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PLA Powder - Grade 4032D

Polylactic Acid / Polylactide (PLA) - Unfilled Powder Form

SECTION 1: Identification

Product name	PLA Powder - Grade 4032D
Chemical name	Polylactic Acid / Polylactide (PLA)
CAS No.	9051-89-2
Product form	Fine solid powder; no intentionally added fillers, pigments, or modifiers declared for this product form
Recommended use	Industrial polymer processing, compounding, coating, laboratory and materials research
Brand / Distributor	PolymerVerse
Emergency information	Use local emergency medical / fire services and applicable poison-control resources

SECTION 2: Hazards Identification

GHS classification: Not classified as hazardous under the current OSHA Hazard Communication / WHMIS criteria for the base 4032D PLA resin.

Signal word	None
Hazard statements	None required by classification
Pictograms	None required

- Powder-specific hazard: Fine PLA powder can form combustible dust concentrations in air. Avoid dust clouds, ignition sources, static discharge, and dust accumulation.
- Molten polymer can cause severe thermal burns. Thermal decomposition or burning may release irritating fumes.

SECTION 3: Composition / Information on Ingredients

Component	CAS No.	Concentration
Poly lactide (PLA)	9051-89-2	>98 wt%
Intentionally added fillers / pigments / modifiers	-	None declared for this powder product

Note: The 4032D base-resin SDS identifies polylactide at >98 wt%. "Pure PLA powder" here means an unfilled/unpigmented powder form; it should not be interpreted as a certified 100.00 wt% assay.

SECTION 4: First-Aid Measures

Exposure route	First aid
Inhalation	Move to fresh air. Seek medical attention if symptoms persist.
Skin contact	Wash with water. If molten polymer contacts skin, cool rapidly with cold water and do not forcibly remove solidified polymer; obtain medical attention.
Eye contact	Rinse immediately with plenty of water, including under eyelids, for at least 15 minutes. Seek medical attention if irritation persists.
Ingestion	Rinse mouth and drink water if conscious. Do not induce vomiting unless medically directed. Seek medical advice if unwell.

SECTION 5: Fire-Fighting Measures

Suitable extinguishing media: Foam, water spray, carbon dioxide (CO₂), or dry chemical.

Autoignition temperature: approximately 388 °C (730 °F).

Combustible dust: Fine powder dispersed in air may ignite. Avoid dust accumulation and dispersal; use suitable grounding/bonding and explosion-control practices where required.

Hazardous combustion products may include aldehydes, carbon monoxide (CO), and carbon dioxide (CO₂). Firefighters should use self-contained breathing apparatus and appropriate protective equipment.

SECTION 6: Accidental Release Measures

Eliminate ignition sources. Avoid generating airborne dust. Use appropriate PPE and adequate ventilation.

Vacuum with suitably rated equipment or carefully sweep into a closed container. Do not use compressed air to disperse accumulated dust.

Prevent release to drains, surface water, or the environment.

SECTION 7: Handling and Storage

Handle with adequate ventilation and minimize dust generation. Prevent electrostatic discharge and keep away from ignition sources when powder is airborne.

Store cool and dry in tightly closed packaging. Keep storage temperature at or below 50 °C (122 °F). Protect from moisture and contamination.

Avoid prolonged molten residence above 230 °C because polymer degradation can occur.



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SECTION 8: Exposure Controls / Personal Protection

No product-specific occupational exposure limit is established. For nuisance/particulate dust, follow applicable local limits. Reference values used for PNOG include OSHA PEL/TWA 15 mg/m³ total dust and 5 mg/m³ respirable fraction; ACGIH reference values commonly used are 10 mg/m³ inhalable and 3 mg/m³ respirable particulate.

Control	Recommendation
Engineering controls	Local exhaust / general ventilation at locations where powder dust may be generated.
Eye protection	Safety glasses with side shields or goggles.
Hand / skin protection	Protective gloves and work clothing appropriate for the task; heat-resistant gloves for molten polymer.
Respiratory protection	Use an approved particulate respirator if dust exposure cannot be adequately controlled.
Hygiene	Wash hands after handling; avoid eating, drinking, or smoking in work areas.

SECTION 9: Physical and Chemical Properties

Property	Value
Physical state / form	Solid powder
Color	Natural / white to off-white; may vary with particle size and lot
Odor	Slight / sweet
Density / specific gravity	Approx. 1.24-1.25 g/cm ³
Melting range	Approx. 150-180 °C
Glass transition temperature	Approx. 55-60 °C
Decomposition temperature	Approx. 250 °C
Autoignition temperature	Approx. 388 °C
Water solubility	Insoluble
Flammability	Fine dust dispersed in air may ignite

SECTION 10: Stability and Reactivity

Stable under recommended storage and handling conditions.

Conditions to avoid: temperatures above 230 °C for extended periods, ignition sources, electrostatic discharge, and airborne dust clouds.

Incompatible materials: strong oxidizing agents and strong bases.

Hazardous decomposition products from burning or severe overheating may include aldehydes, CO, and CO₂.

SECTION 11: Toxicological Information

Based on available data for the 4032D base resin, classification criteria for acute toxicity are not met.

Reported reference values for polylactide include oral LD₅₀ (rat) >5000 mg/kg and dermal LD₅₀ (rabbit) >2000 mg/kg.

Powder dust may cause mechanical irritation to eyes, skin, and respiratory tract. Inhalation of excessive dust may cause coughing, throat irritation, or chest discomfort.

The product is not identified as containing carcinogens listed by OSHA, IARC, or NTP in the reference 4032D SDS.

SECTION 12: Ecological Information

Ecotoxicity reference: EC₅₀ / 72 h / algae >1100 mg/L for polylactide.

Poly(lactide) is inherently biodegradable under industrial composting conditions and is not expected to bioaccumulate significantly.

Avoid uncontrolled release to the environment.

SECTION 13: Disposal Considerations

Dispose of product and contaminated packaging in accordance with applicable local and national regulations. Minimize waste and consider recycling or recovery where technically feasible.

Do not discharge powder into drains or surface waters.

SECTION 14: Transport Information

Mode	Status
DOT (US)	Not regulated as dangerous goods
IMDG	Not regulated as dangerous goods
ICAO / IATA	Not regulated as dangerous goods



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UN Number / Packing Group	Not applicable
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SECTION 15: Regulatory Information

Inventory / Regulation	Reference status for 4032D PLA resin
US TSCA	Active listed
SARA Title III	Not listed
California Proposition 65	Not listed
Canada DSL	Listed
EU REACH / EINECS	Compliance with applicable technical requirements
Japan ENCS	Listed
Australia AICIS	Listed
Korea inventory	Listed
China IECSC	Listed
Taiwan TCSI	Listed

Regulatory requirements vary by jurisdiction and intended use. The user is responsible for determining applicability of local regulations.

SECTION 16: Other Information

Revision date

Oct. 21, 2026

Product / grade

PLA Powder - 4032D

Document basis

Current public safety information for 4032D polylactide resin, adapted for the supplied powder form

This SDS is intended as guidance for safe handling, processing, storage, transportation, and disposal. It is not a product specification or warranty. Powder handling can create greater airborne-dust exposure and combustible-dust potential than the original pellet form; users should perform their own process-specific risk assessment.

4032D is a commercial PLA resin grade. The safety information in this document follows the current manufacturer SDS for the base resin and adds powder-form handling precautions without changing the underlying chemical classification.