DATA SHEET

HALLIBURTON

Cementing solutions

Tuned Prime HT™ cement spacer

High-temperature, low-crystalline-silica cement spacer for effective mud removal

FEATURES

- Thermally stable synthetic polymer suspension
- Tuneable rheology and density
- Delayed temperature-based yielding
- Low crystalline silica
- Engineered with scouring agents

BENEFITS

- Helps prevent thermal thinning up to 400°F
- Provides rheological and density hierarchies for efficient mud removal
- Maintains surface mixability
- Helps meet OSHA respirable crystalline silica PEL requirement
- Improves mud removal
- Adjusts wettability of the casing and formation to strengthen cement bonding
- Supports mix on-the-fly operations

Overview

Cement operations in high-temperature environments require specialized solutions to maintain fluid stability when bottomhole temperatures exceed 280°F (138°C). Biopolymer-based suspension aids, often used in cement and spacer slurries, begin to degrade at 250-300°F. This degradation lowers the rheological profile of the fluids and impairs suspension capability. This loss may lead to particle settling, insufficient mud removal, and a breakdown in the rheological hierarchy of the fluid train. These effects may allow fluids to bypass the spacer, create channeling, or force a premature end to the cement operation.

Halliburton engineered Tuned Prime HT™ cement spacer to address this limitation and extend the proven performance of the Tuned® Prime™ cement spacer into applications 280-400°F (138-204°C). The system uses two suspension aids to maintain rheological hierarchy throughout the cementing operation and improve wellbore cleaning with engineered scouring particulates.

High-temperature stability

The Tuned Prime HT cement spacer contains a synthetic polymer suspension aid and a non-hazardous scouring agent. The synthetic polymer suspension aid activates as the fluid temperature approaches 280°F. This activation offsets the base spacer thermal thinning and preserves spacer stability in high-temperature environments. Surface and downhole rheology are tailored by adjusting suspension aid concentrations to maintain a consistent hierarchy between the spacer and the rest of the fluid train. This helps improve operational efficiency and maintain optimum surface mixability. Engineered particulates function as scouring agents for more effective filter-cake removal and wellbore cleaning.

Low-crystalline silica

Tuned Prime HT cement spacer contains less than 2% crystalline silica by weight. This design minimizes personnel exposure and supports compliance with the U.S. Occupational Safety and Health Administration (OSHA) respirable crystalline silica permissible exposure limit (PEL) requirement 29 CFR 1910.1053.

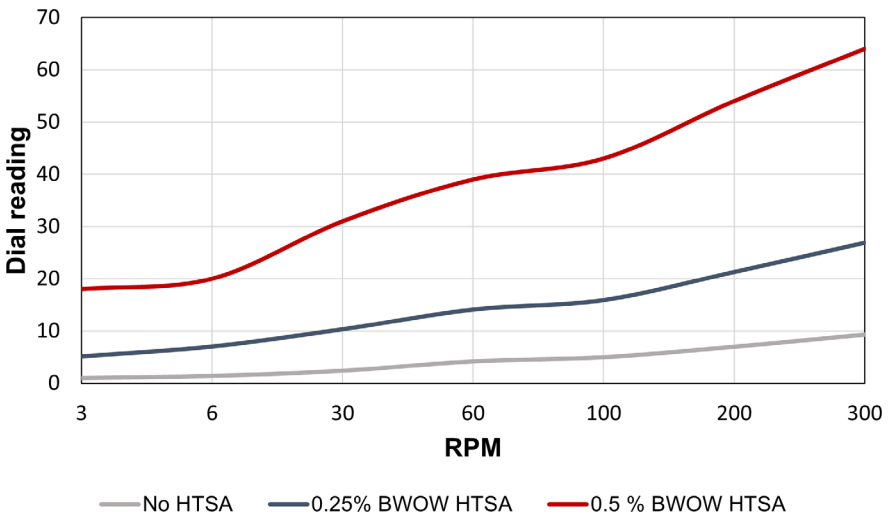
Applications

Tuned Prime HT™ cement spacer mixes with a wide range of water sources and effectively displaces oil- and water-based muds in applications between 280°F (138°C) and 400°F (204°C). Surfactants improve compatibility with oil-based mud and adjust the wettability of the casing and formation to strengthen cement bonding. Concentrations range from 10 lbm/bbl to 50 lbm/bbl, and densities range from 10 lbm/gal to 18 lbm/gal. We can design values outside of these ranges when required.

Tuned Prime HT cement spacer is dry-blended with weighting agents at the bulk plant, shipped to location, and either mixed on the fly or batch-mixed. Add dry surfactants to the dry blend or liquid surfactants to the fluid system on location.

CRYSTALLINE SILICA	CRYSTALLINE SILICA CONCENTRATION (BY WT.)	CRYSTALLINE SILICA REDUCTION
Conventional cement spacer	29%	-
Tuned Prime HT™ cement spacer	<2%	93.3%

16 ppg Tuned Prime HT™ spacer rheological profile at 330°F



Tuned Prime HT™ cement spacers tested at 330°F demonstrate adjustable rheological profile dependent on the concentration of the synthetic polymer high-temperature suspension aids.

For more information, contact your local Halliburton representative or visit us on the web at www.halliburton.com