



# PLA Material Safety Data Sheet

## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

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**PRODUCT NAME:** PLA 3D Printing Filament

**PRODUCT IDENTIFICATION:** PLA x/y (x denotes diameter, y denotes color)

**SYNONYMS:** PLA, Co-Polyester, Polylactic Acid, Polylactide

**MANUFACTURED / IMPORTED BY:** TAW Global, LLC

**DIVISION:** Quantum3D

**ADDRESS:** 8135 Cox's Dr Suite 208, Portage, MI 49002

**SOLD BY:** New Valence Robotics Corporation

**ADDRESS:** 12 Channel St Suite 601, Boston, MA 02210

**PHONE:** 857-529-6397

**WEBSITE:** <https://nvbots.com/>

**CHEMTREC PHONE:** 800-424-9300

**CHEMICAL NAME:** Polylactic Acid

**CHEMICAL FAMILY:** Polyester

**CHEMICAL FORMULA:** (C<sub>3</sub>H<sub>4</sub>O<sub>2</sub>)<sub>n</sub>

**PRODUCT USE:** Used for generating models using a 3D printer

**PREPARED BY:** Arjun Chandar, Director of Operations, New Valence Robotics Corporation

## SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

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INGREDIENT AND CAS NO.	% WEIGHT	OSHA EXPOSURE LIMITS	ACGIH EXPOSURE LIMITS
Polylactic Acid (26100-51-6)	>90%	None	None
N.N Ethylene bistearamide (110-30-5)	<5%	None	None
Typical Antioxidant	<5%	None	None
Typical Pigment	<5%	None	None



### SECTION 3: HAZARDS IDENTIFICATION

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HAZARD STATEMENT: NONE  
PRECAUTIONARY STATEMENT: NONE  
SIGNAL WORD: NONE  
PICTOGRAM: NONE

#### POTENTIAL HEALTH EFFECTS

**EYES:** Solid or dust may cause irritation or corneal injury due to mechanical action

**SKIN:** May cause slight skin irritation, but essentially nonirritating except for mechanical injury

**INGESTION:** Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

**INHALATION:** Inhalation of dust may cause shortness of breath, a sore throat and cough. Considered a low hazard under normal industrial or commercial handling.

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### SECTION 4: FIRST AID MEASURES

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

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

**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.

**INHALATION:** Move to fresh air. Call a physician immediately.

**NOTES TO PHYSICIANS OR FIRST AID PROVIDERS:** Treat symptomatically.

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## SECTION 5: FIRE-FIGHTING MEASURES

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### FLAMMABLE LIMITS IN AIR

UPPER: N/A

LOWER: N/A

### AUTOIGNITION TEMPERATURE:

F: 730

C: 388

### NFPA HAZARD CLASSIFICATION

HEALTH: 0

FLAMMABILITY: 1

REACTIVITY: 0

OTHER:

**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.

**SPECIAL FIRE FIGHTING PROCEDURES:** As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** None.

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## SECTION 6: ACCIDENTAL RELEASE MEASURES

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**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.

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## SECTION 7: HANDLING AND STORAGE

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**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.

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## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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

**EXPOSURE LIMITS:** None established. This material can generate Particulates Not Otherwise Classifiable (PNOC). The Occupational Safety and Health Administration (OSHA) PEL/TWA for PNOC is 15 mg/m<sup>3</sup> for total dust and 5 mg/m<sup>3</sup> for the respirable fraction. The American Conference of Governmental Industrial Hygienists (ACGIH) TLV/TWA for PNOC is 10 mg/m<sup>3</sup> for inhalable particulates and 3 mg/m<sup>3</sup> for respirable particulates.

**CONTROL PARAMETERS:** None

**EYE PROTECTION:** Safety glasses with side-shields, goggles.

**SKIN AND BODY PROTECTION:** Impervious clothing.

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## **SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

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**APPEARANCE:** Clear, translucent, opaque

**ODOR:** Sweet

**PHYSICAL STATE:** Solid

**pH AS SUPPLIED:** N/A

**BOILING POINT:** N/A

**MELTING POINT:**

F: 302 to 320

C: 150 to 160

**GLASS TRANSITION TEMPERATURE:**

F: 131 to 140

C: 55 to 60

**DECOMPOSITION TEMPERATURE:**

F: 446

C: 230

**VAPOR PRESSURE (mmHg):** Not determined

**VAPOR DENSITY (AIR = 1):** Not determined

**SPECIFIC GRAVITY (H<sub>2</sub>O = 1):** 1.25 g/cc

**EVAPORATION RATE:** Not determined

**WATER SOLUBILITY:** Insoluble

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#### **SECTION 10: STABILITY AND REACTIVITY**

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**STABILITY:** Stable under recommended storage conditions.

**REACTIVITY:** None expected under conditions of normal use.

**CONDITIONS TO AVOID:** Temperatures above 446F (230 °C). Avoid keeping resin molten for excessive periods of time at elevated temperatures. Prolonged exposure will cause polymer degradation.

**MATERIALS TO AVOID:** Oxidizing agents, strong bases.

**HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:** Burning produces obnoxious and toxic fumes - aldehydes, carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>).

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#### **SECTION 11: TOXICOLOGICAL INFORMATION**

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**PRINCIPLE ROUTES OF EXPOSURE:** Eye contact, Skin contact, Inhalation, Ingestion.

**ACUTE TOXICITY:** None noted during use.

**LOCAL EFFECTS:** Product dust may be irritating to eyes, skin and respiratory system. Particles, like other inert materials, are mechanically irritating to eyes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

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

**CHRONIC TOXICITY:** None noted during use.

**REPRODUCTIVE TOXICITY:** No data is available on the product itself.

**CARCINOGENIC EFFECTS:** None of the components of this product are listed as carcinogens by IARC, NTP, or OSHA.

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**SECTION 12: ECOLOGICAL INFORMATION**

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**SHIPPING CONTAINERS:** Cardboard boxes containing sealed plastic pouches with filament spools. Desiccant included in sealed pouches.

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**SECTION 13: DISPOSAL CONSIDERATIONS**

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**WASTE DISPOSAL METHOD:** In accordance with local and national regulations.

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**SECTION 14: TRANSPORT INFORMATION**

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D.O.T.: Not regulated as hazardous.

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