



Ergothioneine

Technical Data Sheet

1. General information

1.1. Manufacturer/supplier

Shanghai EGT Synbio Group Co., Ltd.
NO.1299, Zizhu Road, Minhang District,
200241 Shanghai, China
Telephone : +86 21 61453999 2383

1.2. INCI Name: Ergothioneine

1.3. Information on production process

Ergothioneine (thiol histidine trimethyl inner salt) is a crystalline sulfur-containing compound, a natural amino acid, extracted by biological fermentation and enzyme-catalyzed reaction. This product is easily soluble in water and is a pure powder that can be added to various skin care formulations.

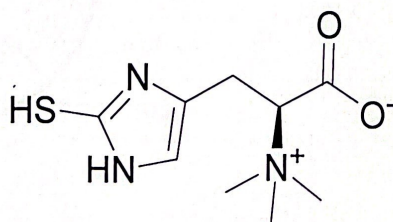
2. Composition

Components	CAS No.	%
Ergothioneine	497-30-3	100

3. Solubility

Water	Soluble
60% alcohol	Soluble
Mineral oil	Insoluble

4. Chemical structure



5. Skin care effect



5.1. Antioxidation

The IC50 value for scavenging hydrogen peroxide is 3.03 μ g/mL.

The IC50 value for scavenging hydroxyl radical is 33.64 μ g/mL.

The IC50 value for scavenging superoxide anion is 159.35 μ g/mL.

The IC50 value for scavenging ozone is 0.8 μ g/mL.

When the concentration of ergothioneine is 12.5 μ g/mL, the clearance of HONOO- reaches 68%. Experiments have shown that ergothioneine at 20 μ g/mL can stop lipid oxidation in cells.

5.2. Whitening

The ergothioneine inhibiting the activity of tyrosinase monophenolase with L-tyrosine as the substrate, the IC50 value is 0.29 μ g/mL; The ergothioneine inhibiting the activity of tyrosinase bisphenolase with L-dopa as the substrate, the IC50 value is 1.33 μ g/mL.

5.3. Anti-aging

Cell experiments have shown that:

0.1% concentration of EGT can inhibit MMP-1 activity by 56% and 0.025% concentration of EGT can protect elastin by 83%.

5.4. Anti-glycation

Cell experiments have proved that:

0.01% concentration of EGT pretreat the cells, the inhibition rate of SA- β -gal (β -galactosidase) activity reaches 42%. 0.005% concentration of EGT pretreat the cells, the N ϵ -CML induced by glyoxal decreases by 35%.

5.5. Synergistic effect with actives

Ergothioneine can stabilize Vc. When EGT:Vc=1:100, mix Vc and ergothioneine, and heat the mixed solution with 37 $^{\circ}$ C for 5 hours, it can increase the remaining Vc content by 506%.

6. Physical and chemical indicators

Item	Specification
Appearance	White crystal
Smell	Characteristic odor
pH (5% water solution)	6.0~7.5
Density	1.22-1.41

7. Solvent and heavy metals



Item	Specification
Solvent (Ethanol, ethyl acetate, propanol, isopropanol)	≤1000 ppm
As	≤1 ppm
Pb	≤1 ppm
Hg	≤1 ppm
Cd	≤1 ppm
Total heavy metals	≤10 ppm

8. Microbiological Limits

Item	Specification
Thermostable E.Coli	Negative
Staphylococcus aureus	Negative
Pseudomonas aeruginosa	Negative
Total yeast and mould count	≤100 CFU/g
Total viable aerobic count	≤500 CFU/g

9. Recommendations:

It is recommended to add to skin care products with antioxidant, anti-aging, repair, whitening and freckle removal claims, the recommendation amount is 0.01-2%, and finally added at pH <7 and temperature < 40°C.

This product has good water solubility and can be added to toner, lotion, cream, and serum.

10. Storage requirements

Refrigerate at 2-8°C and keep tightly closed.

11. Shelf life

24 months.

