

# MUDPUSH HPHT

Engineered high-pressure, high-temperature cement spacer

## APPLICATIONS

- Mud removal prior to cementing operation under challenging conditions

## BENEFITS

- Improves reliability with effective displacement and zonal isolation
- Provides excellent thermal stability at extreme conditions through the use of synthetic polymers
- Enhances spacer stability and control through the use of fine weighting material
- Resists hydrolyzing or degrading at temperature as high as 232 degC [450 degF]

## FEATURES

- Availability in a density range from 1,560 kg/m<sup>3</sup> [13 lbm/gal] to 2,395 kg/m<sup>3</sup> [20 lbm/gal]
- Formulation for high-temperature applications, with the ability to be formulated for high-pressure or HPHT applications
- Nonsettling fluid over the whole temperature range
- Controllable viscosity at bottomhole conditions for enhanced drilling fluid displacement
- High solid volume fraction for an improved suspension stability and greater shear energy to erode mud filtercake
- Use of several weighting materials depending on spacer density and targeted stability

MUDPUSH HPHT\* engineered high-pressure, high-temperature cement spacer is thermally stable, and its components resist degrading under harsh conditions of at least 232 degC [450 degF]. In addition, the spacer can be configured for either high-pressure, high-temperature, or HPHT applications. The spacer's effective displacement contributes to successful cementing operations and reliable zonal isolation.

## Preparation

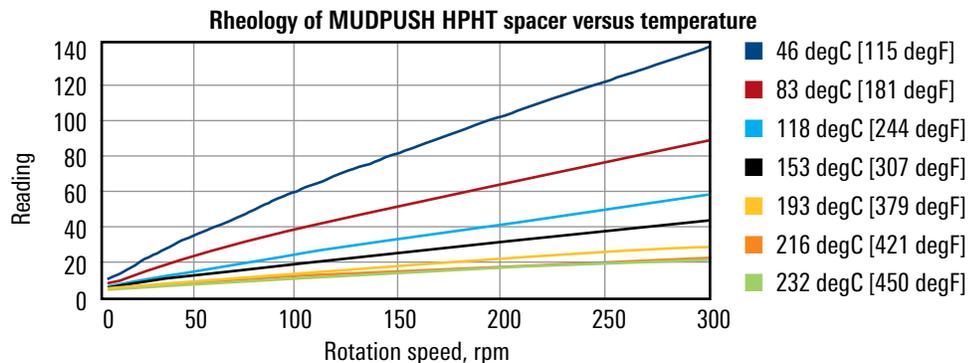
The MUDPUSH HPHT spacer is prepared with freshwater but can also be prepared with up to 3% KCl by weight of water if needed. To prevent premature set of the contaminated cement slurry, a high-temperature cement retarder can also be added to the MUDPUSH HPHT spacer.

## Compatibility

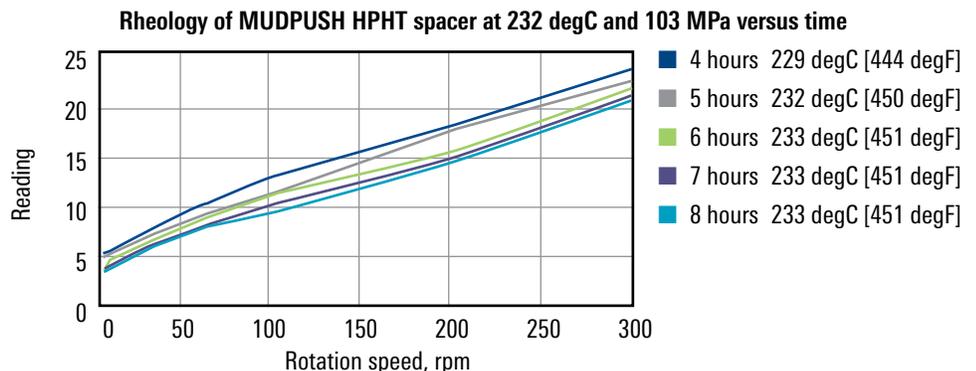
The MUDPUSH HPHT spacer is compatible with drilling fluids and cement slurries, including nonaqueous fluids, water-base muds, and high-temperature slurries.

## High-temperature sedimentation tests

Even at the highest temperature during testing, the MUDPUSH HPHT spacer remained stable for several hours and retained its capacity to suspend the particles contained in the spacer. In sedimentation tests, there was no settling of the weighting material at the bottom of the cell and no free fluid with a density gradient below 5%.



The MUDPUSH HPHT spacer's rheological behavior is stable at increasing temperatures.



Even at 232 degC and 103 MPa, the spacer remains stable for several hours in a row.

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