



# EBC-1

## Oil-in-Water Emulsion Breaker-Flocculant

### GENERAL

EBC-1 is a liquid cationic polymer that is employed as an oil-in-water emulsion breaker in waste streams containing cutting oils, lubricating oils, coolants, grinding fluids, and tramp oils from industrial machining plants, such as car plants and metal working shops.

### APPLICATION

EBC-1 dissolves easily and completely in water. Dilute solutions of any lower concentration can be prepared merely by adding the emulsion breaker to water and stirring.

EBC-1 is effective in breaking emulsions containing oil concentrations of 1,000 to 50,000 ppm (0.1 to 5.0 %). While EBC-1 is effective over a wide pH range, best results usually occur at pH 8.0 to 9.0.

Most oily wastes are pretreated with caustic to reach the desired pH value.

EBC-1 breaks oil-in-water emulsions by neutralizing repulsive charges between particles. Thus it is important to use an adequate amount of the emulsion breaker without overtreating, since too much emulsion breaker may re-emulsify the oil.

EBC-1 should be added at a point where good mixing assures uniform distribution in the waste water. After the addition of EBC-1, coagulations such as aluminium sulfate or sodium aluminate are typically added at treatment levels of 40 to 100 ppm.

Anionic polymer flocculants are often added to facilitate rapid flocculation. Subsequent treatment steps vary from batch treatment where oily sludge is collected from the bottom of treatment tanks, to air flotation treatment where oil is floated and skimmed off the surface.

Use levels for EBC-1 range from 30 to 100 ppm in most oil emulsions. However, the presence of emulsifiers, such as anionic surfactants in the waste, necessitates higher treatment levels.

To determine the approximate treatment level necessary for proper emulsion breaking, the following jar test procedure may be used :

1. Fill test beakers with 500 ml of oily waste water.
2. Mix at 100 rpm, using a gang stirrer.
3. Add the emulsion breaker test solution to the beakers in varying concentrations (test solution is made by diluting the polymer to 1.0 % of product as received). Each ml of test solution added is equal to 20 ppm emulsion breaker.
4. Mix at 100 rpm for 4 minutes.
5. If alum or sodium aluminate is to be used, add the desired concentration to each beaker.
6. Mix at 100 rpm for 3 minutes.
7. If an anionic polymer is to be used, add the desired concentration to each beaker.
8. Mix at 20 to 50 rpm for 3 minutes.
9. Shut off mixer and allow flow to separate for 5 minutes.

Select the lowest dosage of emulsion breaker giving clear water.

### PRODUCT CHARACTERISTICS

Color	amber-light brown
Density at 25°C	1.13 – 1.16 g/ml
Approx. vol./kg	882 – 885 ml
Flash point (PMCC)	> 100°C
pH	6.0 – 8.0
Shelf life	3 years

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Updated since last version: color added

Verified by: FDE

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