

# PLA Material Safety Data Sheet

## 1. PRODUCT AND COMPANY IDENTIFICATION

### MakerGeeks Manufacturing, Inc.

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**Chemical name:** Polylactic acid **Common names:** Polylactic acid, PLA.

**Chemical formula:** (C<sub>3</sub>H<sub>4</sub>O<sub>2</sub>)<sub>n</sub>

## 2. COMPOSITION

Chemical Name	Weight	OSHA Exposure Limits:	ACGIH Exposure Limits:
Polylactic acid (PLA)	>90%	None	None
N,N Ethylene bis stearamide	<5%	None	None
Typical Antioxidant	<5%	None	None
Typical Pigment	<5%	None	None

## 3. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Clear, translucent, opaque, pellets **Color:** Clear, translucent, opaque

**Density:** 1.24g/cc

**Physical state:** Solid

**Odor:** Sweet

**pH:** Not applicable

**Vapor pressure:** Not determined **Vapor density:** Not determined

**Evaporation rate:** Not determined **Boiling point/range:** Not applicable  
**Decomposition temperature:** 250c

**Melting point/range:** Not determined **Water solubility:** Insoluble  
**Solubility in other solvents:** None known

#### 4. HAZARDS IDENTIFICATION

**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.

Considered a low hazard under normal 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.

#### 5. 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.

#### 6. FIRE FIGHTING MEASURES

**Suitable extinguishing media:** Foam, Water, Carbon dioxide (CO<sub>2</sub>), 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 (CO<sub>2</sub>).

**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. ....

## 7. ACCIDENTAL RELEASE MEASURES

**Personal precautions:** Use personal protective equipment. See Section 9. 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.

## 8. 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. Considered low hazard under normal industrial or commercial handling. Use personal protective equipment.

**Storage:** Store in cool place. Keep at temperatures below 60 °C. No special restrictions on storage with other products.

## 9. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering measures:** Where possible, use exhaust ventilation and good general extraction. Provide appropriate exhaust ventilation at places where dust is formed.

**Control parameters:** None

**Eyeprotection:** safety glasses with side-shields, goggles.

**Skin and body protection:** Impervious clothing.

## 10. STABILITY AND REACTIVITY

**Stability:** Stable under recommended storage conditions

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

**Materials to avoid:** Oxidizing agents. Strong bases.

**Hazardous decomposition products:** Burning produces obnoxious and toxic fumes - aldehydes, carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>).

## 11. TOXICOLOGICAL INFORMATION

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

**Carcinogenic effects:** No data is available on the product itself. **Mutagenic effects:** Not mutagenic in AMES Test.

## 12. ECOLOGICAL INFORMATION

**Shipping Containers:** Samples bottles. Moisture proof laminated pouches.

**Proper Shipping name:** Not regulated or regarded as hazardous by DOT or IMO.

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## 13. DISPOSAL CONSIDERATIONS

**Waste from residues / unused products:** In accordance with local and national regulations.

## 14. TRANSPORTING REGULATIONS

Not regulated.