RheoMinerals **B91** is an amine treated organophilic bentonite clay used as a viscosifier and gelling agent in any oil-based drilling fluid.

GENERAL DESCRIPTION

As an industry standard viscosifier, **B91** cost effectively increases carrying capacity and solids removal for diesel and mineral oil-based drilling fluids. **B91** is also commonly used in Guar slurries as a viscosifier.

FEATURES AND BENEFITS

- Cost effectively increases carrying capacity and solids removal
- Economic source for viscosity and yield
- Aids in fluid loss control
- Enhances emulsion stability
- Is environmentally non-hazardous

PHYSICAL PROPERTIES AND LIMITATIONS

Appearance/Form	Light tan, free flowing powder
Specific gravity	1.7 g/cm^3
Moisture	4.0% maximum
Sieve Analysis	85% min. passing 200 mesh
Temperature	350°F (176.7°C) Maximum

APPLICATIONS

B91 is recommended for use in any non-aqueous drilling fluids, such as diesel or mineral oil-based, where bottom hole temperatures do not exceed 300°F (148.9°C). Please refer to the Safety Data Sheet for more information on safe handling.

B91 requires adequate agitation, heat, and shear to provide gelation. The amount of agitation depends on the temperature of the system and the quality of shear available, as gelation increases with temperature and shear. Circulating through the bit for shear and increasing temperature downhole will help achieve full yield.

Recommended concentrations are 2 to 10 lb/bbl (5.7 to 28.5 kg/m^3). Pilot testing is recommended to determine actual concentrations of **B91** before use in the field.

The water phase of invert emulsion provides the polar activation required for **B91**. If water is unwanted and **B91** is applied to a 100% oil-based formulation, a polar activator like methanol or propylene carbonate must be included to achieve full development of the clays yield. 5% water by weight is also recommended to be added to the activator to increase activation efficiency.

PACKAGING

B91 is packaged in 50 lb. or 25 kg multi-walled kraft paper bags. 1 MT super sacks are available upon request. This product is moisture sensitive and should be stored in a cool, dry location. Pallet stacking should be no more than two pallets high to prevent compaction.

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TECHNICAL DATA

Sample Formulation: 12.0 lb/gal (1.44 g/cm^3) 80:20 Diesel-based Fluid

Base Oil, g	194.8
Primary Emulsifier, g	5.0
Secondary Emulsifier, g	5.0
Lime, g	5.0
29.7% $CaCl_2$ Brine, g	74.5
B91, g	6.0
Barite (4.1), g	215.0

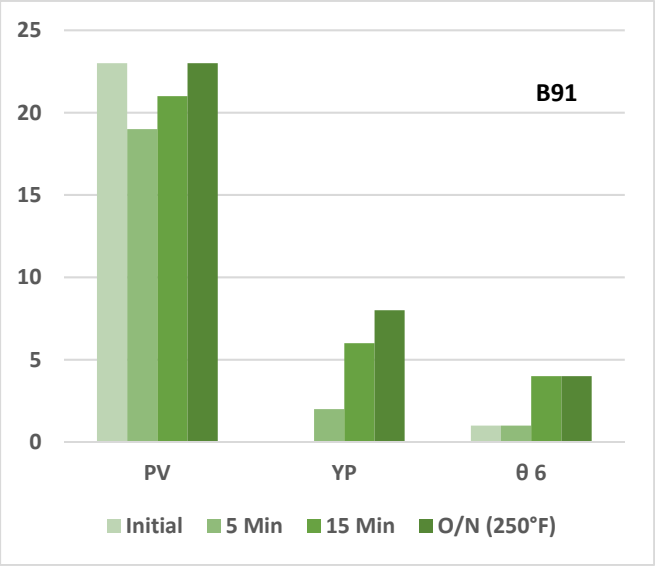
	Initial	5 Min	15 Min	16 Hour HR 250°F (121°C)
Electrical Stability, volts	177	652	1,120	1,150
θ 600 / θ 300 at 120°F (49°C)	46 / 23	40 / 21	48 / 27	54 / 31
θ 6 / θ 3	1 / 1	1 / 1	4 / 3	5 / 4
0.5 rpm Brookfield, cPs	160	2,160	7,200	12,000
Plastic Viscosity, cP	23	19	21	23
Yield Point, lb/100 ft^2	0	2	6	8
10-sec Gel, lb/100 ft^2	1	1	4	4
10-min Gel, lb/100 ft^2	1	1	4	5

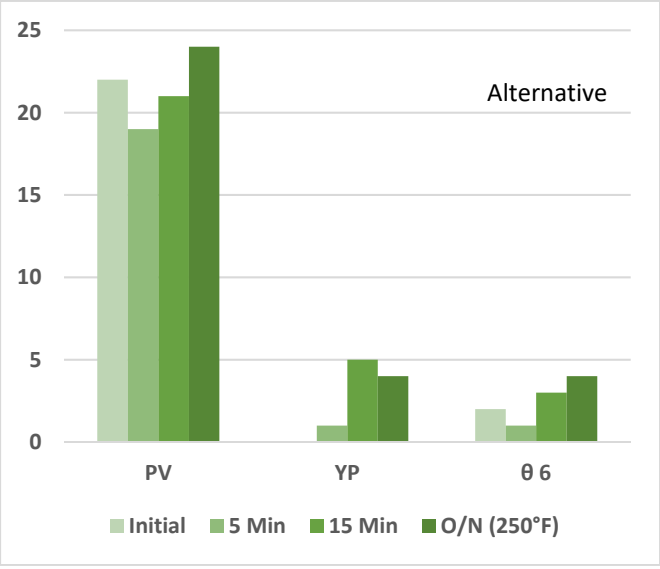
Sample Formulation: 11.75 (1.41 g/cm^3) lb/gal 90:10 Distillate 822 Mineral Oil-based Fluid

Base Oil, g	194.8
Primary Emulsifier, g	5.0
Secondary Emulsifier, g	5.0
Lime, g	5.0
29.7% $CaCl_2$ Brine, g	74.5
B91, g	6.0
Barite (4.1), g	215.0

	Initial	5 Min	15 Min	16 Hour HR 200°F (93.3°C)
Electrical Stability, volts	354	1,043	1,562	1,884
θ 600 / θ 300 at 120°F (49°C)	25 / 12	28 / 15	31 / 18	32 / 19
θ 6 / θ 3	1 / 1	2 / 2	4 / 3	4 / 3
0.5 rpm Brookfield, cPs	0	3,360	7,440	8,720
Plastic Viscosity, cP	13	13	13	13
Yield Point, lb/100 ft^2	1	2	5	6
10-sec Gel, lb/100 ft^2	1	2	3	3
10-min Gel, lb/100 ft^2	1	2	4	3

12.0 lb/gal (1.44 g/cm^3) 80:20 Diesel-based Fluid – B91 and Alternative Organophilic Clay





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