Safety Data Sheet

PINHONBIO® Hydroxyectoin

SDS / MSDS | Assay ≥98.0% | General product specification | Version 1.0

1. Identification

Product identifier	PINHONBIO® Hydroxyectoin
INCI / other names	HYDROXYECTOIN / Hydroxyectoine; 5-Hydroxyectoine
Recommended use	Raw material for professional cosmetic formulation and manufacturing.
Restrictions	Not for direct consumption, injection or inhalation. Finished-product suitability requires assessment for its intended use.
Supplier	Shaanxi Pinhon Biotechnology Co., Ltd.
Address	Room 704, Unit 2, Building 1, I-Duhui, No. 11 Tangyan South Road, Yanta District, Xi'an, Shaanxi, China
Contact	Albert Zhao | +86 173 0298 1616 | info@pinhoningredients.com | https://pinhoningredients.com/
Emergency contact	Albert Zhao | +86 173 0298 1616 | 09:00-18:00 China Standard Time (UTC+8), Chinese/English. Business-hours contact; not a 24-hour medical service.

2. Hazard identification

GHS classification: Not classified as hazardous according to the supplied manufacturer SDS for this material. Public supplier classifications differ; this classification follows the supplied material-specific manufacturer information. See Section 16.

Label elements: No GHS pictogram, signal word or hazard statement is required under the classification above.

Other hazards: Airborne powder may irritate the eyes and respiratory tract. Avoid breathing dust and unnecessary eye or skin contact. Dust combustibility and explosion characteristics have not been established for this product.

3. Composition and information on ingredients

Component	CAS number	Content / specification
Hydroxyectoin	165542-15-4	≥98.0%
Ectoin, related impurity	96702-03-3	≤0.5%

Substance grade; no carrier is identified in the supplied product specification. The assay minimum does not define an intentional 2% additive. Water and other trace process impurities are not fully characterized. Molecular formula: C6H10N2O3. Molecular weight: 158.16 g/mol.

4. First aid measures

Inhalation: Move to fresh air and stop dust exposure. Seek medical attention for persistent coughing, breathing difficulty or other symptoms. Obtain urgent assistance if breathing stops; resuscitation should be performed by trained personnel.

Skin contact: Remove contaminated clothing. Wash skin with soap and water. Obtain medical advice if irritation persists. Wash clothing before reuse.

Eye contact: Rinse cautiously with clean running water for at least 15 minutes, keeping eyelids open. Remove contact lenses if present and easy to do; continue rinsing. Seek medical attention if pain, redness or visual disturbance persists.

Ingestion: Rinse the mouth. Do not induce vomiting. Do not give anything by mouth to an unconscious person. Seek medical advice if unwell or after a significant exposure.

Symptoms and treatment: Dust exposure may cause temporary eye, skin or respiratory discomfort. Treat symptomatically; no specific antidote is identified. Show this SDS to medical personnel.

5. Firefighting measures

Suitable media: Water spray, dry chemical, foam or carbon dioxide suitable for the surrounding fire. Avoid a strong water jet that disperses powder.

Specific hazards: Organic solid; strong heating or fire may generate carbon oxides, nitrogen oxides and irritating fumes. Product-specific flammability and dust-explosion data are unavailable. Avoid dust clouds near ignition sources.

Firefighters: Wear self-contained breathing apparatus and suitable protective clothing. Cool exposed containers with water spray if safe. Contain contaminated firefighting water.

6. Accidental release measures

Restrict access and provide ventilation. Avoid dust generation and use the protection described in Section 8. Keep spilled material out of drains, surface water and soil.

Collect carefully by low-dust mechanical methods or a suitable filtered vacuum, and place in a sealed, labelled container. Avoid dry brushing or compressed air. Clean remaining material without creating airborne dust; collect wash water where necessary.

7. Handling and storage

Handle with adequate ventilation and local dust extraction where powder is weighed or transferred. Avoid eye contact and inhalation. Wash hands after handling. Do not eat, drink or smoke in the work area. Keep containers closed when not in use.

Store in original sealed packaging in a cool, dry place away from direct sunlight, moisture and strong oxidizing agents. Protect packaging from damage. Shelf life: 36 months unopened under recommended storage conditions.

8. Exposure controls and personal protection

Exposure limits and engineering controls: No substance-specific occupational exposure limit is identified in the supplied SDS. Apply relevant local dust limits and workplace assessment. Use effective ventilation and dust extraction; provide accessible eyewash facilities.

Personal protection: Wear safety glasses or dust goggles, suitable protective gloves and work clothing. If ventilation does not adequately control airborne powder, use an approved particulate respirator selected for the exposure and local requirements. Inspect and replace contaminated equipment as needed.

9. Physical and chemical properties

Physical state / appearance	White to off-white crystalline powder.
Odour / odour threshold	Characteristic / threshold not determined.
pH	5.0-8.0; supplied manufacturer TDS uses a 2% aqueous solution.
Solubility	Soluble in water. Quantitative product solubility not established.
Melting / freezing point	No confirmed product-specific value; reference sources differ.
Boiling point / range	Not determined.
Flammability	Not determined by product-specific testing.
Explosion / flammability limits	Not determined.
Flash point	Not applicable to the supplied solid; no measured product value.
Autoignition / decomposition temperature	Not determined.
Kinematic viscosity	Not applicable to the solid.
Partition coefficient n-octanol/water	Not determined.
Vapour pressure / relative vapour density	Not determined.
Density / relative density / bulk density	Not determined.
Particle characteristics	Crystalline powder; particle-size distribution not established.
Oxidizing properties	No oxidizing hazard identified in the supplied manufacturer SDS.
Other specification information	Hydroxyectoin content ≥98.0%; ectoin ≤0.5%; loss on drying ≤0.5%.

10. Stability and reactivity

Stable under recommended storage and handling conditions. No hazardous reaction is identified during normal use. Avoid excessive heat, moisture, ignition sources and unnecessary dust generation. Keep away from strong oxidizing agents. Decomposition in a fire may generate carbon oxides, nitrogen oxides and irritating fumes.

11. Toxicological information

Likely exposure routes: inhalation of powder, skin and eye contact, and accidental ingestion. Dust can cause local discomfort or irritation. No quantitative product-specific oral, dermal or inhalation LD50 / LC50 is provided in the supplied evidence.

Skin irritation, eye irritation and sensitization: The supplied manufacturer SDS reports no skin corrosion, sensitization or eye irritation, but gives no supporting study details; the English version reports no acute-toxicity data. Other suppliers classify hydroxyectoine as an irritant. These statements are not a guarantee of absence of effects.

Other endpoints: Adequate product-specific information on mutagenicity, carcinogenicity, reproductive toxicity, specific target organ toxicity and aspiration hazard is not available. Finished-formulation skin tolerance does not establish the safety of inhaling the raw powder.

12. Ecological information

No adequate product-specific data are available for aquatic toxicity, persistence and degradability, bioaccumulation, soil mobility, PBT / vPvB properties or endocrine-disrupting effects. Do not infer environmental harmlessness or ready biodegradability from the ingredient's cosmetic use. Prevent uncontrolled release.

13. Disposal considerations

Collect residues and contaminated packaging in sealed, labelled containers. Reuse or recycle only where suitable and permitted; otherwise use an authorized waste contractor in accordance with local requirements. Do not dispose of powder or concentrated solutions through drains. Empty packaging may retain residues.

14. Transport information

Transport status	Non-dangerous goods.
Road / rail, sea and air	Not regulated as dangerous goods on the basis of the supplied manufacturer transport information.
UN number / proper shipping name	Not applicable.
Transport hazard class / packing group	Not applicable.
Marine pollutant	No, according to the supplied manufacturer SDS.
Special precautions	Transport in tightly sealed, intact packaging. Protect from moisture, heat, direct sunlight and physical damage; prevent leakage and dust release.
Maritime transport in bulk	Not intended for bulk transport under maritime bulk-chemical provisions.

15. Regulatory information

Prepared using the GHS 16-section SDS structure. The supplied manufacturer SDS refers to GB/T 16483 and GB/T 17519. This sheet does not certify a chemical-inventory listing, REACH registration, cosmetic-product approval or compliance in every destination market. The user is responsible for applicable workplace, chemical and finished-product requirements.

16. Other information

Issue date: 13 Oct 2026 | Version: 1.0 | Prepared for Shaanxi Pinhon Biotechnology Co., Ltd..

Scope: General SDS / MSDS for the Hydroxyectoin ≥98.0% grade. Quality specifications are standing limits, not batch test results. Update this sheet if composition, grade or relevant safety information changes.

Classification basis: The supplied Zhejiang Huarui manufacturer SDSs dated 19 Feb 2024 identify their hydroxyectoin material as not hazardous and as non-dangerous goods. Aladdin SDS H344938 (23 Jan 2024) assigns skin irritation Category 2, eye irritation Category 2A and respiratory irritation STOT SE Category 3 to its laboratory grade. The supplied manufacturer classification is retained here; the disagreement is not resolved by batch assay alone.

References: supplied PINHONBIO quality specification; Huarui Hydroxyectoin TDS and Chinese / English MSDS; the public references below, accessed 13 Oct 2026.

Aladdin Hydroxyectoine SDS H344938, alternative supplier classification. View source

FDA GSRS Hydroxyectoin identity record; identity listing is not product approval. View source

Merck / Sigma-Aldrich Hydroxyectoin technical information. View source

Abbreviations: GHS, Globally Harmonized System; STOT SE, specific target organ toxicity, single exposure; LD50 / LC50, median lethal dose / concentration; PBT / vPvB, persistent, bioaccumulative and toxic / very persistent and very bioaccumulative.

This sheet provides information for safe handling of the raw material under normal industrial conditions. It is not a guarantee of any particular property or a substitute for workplace and finished-product assessments.