SAFE-BREAK™ ZINC

SAFE-BREAK ZINC emulsion preventer is a blend of surfactants and solvents designed to prevent the formation of a stable emulsion between clear-brine completion fluids containing zinc bromide or a formate salt and reservoir crude oil. It is formulated to penetrate the formation with minimal adsorption and to provide the intended benefit to the leading edge of invading fluid.

SAFE-BREAK ZINC is soluble in all zinc- and formate-base completion fluids. It will not precipitate out of solution at typical bottomhole temperatures. SAFE-BREAK ZINC does not affect the ability to reclaim these high-density brines.

TYPICAL PHYSICAL PROPERTIES

Physical appearance	Clear-to-amber liquid
Odor	Alcohol
Specific gravity	0.88 – 0.92 @ 68°F (20°C)
Solubility in water	100%
Flash point	70°F (21°C) (PMCC)

APPLICATIONS

SAFE-BREAK ZINC is designed specifically for downhole use in oil and gas wells for clean up prior to the start of production. It is intended to be used as a solution in filtered zinc-base completion fluids. Solutions may be made between 0.1 to 1.0% by volume through the rig hopper.

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. The optimum concentration of SAFE-BREAK ZINC is determined by considering the rate at which the oil and brine phases separate, the condition of the oil-water interface, observing the crude oil-brine mixture for the presence or formation of a sludge, and wettability of the brine phase.[1]

Figure 1
SAFE-BREAK non-emulsifier prevents formation of crude oil-completion brine emulsion.

The benefits of SAFE-BREAK ZINC can sometimes be enhanced through the addition of a small amount of mutual solvent such as Ethylene Glycol MonoButyl Ether (EGMBE). However, the effect of mutual solvents should be considered with respect to reclamation of the completion fluid. In most instances the addition of EGMBE over about 0.5% by volume will reduce the ability to reclaim completion fluid and will usually increase the cost of reclamation.

If the opportunity to pilot test SAFE-BREAK ZINC does not exist, it should be applied at 0.5% by volume. In all applications, fluid returns should be monitored and the dosage adjusted accordingly.

[1]See SPE 39444 for details on laboratory procedures.

ADVANTAGES

- Soluble in zinc bromide- and formate-base completion fluids.
- Effective at low concentrations.
- Prevents formation damage due to crude oil emulsions.

LIMITATIONS

- Flammable liquid.

TOXICITY AND HANDLING

Bioassay information is available upon request.

SAFE-BREAK ZINC is classified as a flammable liquid for shipping.

Handle as an industrial chemical, wearing protective equipment and observing the precautions as described on the Material Safety Data Sheet (MSDS).

Keep away from strong oxidizers, acids or alkalis.

Avoid contact with eyes and with skin.

WARNING! Flammable liquid and vapor. Contains alcohol; avoid inhalation of vapors. Use with adequate ventilation. Material is an irritant.

PACKAGING AND STORAGE

SAFE-BREAK ZINC is packaged in 55-gal (208.2-L) drums and in 5-gal (18.9-L) cans.

WARNING! SAFE-BREAK ZINC is flammable. Keep away from heat, sparks, flame and all sources of ignition.

MIC-11907 1M 4/99 Litho in U.S.A.

P.O. Box 721110
Houston, Texas 77272-1110
Tel: 281·561·1300
Fax: 281·561·7240
http://www.midf.com
E-mail: mimud@midf.com