品鸿生物科技
Pinhon Biotechnology

TECHNICAL DATA SHEET

PINHONBIO® Ectoin

1. Product Overview

PINHONBIO® Ectoin is a high-purity, water-soluble compatible solute intended for professional cosmetic formulation. The supplied grade is standardized to not less than 99.0% ectoin by HPLC and is suitable for skin-care, sun-care, scalp-care and other personal-care applications.

2. Product Identification

Product name	PINHONBIO® Ectoin
INCI	ECTOIN
Chemical name	(4S)-2-methyl-1,4,5,6-tetrahydropyrimidine-4-carboxylic acid
CAS / EC	96702-03-3 / 431-910-1
Molecular formula	C6H10N2O2
Molecular weight	142.16 g/mol
Appearance	White to off-white crystals or crystalline powder
Origin	Biotechnology-derived
Geographical availability	Global

3. Functions and Applications

- Skin-conditioning and moisturizing active for products designed to support skin comfort, hydration and barrier resilience.
- Suitable for facial and body care, sensitive-skin products, sun-care and after-sun products, scalp care, hair care and oral-care formulations.
- Finished-product claims, safety and stability must be supported by testing of the actual formulation in the destination market.

4. Formulation Guidance

Suggested use level	0.3-2.0%. Published regulatory assessment covers leave-on cosmetic use up to 3%.
Solubility	Highly soluble in water; published room-temperature values are approximately 390-550 g/L.
Processing	Add directly to the aqueous phase before emulsification. It may be incorporated in hot or cold processing.
pH compatibility	Published technical information indicates stability over approximately pH 1-9. Confirm compatibility in the final formula.

5. Technical Specification

Test	Specification	Method
Appearance	White to off-white	Organoleptic
Aspect	Crystalline powder	Organoleptic
Odor	Characteristic	Organoleptic
Assay	>=99.0%	HPLC
Purity	>=99.0%	HPLC
Specific rotation	$[\alpha]^{20}_D$ = +139° to +145° (c = 1, H_2O)	CP 2025
pH	6.0-8.0	CP 2025
Loss on drying	<=0.50%	CP 2025
Bacterial endotoxins	<=0.05 EU/mg	CP 2025
Total heavy metals	<=10 ppm	ICP-MS
Arsenic (As)	<=2 ppm	ICP-MS
Cadmium (Cd)	<=2 ppm	ICP-MS
Lead (Pb)	<=2 ppm	ICP-MS
Mercury (Hg)	<=1 ppm	ICP-MS
Staphylococcus aureus	Negative per g	USP 34-NF 29 <2022>
Salmonella	Negative per g	USP 34-NF 29 <2022>
E. coli	Negative per g	USP 34-NF 29 <2022>
Yeasts and molds	<=100 CFU/g	USP 34-NF 29 <2021>
Total bacteria count	<=1,000 CFU/g	USP 34-NF 29 <2021>

6. Packaging Storage and Shelf Life

Packaging	Double-layer plastic bag inside a neutral fiber drum, or agreed equivalent.
Storage	Keep tightly closed in a cool, dry place and protect from direct sunlight, heat and moisture.
After opening	Reseal promptly and minimize exposure to air and humidity.
Shelf life	36 months in unopened original packaging when stored as recommended.

Information sources: supplied Ectoin COA and Method of Analysis; ECHA registered-substance dossier for CAS 96702-03-3; Australian industrial-chemical public assessment STD/1613; PubChem Ectoine record; published ectoin formulation information.