

M-I GEL

M-I GEL* viscosifier is a premium-grade bentonite (a sodium montmorillonite clay) that will yield 91 to 100 barrels of 15-cP mud per ton (1.7 m³/100 kg).

It is used as a primary filter-cake-building, filtration-control and suspension agent in freshwater systems, and has application in all water-base mud systems. M-I GEL viscosifier is a high-quality product which meets the ISO 13500 Clause 9 (formerly known as API Spec 13A, Section 9) specifications for Bentonite.

Typical Physical Properties

| | |
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| Physical appearance | Light tan/gray-green powder |
| Specific gravity | 2.3 – 2.6 |
| Bulk density | 48 – 52 lb/ft ³ (769 – 833 kg/m ³) |
| ISO 13500 Clause 9 Specifications: | |
| Suspension properties (Suspension of 22.5 grams into 350 cm ³ water): | |
| Viscometer dial reading at 600 rpm | 30, min. |
| Yield point/plastic viscosity ratio | 3, max. |
| Filtrate volume | 15 cm ³ , max. |
| Residue >75 micron (wet screen) | 4% wt, max. |

Applications

M-I GEL viscosifier is used to increase viscosity and reduce fluid-loss in water-base drilling fluids. It is a cost-effective means of achieving viscosity, fluid-loss control and filter-cake quality in freshwater and seawater muds. Typical concentrations for M-I GEL viscosifier range from 5 to 35 lb/bbl (14.3 to 100 kg/m³).

As with all bentonite products, the yield decreases as water salinity increases. In muds containing more than 10,000 mg/L chlorides, the performance of M-I GEL viscosifier is significantly reduced unless prehydrated in freshwater before adding to the mud system.

Advantages

- Hydrates more than other types of clays and is best for generating viscosity, developing gels for suspension and controlling filtration
- Small particle size, unique flat shape and high surface area of hydrated M-I GEL viscosifier provides superior filtration characteristics
- Promotes the deposition of thin, compressible filter cakes in the wellbore

Limitations

- Performance reduced in salty (>5,000 mg/L Cl⁻) or hard (>240 mg/L Ca⁺⁺) waters due to decreased hydration

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 GEL viscosifier is packaged in 100-lb (45.4-kg) multi-wall paper sacks, 40-kg sacks, big bags and is available in bulk.

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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