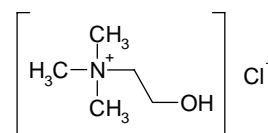


(2-HYDROXYETHYL) TRIMETHYLAMMONIUM CHLORIDE



Technical Data Sheet

Description

(2-hydroxyethyl) trimethylammonium chloride can be used as a clay stabilizer.

Taminco produces (2-hydroxyethyl) trimethylammonium chloride: an aqueous solution and is a clear., colorless and nearly odorless liquid.

The standard grade material has a concentration of 75 %, which is equivalent to 559 mg/g choline.

Chemical properties

Property	Value
Molecular formula	C ₅ H ₁₄ ClNO
CAS Nr.	67-48-1
EINECS Nr.	200-655-4
ENCS/ISHL listed	
TSCA listed	
Molecular weight	139.6 g/mol

Specifications

	Unit	SPEC	Method of Analysis
Choline Chloride min.	% w/w	75	Argentometric titration
TMA.HCl max.	% w/w	0,05	idem
H ₂ O max	% w/w	25	---
pH (20°C)	---	6 - 8	pH
Color max	APHA	25	Spectrophotometry

Methods of Analysis

Research from recent years clearly shows that the choline chloride content from some competitive sources is significantly lower than the content which is mentioned on the certificates of analysis, due to intentional adulteration of the product by adding other chlorides, e.g. household salt. When analyzing choline chloride with the standard Volhard method (= the chloride method), this common salt will be calculated as choline chloride.

Therefore, if the product quality is suspected, we recommend to use a more selective method of analysis, for example the Reinecke salt gravimetric method or ion chromatography.

Packaging

Polyethylene drums (230 kg net)
1120 kg IBC containers
Road Tankers – stainless steel
Flexitainer

Shelf-life

24 months (2 years) when stored in closed drums or containers at room temperature.

Physical properties

Crystallization point

The crystallization point of liquid choline chloride is quite depending on the concentration of the product.

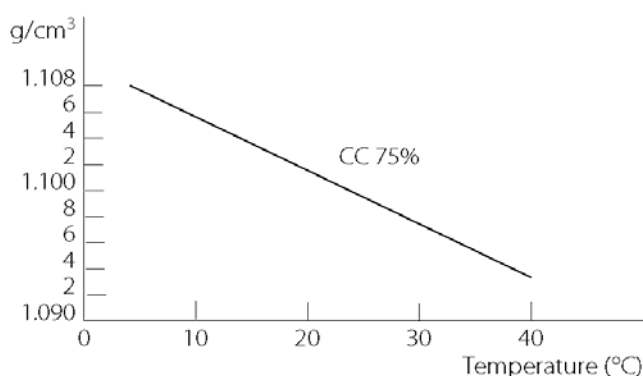
For (2- hydroxyethyl) trimethylammonium chloride, the crystallization point is -10° Celsius.

As a comparison, the crystallization point of a saturated liquid product at 78 % is $+10^{\circ}$ Celsius.

Density

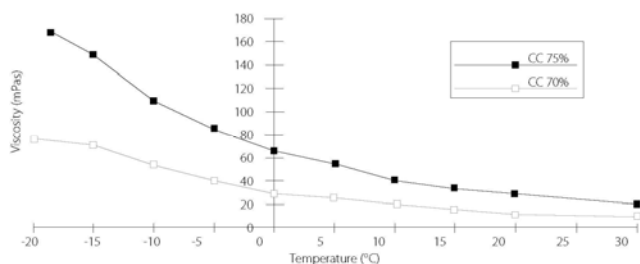
Density at 20°C : 1100 kg/m^3

Density as a function of temperature



Viscosity

Viscosity as a function of temperature



Other Physical & Chemical Properties

See Material Safety Data Sheet

Transport regulations

Since (2- hydroxyethyl) trimethylammonium is not referred to in the regulations relating to the transport of dangerous goods, it is not subject to any regulation.

Storage and handling

Because (2- hydroxyethyl) trimethylammonium 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.

Other information

Those who want more detailed information on health and safety aspects, can find a lot of supplementary information (properties, exposure, toxicological and ecological data) on our Material Safety Data Sheet, which is available on internet.

Use for (2- hydroxyethyl) trimethylammonium chloride

Can be used as one of the chemical additives in fracturing fluids. Those fracturing fluids are used in shale gas fields when drilling. Additives can include scale inhibitor, surfactant, pH adjusting agent, breaker, biocide, corrosion inhibitor, cross linker, gelling agent, clay stabilizer or friction reducer.

(2- hydroxyethyl) trimethylammonium chloride functions as a clay stabilizer, whose function 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.

For further questions please contact our regional sales departments

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Supersedes /

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