Section 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product Identifier
   Product form   Filament
   Trade name     Medium Gray Composite Carbon Fiber HTPLA
   Product code   HTP2xxxx-CFM

1.2 Relevant identified uses of the substance or mixture and uses advised against
   For use in 3D printers at recommended temperatures

1.3 Details of the supplier of the safety data sheet
   Proto Plant
   12001 NE 60th Way, B-2
   Vancouver, WA 98682
   www.proto-pasta.com

   Emergency telephone number: 503-877-5268

Section 2: Hazards identification

2.1 Classification of the substance or mixture
   No classified

2.2 Label elements
   No labeling applicable

2.3 Other hazards
   No additional information applicable

2.4 Unknown acute toxicity (GHS US)
   Not applicable

Section 3: Composition/Information on ingredients

3.1 Substances/Mixtures

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyactide resin</td>
<td>9051-89-2</td>
<td>88.55</td>
</tr>
<tr>
<td>Carbon fiber</td>
<td>7440-44-0</td>
<td>10.2</td>
</tr>
<tr>
<td>Titanium dioxide</td>
<td>13463-67-7</td>
<td>6.25</td>
</tr>
</tbody>
</table>

Section 4: First-aid measures

4.1 Description of first-aid measures
   First-aid measures after
   Inhalation               Most to fresh air. If irritation persists, seek medical attention.
   Skin contact             Wash with soap and water. For thermal burns, immediately flush with cold water. Do not attempt to remove polymer from skin. Obtain medical attention.
   Eye contact              First aid not likely required. Flush with water. Consult physician is symptoms persist.
   Ingestion                Obtain immediate medical attention. For poison emergency in the US,
4.2 Most important symptoms and effects, both acute and delayed
No additional information available
4.3 Indication of any immediate medical attention and special treatment needed
Treat symptomatically

Section 5: Firefighting measures
5.1 Extinguishing media
Suitable extinguishing data Water spray, dry powder, foam
Unsuitable extinguishing data None known

5.2 Special hazards arising from the substance or mixture
Burning produces obnoxious and toxic fumes
5.3 Advice for firefighters
As in any fire, wear self-contained breathing apparatus and full protective gear

Section 6: Accidental release measures
6.1 Personal precautions, protective equipment, and emergency procedures
6.1.1 For non-emergency personnel
Sweep up to prevent slipping hazard
6.1.2 For emergency responders
Wear protective gear
6.2 Environmental precautions
Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water systems.
6.3 Methods and material for containment and cleaning up
Clean up promptly with scoop or vacuum. Sweep up and shovel into suitable containers for disposal.
6.4 Reference to other sections
No additional information available

Section 7: Handling and Storage
7.1 Precautions for safe handling
Precautions for safe handling Ensure good ventilation of the work station. Wear personal protective equipment.
Hygiene measures Do not eat, drink, or smoke when using this product. Always wash hands after handling the product.

7.2 Conditions for safe storage, including any incompatibles
Store in a well-ventilated place. Keep cool.
7.3 Specific end use(s)
No additional information available
Section 8: Exposure controls/personal protection

8.1 Control parameters
Where reasonably practicable, use local exhaust ventilation and good general extraction. Provide appropriate exhaust ventilation in places where dust is formed.

8.2 Exposure controls
Appropriate engineering controls
- Ensure good ventilation of the work station

Hand protection
- Protective gloves

Eye protection
- Safety glasses

Skin and body protection
- Impervious clothing

Respiratory protection
- In case of insufficient ventilation, wear suitable respiratory equipment

Environmental exposure controls
- Avoid release into the environment

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Monofilament plastic, thin strand</td>
</tr>
<tr>
<td>Color</td>
<td>Medium gray</td>
</tr>
<tr>
<td>Odor</td>
<td>Light, sweet odor during processing; none at room temperature</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not applicable</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Melting point</td>
<td>195-225°C</td>
</tr>
<tr>
<td>Freezing point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Boiling point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not determined</td>
</tr>
<tr>
<td>Relative evaporation rate</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability</td>
<td>Combustible if heated</td>
</tr>
<tr>
<td>Explosion limits</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Not determined</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.15 g/cc</td>
</tr>
<tr>
<td>Relative vapor density at 20°C</td>
<td>Not determined</td>
</tr>
<tr>
<td>Solubility</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Log Pow</td>
<td>Not determined</td>
</tr>
<tr>
<td>Log Kow</td>
<td>Not determined</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>300-400°C</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>250°C</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

9.2 Other information
No other information available

**Section 10: Stability and reactivity**

10.1 **Reactivity**
Stable when stored as recommended

10.2 **Chemical Stability**
Stable when stored/used as recommended

10.3 **Possibility of hazardous reactions**
None known

10.4 **Conditions to avoid**
Temperatures above 230°C

10.5 **Incompatible materials**
Oxidizing agents, strong acids, strong bases.

10.6 **Hazardous decomposition products**
Burning produces obnoxious and toxic fumes. Aldehydes, carbon monoxide, carbon dioxide

**Section 11: Toxicological information**

11.1 **Information on toxicological effects**

<table>
<thead>
<tr>
<th>Effect</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity</td>
<td>None known</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Contact with molten material may cause thermal burns</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Contact with dust/fumes may cause irritation</td>
</tr>
<tr>
<td>Respiratory or skin sensitization</td>
<td>None known</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Not determined</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Suspected of causing cancer</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>STOT-single exposure</td>
<td>Not determined</td>
</tr>
<tr>
<td>STOT-repeated exposure</td>
<td>Not determined</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>None known</td>
</tr>
</tbody>
</table>

**Section 12: Ecological information**

12.1 **Toxicity**
Not determined

12.2 **Persistence and degradability**
Not determined

12.3 **Bioaccumulative potential**
Not determined

12.4 **Mobility in soil**
Not determined

12.5 **Results of PBT and vPvB assessment**
Not applicable

12.6 **Other adverse effects**
No other information available
Section 13: Disposal considerations

13.1 Waste treatment methods
In accordance with local and national regulations. Do not contaminate ponds, waterways, or ditches with chemical or used container. For recycling, contact local waste disposal centers.

Section 14: Transport information
Not regulated under the US Department of Transportation

Section 15: Regulatory information

15.1 US Federal regulations
SARA 313: Listed
IARC: Listed

15.2 International regulations
Components are in compliance and/or are listed

15.3 US State regulations
Prop 65: This product contains a chemical, Titanium Dioxide, which is known to the State of CA to cause cancer.
Right to Know Hazardous Substance List-New Jersey: Listed

Section 16: Other information
Prepared by Protopant Inc
Reason for Revision GHS compliance
Revision Date 1/8/19

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