DELTA-LINE rheology modifier

Enhance viscosity and solids suspension in nonaqueous fluids

Applications

- Nonaqueous fluids
  - Compatible with diesel, mineral oil, and synthetic base fluid

Features and benefits

- Provides Imparts viscosity and solids suspension in NAF
  - Enhances hole cleaning
- Activates at low temperatures
- Improves emulsion stability and filtration control
- Effective up to 350°F (177°C)
- Liquid form
  - Ease of mixing

The DELTA-LINE™ rheology modifier from Baker Hughes is a polymer/copolymer blend for use in nonaqueous fluids (NAF). The product is effective at increasing low shear rate viscosity with minimal effect on apparent viscosity.

DELTA-LINE activates at lower downhole temperatures and will provide excellent performance at temperatures up to 350°F (177°C). It improves sag resistance and aids in emulsion stability and filtration control.

Recommended treatment

Concentrations of DELTA-LINE range from 0.5 to 2.0 lb/bbl (1.43 to 5.7 kg/m^3). Pilot testing is recommended to determine the treatment required to obtain the desired result.

Environmental information

For information concerning environmental regulations applicable to this product, contact the Health, Safety, and Environmental department of Baker Hughes.

Shipping

Transportation of the DELTA-LINE rheology modifier is not restricted by either international or United States regulatory agencies.

Safe handling recommendations

Use normal precautions for employee protection when handling chemical products. See Safety Data Sheet (SDS) prior to use.

Packaging

DELTA-LINE rheology modifier is available in 55-gal (208.2-L) drums or IBC totes.

Typical properties	
Appearance	Yellow liquid
Specific gravity	0.885
Flash point (Closed cup)	287.6°F (142°C)

Products (ppb)	13.0 ppg Base formulation
SARALINE® 185V	156.96
Emulsifier	14.00
Lime	4.00
Organophilic clay	8.00
Freshwater	53.44
Calcium chloride	18.82
Barite	287.84
Drill solids	2.25%

Hot Rolling at 300°F / 16 hrs Rheology temperature at 150°F								
Fluid	Base		0.25 ppb		0.5 ppb		1.0 ppb	
Fluid properties	Initial	AHR	Initial	AHR	Initial	AHR	Initial	AHR
600 rpm	65	70	57	73	57	77	64	79
300 rpm	41	43	34	46	34	53	41	55
200 rpm	29	33	26	37	26	44	34	46
100 rpm	20	25	15	26	16	33	23	36
6 rpm	6	10	5	12	5	17	9	21
3 rpm	5	9	4	11	4	16	8	19
PV, cP	24	27	23	27	23	24	23	24
YP, lb/100ft^2	17	16	11	19	11	29	18	31
10-second Gels, lb/100ft^2	7	10	5	12	5	16	10	19
10-minute Gels, lb/100ft^2	14	14	10	18	12	21	24	32
30-minute Gels, lb/100ft^2	28	15	22	21	25	28	32	39
HTHP at 350°F, cc/30min	-	22.0	-	25.0	-	23.0	-	16.0
HTHP cake, 1/32-in.	-	4/32	-	5/32	-	5/32	-	4/32
ES, volts	822	839	769	766	771	773	676	969

Baker Hughes