

TECHNICAL DATA SHEET

ETI-QUEST

INCI Etidronic Acid

CAS 2809-21-4



SPECIFICATIONS

Appearance	Colorless to pale yellow transparent liquid
Odor	Odorless
Active content (%)	58 - 62

GENERAL INFORMATION

ETI-QUEST is used as a chelating agent in cosmetics, building complexes with calcium, arsenic, iron and other metal ions to neutralize them. This allows for management of the use of slightly "hard" water, which could, for example, interfere with the surfactants of the product.

Chelators are often used in water softeners. This molecule does not pose any problem for human health. Its disadvantage is that, like EDTA, it is very poorly biodegradable and the complexes it forms with metals are found scattered in nature.

FORMULATION AND RECOMMENDATIONS

Recommended use concentration

Hair care products: max 1.5% as Etidronic Acid in the finished product. [ECHA](#)

Soaps: max 0.2% as Etidronic Acid in the finished product

Solubility

Soluble in water

EFFICACY

ETI-QUEST is used for the chelation of metal ions, in particular transition metals (Fe, Cu, Mn, Zn) and water hardness ions (Ca, Mg).

Stability constants of etidronic chelates have been measured and the approximate amount of free ions have been calculated

METAL	LOG K	APPROXIMATE % CHELATED	FREE METAL
Ca ²⁺	6.5	99.99997	3x10 ⁻⁵
Mg ²⁺	4.5	99.997	3x10 ⁻³
Fe ²⁺	21.6	-	2.5x10 ⁻²⁰
Cu ²⁺	6.4	99.99996	4x10 ⁻⁵
Mn ²⁺	6.9	99.99999	1.2x10 ⁻⁵
Zn ²⁺	10.6	-	2.5x10 ⁻⁹

In most cases, stability constants greater than 5 to 6 are not needed for practical removal of unwanted metal ions.

BENEFITS

- Easy to handle
- Good efficacy against ion metals
- Good stability

APPLICATIONS

Cosmetics

- Skin care
- Baby care
- Makeup
- Hair care
- Sun care
- Toiletries

SHELF LIFE

12 months under proper storage conditions