

## INFORMATION

# CA-FC1

### FORMATION CONTROL AGENT

#### DESCRIPTION

CA-FC1 is a solution that when mixed downhole with brine, forms a tough gel plug and when squeezed with a cement slurry, flash sets to seal both brine flows and lost circulation zones.

#### APPLICATION

CA-FC1, optionally loaded with Messina's HOLE-SEAL II and Wel-Frac 20-40 sand, is pumped to the problem formation and followed by a cement slurry. CA-FC1 reacts with divalent metal ions in brine (from the formation or pumped in front of CA-FC1) to form a gel plug. When the cement slurry contacts the CA-FC1/brine it flash sets, sealing the formation. This process is an economical method of lost circulation control compared to prevalent squeeze materials and techniques and is very successful in shutting off water flow.

#### RECOMMENDED TREATMENT

For lost circulation:

1. (A) Brine water zone (high calcium content) - pump 5-10 bbl fresh water. (B) Fresh water or low salt zone - pump 10-30 bbl of 10-30% CaCl<sub>2</sub> brine followed by 5-10 bbl fresh water.
2. Pump 200 gallons of CA-FC1 per foot of formation. Add 10 ppg Messina W/F 20-40 and 5 to 10 ppg HOLE-SEAL II, if desired. Normal treatment is 10-30 barrels of CA-FC1 solution. CA-FC1 is supplied in concentrate form and is normally diluted 1:1 or 2:1 (CA-FC1: fresh water) to produce a 50-67% solution.
3. Pump 5-10 bbl fresh water spacer.
4. Mix and pump 10-30 sx/ft low water loss cement. CaCl<sub>2</sub> may be added to the cement if desired.
5. Use proper squeeze techniques.
6. CA-FC1 is not recommended for cementing liners or multiple-stage strings.

For brine flow:

1. Pump one drill pipe volume of fresh water.
2. Follow lost circulation procedures 2 through 5 above.

### **PACKAGING**

CA-FC1 is normally available in export quality 55 gallon drums. Special packaging is available upon request and at extra cost.

CA-FC1 is a Messina trademark