西安绿天生物技术有限公司
Plamed Green Science Group

MATERIAL SAFETY DATA SHEET

Section 1 Description

Product Name	Ectoin
Manufacturer/Supplier	Plamed Green Science Group
Address	69# Jinye Rd., High-Tech Zone, Xi'an, P. R. China.
Phone Number	+ 86-29-81021258

Section 2 Ingredients/Identity Information

Components	**Other Name**	**CAS Number**	**INCI Name**
Ectoin	Ectoin	96702-03-3	ECTOIN

Section 3 Possible Hazards

- Classification of the substance or mixture:

Not classified.

- GHS label elements, including precautionary statements

Pictogram(s): No symbol

Signal word: No signal word

Hazard statement(s): none

Precautionary statement(s)- Prevention: none

Response: none

Storage: none.

Disposal: none.

- Other hazards which do not result in classification: none.

Section 4 First Aid Measures

- Description of necessary first-aid measures

If inhaled:

Remove to fresh air. Keep airway open. Keep warm and rest. Give oxygen when breathing is difficult. When breathing stops, give artificialrespiration immediately and seek medical attention immediately.

In case of skin contact:

Take off contaminated clothing, im mediately wash with soapy water and water for at least 15 minutes, if large arcas of skin contact with chemicals, wash the body thoroughly with a shower, and call a doctor immediately.

In case of eye contact:

Flush eyes gently with water for at least 15 minutes while holding eyelids apart: seek immediate medical attention.

If swallowed:

The person who takes it by mistake immediately gargles, do not induce vomiting, do not give any food to the unconscious person, please seek medical attention immediately.

Advice for protecting rescuers

Move the patient to a safe location. Consult a physician. Show this Material Safety Data Sheet to the attending physician.

Indication of immediate medical attention and special treatment needed

No data available.

Section 5 Fire-fighting Measures

Extinguishing Media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media Water jet.

Special Hazards arising from the substance or mixture

Carbon oxides, nitrogen oxides (NOx).

Advice for firefighters

Fire fighters should wear self-contained breathing apparatus, wear full body fire clothing and fight the fire upwind.

Use water sprays to cool unopened containers. Move the container away from the fire and into an open space whenever possible.

Isolate the scene of the incident and keep unrelated people away.

Section 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.Avoid contact with skin and eyes.

Cut off the source of the leak whenever possible. Eliminate all sources of ignition.

Establish a warning zone based on the affected area of steam or dust diffusion,and evacuate unrelated personnel from crosswind or upwind to the safety zone.

Environmental precautions

No special environmental protection measures are required.

Methods and materials for containment and cleaning up

Sweep and shovel. Dispose of in a suitable sealed container.

Section 7 Handling and storage

Precautions for safe handling

Operators should be specially trained to strictly follow operating procedures.

Operation disposal should be carried out in places with local ventilation or full ventilation ventilation facilities.

Refer to Section 8 for personal protection measures.

Keep away from fire and heat, and do not smoke in the work place.

Use explosion-proof ventilation systems and equipment.

Avoid contact with forbidden compounds such as oxidants (see Part 10 for forbidden compounds).

Load and unload lightly when handling to prevent damage to packaging and containers.

Wash hands after use. Do not cat or drink in the workplace.

Stay away from food, drink and animal feed.

Conditions for safe storage, including any incompatibilities

Store at room temperature.

Store the container tightly closed in a dry and well-ventilated place.

Storage class (TRGS 510): Non-combustible solid.

Store away from areas with high temperatures, ignition sources, moisture, and media

of opposite nature.

The storage area should be equipped with emergency response equipment for leaks and suitable containment materials.

Section 8 Exposure control /personal protection

Occupational Exposure Limit

NOAEL (No Observed Adverse Effect Level) =1000 mg/kg bw/day

MoE (Margin of Exposure) =83

Monitoring Methods

GBZ/T 160.1 ~GBZ/T 160.81-2004 Determination of toxic substances in the air of workplace (series of standards), EN 14042 Guide for the use of procedures for the assessment of exposure to chemical or biological agents in the air of work place.

General protective measures

Engineering controls: A central exhaust system is required to protect employees working within the safety limits of air transport. A central exhaust sy stem is a primary requirement because it controls the emission of hazards and prevents them from entering the central work area. Control parameters contact limits (no data available).

Personal protective device

Respiratory protection:

If the risk assessment indicates the need for protection against dust hazards, please use an N95 type (US) or P1 type (EN 143) dust mask. If a respirator is the only means of protection, use a full face piece supplied-air respirator. Ensure that the respirator and its components are tested and approved according to government standards such as NIOSH (US) or CEN (EU).

Hand protection:

Handle with gloves. Gloves must be inspected before use. Use appropriate glove removal

techniques (without touching the outer surface of the gloves) to avoid skin contact

with

this product. Dispose of contaminated gloves in accordance with applicable laws and good laboratory practices. Wash and dry hands thoroughly afterwards.

Full contact protection:

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Breakthrough time:480 minutes

Test material: dermatrix® (KCL 740 / Aldrich Z677272, Size M)

Splash contact protection:

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Breakthrough time:480 minutes

Test material: dermatrix® (KCL 740 / Aldrich Z677272, Size M)

Data source:KCL GmbH,D-36124Eichenzell, Test method:EN374.

The protective gloves to be used must comply with the specifications of EC directive 89/686/EEC and the resultant standard EN 374. Please follow the instructions related to the permeability and the penetration time provided by the manufacturer

Eye protection:

Use face shields and safety glasses that have been tested and approved by official standards such as NIOSH (US) or EN 166 (EU) to protect the eyes.

Skin and body protection:

Select personal protective measures based on the type, concentration, and amount of the hazardous substance, as well as the specific workplace. The type of protective equipment must be chosen according to the concentration and quantity of the hazardous substance in the specific workplace.

Hygiene measures:

Wash contaminated clothing before reuse to avoid contact with skin and eyes.

Other protection:

Smoking, eating and drinking are prohibited at the work site. After work, shower and change clothes. Get pre-employment and regular medical checkups.

Control of environmental exposure

No special environmental precautions are required.

Section 9 Physical and chemical properties

Product appearance and properties Color: White powder.

Purity:≥99.00%

Content:≥99.00%

Loss on drying:≤0.50%

pH (2% aqueous solution):5.00-7.00

Density: 1.37 g/cm*

Melting point: Decomposes without melting at ≥270℃

Boiling point:381.5±35.0℃ at 760 mmHg

Flash point: 184.5±25.9℃

Autoignition temperature: No data available

Decomposition temperature: 280° C(536° F)-

Explosive characteristics: Non-explosive

Vapor pressure: 0.0±1.9 mmHg at 25°C

Solubility: Methanol: 20mg/mL, clear, colorless

Water solubility: Water: 250 mg/mL(1758.58 mM)

Refractive index:1.597

Acidity coefficient:3.14±0.20 (Predicted)

n-Octanol/water partition coefficient (log P): 0.27

Viscosity: No data available

Section 10 Stability and reactivity

Reactivity no unusual reactivity

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

High temperature, strong acid and strong alkali environments.

Conditions to avoid: no data available

Incompatibilities material

Strong oxidizers, hydrogen peroxide, nitric acid, hypochlorites.

Hazardous decomposition products

Carbon monoxide, carbon dioxide, nitrogen oxides (NOx).

Section 11 Toxicological information

Acute toxicity

Oral: OECD TG 423, Rats -male and female, Limit test,LD50 >2,000 mg/kg; Low toxicity.

Dermal: OECD TG 402, Rats - male and female, Limit test,LD50 > 2,000 mg/kg;Low toxicity.

Inhalation: No data available.

Skin irritation

Internal skin irritation: OECD TG 404, New Zealand White rabbits, semi-occlusive patch test, observation period of 72 hours, non-irritating.

Note: No signs of irritation were observed throughout the study period.

Eye irritation

Internal eye irritation:OECD TG 405, New Zealand White rabbits, observation period of 72 hours, mildly irritating,

Note: One hour after the application of the test substance, all animals showed transparent, colorless secretions in the conjunctiva and diffuse conjunctival redness. Mild conjunctival swelling was observed in 2/3 of the animals. At the 24-hour observation, only 1/3 of the animals exhibited irritation symptoms (mild conjunctival redness). No signs of irritation were found at the 48-hour observation point.

Based on the available data, the criteria for classification as an eye irritant are not met.

Respiratory or skin sensitization

In vivo skin sensitization:OECD TG 406, Guinea pigs, Skin sensitization-Maximization test, No evidence of sensitization.

Germ cell mutagenicity

Ames Salmonella test, Result: Negative; Non-mutagenic.

Carcinogenicity

There is no classification data on the careinogenicity of this material from EPA, IARC, NTP,OSHA, or ACGIH.

Reproductive toxicity

The Registry of Toxic Effects of Chemical Substances (RTECS) does not contain reproductive data for this substance.

Specific target organ toxicity - single exposure (Globally Harmonized System)

No data available.

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

No data available.

Repeated dose toxicity

OECD TG 407, Rats - male and female, Gavage (28 days), NOAEL=300 mg/kg.

Section 12 Ecological information

Ecotoxicity

Acute toxicity:

Fish: OECD TG 203, Zebrafish, Semi-static method, LC50 > 100 mg/L at 96 hours, harmless to fish.

Aquatic invertebrates: OECD 202, Daphnia magna (water flea), Static test,EC50>100 mg/L at 48 hours, harmless to daphnia.

Algae: OECD 201, Desmodesmus subspicatus (green algae), Static test, EC50 > 100 mg/L at 72 hours, harmless to algae.

Microorganisms: OECD TG 209, Activated sludge respiration inhibition test, 3h, IC50 > 1000 mg/L, no harm to sludge microorganisms.

Chronic toxicity:

No data available.

Persistence and degradability

No data available.

Bioaccumulative potential

No data available.

Migrability in soils

No data available.

PBT and vPvB Assessment Results

PBT/vPvB assessment is not available because a chemical safety assessment is not required/has not been conducted.

Section 13 Disposal consideration

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Dispose in accordance with national/ local regulations.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning.Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials. Dispose in accordance with national / local regulations.

Section 14 Transport Information

UN Number:

ADR/RID: Not dangerous goods

IMDG: Not dangerous goods

IATA: Not dangerous goods

UN Proper Shipping Name:

ADR/RID: unknown

IMDG: unknown

IATA: unknown

Transport hazard class(es):

ADR/RID: No dangerous goods

IMDG: No dangerous goods

IATA: No dangerous goods

Packing group, if applicable:

ADR/RID: No dangerous goods

IMDG: No dangerous goods

IATA: No dangerous goods

Environment hazards:

ADR/RID: no

IMDG: no

IATA: no

Special precautions for user: no data available

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: no data available

Section 15 Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

Authorisations and/or restrictions on use:

Authorisations: Not regulated

Restrictions on use: Not regulated

Other EU regulations:

Information according 1999/13/EC about limitation of emissions of volatile organic compounds (VOC-guideline): Not regulated

National regulations

Law of the People's Republic of China on the Prevention and control

Occupational Diseases

Classification Catalog of Occupational Disease Hazards (2015): Not listed

Regulations on Labor Protection in Workplaces Using Poisonous Substances

Catalog of Highly Toxic Substances: Not listed

Regulations on the Safety Management of Hazardous Chemicals

Catalog of Hazardous Chemicals (2015): Not listed

Catalog of Hazardous Chemicals under Key Supervision

First and Second Batches of Catalog of Hazardous Chemicals under Key Supervision: Not listed

Catalog of Toxic Chemicals Subject to Strict Import and Export Control in China: Not listed

Regulations on the Environmental Management of the First Import of Chemicals and the Import and Export of Toxic Chemicals

Catalog of Toxic Chemicals Subject to Strict Control in China: Not listed

Measures for the Environmental Management of New Chemical Substances

China's Existing Chemical Substances Catalog (including all supplements):Not listed

Safety, Health, Environment, and National Regulations

The product is not subject to any additional regulations or provisions.

SARA 302 Proposal

The product is not subject to the reporting requirements of Section 302 of Title Ill of SARA.

SARA 313 Proposal

The product does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels specified in Section 313 of Title III of SARA.

SARA 311/312 Hazards

No SARA hazards.

California Proposition 65

Not listed on California's list of known or potential carcinogens.

Safety Assessment

No chemical safety assessment available.

Section 16 Other Information

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.

Revision date: Aug. 22, 2025

