

SILDRIL L

SILDRIL* L additive is a water-soluble sodium-silicate liquid which is used as a primary chemical for wellbore stabilization.

Secondary inhibition is achieved with the use of KCl or NaCl.

Typical Physical Properties

Physical appearance	Colorless, viscous, alkaline liquid
Molecular ratio, SiO ₂ :Na ₂ O	2.6 to 2.8
Specific gravity	1.3 to 1.5
pH	>11.5
Solubility.....	Soluble in water

Applications

SILDRIL L additive is a water-soluble sodium-silicate liquid with a 2.6 to 2.8 SiO₂ to Na₂O ratio. It can be used to provide superior chemical inhibition to reactive shales, clay and claystone formations, chalk formations, and formations interbedded with dispersive clays.

Treatment with 8% (by volume) is the most effective maintenance concentration for optimum inhibition.

SILDRIL L 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 9 to 14 lb/gal (1.1 to 1.7 sg). The temperature limitation of the system can be extended to 275°F (135°C) with the addition of GLYDRIL* products.

The SILDRIL additive reacts readily with Ca²⁺ and Mg²⁺ ions. High concentrations of divalent ions will deplete the effective silicate concentration and diminish its inhibitive performance.

The SILDRIL system is, therefore, not recommended for drilling formations containing high concentrations of calcium or magnesium ions. The addition of monovalent salts (KCl and NaCl) enhances the inhibitive performance of the SILDRIL L product. The use of potassium carbonate can also be used to enhance inhibitive performance.

Advantages

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

Limitations

- High coefficient of friction
- Not recommended for use in formations containing high calcium and magnesium levels
- Reactive shales can deplete the available silicate

Toxicity and Handling

Bioassay information is available upon request.

Handle as an industrial chemical, wearing protective equipment and observing the precautions as described on the Material Safety Data Sheet (MSDS).

Packaging and Storage

SILDRIL L additive is packaged in 5-gal (18.9-L) cans and 55-gal (208-L) drums.

Store in a dry, cool location away from sources of heat or ignition.



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