

# KLA-CURE

KLA-CURE\* hydration suppressant is a water-soluble, environmentally acceptable, organic compound designed to reduce the dispersion and swelling of reactive clay formations.

KLA-CURE suppressant effectively inhibits shale or gumbo clays from hydrating and minimizes the potential for bit balling. KLA-CURE suppressant may be used in freshwater, seawater, saltwater, low-solids, or weighted systems.

### Typical Physical Properties

Physical appearance .....	Amber liquid
Specific gravity .....	1.22 @ 60°F (15.55°C)
pH (1% solution) .....	6.5–7.5
Solubility in water .....	100%
Flash point .....	>200°F (93°C) (PMCC)
Pour point .....	0°F (-17.8°C)
Concentration, lb/bbl (kg/m <sup>3</sup> ) .....	4 (11.4), 6 (17.1), 8 (22.8)
Equivalents, gal/bbl (L/m <sup>3</sup> ) .....	0.392 (9.3), 0.588 (14.0), 0.780 (18.6)

### Applications

KLA-CURE suppressant may be added directly to any freshwater, seawater, or saltwater system. No special mixing requirements are necessary. KLA-CURE suppressant affects only reactive clays that have not yielded. Therefore, it is recommended to pretreat the system with KLA-CURE suppressant before drilling reactive formations. If M-I GEL\* (bentonite) is used for viscosity or fluid-loss control, it will be necessary to prehydrate the M-I GEL before adding it to a system treated with KLA-CURE suppressant. KLA-CURE suppressant is most effective in systems which minimize the amount of bentonite and have low Methylene Blue Test (MBT) values. The minimum recommended concentration of KLA-CURE suppressant is 4 lb/bbl (11.4 kg/m<sup>3</sup>). Normal concentrations range from 4 to 8 lb/bbl (11.4 to 22.8 kg/m<sup>3</sup>) depending upon hole size, interval length, and amount of reactive shale to be drilled. MBT values in KLA-CURE systems remain relatively low. Large increases in MBT values may indicate undertreatment of KLA-CURE suppressant. The product is most effective when used in fluids with a pH in the 8 to 9 range. Drill cuttings tend to be non-sticky and easily removed when using KLA-CURE suppressant. In non-dispersed and high-solids systems, KLA-CURE suppressant may initially cause flocculation. Dilution or treatments with thinners may be necessary to control excess viscosity. Pilot testing prior to addition to the active system is recommended.

### Advantages

- Effective shale hydration suppressant in all water-base mud systems
- Lower toxicity product and environmentally acceptable at the recommended concentrations
- Mixes easily without special shearing equipment
- Reduces the potential for bit balling when drilling gumbo shales
- Temperature-stable in excess of 300°F (149°C)
- KLA-CURE systems have low MBT values, reducing dilution and chemical treatment costs

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### Limitations

- The KLA-CURE system limits clay hydration. All M-I GEL\* additions for viscosity and fluid loss should be prehydrated in freshwater.
- In non-dispersed and high-solids systems, KLA-CURE systems may initially cause flocculation. Dilution or treatments with thinners may be necessary to control excess viscosity.
- As a byproduct of the manufacturing process, KLA-CURE suppressant contains KCl salt crystals. The addition of 1 lb/bbl (2.85 kg/m<sup>3</sup>) KLA-CURE suppressant provides 230 mg/L potassium and 205 mg/L chlorides.
- Not as effective in high pH fluids with values greater than 10.5.

### Toxicity and Handling

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

### Packaging and Storage

KLA-CURE suppressant is packaged in 55-gal (208.2-L) drums.



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