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## MATERIAL SAFETY DATA SHEET (SDS)

Issued on: May. 01, 2015

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### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name: PLA Filament (Color & Transparent) for 3D Printer  
(Color: Black, White, Blue, Red, Green, Orange, Yellow,  
Silver/MetalGrey & Transparent)

Grade: Verbatim

Company name: Mitsubishi Kagaku Media Co., LTD.

Address: Daini Ryumeikan Bldg. 8F 3-20, Kandaogawmachi,  
Chiyoda-ku, Tokyo 101-0052, Japan

Department: Archive Business Development Department

Telephone: +81-3-5577-3095

Fax: +81-3-3295-0680

Reference number: 3DF-150422-01E

Recommended use and restriction on use: 3D Printer Filament for Material Extrusion type

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### 2. HAZARDS IDENTIFICATION

GHS Classification:

Physical hazards:

Classification not applicable

Health hazards:

Classification not applicable

Environmental hazards

Classification not applicable

GHS Label elements:

Pictogram or symbol:

Not applicable.

Signal word:

Not applicable.

Hazard statement:

No relevant information.

Precautionary statement:

Safety measures:

Do not breathe dust/fume/gas/mist.

Response:

Get medical attention/advice if you feel unwell.

Storage:

Keep away from fire.

Store indoors at ambient temperature.

Disposal:

Do not dump into sewers, on the ground or into any  
body of water.

Burn in an adequate incinerator or bury in landfill in  
accordance with applicable local, state, and federal  
regulations.

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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical substance/mixture: A mixture  
 Chemical name or generic name: Polylactide resin  
 Chemical properties (chemical formula, etc): No relevant information.

#### Contents:

No.	Content	CAS number	Chemical formula	Content (%)
1	Polylactide Resin (PLA)	9051-89-2	$H[(-OCH(CH_3)CO-)]_nOH$	More than 96%
2	Additive & Pigment	Not disclosed	Not disclosed	Less than 4%

No.	ENCS; Japanese Existing and New Chemical Substances	ISHL; Industrial Safety and Health Law Number
1	(7)-2537	-

Health hazards elements: White filament is contained titanium oxide (CAS# 13463-67-7) less than 1%, which may be carcinogenicity. (IARC: Group2B)

Poisonous and Deleterious substances Control Law: Not applicable

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### 4. FIRST AID MEASURES

If inhaled: If you feel unwell by inhalation of vapor or gas, move to fresh air and keep at rest in a position comfortable for breathing. Call a doctor if you feel unwell.

If on skin: In case of contact with melted material, fully cool down by pouring plenty of water over the clothing. Then take off clothing, cover with clean gauze and get medical attention immediately.  
 Get medical attention if appearance changes, irritating pain occurs or feeling unwell.

If in eyes: Immediately rinse the eye with plenty of clean running water for at least 15 minutes. Remove contact lenses, if present and easy to do. Rinse thoroughly the inner side of the eye lid.  
 Get medical attention as soon as possible.

If swallowed: If swallowed by accident, keep at rest and get medical attention immediately.  
 Avoid vomit entering into respiratory tract.  
 Do not induce vomiting unless instructed by a doctor.

Protection of the person who gives the first aid:  
 Wear appropriate protective equipment (protective glasses, protective mask, gloves, etc.).  
 Install ventilation.

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## 5. FIRE-FIGHTING MEASURES

- Suitable extinguisher media: All types of fire extinguisher include water.
- Specific fire fighting method, protection for fire-fighter:
- Fight fire responding to the fire in vicinity.
  - Wear appropriate protective equipment (heat-proof clothing, etc.).
  - Remove flammable substances from surroundings immediately.
  - Fight fire from windward.
  - Restrict the area around fire to unauthorized personnel and prevent secondary disaster.
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## 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures:
- Wear appropriate protective equipment (gloves, protective mask, apron, goggles, etc.).
  - Collect the residual of filament on the floor frequently because those make the floor slippery.
- Environmental precautions: Care should be taken to avoid environmental impacts caused by release to rivers, etc.
- Methods, materials for containment and cleaning up:
- Treat the contaminated materials and wastes in accordance with the relevant laws and regulations.
  - If released, sweep and collect in an empty container.
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## 7. HANDLING AND STORAGE

- Handling:
- Handle in a well-ventilated area.
  - Install local exhaust at 3D printers area is recommended when many printers are operated at once.
  - Keep away from fire (ignition source) and store at ambient temperature.
- Storage:
- Protect from water, moisture and direct sunlight and store indoors at ambient temperature and well-ventilated.
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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- Protective equipment:
- Respiratory protection: Wear appropriate protective equipment to avoid inhalation or contact of gas generated from high temperature molten resin.
- Hand protection: Wear the protective gloves.  
It is preferable to wear cotton work gloves or leather gloves when handling the melted resin.
- Eye protection: Wear protective glasses when handling.
- Skin and body protection: Wear clothing to avoid direct exposure of skin to molten resin, when handling.
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## 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance Physical state: Solid (Filament Shape)
- Melting point/freezing point: 150 to 180 °C (start melting)
- Auto ignition point (ignition point): 388 °C
- Combustibility: If there are ignition source, it lights off.
- Specific gravity (relative density): 1.15 to 1.35 g/cm<sup>3</sup>
- Solubility in water: Insoluble

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**10. STABILITY AND REACTIVITY**

Stability (possibility of hazardous reactions):

Largely stable under normal storing/handling conditions.  
There is a biodegradability or a bit unstable against heat,  
light & humidity then gradually colored and decomposed.  
There is a hydrolysis.  
When it decomposes, carbon hydride, aldehyde, other  
hazardous gases can be generated.

Self-reactivity:

none

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**11. TOXICOLOGICAL INFORMATION**

Germ cell mutagenicity:

AMES Test Negative

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**12. ECOLOGICAL INFORMATION**

Ecotoxicity effects:

EC50/72h/algae &gt; 1100 mg/L

Persistence and Decomposition:

There are a biodegradability and a hydrolysis,  
so decomposed under the environment.

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**13. DISPOSAL CONSIDERATIONS**

Do not dump into sewers, on the ground or into any body of water. Burn in an adequate incinerator or bury in landfill in accordance with applicable local, state, and federal regulations.

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**14. TRANSPORT INFORMATION**

Follow the instructions in "HANDLING AND STORAGE".

International regulation:

UN classification: Not applicable to the dangerous goods under UN classification.

Land transport:

Follow all regulations in your country.

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**15. REGULATORY INFORMATION**

Follow all regulations in your country.

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**16. OTHER INFORMATION**

Company name:

Mitsubishi Kagaku Media Co., LTD

Others:

The descriptions herein are based on the currently available sources and information but no guarantee is given for the integrity or accuracy regarding the given data and evaluation. The precautions herein are for normal handling. If you use this product under the special conditions, take new safety measures appropriate for the use and usage.