MATERIAL SAFETY DATA SHEET (SDS)

Issued on: April 19, 2016

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION Product name: **BG-4800 (PLA Compound Resin)**

Company name: Top Leaf Chemical Korea Co. Ltd.

Address: 74 Makgol-Gil, Hojeo-Myeon Wonju City, Gangwon-Do, Korea

Telephone: +82-33-732-9157

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Reference number: 3DF-190416-01

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

1. 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.

1. 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 | Polylactic Acid Resin (PLA) | 9051-89-2 | H[(- OCH(CH3))CO-]nOH | More than 95% |
| 2 | Impact Modifier | Not disclosed | Not disclosed | Less than 5% |

Poisonous and Deleterious substances Control Law: Not applicable

1. 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.

1. FIRE-FIGHTING MEASURES

Suitable extinguisher media: All types of fire extinguisher

 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.

1. 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:

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.

1. HANDLING AND STORAGE Handling:

Storage:

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.

Protect from water, moisture and direct sunlight and store indoors at ambient temperature and well-ventilated.

1. EXPOSURE CONTROLS/PERSONAL PROTECTION Protective equipment:

Respiratory protection: Wear appropriate protective equipment to avoid inhalation

of gas generated from high temperature molten resin.

Hand protection: Wear protective gloves.

It is preferable to wear cotton work gloves or leather gloves when handling the molten resin.

Eye protection: Wear protective glasses when handling.

Skin and body protection: Wear protective clothing to avoid direct skin exposure to

molten resin, when handling.

1. PHYSICAL AND CHEMICAL PROPERTIES

Appearance Physical state: Solid (Filament)

Melting point/freezing point: 170~190 °C

Specific gravity (relative density): 1.24~1.25 g/cm3 Solubility in water: Insoluble

1. STABILITY AND REACTIVITY Stability (possibility of hazardous reactions):

Largely stable under normal storing/handling conditions.

PLA is resistant to hydrolysis in ambient condition but it is advised to avoid excessive humidity, heat and light during storage and handling.

Self-reactivity: None

1. TOXICOLOGICAL INFORMATION

Acute toxicity (oral): Rat LD50 > 5,000 mg/kg

Germ cell mutagenicity: AMES Test Negative

1. ECOLOGICAL INFORMATION

Acute aquatic environmental hazards: Fish (Oryzias latipes) LC50 > 100 mg/L

 Not available.

Persistence and Decomposition: Compostable when exposed to excessive heat

and humidity for lengthy period of time

1. 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.

1. 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.

1. REGURATORY INFORMATION Follow all applicable laws and regulations
2. OTHER INFORMATION

This (M)SDS is a Hazardous Communication tool and should be used to assist in the Risk Management. Many factors determine whether the reported Hazards are Risks in workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scales of use, frequency of use and current or available engineering controls must be considered.

This information is based on our current knowledge and is intended to describe the product for the purpose of health, safety and environmental requirements only.

It should not therefore be construed as guaranteeing any specific property of the products

When process PLA resin after more than 12months of storage, re-dry before processing.