

Safety Data Sheet

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1.IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING	
Chemical name	3, 6-dimethyl-1, 4-dione; polymer.
Chemical family	Polyester
Common names	Poly lactide, polylactic acid, CO2-PLA.
Chemical formula	(C ₃ H ₆ O ₃) _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. affected skin area and clothing with plenty of (soap and) water. Seek medical advice.
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: >350 °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 air purifying 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	388°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	
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Product name	C02 PLA filament
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16. OTHER INFORMATION	
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Label information	C02 PLA filament
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Reason for revision	Not applicable
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Revision date	01/01/2019
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