

M-I Pac R

M-I Pac* R polyanionic cellulose is a fluid-loss and viscosity-control additive.

M-I Pac R agent is a regular tech-grade quality PAC, useful in controlling filtration and increasing rheology in all types of water, but is particularly effective in saltwater brines. M-I Pac R additive will aid in dispersion control by attaching and encapsulating the drill solids. It may be used at all density ranges, and functions effectively in dispersed and non-dispersed systems.

Typical Physical Properties

Physical appearance	White powder
Specific gravity	1.5 to 1.6
pH	6.5 to 8.0 (1% solution)

Applications

M-I Pac R additive controls fluid loss in freshwater, seawater, KCl, and saltwater drilling fluid systems. It aids in the formation of a tough, thin filtercake to minimize the potential for differential sticking. Recommended treatment is from 0.2 to 1 lb/bbl (0.7 to 2.85 kg/m³) depending on the water type and the salt level for the control of fluid loss.

M-I Pac R agent is useful in viscosifying all types of water to create sufficient yield point to assist in the carrying capacity of solids for improved hole cleaning. Typically M-I Pac R additive provides a 15 cP viscosity and 30-lb/100 ft² (14.3-Pa) yield point with a concentration of 2.5 lb/bbl (7.0 kg/m³) in freshwater without any clay.

Recommended concentrations for building viscosity range from 1.0 to 4.0 lb/bbl (3.0 to 12.0 kg/m³). Water hardness and salt level will affect the amount of M-I Pac R additive required.

M-I Pac R product will create an envelope around exposed shales and cuttings to encapsulate them, reducing dispersion and permitting improvement of wellbore integrity. The encapsulation protects the shale from exposure to water.

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Advantages

- Effective in controlling fluid loss.
- Resists attack from bacteria, requiring no preservatives or bactericide.
- Environmentally acceptable.
- Depending on water quality, provides viscosity.
- Functions at all ranges of pH levels in both dispersed and non-dispersed fluids.

Limitations

- Contains salt as a by-product of processing.
- High hardness (1,000 mg/L) will require precipitation of the Ca⁺⁺ and Mg⁺⁺ to improve performance.
- Temperature stability limitation of 250°F (120°C); approaching this temperature, a thermal stabilizer, such as PTS-200* additive, will be required.
- Has lower D.S. than M-I Pac*R product.

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

M-I Pac R additive is packaged in 50-lb (22.7-kg), multi-wall, paper sacks.

Store in a dry location away from sources of heat or ignition, and minimize dust.

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