**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
Sildril 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.