IDCAP D
Low-molecular-weight, dry acrylic acid copolymer encapsulator

APPLICATIONS
- Freshwater-, seawater-, and saturated NaCl, and KCl applications

ADVANTAGES
- Provides excellent cuttings encapsulation and limits cuttings dispersion
- Enhances removal of drill solids by reducing dispersion tendencies
- Minimal contribution to the viscosity of the system
- For use in KCl/NaCl or fresh water
- Easily added to the active system through a premix
- Provides improved shale stabilization
- Significantly lower screen blinding potential, compared to higher molecular weight encapsulators
- Can be used in high pH fluids (silicates) for enhanced control of highly dispersive (kaolinite/illite) shales

IDCAP D* additive provides excellent cuttings encapsulation by adsorbing onto the clay surfaces and forming a protective film that prevents cuttings from sticking to each other or to the shaker screens. IDCAP D encapsulator limits dilution rates and low-gravity-solids loading by preventing clay solids from dispersing into the mud system. This product is effective in a wide range of base brines including seawater, saturated NaCl, and KCl, but should not be used in calcium brines. Typical concentrations of IDCAP D additive range between 0.5–4 lb/bbl (1 to 12 kg/m³).

Due to the low molecular weight of this polymer, the mixing process requires less shear than polymers with higher molecular weights. The resulting fluid will pass through fine shaker screens without blinding. For best results IDCAP D should be to ensure proper hydration and shearing, but can be added directly to the active system if needed.

IDCAP D additive concentration should be calculated by mass balance assuming an approximate depletion rate and observing the quality of the cuttings at the shakers. Cuttings that appear dry inside, but ball or stick to shakers may indicate low encapsulator levels. Conventional ammonia extraction test cannot be used to determine residual concentration because IDCAP D does not produce ammonia when exposed to elevated pH.

Dilution rates with premix should be based on the depletion rate of the IDCAP D encapsulator. IDCAP D premix concentrations can range as high as 4–5 lb/bbl (1 to 12 kg/m³), depending on the depletion rates.

Calcium hardness in makeup water should be treated out with soda ash before use. Maintain pH below 10 for optimum performance, where applicable. IDCAP D encapsulator does not contain acrylamide, so hydrolysis with NH₃ release is not a problem.

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<th>Typical Physical Properties</th>
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<td>Physical appearance</td>
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<td>Specific gravity</td>
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<td>pH (1% solution)</td>
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<td>Solubility in water</td>
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Limitations
- Fluid systems containing IDCAP D encapsulator should be pretreated with either citric acid or sodium bicarbonate before drilling cement to avoid chemical precipitation by calcium ions
- Should not be used in systems with calcium content above 500 mg/l
- Magnesium concentration above 2,700 mg/l might diminish its performance
- To avoid compatibility issues, IDCAP D should not be used in drilling fluid systems that contain KLA-HIB, and KLA-HIB NS. Shale Recovery/Hydration tests should be carried out to confirm performance before use

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