

SAFE-BREAK CBF

Nonemulsifier

APPLICATIONS

- Prevent formation of stable emulsion between clear-brine completion fluids and reservoir crude oil

ADVANTAGES

- Soluble in most completion fluids and water-based systems
- Effective at low concentrations
- No formation damage due to crude oil emulsions

LIMITATIONS

- Flammable liquid
- Not soluble in zinc bromide- or formate-containing completion fluids

SAFE-BREAK CBF* nonemulsifier is a specialty solvent and surfactant blend that acts to prevent the formation of a stable emulsion between clear-brine completion fluids and reservoir crude oil. This nonemulsifier is formulated to penetrate the formation with minimal adsorption and to provide the intended benefit to the leading edge of invading fluid. SAFE-BREAK CBF nonemulsifier is soluble in all standard nonzinc bromide- or nonformate-based completion fluids. It will not precipitate out of solution at typical bottomhole temperatures. This combination of properties makes the nonemulsifier effective at the lowest possible concentration and maximizes the possibility for full reclamation of the completion fluid.

The typical application of SAFE-BREAK CBF nonemulsifier ranges from 0.1 to 1.0 vol % in a filtered completion fluid (4 to 40 galUS/100 bbl).

If possible, compatibility between the specific crude oil and completion fluid should be established through laboratory pilot testing prior to applying the product in the field. During a pilot test, the optimal concentration of nonemulsifier is determined by considering the rate at which the oil and brine phases separate, the condition of the oil-water interface, and observation of the crude oil-brine mixture for the presence or formation of a sludge and wettability of the brine phase.

The benefits of SAFE-BREAK CBF nonemulsifier can be enhanced in some applications by the addition of a small amount of mutual solvent such as ethylene glycol monobutyl ether (EGMBE); however, the effect of mutual solvent should be considered with respect to reclamation of the completion fluid. In most circumstances, addition of EGMBE over about 0.5 vol % will reduce the ability to reclaim the completion fluid and will usually increase the cost of reclamation. If the opportunity to pilot test the nonemulsifier does not exist, it should be applied at 0.5 vol %. In all applications, fluid returns should be monitored and the dosage adjusted accordingly.

Toxicity and handling

Handle as an industrial chemical, wearing protective equipment and observing the precautions as described in the MSDS.

SAFE-BREAK CBF nonemulsifier contains isopropyl alcohol, a flammable liquid. Keep away from heat, sparks, flame, and all sources of ignition. **WARNING!** Flammable liquid and vapor. Contains alcohol; avoid inhalation of vapors. Use with adequate ventilation. Material is an irritant.

Packaging and storage

SAFE-BREAK CBF nonemulsifier is packaged in 55-galUS [208-L] drums. It must be stored in closed containers. Use only with adequate ventilation. **WARNING!** SAFE-BREAK CBF nonemulsifier is flammable. Keep away from heat, sparks, flame, and all sources of ignition.

Typical Physical Properties

Physical appearance	Clear, pale yellow to amber liquid
Odor	Alcohol
Specific gravity	0.86
pH (10 vol % in water)	4
Flashpoint	70 degF [21 degC] (PMCC)