



**TECHNICAL DATA SHEET**

**1. Product Information**

<b>Item</b>	<b>Specification</b>
Product Name	ECTOIN
Chemical Name	4-Tetrahydromethylpyrimidine Carboxylic Acid
CAS No.	96702-03-3
Molecular Formula	C <sub>6</sub> H <sub>10</sub> N <sub>2</sub> O <sub>2</sub>
Molecular Weight	142.16
Appearance	White or almost white crystalline powder
Grade	Cosmetic / Food Grade

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**2. Product Description**

ECTOIN is a natural cell-protective active ingredient widely used in cosmetic, skincare, and functional health products. It is known for its excellent moisturizing performance and environmental stress protection capabilities.

ECTOIN helps stabilize cell membranes and protects skin from external stress factors such as dryness, UV exposure, pollution, and temperature changes. Due to its outstanding skin compatibility and formulation stability, it is widely used in premium skincare and wellness formulations.

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**3. Key Benefits**

- Excellent moisturizing and water-binding capacity
  - Helps support skin barrier protection
  - Provides anti-pollution and environmental stress defense
  - Soothes sensitive and irritated skin
  - Supports anti-aging and skin repair formulations
  - High formulation stability and compatibility
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## 4. Application Categories

### Cosmetic & Personal Care

- Moisturizing creams and lotions
- Anti-aging skincare products
- Sensitive skin formulations
- Facial masks and serums
- Sun care and after-sun products
- Repair and soothing products

### Functional Nutrition

- Oral beauty supplements
- Healthy aging products
- Cellular protection formulations

### Pharmaceutical & Dermatological Research

- Skin barrier protection studies
- Cell protection applications
- Stress-protection formulations

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## 5. Technical Specifications

Test Item	Specification	Result
Description	White or almost white crystals or crystalline powder	Conforms
Identification	IR spectrum conforms to reference standard	Conforms
Assay (HPLC)	≥98.5%	99.7%
Specific Rotation	+139° ~ +145°	+139.6°
Loss on Drying	≤0.50%	0.05%
Residue on Ignition	≤0.10%	0.05%
pH	6.0 – 8.0	6.5
Heavy Metals (Pb)	≤10 ppm	<10 ppm
Arsenic	≤2 ppm	<2 ppm
Bacterial Endotoxin	<10 EU/g	Conforms
Total Plate Count	≤100 CFU/g	<100 CFU/g
Yeast & Mold	≤50 CFU/g	<50 CFU/g
E. coli	Negative	Conforms

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## **6. Packaging**

- 25kg/drum
  - Customized packaging available upon request
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## **7. Storage & Shelf Life**

### **Storage Conditions**

Store in a cool, dry, and well-sealed container away from direct sunlight and moisture.

### **Shelf Life**

24 months under recommended storage conditions and unopened original packaging.

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## **8. Quality Standard**

Manufactured under strict quality control procedures and tested according to in-house specifications and USP methods.

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## **9. Notice**

The information provided in this document is believed to be accurate and reliable. Customers should conduct their own evaluation and testing to determine the suitability of this product for their specific applications.