SAFETY DATA SHEET

In accordance with Safe Work Australia GHS requirements

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier

Product Name	VEXA PLA+ Hyper
Chemical Name	Polylactic Acid (PLA) with additives
CAS Number	26100-51-6 (PLA)
Product Use	3D printing filament for FDM/FFF printers

1.2 Relevant Identified Uses and Uses Advised Against

Identified Uses: Thermoplastic material for additive manufacturing (3D printing) via Fused Deposition Modeling (FDM).

Uses Advised Against: Not for food contact applications. Not for medical implantation. Not for use in applications requiring compliance with specific regulatory standards unless tested and certified.

1.3 Details of the Supplier

Company Name: 3Docity

Address: 3/29 Bailey Crescent, Southport QLD 4215, Australia

Website: www.3docity.com.au

1.4 Emergency Telephone Number

Poisons Information Centre (Australia): 13 11 26 (24 hours)

Emergency Services: 000

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the Substance or Mixture

GHS Classification: Not classified as hazardous according to Safe Work Australia criteria.

2.2 Label Elements

Signal Word: None

Hazard Statements: None

Precautionary Statements: None required

Pictograms: None

2.3 Other Hazards

When heated above melting temperature (156°C), this material may release irritating fumes containing decomposition products.

Dust generated from cutting, sanding, or grinding printed parts may cause mechanical irritation to eyes and respiratory system.

Prolonged exposure to UV light may cause yellowing/discolouration but does not significantly affect safety properties.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Number	Concentration %	Classification
Polylactic Acid (PLA)	26100-51-6	>95	Not classified
Additives (pigments, modifiers)	Proprietary	<5	Not classified

SECTION 4: FIRST AID MEASURES

4.1 Description of First Aid Measures

Inhalation: Remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Seek medical attention if symptoms persist.

Skin Contact: Wash with soap and water. Remove contaminated clothing. If irritation develops or persists, seek medical attention.

Eye Contact: Flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Remove contact lenses if present and easy to do. Seek medical attention if irritation persists.

Ingestion: Rinse mouth with water. Do not induce vomiting. Seek medical attention if large quantities are swallowed or if symptoms develop.

4.2 Most Important Symptoms and Effects

Acute: Potential for mechanical irritation from dust. Fumes from heated material may cause respiratory irritation.

Delayed: No known delayed effects under normal use conditions.

4.3 Indication of Immediate Medical Attention

Treat symptomatically. No specific antidote required. This material exhibits extremely low toxicity.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing Media

Suitable: Water fog, dry chemical, foam, carbon dioxide (CO_2).

Unsuitable: None known.

5.2 Special Hazards Arising from the Substance

Combustion may produce carbon monoxide, carbon dioxide, and other toxic fumes. Burning material may produce acrid smoke.

5.3 Advice for Firefighters

Wear self-contained breathing apparatus (SCBA) and full protective clothing. Fight fire from upwind position. Move containers from fire area if safe to do so. Cool containers with water spray.

Flammability Classification (UL 94): HB (Horizontal Burn)

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

Avoid creating dust. Ensure adequate ventilation. Use appropriate personal protective equipment (PPE) as specified in Section 8.

6.2 Environmental Precautions

Prevent entry into waterways, sewers, or confined spaces. This material is biodegradable but should not be deliberately released into the environment in large quantities.

6.3 Methods and Materials for Containment and Cleaning Up

Sweep up or vacuum spilled material and place in appropriate container for disposal. Avoid creating dust. Clean spill area with water if necessary.

Waste Disposal: Dispose of in accordance with local regulations. Material may be suitable for industrial composting facilities. See Section 13 for more information.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for Safe Handling

Avoid breathing dust or fumes from heated material. Use in well-ventilated areas. Avoid prolonged or repeated skin contact. Maintain good housekeeping practices to minimize dust accumulation.

When processing above melting temperature (156°C), ensure adequate ventilation to prevent accumulation of decomposition fumes.

7.2 Conditions for Safe Storage

Store in a cool, dry, well-ventilated area away from direct sunlight and heat sources. Keep containers sealed when not in use to prevent moisture absorption.

Storage Temperature: Room temperature (15-30°C)

Incompatibilities: Strong oxidizing agents, strong acids, strong bases, ketones.

Note: *Prolonged exposure to UV light may cause yellowing. For optimal print quality, store with desiccant in sealed containers.*

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters

Occupational Exposure Limits: No specific exposure limits established for this product. For nuisance dust, refer to Safe Work Australia workplace exposure standards for particulates not otherwise classified (PNOC): 10 mg/m³ (inhalable), 3 mg/m³ (respirable).

8.2 Exposure Controls

Engineering Controls:

• Provide adequate general and local exhaust ventilation

• Use local exhaust ventilation when processing above melting temperature

• Maintain clean work environment to prevent dust accumulation

Personal Protective Equipment (PPE):

Respiratory Protection: Not normally required under typical use conditions. If dust is generated (cutting, sanding, grinding), use approved dust respirator (P2/N95 minimum). When processing heated material with inadequate ventilation, use organic vapour respirator.

Eye Protection: Safety glasses with side shields recommended when handling solid material. Wear safety goggles when dust may be generated or when handling heated material.

Hand Protection: Protective gloves recommended when handling heated material. Heat-resistant gloves required when handling material above 60°C.

Skin Protection: Long sleeves and long trousers recommended to minimize skin contact.

Hygiene Measures: Wash hands thoroughly after handling. Do not eat, drink, or smoke when using this product. Remove and wash contaminated clothing before reuse.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Property	Value
Appearance	Solid filament, various colours
Odour	Slight sweet odour when heated
pH	Not applicable (solid)
Melting Point	156°C
Glass Transition Temperature (Tg)	60°C
Decomposition Temperature	≥374°C
Flash Point	Not applicable (does not support flame)
Flammability	Class HB (Horizontal Burn) per UL 94
Vapour Pressure	Not applicable (solid)
Relative Density (23°C)	1.28 g/cm³
Solubility in Water	Insoluble
Partition Coefficient (n-octanol/water)	Not determined
Auto-ignition Temperature	Not determined
Viscosity	Not applicable (solid)
Explosive Properties	Not explosive. Dust clouds may be combustible.
Oxidizing Properties	Not oxidizing

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Not reactive under normal conditions of use and storage.

10.2 Chemical Stability

Stable under normal conditions of use and storage. May degrade when exposed to prolonged heat above decomposition temperature or UV radiation.

10.3 Possibility of Hazardous Reactions

None under normal conditions. Hazardous polymerization will not occur.

10.4 Conditions to Avoid

Excessive heat, open flames, sparks, and other ignition sources. Prolonged exposure to temperatures above 200°C. Prolonged UV exposure.

10.5 Incompatible Materials

Strong oxidizing agents, strong acids (pH <3), strong bases (pH >10), ketones (e.g., acetone).

10.6 Hazardous Decomposition Products

Under normal use conditions, no hazardous decomposition products are expected. Thermal decomposition (>374°C) or combustion may produce carbon monoxide, carbon dioxide, and other toxic organic compounds.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological Effects

Acute Toxicity:

Oral: Not classified. PLA has extremely low toxicity.

Dermal: Not classified. Non-irritating to skin.

Inhalation: Not classified under normal use. Fumes from heated material may cause temporary respiratory irritation.

Skin Corrosion/Irritation: Not classified. Not expected to cause irritation.

Serious Eye Damage/Irritation: Not classified. May cause temporary mechanical irritation from dust.

Respiratory Sensitization: Not classified. No evidence of respiratory sensitization.

Skin Sensitization: Not classified. No evidence of skin sensitization.

Germ Cell Mutagenicity: Not classified. No evidence of mutagenic effects.

Carcinogenicity: Not classified. PLA is not listed as a carcinogen by IARC, NTP, or OSHA.

Reproductive Toxicity: Not classified. No evidence of reproductive toxicity.

STOT - Single Exposure: Not classified.

STOT - Repeated Exposure: Not classified.

Aspiration Hazard: Not classified (solid material).

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

PLA has low aquatic toxicity. Specific aquatic toxicity data for this product is not available.

12.2 Persistence and Degradability

PLA is biodegradable under industrial composting conditions (58°C, high humidity, microbial activity). Degradation in natural environments is slow. Material will persist in marine environments.

12.3 Bioaccumulative Potential

Not expected to bioaccumulate. PLA is a biopolymer derived from renewable resources.

12.4 Mobility in Soil

As a solid material, mobility is limited. Not expected to leach into groundwater.

12.5 Results of PBT and vPvB Assessment

This product does not meet the criteria for PBT (Persistent, Bioaccumulative, and Toxic) or vPvB (very Persistent and very Bioaccumulative).

12.6 Other Adverse Effects

No additional adverse environmental effects identified. Do not deliberately release large quantities into the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods

Product: Dispose of in accordance with local, state, and federal regulations. Material may be suitable for industrial composting facilities that accept PLA. Can be incinerated in approved facilities with energy recovery. Landfill disposal is acceptable where permitted.

Contaminated Packaging: Dispose of as product. Empty containers may be recycled where facilities exist.

Note: *Do not dispose of via household recycling streams. PLA is not compatible with PET recycling processes.*

SECTION 14: TRANSPORT INFORMATION

UN Number: Not regulated

UN Proper Shipping Name: Not applicable

Transport Hazard Class: Not applicable

Packing Group: Not applicable

Environmental Hazards: Not classified as environmentally hazardous

Special Precautions for User: None. Not subject to dangerous goods regulations.

This product is not classified as dangerous goods for transport by road, rail, sea, or air under ADG Code (Australia), IMDG (sea), or IATA (air) regulations.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, Health and Environmental Regulations

Australian Inventory of Chemical Substances (AICS): All components are listed or exempt.

Poisons Standard (SUSMP): Not scheduled.

Work Health and Safety (WHS) Regulations: Not classified as hazardous according to Safe Work Australia criteria.

Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code): Not classified as dangerous goods.

SECTION 16: OTHER INFORMATION

Abbreviations and Acronyms

AICS: Australian Inventory of Chemical Substances
CAS: Chemical Abstracts Service
FDM: Fused Deposition Modeling
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
IARC: International Agency for Research on Cancer
NTP: National Toxicology Program (USA)
OSHA: Occupational Safety and Health Administration (USA)
PBT: Persistent, Bioaccumulative, and Toxic
PLA: Polylactic Acid
PNOC: Particulates Not Otherwise Classified
PPE: Personal Protective Equipment
SCBA: Self-Contained Breathing Apparatus
SDS: Safety Data Sheet
STOT: Specific Target Organ Toxicity
SUSMP: Standard for the Uniform Scheduling of Medicines and Poisons
vPvB: very Persistent and very Bioaccumulative
WHS: Work Health and Safety

References

• Safe Work Australia - Hazardous Chemical Information System (HCIS)
• Safe Work Australia - Workplace Exposure Standards
• Safe Work Australia - Model Code of Practice: Managing Risks of Hazardous Chemicals
• Supplier technical data sheets

Revision Information

SDS Version: 1.0

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Revision Date: Not applicable (initial version)

Changes from Previous Version: Initial release

Disclaimer

The information contained in this Safety Data Sheet is based on data from sources considered technically reliable and has been provided in good faith in accordance with the

current state of knowledge. It is provided for guidance only. The conditions or methods of handling, storage, use, and disposal of the product are beyond our control and may be beyond our knowledge. For these reasons, we do not assume responsibility and expressly disclaim liability for loss, damage, or expense arising out of or in any way connected with the handling, storage, use, or disposal of this product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.

End of Safety Data Sheet

VEXA - Premium 3D Printing Materials

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