millennium energy
Drilling Fluids & Chemicals

Products Data Sheet

1. PRODUCT NAME : MENEX Asphaltic Fluid Loss Control Agent.

COMPOSITION / INFORMATION ON INGREDIENTS:

MENEX is blend of water soluble Gilsonite and other suspended surfactant etc. The primary functions is to improve both API and HPHT fluid loss while providing rheology stability over a wide range of temperatures. Another functions as a shale stabilizer and has a broad PSD for sealing micro-fractures. It functions well in the presence of common mud contaminants such as calcium, magnesium and chloride salts and also across a wide range of pH alkalinities.

MENEX filtration control additive is principally used in higher temperature applications up to 400°F (204°C) to replace basic polymer filtration control additives which lose their functionality at elevated wellbore temperatures additive is useful to assist in controlling shale stability and hole washout.

Benefits:

- ✓ Stabilizes and extends the temperature limitations and contamination resistance of water-base mud systems to above 200°C
- ✓ Controls fluid loss in basically all water-based drilling fluids
- ✓ Controls shale stability
- ✓ Does not increase rheology
- ✓ Has higher temperature performance limits than CMC, PAC, or starches
- ✓ Its effective same as Sulfonated Asphalt or lignite, but doesn't contaminate the formation
- ✓ Its effective in high-density drilling fluids where fluid-loss control can be achieved without increasing the viscosity.

Applications: should be used to reduce and maintain low fluid loss in all water-based systems at all densities, and will improve the performance of water-based drilling fluids.**MENEX** additive will not increase viscosity but will stabilize the fluid at increased bottomhole conditions while controlling high-temperature, high-pressure filtration rates. **MENEX** II additive is useful to assist in controlling shale stability and hole washout.

should be used at concentrations of 5.7 to 22.8 kg/m3 for fluid loss control. For increased bottomhole temperatures, use larger concentrations depending on drilling conditions.

Apperance: Black free flowing powder or suspending liquid.

Ph : 8.8-9.2 **Density**:0.85-0.95

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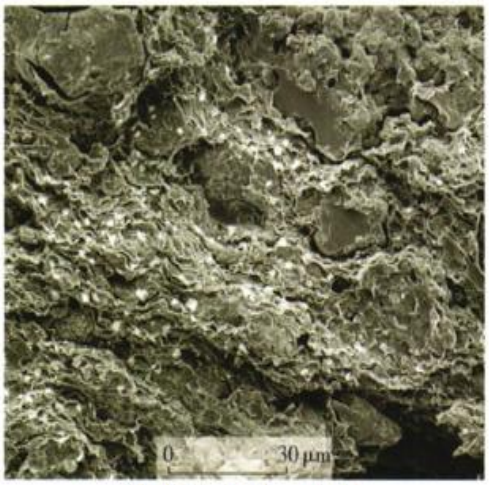
Application Case

MENEX Asphaltic Fluid Loss Control Agent
Operator: SINOPEC SHENGLI OILFIELD OFFSHORE DRILLIN COMPANY
Location: Jidong Oilfield, Oil Well # Nanpu, Bohai See offshore, Hebei province.

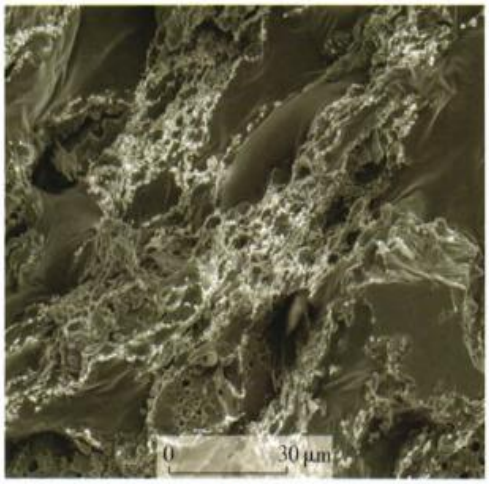
This section was designed to drill a inclined well section, the formation of this section was mainly mud shale and sand shale, and sand,formation was so loose to make mud easily, operator determined to use low density Polysulfur drilling fluid to restrain formation mud making.

First drilling (83-1003m): This section targeted on hole cleaning and containment. The Formula was determined as below:
:Seawater + 6% salt-resistant clay +0.5% PMHA - ll+1-2% Polymer Anti-Salt Fluid loss control + 2% Propping agent + Alkali
Second drilling (1003-2928m). This section targeted on Clean wellbore, prevent collapse, seepage seal and protect reservoir. The Formula was determined as below:
Formula: Seawater + 6% Anti-salinite + 1-1.5% Polyol + 2% Formate + 1-2% Anti-salinite filter loss agent + 1-2% Non-fluorescent lubricant+ 2% Low-fluorescence sulphonated asphalt + 2% sand carrier agent+ 2% **ME-CROSS** + caustic soda + Weighting agent.
It had increased the viscosity of drilling fluid, and had limited solid particles and limited permeability reduction near the borehole wall (Sulfonation makes the sulfonated asphalt lose the adhesion of asphalt itself and the properties of demulsifying into pieces) So when the operator started to drill at 12-1/4", they decided to add **MENEX** to replace the sulphonated asphalt .

MENEX particle size range of MENEX cationic emulsified asphalt is 0.50 ~ 175.um, with a cumulative proportion of 95% below 100um, which matches the size of natural fractures in medium and deep mud shale.
Formula: Seawater + 6% Anti-salinite + 3% **MENEX**+ 2% Formate + 1-2% Anti-salinite filter loss agent + 1-2% Non-fluorescent lubricant+ 2% sand carrier agent+ 2% **ME-CROSS** + caustic soda + Weighting agent.



Added 2% Sulphonated Asphalt



Added 3% MENEX