

# SP-101

SP-101\* sodium polyacrylate copolymer is a medium-molecular-weight, anionic additive used to reduce fluid loss in freshwater and seawater muds. This synthetic additive has a high temperature limit and is not subject to bacterial degradation.

### Typical Physical Properties

|                           |                                    |
|---------------------------|------------------------------------|
| Physical appearance ..... | Off-white to cream flakes (powder) |
| Bulk Density.....         | 392 kg/m <sup>3</sup>              |
| Specific gravity .....    | 0.70-0.80 SG                       |
| pH (1% solution) .....    | 7                                  |

### Applications

SP-101 copolymer is an effective additive for reducing fluid loss and stabilizing rheology in a wide range of water-base systems, including low solids, non-dispersed and dispersed weighted systems. It is most effective in freshwater fluids that are low in soluble calcium. SP-101 additive is used most often in low-solids, non-dispersed polymer systems such as the POLY-PLUS\* system and in high-temperature applications. Normal treatments range from 0.5 to 1 lb/bbl (1.43 to 2.85 kg/m<sup>3</sup>).

A viscosity “hump” can occur in non-dispersed or high-solids systems with the initial addition of SP-101 additive (when the concentration is low, ~0.1 lb/bbl [0.29 kg/m<sup>3</sup>]). Subsequent treatments reduce this viscosity “hump” in clean, low-solids muds. SP-101 additive attaches to clay particles and helps to form a protective colloid on exposed shales and encapsulated cuttings.

SP-101 additive is also effective as a deflocculant and high-temperature stabilizer in low-solids systems at concentrations greater than 1 lb/bbl (2.85 kg/m<sup>3</sup>). Pilot tests are recommended prior to treating with SP-101 additive.

### Advantages

- Reduces fluid loss and improves filter cake quality
- Thermally stable in drilling mud at temperatures up to 204 ° C
- Not subject to biodegradation
- Stabilizes flow properties in high-temperature environments in excess of 400°F (204°C)

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## Limitations

- Highly anionic, precipitated by high concentrations of divalent cations such as calcium and magnesium
- Total hardness must be maintained below 320 mg/L with soda ash
- Should not be used in calcium systems such as lime, gyp or untreated seawater muds that have high concentrations of soluble calcium

## Toxicity and Handling

Bioassay information is available upon request.

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

## Packaging and Storage

SP-101 additive is packaged in 50-lb (22.7-kg), multi-wall, paper sacks.

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

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