



TETRA CS Neptune® Monovalent Fluids

HIGH-DENSITY, SOLIDS-FREE COMPLETION FLUIDS

Overview

TETRA CS Neptune monovalent completion fluids are innovative, high-density, solids-free, zinc-free, and formate-free fluids for offshore and complex wells, including high-temperature applications, that require heavy clear brines to control well pressure during the completion phase. These monovalent brines are an environmentally friendly, cost-effective alternative to traditional zinc bromides and cesium formate high-density completion fluids. They are designed for use in well completion and workover operations, but can also be formulated as a low-solids reservoir drill-in fluid (DIF).

TETRA CS Neptune monovalent fluids are part of our portfolio of TETRA CS Neptune fluids. See the table on next page for complete portfolio details.

Application Information

TETRA CS Neptune monovalent fluids are designed for use in applications requiring a monovalent completion fluid with densities from 12.4 lb/gal to 15.3 lb/gal without the use of formate salts. TETRA CS Neptune monovalent salts can be designed to provide improved corrosion protection over alternative fluids. They also exhibit low scaling tendencies in the presence of carbonate and sulfate ion-containing formation fluids.

Safety and Handling

Avoid skin and eye contact, inhalation, or ingestion. Ensure good ventilation of the work station. Wear personal protective equipment. Hygiene measures: Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

For skin contact, wash with soap and large quantities of water. For eye contact, flush with large quantities of water for a minimum of 15 minutes and seek medical attention. Use a properly designed respirator if adequate ventilation is not available. Refer to the Safety Data Sheet for specific details.

Features

- Can be formulated to densities of up to 15.3 lb/gal with a true crystallization temperature < 10°F (-12°C) and without the use of formate salts
- Stable at temperatures >350°F (177°C) and during storage
- Can be mixed with standard clear brine fluid mixing equipment
- Compatible with downhole elastomers and metallurgies
- Exhibits compatibility similar to that of calcium bromide with other working and reservoir fluids

Benefits

- Low scaling and low formation damage potential
- Free of formates, divalents and zinc
- Formulated from renewable products, ensuring continuity of supply
- Can be reclaimed for reuse using standard technology
- Neutral to slightly alkaline in pH, thereby posing low health and safety risks to rig site and plant personnel
- Scale inhibiting at high temperatures
- Requires no special mixing, handling, or storage equipment at the rig site
- Environmentally acceptable globally

Physical Properties

Appearance	Clear to amber liquid
Odor	Odorless
Density	12.4 to 15.3 lb/gal
pH	7-10
Water Solubility	Soluble

Recommended Treatment

TETRA CS Neptune fluids are delivered in bulk form.



TETRA CS Neptune® Fluids Portfolio Features

TETRA CS Neptune Divalent Completion Fluids	Density range up to 15.4 lb/gal or 1.84 sg Temp stability to 350°F / 177°C Field proven
TETRA CS Neptune HDD Completion Fluids <i>(High Density Divalent)</i>	Provide density extension to 15.7 lb/gal or 1.88 sg Temp stability to 290°F / 143°C Drill-in and low solids invert emulsions
TETRA CS Neptune XHDD Completion Fluids <i>(Extra High Density Divalent)</i>	Densities > 17.0 lb/gal or 2.04 sg
TETRA CS Neptune HDM Completion Fluids <i>(High Density Monovalent)</i>	Density range up to 13.1 lb/gal or 1.57 sg Temp stability to > 350°F / 177°C Drill-in, low solids invert emulsions, and frac fluids
TETRA CS Neptune XHDM Completion Fluids <i>(Extra High Density Monovalent)</i>	Density range up to 15.3 lb/gal or 1.83 sg Temp stability to > 350°F / 177°C Drill-in, low solids invert emulsions, and frac fluids

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