M-I SWACO
A Schlumberger Company

SAFE-LINK

Completion fluid loss control agent

APPLICATIONS

Controlling loss of brine to the formation during cased hole completion or intervention operations

ADVANTAGES

- Streamlines operations and reduces rig footprint
- Easily blends at rig site
- Mixes without any special mixing equipment requirements
- Withstands downhole temperatures of up to 250 degF [121 degC] and differential pressure of up to 1,000 psi [6.89-MPa]
- Cleans up with dilute acid
- Features precrosslinked cellulose polymer
- Controls loss with viscous material
- Uses various-density products to generate desired final pill density

The SAFE-LINK* completion fluid loss control agent comprises a chemically modified, crosslinked cellulose polymer that is primarily used to control loss of clear-brine fluid to the formation during cased hole completion or workover operations.

The agent controls fluid loss by applying a highly viscous material across the formation face, virtually stopping the flow of brine into the formation. The SAFE-LINK agent functions through a crosslinked polymer network that is held in place on the formation face. The effectiveness of this product is not dependent on bridging solids or on viscous drag within the formation matrix.

The SAFE-LINK agent works in nonzinc halide brines—such as calcium chloride, calcium bromide, sodium chloride, seawater, sodium bromide, and potassium chloride—ranging from 8.6 to 15.1 lbm/galUS [1,030 to 1,809 kg/m^3] to control loss of brine to the formation. Generally, the SAFE-LINK agent is stable to 250 degF [121 degC] for at least 48 h of exposure time. Because of the SAFE-LINK agent's crosslinking mechanism, differential pressure greater than 2,000 psi [13.79 MPa] is not advisable.

Three SAFE-LINK agent products are available: SAFE-LINK 110 agent, SAFE-LINK 135 agent, and SAFE-LINK 140 agent. Active components consist of crosslinked hydroxyethyl cellulose (HEC) polymer in approximately 11-, 13.5-, and 14-lbm/galUS [1,318-, 1,618-, and 1,678-kg/m^3] brines, respectively. The appropriate SAFE-LINK agent should be chosen for the desired pill density.

Based on recommended treatment levels and use, the fluid loss to moderately permeable formations (100–1,000 mD) can be eliminated.

Mixing instructions

A 10-bbl [1.6-m^3] pill is the minimum recommended treatment. For larger pills, maintain product concentrations accordingly. The pill should cover the perforated zone with 200% excess.

Mix a 10-bbl pill as follows:

1. Add 6.2 bbl [0.99 m^3] of appropriate-density brine.
2. Add 2.5–3.5 lbm/bbl [7.1–10.0 kg/m^3] of SAFE-VIS* polymer fluid loss control additive or 3–4 galUS/bbl [0.071–0.095 m^3/m^3] SAFE-VIS* HDE high-density-brine liquid polymer fluid loss control additive to viscosify 6.2 bbl of brine.
3. Select the SAFE-LINK agent with the appropriate density so that the final pill density will be correct for the target application.
4. Add 32 pails (one standard pallet) of SAFE-LINK agent. The agent is a stiff gel that must be prechopped while in the bucket or added through the grating to create manageable-sized pieces. Do not dump the bucket into the pit. Gently stir with a lightning mixer or paddle mixer to slurry the chosen SAFE-LINK agent. Do not overshear the slurry; the slurry should be lumpy or stringy when ready to pump.
5. Bulk handling agents are available in select markets to enable premixing the pill in a self-contained unit.

See your M-I SWACO representative for engineering guidelines with more detailed mixing instructions.

SAFE-LINK

Toxicity and handling

Bioassay information is available upon request. Handle as an industrial chemical. Wear protective equipment, and observe the precautions as described in the Material Safety Data Sheet (MSDS).

Packaging and storage

SAFE-LINK agents are packaged in 5-galUS [18.9-L] pails. Store in a dry, well-ventilated area and away from incompatibles. Keep container closed. Keep away from heat, sparks, and flames. Personnel handling this material should read and follow all safety and handling procedures in the MSDS.

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