

Material Safety Data Sheet
Beijing Tiertime Technology Co.,Ltd

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Chemical name: 3, 6-dimethyl-1, 4-dione; polymer.

Chemical family: Polyester

Common names: Polylactide, polylactic acid, C02-PLA.

Chemical formula: (C₃H₆O₃)_x.

2. HAZARDS IDENTIFICATION

HEALTH EFFECTS	Prolonged and /or repeated contacts: Risk of skin sensitization When handled at high temperatures, can cause serious burns
POTENTIAL HEALTH EFFECTS	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 diarrhea. 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.
SPECIFIC HAZARDS/EC	No information available.
FLAMMABILITY	Fine dust dispersed in air may ignite.
ENVIRONMENTAL PRECAUTION	Not determined.

3. COMPOSITION/INFORMATION ON INGREDIENTS

POLYLACTIDE RESIN	90%-98% CAS: 9051-89-2
ACRYLATES COPOLYMER	2%-10% CAS: 141-32-2
PROCESSING ADDITIVES	0-1%
IMPURITIES CONTRIBUTING TO HAZARD	

Solubility in water: React very slowly with water to become soluble.

Appearance: Solid filament.

4. FIRST AID MEASURES

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

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.

Inhalation: Move to fresh air. Call a physician immediately.

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.

Notes to physician: Treat symptomatically.

5. FIRE FIGHTING MEASURES

FLAMMABILITY

Auto ignition temperature: 380 °C

FLAMMABILITY LIMITS IN AIR

Flammable limits in air – lower (%): Not applicable.

Flammable limits in air – upper(%): Not applicable.

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.

SPECIFIC HAZARDS

Above 300 °C, possible formation of Styrene, Toluene,

Ketones and Alcohols (small quantities)

Formation of toxic products through combustion: Carbon oxides, Hydrogen bromide

FIRE FIGHTING INSTRUCTIONS

Keep people away, isolate fire area and deny unnecessary entry Cool surroundings with water to localize fire zone

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 ignites followed by flame propagation of secondary explosions shall be prevented by avoiding accumulation of dust, e.g. on floors and ledges.

Unusual Explosion Hazard and Fire: The material will burn if exposed to sufficient heat and an ignition source. Avoid dispersion of dust in the air to reduce dust explosion hazard potential.

Extinguished Media: Water, Carbon dioxide, Dry chemical power, Foam. Special Extinguishing Procedures: Firefighters must wear self-contained breathing apparatus and fully protective equipment. Flammability: Autoignition temperature: 380°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 pressure-demand, 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.

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: Shovel into suitable container for disposal.

7. HANDLING AND STORAGE

Safe handling advice: 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.

Storage: Store in cool place. Keep at temperatures below 122F (50 °C). No special restrictions on storage with other products

Precautions: No special precautions required

8. EXPOSURE CONTROLS / 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:

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

Skin and body protection: Impervious clothing.

Respiratory protection: Respirator must be worn if exposed to dust. Wear respirator with dust filter. 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. **WARNING:** Air purifying respirators do not protect workers in oxygen-deficient atmospheres.

Hand protection: Preventive skin protection.

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: colorful filament.

Physical state: Solid

Odor: None

Odor threshold: No data available

pH: Not applicable

Vapor pressure: Not determined

Vapor density: Not determined

Evaporation rate: No data available

Density: 1.3 g/cc

Decomposition temperature: 482F (250C)

Autoignition temperature: 380°C

Melting point/range: Not determined

Water solubility: Insoluble

Solubility in other solvents: None known

10. STABILITY AND REACTIVITY

Stability: Stable under recommended storage conditions. Combustible gases are released at the temperature over 220°C

Conditions to avoid: Temperatures above 60 °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

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

12. ECOLOGICAL INFORMATION Mobility: No data available

Bioaccumulation: Does not bioaccumulate. Inherently biodegradable.

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

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.

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.

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

15. REGULATORY INFORMATION

Product name: C02 PLA filament

16. OTHER INFORMATION**Label information:** C02 PLA filament**Reason for revision:** Not applicable**Revision date:** 07/05/2014