

# 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 0.5 to 3.0 lb/bbl (1.5 to 9.0 kg/m<sup>3</sup>) 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 ft<sup>2</sup> (14.3-Pa) yield point with a concentration of 2.5 lb/bbl (7.0 kg/m<sup>3</sup>) 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/m<sup>3</sup>). 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.

### 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<sup>++</sup> and Mg<sup>++</sup> 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 on the Material Safety Data Sheet (MSDS).

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### **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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