

FluxDril

Direct emulsion fluid

APPLICATIONS

- When drilling a salt formation where saturated brine needs to be used to prevent formation salt from being washed out, yet the density needs to be reduced to prevent formation losses or fracturing of the formation
- Depleted reservoirs where a lower-density water-based system may be required to reduce the risks of losses to the formation

ADVANTAGES

- Control of rheological and fluid loss properties similar to conventional drilling fluid
- Excellent lubricity similar to oil-based mud
- Good cuttings suspension and hole cleaning
- Good tolerance to contaminations, such as formation salt, hardness, anhydrite, and gypsum
- Good tolerance to drill solids contaminations, such as sand and carbonate
- Used to break emulsion to render oil recyclable

LIMITATIONS

- Reactive clay contamination can increase rheology, which can be minimized by pretreating with clay inhibitors (such as HydraHib* shale inhibitor)
- Cement contamination can be treated with citric acid. However, it is recommended to avoid using FluxDril* direct emulsion fluid

FluxDril fluid is stable over a wide brine:oil ratio that ranges from 95:5 to 50:50. The noncontinuous oil phase can be any type of base oils available. Testing is necessary to confirm the stability of any formulation, but FluxDril fluid is commonly formulated with diesel or low-toxicity mineral oil. The brine phase can be formation brine, saturated or unsaturated brine, or freshwater.

Toxicity and handling

Fluids and cuttings from FluxDril fluid, especially when formulated using diesel, should follow the OBM regulations for safe handling and waste disposal. Always consult the SDS for proper personal protection equipment required for handling the materials.

Typical Physical Properties

Physical appearance	Emulsion (white or pink, depending on color of oil)
Drilling fluid density	7.8 to 9.8 lbm/galUS [934.6 to 1,174.3 kg/m ³]
Temperature stability	Up to 200 degF [93 degC]