



MATERIAL SAFETY DATA SHEET

Date Updated: 2014-10-30

SECTION 1: SUBSTANCE IDENTIFICATION

Name of Substance: Polylactide (Polylactic acid) Resin, polymer
Product Name: ECOPLAN-DURA
CAS #: 178275-24-6

COMPANY INFORMATION

Company name: SK Chemicals Co., Ltd
Address: 686 Sampyeong dong, Bundang-gu, Seongnam-si, Gyeonggi-do 463-400, Korea
Fax: +82-2-2008-2294
Email Address: biz7484@sk.com
Emergency Telephone: +82-2-2008-2008

SECTION 2: HAZARDS IDENTIFICATION

Emergency Overview:

CAUTION! May cause eye/skin irritation. Burning produces obnoxious and toxic fumes. Avoid contact with skin and eyes. Avoid formation of dust and aerosols

Appearance: Opaque, pellets.

Physical state: Solid

Odor: Mild

Eye contact: Contact with eyes may cause irritation.

Skin contact: Substance may cause slight skin irritation.

Ingestion: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

Inhalation

: Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough.

Low hazard for usual industrial or commercial handling.

Target organ effects

: There were no target organ effects noted following ingestion or dermal exposure in animal studies.

Sensitization: Did not cause sensitization on laboratory animals

Specific hazards: No information available

Flammability: Fine dust dispersed in air may ignite.

Environmental precautions: Not determined See Section 12 for more information.

NFPA rating:

Health: 1 Flamm: 1 Reactivity: 0

Special: Not determined

HMIS classification:

Health: 1 Flamm: 1 Reactivity: 0

Personal Protective Equipment: Not determined

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Chemical name and CAS Number: Polylactide resin 178275-24-6

Weight %: >90

OSHA Exposure Limits: None

ACGIH Exposure Limits: None

All ingredients in quantities > 1.0% (0.1% for carcinogens) that are potentially hazardous per OSHA definitions.

Other Standards:

This material can generate Particulates Not Otherwise Classifiable (PNOC). The Occupational Safety and Health Administration (OSHA) PEL/TWA for PNOC is 15 mg/m³ for total dust and 5 mg/m³ for the respirable fraction. The American Conference of Governmental Industrial Hygienists (ACGIH) TLV/TWA for PNOC is 10 mg/m³ for inhalable particulates and 3mg/m³ for respirable particulates.

SECTION 4: FIRST AID MEASURES

After skin contact: Rinse immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician. Cool skin rapidly with cold water after contact with hot polymer.

After eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.

After ingestion: Drink water as a precaution. Never give anything by mouth to an unconscious person. Do not induce vomiting without medical advice. Call a physician immediately.

Indication of immediate medical attention and notes for physician: Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

Flammability:

Autoignition temperature: 388°C

Flammability Limits in Air

Flammable limits in air - lower (%): Not determined

Flammable limits in air - upper (%): Not determined

Suitable extinguishing media: Foam. Water. Carbon dioxide (CO₂). Dry chemical. Alcohol resistant foams are preferred if available. General-purpose synthetic foams (including AFFF) or protein foams may function, but much less effectively.

Extinguishing media which must not be used for safety reasons: No information available

Hazardous decomposition products: Burning produces obnoxious and toxic fumes Aldehydes Carbon monoxide (CO) carbon dioxide (CO₂)

Special protective equipment for firefighters: As in any fire, wear self-contained breathing apparatus pressuredemand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Under fire conditions: Cool containers / tanks with spray water. Water mist may be used to cool closed containers.

Other information: Fine dust dispersed in air may ignite. Risks of ignition followed by flame propagation or secondary explosions shall be prevented by avoiding accumulation of dust, e.g. on floors and ledges.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions:

- Use personal protective equipment. See Section 8.
- Remove all sources of ignition.
- Avoid dust formation.
- Avoid contact with skin and eyes.
- Sweep up to prevent slipping hazard.

Environmental precautions

- Do not flush into surface water or sanitary sewer system.
- Do not allow material to contaminate ground water system.

Methods for cleaning up / removal:

- Shovel into suitable container for disposal.
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SECTION 7: HANDLING AND STORAGE

Handling:

- Avoid contact with skin and eyes.
- Avoid dust formation.
- Workers should be protected from the possibility of contact with molten material during fabrication.
- Low hazard for usual industrial or commercial handling.
- Use personal protective equipment. See Section 8.

Precautions: No special precautions required

Storage:

- Store in cool place. Keep at temperatures below 122F (40 °C).
 - No special restrictions on storage with other products
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SECTION 8: EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures:

Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. Provide appropriate exhaust ventilation at places where dust is formed.

Control parameters: None

PERSONAL PROTECTIVE EQUIPMENT:**Respiratory Protection:**

- Respirator must be worn if exposed to dust.
- Wear respirator with dust filter.
- Respiratory protection is needed if any of the exposure limits in Section 3 are exceeded.
- Consult an industrial hygiene professional prior to respirator selection and use.
- Use a positive-pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where airpurifying respirators may not provide adequate protection.

Eye Protection: Safety glasses with side-shields. Goggles.

Skin Protection: Impervious clothing.

Hand protection: Preventive skin protection.

Hygiene measures: Avoid contact with skin, eyes and clothing.

Exposure limits: See Section 3.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear, translucent, opaque, pellets.
Odor	Mild
Odor threshold	Not available
pH:	Not available
Melting / freezing point:	Not available
Initial boiling point and boiling range:	Not available
Flash point	Not available
Flammability:	Not available
Upper/lower flammability or explosive limits	Not available
Vapor pressure:	Negligible (20 °C)
Vapor density:	Not available
Water solubility:	Insoluble
Solubility in other solvents:	Not available
Density:	1.21 g/cc
Evaporation rate:	Not available
Auto ignition temperature:	388 °C
Decomposition temperature:	482F (250C)
Viscosity:	Not available

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable under recommended storage conditions

Conditions to avoid: Temperatures above 446F (230 °C).

Materials to avoid: Oxidizing agents. Strong bases.

Hazardous decomposition products: Burning produces obnoxious and toxic fumes. Aldehydes. Carbon monoxide (CO). carbon dioxide (CO₂).

Polymerization: Not applicable

SECTION 11: TOXICOLOGICAL INFORMATION

Principle Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.

Acute toxicity: There were no target organ effects noted following ingestion or dermal exposure in animal studies.

Local effects: May cause eye/skin irritation. Product dust may be irritating to eyes, skin and respiratory system. Caused mild to moderate conjunctival irritation in eye irritation studies using rabbits. Caused very mild redness in dermal irritation studies using rabbits (slightly irritating). Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

Long term toxicity: Did not cause skin allergic reactions in skin sensitization studies using guinea pigs.

Specific effects: May cause skin irritation and/or dermatitis. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough. Burning produces irritant fumes.

Mutagenic effects: No data is available on the product itself.

Reproductive toxicity: No data is available on the product itself.

Carcinogenic effects: No data is available on the product itself.

Target organ effects: There were no target organ effects noted following ingestion or dermal exposure in animal studies.

Skin: LD₅₀/dermal/rabbit > 2000 mg/kg

Ingestion: LD₅₀/oral/rat > 5000 mg/kg.

Further information: No information available

SECTION 12: ECOLOGICAL INFORMATION

Mobility: No data available

Bioaccumulation: Does not bioaccumulate. Inherently biodegradable.

Ecotoxicity effects: EC₅₀/72h/algae > 1100 mg/L



SECTION 13: DISPOSAL CONSIDERATIONS

Waste from residues / unused products

: In accordance with local and national regulations. Do not contaminate ponds, waterways or ditches with chemical or used container. Contact manufacturer.

THE COMPANY HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION 3 (Composition/Information On Ingredients).

Contaminated packaging

: Empty remaining contents. Do not re-use empty containers. Empty containers should be transported/delivered using a registered waste carrier to local recyclers for disposal.

SECTION 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT):

Proper shipping name:	None
Hazard class:	Not regulated.
UN-No:	None
Packing group:	None
Hazardous substances (RQ):	None

IMDG:

Proper shipping name:	None
Hazard class:	Not regulated.
UN/Id No.:	None
Packing group:	None

ICAO/IATA:

Proper shipping name:	None
Hazard Class:	Not regulated.
UN-No.:	None
Packing group:	None

SECTION 15: REGULATORY INFORMATION

U.S. REGULATIONS

Sara 313 title III
TSCA Inventory List

STATE REGULATIONS

Proposition 65 listed material

INTERNATIONAL INVENTORIES

Canada DSL Inventory List

EU EINECS List

Japan (ECL)

Korean chemical inventory

Phillipines (PICCS) inventory

China inventory of existing chemical substances list

SECTION 16: OTHER INFORMATION

Recommended restrictions: None