



TETRA CS Neptune™ is a new, innovative, high-density solids-free, completion fluid. TETRA's new zinc- and formate-free completion fluid is the clear solution to the industry's quest for an environmentally friendly, cost-effective alternative to traditional zinc bromides and cesium formate high-density completion fluids. TETRA CS Neptune is a high density (up to 15.4 ppg, 1.85 g/ml), solids free fluid that can provide an alternative to some zinc bromide and cesium formate brines. TETRA CS Neptune was designed for use in well completion and workover operations, but can also be formulated as a low solids reservoir drilling fluid.

Features

- Can be formulated to a density of up to 15.4 ppg, 1.85 g/ml (efforts are underway to extend the limits)
- Exhibits significantly lower crystallization temperatures (TCT & PCT) than equivalent-density calcium bromide brines
- Stable at elevated temperatures and during storage
- Can be mixed with standard CBF mixing equipment
- Compatible with downhole elastomers and metallurgies
- Exhibits compatibility similar to that of calcium bromide with other working and reservoir fluids
- Formulated from renewable products, ensuring continuity of supply

Benefits

- Zinc-free and, hence, does not require zero-discharge system of work
- Can be reclaimed for reuse, using standard technology
- Neutral in pH, thereby posing low health and safety risks to rig site and plant personnel
- Significantly lower unit cost than alternative fluid chemistries
- Requires no special mixing, handling, or storage equipment at the rig site
- Has global environmental acceptability

Application Information

TETRA CS Neptune is formulated, predominantly using bromide-based brines and a complex, proprietary blend of additives, which achieves significant reductions in the true crystallization temperature and pressure crystallization temperature of the fluid. Each TETRA CS Neptune fluid is formulated specifically for the density and TCT/PCT requirements of the project. Advice on formulation and use of TETRA CS Neptune fluids should always be sought from TETRA's Innovation Group (TIG). The graph illustrates the magnitude of reduction in PCT that can be achieved using a TETRA CS Neptune fluid to replace pure calcium bromide brine.

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To learn more about TETRA's completion fluids services, visit tetrathec.com.

Technical Specifications

Physical Properties

Appearance	Colorless to amber, clear liquid
Density/Specific Gravity	14.2 to 15.4 ppg (1.70 to 1.85g/ml)
pH	6.5 to 8.5
Flashpoint	>212°F (>100°C)

Packaging

TETRA CS Neptune is delivered in bulk form.

Safety and Handling

TETRA CS Neptune poses similar HSE risks to calcium bromide brine. Avoid skin and eye contact, inhalation or ingestion. 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; seek medical attention. Use a properly designed respirator if adequate ventilation is not available. Refer to the Safety Data Sheet for specific details.

