

SILDRIL K

SILDRIL^{*} K additive is a water-soluble potassium silicate liquid which is used for primary chemical wellbore stabilization without the need for additional salt for added inhibition.

SILDRIL K additive is primarily used in environmentally sensitive areas, where chlorides are not allowed to be discharged.

Typical Physical Properties

Physical appearance	Colorless, viscous, alkaline liquid
Specific gravity	1.30 – 1.50
pH	11.3 – 11.7
Solubility in water	Soluble

Applications

SILDRIL K additive is a water-soluble potassium silicate liquid. SILDRIL K additive is used to provide superior chemical inhibition to shales, clay and claystone formations, chalk formations, and formations interbedded with dispersive clays without the use of additional salt. Treatment with 8 to 12% (by volume) is an effective maintenance concentration for optimum inhibition. Potassium chloride and potassium carbonate, as well as other potassium salts, can be used to enhance the inhibitive performance.

SILDRIL systems are formulated with conventional drilling fluid polymers to achieve the required rheological and fluid-loss properties. The SILDRIL system is engineered without commercial bentonite. The SILDRIL system has been successfully used in the field with densities varying from 1.1 to 1.7 sg (9 to 14 lb/gal). The SILDRIL system has the same temperature limitation as all other polymer-base fluids.

SILDRIL K additive reacts readily with calcium and magnesium ions. High concentrations of divalent ions will deplete the effective silicate concentration and diminish its inhibitive performance. SILDRIL K additive is not recommended for drilling formations containing high concentrations of calcium or magnesium ions.

Advantages

- Highly effective shale and clay stabilizer
- No adverse effect on fluid rheology and filtration properties
- Effective in fresh water and monovalent salt systems
- Effective at temperatures up to 135°C (275°F)
- Provides effective corrosion inhibition

Limitations

- SILDRIL K concentration rapidly decreases if drilling formations contain high concentrations of calcium or magnesium ions
- A rapid decrease in SILDRIL K concentration can occur if CO₂ influx is encountered

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

SILDRIIL K additive is packaged in 55-gal (208-L) drums, other pack units available upon request.

Store in a dry, well-ventilated area. Keep container closed. Keep away from heat, sparks and flames. Store away from incompatibles. Follow safe warehousing practices regarding palletizing, banding, shrink-wrapping and/or stacking.



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