

NOVAMOD™

NOVAMOD organic gelling agent is a liquid rheology modifier used in NOVADRIL®, NOVAPLUS® and NOVATEC™ synthetic-base mud systems. It increases Low-Shear-Rate Viscosities (LSRV) and gel strengths for improved hole cleaning. The primary application for NOVAMOD is in large-diameter, high-angle, horizontal and extended-reach wells to increase cuttings-carrying capacity. This permits higher rates of penetration while maintaining wellbore stability. NOVAMOD, when used at proper concentrations, produces the highly shear-thinning rheological profile necessary for proper hole cleaning in deviated wells.

TYPICAL PHYSICAL PROPERTIES

Physical appearance	Amber viscous liquid
Specific gravity	0.8 – 0.9
Flash point	>300°F (148.9°C) (PMCC)

APPLICATIONS

NOVAMOD is used to increase LSRV and improve cuttings transport in large-diameter or directional wells, especially wells with diameters greater than 8½ in. or deviations greater than 25°. It modifies the rheological profile of synthetic-base muds, increasing their shear-thinning and thixotropic characteristics without using additional clay-base additives.

NOVAMOD can be used in any existing NOVA system, as well as freshly prepared mud, to increase LSRV and gel strengths. Good mixing and shearing are required to develop this increase in rheology, especially in freshly prepared muds.

Normal concentrations range from 1 to 4 lb/bbl (2.85 to 11.4 kg/m³), depending on the brine content. NOVAMOD is more effective in higher-brine-content fluids. Typical initial

treatments are 1 to 2 lb/bbl (2.85 to 5.7 kg/m³) for muds with synthetic-to-water ratios in the 75:25 to 85:15 range; above 85:15 the effectiveness is diminished. Pilot testing is recommended to determine the actual treatment required to obtain the desired result.

NOVAMOD is activated by calcium, shear and temperature. Generally, 1 lb/bbl (2.85 kg/m³) lime should be added and maintained for every 1 lb/bbl (2.85 kg/m³) NOVAMOD used in a system. NOVAMOD will not be fully activated by the shear and temperature exposure in a mixing plant or mud pit, and care should be taken not to overtreat with NOVAMOD, especially before the fluid is actually circulated through the well.



ADVANTAGES

- Improves the rheological profile and hole-cleaning capacity of the NOVA synthetic systems.
- Produces a more shear-thinning rheology profile as compared to alternative gelling agents.
- Increases LSRV and gel strengths with minimal yield point and plastic viscosity changes; gels tend to be fragile and non-progressive.
- Can be used in existing systems or in freshly prepared mud.
- Rheological modifications achieved with NOVAMOD are reversible with treatments of NOVATHIN™.
- After initial NOVAMOD additions, daily maintenance treatments are very low.

LIMITATIONS

- Becomes less effective as the synthetic-to-water ratio rises above 85:15. Above this level, increased concentrations of NOVAMOD will be needed for the desired rheological properties. Low-brine-content muds which use high concentrations of NOVAMOD will become extremely viscous if the water content is increased, as with a saltwater flow.
- NOVAMOD is activated by shearing and temperature. It does not generate significant viscosity at the mixing plant or mud pits until the fluid is actually circulated through the well. VERSA-HRP® should be used to viscosify fluids at mixing plants for transportation to the wellsite.

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 Transportation and Material Safety Data Sheet (MSDS).

PACKAGING AND STORAGE

NOVAMOD is packaged in 55-gal (208.2-l) drums.
Keep containers closed and tightly sealed.

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