionic emulsion polymer for flocculation in water treatment*

### Description

HYDRABOND<sup>®</sup> HB-4302 is a general purpose anionic liquid emulsion used for water clarification, sludge thickening and sludge dewatering in industrial and municipal water treatment. HB-4302 is characterised as being a very high molecular weight linear polymer of medium anionic charge.

### Product Benefits

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

### Product Use

HYDRABOND HB-4302 is an anionic emulsion 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-4302 should be made-down and activated at 0.8–1.2% strength before use with purpose built make-down equipment. Activation at lower concentrations may reduce product effectiveness leading to higher than expected dose rates. Activation at higher concentrations may produce a solution that is too viscous.

HB-4302 can be used immediately after activation although a minimum 10 minute aging is recommended for optimum performance. Post dilution to lower strengths after activation is suitable. For dilutions to less than 0.1% strength, solution stability will be reduced to less than 48 hours.

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.

### Product Application

An activated solution of HB-4302 can be dosed as prepared, although post dilution in a dosing tank or in-line post dilution just prior to application will reduce

### Properties

Form:	Liquid (emulsion)
Colour:	Off-white to tan-cream
SG:	1.05 ± 0.03
Viscosity:	1,200 cP neat. 2,300 cP @ 1%

the polymer viscosity; this may improve solids/polymer mixing thus helping to achieve optimum dose rates. Dose rates and dose locations are best determined by jar testing and on-site optimisation. Using two separated dose points may reduce overall consumption.

When applied as a primary flocculant after the addition of a coagulant, dose rates between 0.5–20 mg/L of HB-4302 are typical. 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 can be shear sensitive and may break apart if traversing long pipe lengths or in high shear mixing chambers.

For sludge thickening applications, and dependent on the type of sludge to be treated, dose rates between 1.0–10 kg HB-4302/dry tonne solids (dts) is expected. The dosing point should be as close to the sludge thickening unit as possible while still achieving good mixing between sludge and polymer.

For sludge dewatering applications the dose rate is highly dependent on the type of sludge to be treated. Primary sludge may require 2–8 kg HB-4302/dts; secondary and digested sludge may require 4–16 kg HB-4302/dts.

Spills of neat HB-4302 should be wiped up and any remaining product removed using bleach, salt, sawdust or absorbers, before rinsing the area with water. Do not use water on spills of neat HB-4302 as the area will become very slippery and clean-up will be difficult. Do not let any spills (or any water hosing of spills) enter the stormwater system.