

Guar Gum

Guar gum is a rapidly mixing, high-viscosity polymer for use in freshwater and seawater spud muds.

Typical Physical Properties

Physical appearance	Yellowish-white powder
Odor	Bean-like
Specific gravity	1.30
Solubility in water	Soluble

Applications

Guar gum polymer is used principally as a viscous slugging fluid, pumped at connections to ensure that all cuttings are removed from the annulus while drilling surface holes with water. It is particularly useful offshore, as it can be added directly to seawater. Direct mixing eliminates the need for large quantities of drill water as well as the time required to prehydrate bentonite.

As a slugging fluid, guar gum should be mixed through a hopper at a rate of 10 minutes per sack. Recommended concentrations are typically 3.0 to 3.5 lb/bbl (8.5 to 10 kg/m³), but can vary. No additions of caustic soda should be made before or after mixing. If operational delays are likely, the addition of 0.2 lb/bbl biocide is recommended to protect the slurry against bacterial degradation.

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Advantages

- Widely available and economical source of polymer viscosifier
- Concentrated chemical that is very effective at low treatment levels
- Can be used in most water types

Limitations

- Subject to bacterial degradation; a biocide should be used to prevent fermentation
- Not tolerant of high-pH or high-calcium-ion conditions
- Guar gum-treated systems should be pretreated with either sodium bicarbonate or in some cases with citric acid prior to drilling cement.

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

Guar gum is packaged in plastic-lined, multi-wall, paper sacks. Packing container sizes vary based on local area of purchase.

Store at moderate temperatures in a dry, well-ventilated area. Keep in original container.

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