

(2-hydroxyethyl) trimethylammonium chloride choline chloride

C₅H₁₄ClNO

Specifications

		metod of analysis
Choline Chloride min % w/w	97	18/51256/02-01/01
H ₂ O % w/w	0,7	18/51256/02-01/01

Description

(2-hydroxyethyl) trimethylammonium chloride or choline chloride is an essential nutrient. and finds its main application as a feed additive.

choline chloride:

an aqueous solution of choline chloride is a clear, colorless and nearly odorless liquid. The standard grade material has a concentration of 97%, which is equivalent to 651 mg/g choline.

chemical properties

Molecular weight 139.6 g/mol

CAS Nr 67-48-1

EINECS Nr 200-655-4

Quality Management & Control

In the interest of its customers, company follows a number of strict rules to guarantee the quality of choline chloride as a high valuable feed additive.

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:

Multilayer bags with moisture barrier (25 kg net)

External layer: PES with aluminium foil barrier

Internal layer: coex linear low MDPE

Shelf-life 12 months (1 year) when stored in closed drums or containers at room temperature.

Choline chloride is commonly classified as a vitamin. It belongs to the family of water soluble B-vitamins. It was formerly known as vitamin B4. Like other vitamins, it plays a significant role in nutrition, but its daily requirement seems to be hundreds of times greater than that of other vitamins. Choline chloride has three essential metabolic functions :

- As constituent of phospholipids, improving fat transport and cell construction
- As a precursor in the synthesis of acetylcholine, interacting in muscle control (neurotransmitter)
- As a source of labile methyl groups, essential for numerous biological processes.

Choline chloride occurs in almost all feed ingredients (see for example publications by the NRC); however not all naturally occurring choline is bio-available. Many animals have a choline requirement that is not fully covered by the natural choline content of the feed. Therefore extra choline is often supplemented, and choline chloride salt is the common form in which choline is added to the feed. Addition levels vary by species, but are also dependent on age, feed composition, environmental stress, and breed. The required addition level is the difference between the requirements on the one hand and the levels of natural available choline on the other. It is further augmented with a safety margin, to cover up for variations of choline levels in natural feed ingredients.

Dosing

The following supplementation levels reflect average recommendation values for choline chloride addition of to practical diets:

Species		Choline chloride supplement in mg/kg feed (90 % dry matter)
Broilers	Starting (0-8 weeks)	600-850
Broilers	Growing (8-18 w.)	350-700
Layers		300-600
Layers	Breeding	350-700
Turkeys	Starting (0-8 weeks)	950-1200
Turkeys	Fattening (8-end)	600-850
Turkeys	Breeding	600-850
Ducks	Market/Breeding	1100
Pigs	Starting (10-25 kg)	350-700
Pigs	Growing (25-60 kg)	250-500
Pigs	Finishing(60kg-end)	200-350
Pigs	Gestating/Lactating	200-600
Fish	depends on species	350-950
Shrimp		500-700
Calves		250-350
Dogs		1200-1400
Cats		1200-1650

These recommendations can serve as a general guideline only, since diet composition and vitamin availability from regular feed ingredients can vary greatly.