

MATERIAL SAFETY DATA SHEET

1. Identification of Substance

Product Name: Astaxanthin Powder (2%)

Synonyms: Haematococcus pluvialis Extract, Astaxanthin, 3,3'-Dihydroxy-4,4'-diketo- β

Chemical Name: (3S,3'S)-3,3'-Dihydroxy- β,β -carotene-4,4'-dione

CAS No.: 472-61-7

EC No.: 207-451-4

Molecular Formula: $C_{40}H_{52}O_4$

Molecular Weight: 596.84 g/mol

Product Form: Dark red to reddish-brown fine powder or granules

Supplier/Manufacturer Details: Xi'an Land Nutra Co., Ltd.

Address: 12th Floor, Vanke Huizhi Center, Yanta District, Xi'an City, Shaanxi, China

Email: sale01@landnutra.com

2. Hazards Identification

Classification (GHS): Not classified as hazardous.

Label Elements:

Signal Word: None

Hazard Statements: None

Precautionary Statements: None

Other Hazards:

May form combustible dust.

Powder may cause mild mechanical irritation to eyes and respiratory tract.

Sensitive to light, oxygen, and heat; prone to oxidative degradation.

3. Composition/Information On Ingredients

Mixture: Standardized extract

Active Ingredient: Astaxanthin (predominantly natural trans-isomer)

Concentration: $\geq 2.0\%$ (HPLC)

Carrier/Matrix: Food-grade carrier (e.g., maltodextrin, starch, gelatin, approx. 98%)

Antioxidants: May contain natural antioxidants (e.g., tocopherol, ascorbic acid) for stability

Moisture Content: $\leq 8.0\%$

4. First Aid Measures

Inhalation: Move to fresh air. If breathing is difficult, seek medical attention.

Skin Contact: Wash with soap and water.

Eye Contact: Rinse with plenty of water for at least 15 minutes. If irritation persists, consult a physician.

Ingestion: Rinse mouth. Drink water. Safe at recommended doses. Excessive intake may cause temporary harmless orange discoloration of skin. If discomfort occurs, seek medical advice.

5. Fire-Fighting Measures

Suitable Extinguishing Media: Water spray, foam, CO₂, dry chemical.

Specific Hazards:

Decomposes upon heating, emitting carbon monoxide, carbon dioxide.

Dust may form explosive mixtures with air.

Special Protective Equipment: Self-contained breathing apparatus and protective clothing.

6. Accidental Release Measures

Personal Precautions: Wear dust mask, protective goggles, and gloves.

Environmental Precautions: Prevent entry into drains.

Methods For Cleanup: Collect using damp cloth or explosion-proof vacuum cleaner. Place in a closed container. Wash area with water.

7. Handling And Storage

Handling:

Avoid dust generation. Ensure adequate ventilation.

Use anti-static equipment.

Wash hands after handling.

Storage:

Store in a cool, dry, dark place, sealed under nitrogen or vacuum.

Keep away from heat and oxidizers.

Recommended storage temperature: -20°C to 4°C (long-term); below 25°C (short-term).

8. Exposure Controls/Personal Protection

Engineering Controls: Local exhaust ventilation.

Individual Protection Measures:

Respiratory Protection: Dust mask in dusty environments.

Hand Protection: Protective gloves.

Eye Protection: Safety glasses.

Skin And Body Protection: Dust-proof clothing.

9. Physical And Chemical Properties

Property	Specification
Appearance	Dark red to reddish-brown fine powder

Property	Specification
Odor	Slight characteristic odor
Solubility	Insoluble in water; soluble in oils/fats, acetone, chloroform, DMSO
Melting Point	Approx. 215–220°C (decomposes)
Absorbance (A470)	Conforms to product specification
Moisture Content	≤ 8.0%
Bulk Density	Approx. 0.4–0.6 g/cm ³

10. Stability And Reactivity

Chemical Stability: Sensitive to light, oxygen, and heat. Store under inert atmosphere.

Conditions To Avoid: Light, high temperature, exposure to air, strong acids, strong oxidizers.

Incompatible Materials: Strong oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide upon heating.

11. Toxicological Information

Acute Toxicity: Very low. LD₅₀ (oral, rat) > 5000 mg/kg.

Skin Irritation: Non-irritating.

Eye Irritation: Powder may cause mild mechanical irritation.

Respiratory Irritation: Dust may cause mild irritation.

Sensitization: Not known.

Chronic Toxicity: Long-term animal studies show no significant toxicity; human studies indicate good safety profile.

Carcinogenicity: Not classified as carcinogenic.

12. Ecological Information

Ecotoxicity: Low.

Persistence/Degradability: Biodegradable.

Bioaccumulation: Low potential (log P ≈ 12–14, but low bioavailability in natural form).

Mobility: Insoluble in water; low mobility in soil.

13. Disposal Considerations

Dispose of in accordance with local regulations. Incineration or disposal through licensed hazardous waste facility.

14. Transport Information

UN Number: Not regulated.

Proper Shipping Name: Not dangerous goods.

Transport Hazard Class: Not classified.

Packing Group: Not applicable.

Special Precautions For User: Protect from light; refrigerated transport recommended.

15. Regulatory Information

China:

Approved as a novel food ingredient (Ministry of Health Announcement No. 17 of 2010).

Not listed in the Catalog of Hazardous Chemicals.

EU:

Permitted as a food supplement (Novel Food Authorization (EU) 2015/2283).

Allowed in cosmetics (CI 75100).

US:

Generally Recognized As Safe (GRAS) as a dietary supplement.

FDA-approved for use as a colorant in aquaculture feed (e.g., salmon).

Japan: Approved as a food additive (colorant).

16. Other Information

Disclaimer: This SDS is for guidance only and makes no warranties. Use must ensure compliance with local laws.

