EASTMAN

Technical Data Sheet

Eastman™ Choline Chloride 75

Chemical Synonym

(2-Hydroxyethyl) Trimethylammonium Chloride; Choline Chloride

Applications

- Upstream o&g-stimulation

Key Attributes

- Fully compatible with typical drilling muds and hydraulic fracturing fluids
- High performing clay stabilizer for water-based fluids – 3 times more effective than KCl
- Safe chemical with excellent environmental profile

Product Description

Choline Chloride 75 can be used as a clay stabilizer, whose function it is to prevent clay swelling in the shale rocks and minimize the migration of clay fines and can replace materials such as quaternary ammonium salts and KCl.

Eastman produces Choline Chloride as an aqueous solution: a clear, to light amber and nearly odorless liquid. The material comes in a variety of concentrations, the most common ones being 70% and 75%.

Choline Chloride can be used as one of the chemical additives in fracturing fluids.

Typical Properties

Property	Typical Value, Units
General	
Molecular Formula	$C_5H_{14}CINO$
Molecular Weight	139.6 g/mol
Crystallization Point[a]	-10 °C
Density @ 20°C	1.1 g/cm^3
Viscosity[b]	Very temperature dependent

[a] *The crystallization point of liquid Choline Chloride depends on the concentration of the product.*

[b] *Viscosity curve can be obtained at request.*

Methods of Analysis

In order to determine the exact amounts of choline, we recommend to use a selective method of analysis, for example the Reinecke Salt Gravimetric Method or Ion Chromatography.

Ion Chromatography is a method utilizing the ionizing characteristics of choline. This method can measure the exact amount of Choline Chloride using ionic interactions between the positive ions and negative ions. Also it can detect non-reactive ingredients such as TMA and TMA.HCl and can be used as a test for quality of Choline Chloride products.

When analyzing Choline Chloride with a standard Volhardt method (= chloride method), this common salt will be calculated as Choline Chloride, even though the content of choline is significantly lower than stated.

Packaging

- Bulk: roadtanker and flexitainer
- IBC containers (1120 kg net)

Storage

Because Choline Chloride has a corroding effect on blank steel, storage in appropriate materials such as special stainless steel, polyethylene or glass fiber reinforced containers is necessary.

Handle in accordance with good industrial hygienic and safety procedures.

Breathing, eye and skin protection shall be used during handling.

Shelf-life is 24 months (2 years) from production date when stored in closed drums or containers at room temperature.

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