

ThermaFix® MT/MD

Insulating Packer Fluid

PRODUCT DATA SHEET

General Description

ThermaFix® fluids are a family of insulating packer fluids (IPF) with engineered, low thermal conductivity. These products are water soluble/dispersible for easy clean up and have a non-sheen quality. ThermaFix MT/MD fluids are members of the IPF family and designed for use at medium temperatures and densities.

Features and Benefits

ThermaFix MT/MD IPFs are:

- Formulated at densities up to 12.0 lb./gal
- Corrosion inhibited
- Premixed and do not require addition of any components in the field
- Stable over an extended period of time
- Compatible with commonly used elastomers - nitrile butadiene rubber (NBR), hydrogenated nitrile rubber (HNBR) and fluoropolymer (Viton)
- Biologically inhibited

Application Information

Without protection from uncontrolled heat loss, deepwater wells may be prone to asphaltene, or paraffin deposition, and hydrate formation within hours of production flow interruption. The placement of ThermaFix MT/MD insulated packer fluid in the annuli between the production tubing and casing reduces heat transfer and extends cool-down time during reduced or shut-in well flow conditions versus standard packer fluids. Wellsite engineers are then provided additional time to assess conditions and formulate appropriate responses to downhole conditions.

Availability

ThermaFix MT/MD insulated packer fluid is pre-mixed and can be delivered fully formulated for application. No further chemical additions are required with this product. It is stable as a formulated product for an extended length of time prior to use. Its rheological profile aides in wellbore placement and removal. ThermaFix MT/MD IPF is available in any region of the world.

Safety and Handling

ThermaFix MT/MD IPF is compatible with bare steel, brass, bronze, aluminum, and selected elastomers. ThermaFix MT/MD IPF has very low vapor pressure and is non-DOT regulated. ThermaFix MT/MD IPF is composed of a blend of proprietary inorganic and organic chemicals/additives. Do not use this product until the MSDS has been read and understood, and required safety precautions are followed.

PHYSICAL PROPERTIES	
Thermal Conductivity (K-value)	<0.20 Btu/hr-ft-°F
Specific Heat	ca. 0.5 Btu/lb-°F
Appearance	Viscous, amber liquid
Density	Up to 12.0 ppg
Effective Temperature	Up to 200°F
Solubility in Water or Brine	Soluble
pH	6-8
Corrosion - Mild Steel at 200°F	Very low, <1 mil/year
Working Fluid Compatibility	Compatible with propylene glycol, methanol and control line fluid; non-miscible with crude oil

Insulating Properties

Cool-down time is relative to the Heat Transfer Coefficient (U value) of a fluid; the lower the U value of a fluid, the longer its cool-down time. This relationship is due to both values stemming from the viscosity profile and thermal conductivity (K-value).

ThermaFix MT/MD IPF's viscosity profile (12,000 cP at 0.5 RPM) provides it with a considerably longer cool-down time than non-viscous brine; 55% increase (2651s vs. 1708s). Additionally, brine viscosified to the same degree as ThermaFix MTMD IPF has a shorter cool-down time (2356s vs. 2651s) due to ThermaFix MT/MD IPF's lower K-value. These traits allow ThermaFix MT/MD IPF to provide long cool-down times and a U value of <3.0.

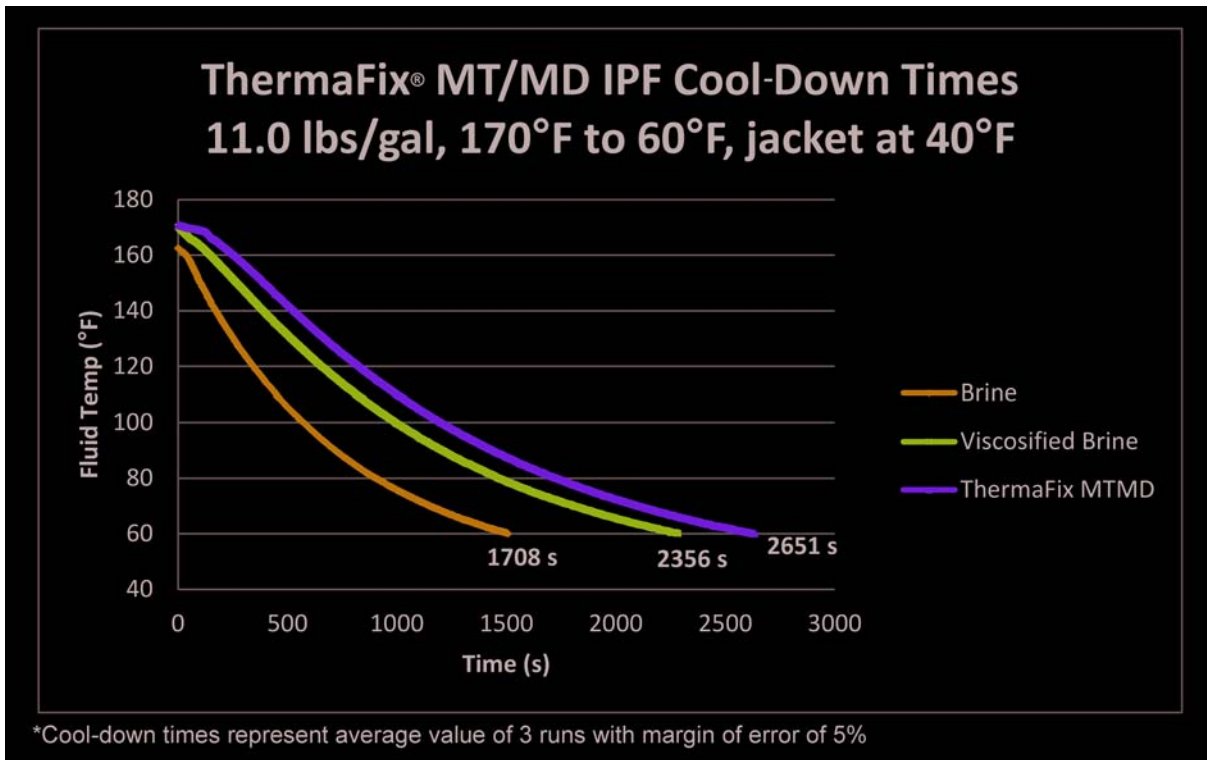


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ThermaFix MT-MD PDS
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