

TECHNICAL DATA SHEET

ELEMENTIS

BENAQUA® 1101

HTHP Rheological Additive for Aqueous Drilling Fluids

GENERAL INFORMATION

BENAQUA® 1101 is a HTHP rheological additive based on a modified hectorite clay designed specifically for aqueous drilling fluids, providing superior thixotropy and anti-sag properties.

BENAQUA® 1101 has temperature stability >350 °F.

CHEMICAL & PHYSICAL PROPERTIES

Composition	Modified hectorite clay
Appearance	Off-white. Soft and finely divided powder
Density	2.6 g/cm ³

These are typical properties not to be used for specification purposes.

APPLICATIONS

- Water-based drilling fluids and cement

KEY PROPERTIES

- Low foaming behavior HTHP rheology in aqueous gel drilling fluids.
- Maintain suspension over a broad temperature range.
- Provide non-Newtonian aqueous rheology.
- Reduce syneresis in aqueous systems.
- Mitigate sag by controlling settling.
- Increase the suspension of solids.
- Facilitate efficient well-bore cleaning.

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INCORPORATION

BENAQUA® 1101 disperses readily in aqueous systems. As with other additives, good agitation should be used when incorporating **BENAQUA® 1101** into the drilling system. The amount of stirring needed will depend on the temperature of the fluid. The rate of suspension control development increases with increasing temperature, and with the level of shear available.

LEVELS OF USE

The level of **BENAQUA® 1101** use depends on the degree of solids suspension needed, on whether it is being used alone or in combination with another rheological additive. Pilot trials are recommended to optimize performance before field use.

Typical loadings are:

1 - 5 pounds/barrel 3 - 15 kg/m

HEALTH & SAFETY

Use proper personal protective equipment when handling.

Before using this product please consult our Safety Data Sheet (SDS) for information on safe handling and storage. The SDS can be found on the company website.

SHELF LIFE

BENAQUA® 1101 has a shelf life of 4 (four) from date of manufacture.

STORAGE RECOMMENDATIONS

Store in a dry place. **BENAQUA® 1101** will absorb moisture if stored under high humidity conditions.

QUALITY ASSURANCE

Quality system at the site manufacturing this product complies with and is certified to ISO 9001 quality standards.

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Formulation	
Additive	Grams
Fresh Water	350
BENAQUA 1101	7.5
20% NaOH	pH adjustment

OFI 900 Visc. @ 120°F	Initial	HR 350°F	Initial	HR 400°F
600 RPM Reading	13	48	13	64
300 RPM Reading	11	35	11	47
200 RPM Reading	10	32	10	40
100 RPM Reading	8	25	8	31
6 RPM Reading	6	10	6	10
3 RPM Reading	7	12	7	11
Apparent Visc., cPs	7	24	7	32
Plastic Visc., cPs	2	13	2	17
Yield Point, Lbs/100 ft ²	9	22	9	30
tau 0 (LSR)	8	14	8	12
10 sec gel	9	20	10	10
10 min gel	21	79	24	33

All tested at 120 °F

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