

INFORMATION

THERMO-THIN-S

HIGH PERFORMANCE DEFLOCCULANT/THINNER

DESCRIPTION

THERMO-THIN-S is a high performance sulfonated polymer developed to perform in HPHT environments as a deflocculant for water based drilling fluids.

THERMO-THIN-S is a unique, low molecular weight organic polymer. It is a highly charged anionic polyelectrolyte that is both chemically and thermally stable. The high charge density of THERMO-THIN-S allows for stable absorption onto clay surfaces while steric orientation maintains excellent salt tolerance:

Form	Tan Powder
Solution Viscosity (25%)	20 cps
pH	6.5
Ionic Character	Anionic
Bulk Density	Approx. 44 lb/ft
Solubility in Water	100%

APPLICATION

THERMO-THIN-S is effective in high clay solids muds through at least 500° F. Additionally, the polymer is not affected by high levels of ionic contamination; deflocculation is maintained in drilling systems such as lime and sea water based muds.

THERMO-THIN-S has the following features:

- Decomposition temperature > 750° F
- Highly anionic
- Quick dissolving
- Chemically stable
- Low order of toxicity
- Superior rheological control of a variety of different mud systems in HPHT environments
- Effective in salt and calcium containing muds including lime and sea water systems
- Effective in heavily weighted, high solids muds
- Controls rheology in CO₂ and cement contaminated muds
- Effective rheological control in geothermal operations

RECOMMENDED TREATMENT

THERMO-THIN-S is recommended for use in water based drilling mud systems which require effective deflocculation of clay solids at temperatures above 200° F. In most systems, 0.5 to 1.5 ppb THERMO-THIN-S is sufficient.

HANDLING

THERMO-THIN-S is for industrial use only. Acute toxicity tests have been done on products similar to THERMOTHIN-S and these products show a low order of oral and dermal toxicity on experimental animals. Care should be taken in the handling of these materials due to the fact that the toxicological properties have not been fully explored.

PERFORMANCE EVALUATION

THERMO-THIN-S has been evaluated in heavy weight mud systems to determine its ability to stabilize mud rheology after exposure to high temperatures and ionic contaminations. See chart on page 3 for results.

	AV	PV	YP	10 sec. gel	Mud System
	250° F. O/N Age				
Base	20.5	7	27	21	16.9 ppg
THERMO-THIN-S	28	23	10	9	sea water mud
Competitive Polyacrylate	21	13	17	18	20 ppb prehydrated bentonite 15 ppb kaolinite 450 ppb barite 4% sea salt 1 ppb deflocculant
	400° F. O/N Age				
Base	19	10	18	18	
THERMO-THIN-S	21	17	8	7	
Competitive Synthetic Sulfonate	19	12	12	9	
	350° F. O/N Age				
Base	21	9	23	18	15.5 ppg salt mud
THERMO-THIN-S	17	13	8	6	20 ppb
Competitive Polyacrylate	24	12	24	18	prehydrated bentonite 20 ppb kaolinite 350 ppb barite 6 ppb NaCl 1.5 ppb gyp

PACKAGING

THERMO-THIN-S is packaged in 50 lb bags. In dry form, it is stable indefinitely. Opened bags should be resealed to protect the product from moisture.

THERMO-THIN-S is a Messina trademark