SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Material Name: 60A TPU MakeShaper Black Filament
Use: Used for 3D Printing and Modeling
Company Identification: MakeShaper Inc.
P.O. BOX 192
Sanford North Carolina 27331

Emergency Telephone Number: 1-919-770-7984 or 1-919-770-6019
General Information Telephone Number: 1-919-776-6925
Email Address: 
Revision Date: 3/6/2017

SECTION 2 HAZARDS IDENTIFICATION

Classification of the Substance or Mixture: The product is not classified as hazardous according to the Globally Harmonized System (GHS).
Classification According to Regulation (EC) NO. 1272/2008: The product is not classified according to the CLP regulation.
Classification System: The product does not have to be labelled due to the calculation procedure of the "General Classification guidelines for preparations of the EU" in the latest version.

Label Elements
GHS Label Elements: Void
Hazard Pictograms: Void
Signal Word: Void
Hazard Statements: Void

Potential Health Effects
Skin Contact: No known acute effects of this product resulting from skin contact at room temperature. No unusual dermatitus hazard from routine handling
Dust may cause mechanical irritation to eye.
Eye Contact: Heated Polymer: Eye contact can cause serious thermal burns.
Vapors formed when polymer is heated may be irritating to the eye.
Inhalation: Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough. Low hazard for usual industrial or commercial handling
Ingestion: No harmful effects have been reported upon ingestion. Ingestion is not an applicable route of entry for intended use.

Primary Routes of Exposure
For Hot Material: Skin contact. Eye contact. Inhalation.

Test Organs: Not applicable
Carcinogenicity: Not listed by NTP, IARC, ACGIH, or OSHA as a carcinogen.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component / Substance</th>
<th>CAS No.</th>
<th>Concentration [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermoplastic Urethane</td>
<td>Proprietary</td>
<td>&lt;75</td>
</tr>
<tr>
<td>Propanol, oxybis-,dibenzoate</td>
<td>27138-31-4</td>
<td>&gt;=25 - &lt;50</td>
</tr>
<tr>
<td>Colorant</td>
<td>Proprietary</td>
<td>&lt;=2</td>
</tr>
</tbody>
</table>

SECTION 4 FIRST AID MEASURES

First Aid Procedures
Inhalation: Remove individual to fresh air and keep calm. In the event of symptoms, consult a physician and show this data sheet.

Eye Contact: Flush eye(s) for 15 minutes or more; if irritation persists, consult a physician (preferably an eye specialist) and show SDS
Wash with soap and water.

Skin Contact: After contact with molten product, cool rapidly with cold water. Do not pull solidified product away from skin. Consult a physician immediately.

Ingestion: Rinse out mouth and then drink plenty of water. Do not induce vomiting. If symptoms persist consult doctor.

General Advice: Remove contaminated clothing.

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SECTION 5  FIRE FIGHTING MEASURES

Hazardous Decomposition Products: None with proper storage and handling.

Extinguishing Media: Water spray, Foam, Dry chemical powder

Extinguishing Media Which Must Not be Used for Safety Reasons: Carbon dioxide
Lack of cooling capacity may permit re-ignition.

Special Protective Equipment for Fire-Fighters: As in any fire, wear self-contained breathing apparatus pressure-demand, (MSHA/NIOSH approved or equivalent) and full protective gear.

Further Information: In case of fire and/or explosion don not breathe fumes.

SECTION 6  ACCIDENTAL RELEASE MEASURES

Spill / Leak Procedures
Small Spills: Use personal protective equipment. If molten, allow material to cool and place into an appropriate marked container for disposal. Sweep up and shovel into suitable containers for disposal.
No Special Environmental precautions necessary.

SECTION 7  HANDLING AND STORAGE

Handling: Handling/Storage Precautions
Handle in accordance with good industrial hygiene and safety practices. Wash thoroughly after handling. Avoid breathing dust. Containers should be kept tightly closed to prevent contamination.

Storage Requirements: Suitable materials for containers: Carbon steel (Iron), High density polyethylene (HDPE), Low density polyethylene (LDPE), Stainless steel 1.4301 (V2)
Further information on storage conditions: Avoid extreme heat. Avoid deposition of dust.
Protect from heat
Conditions for safe storage, including any incompatibilities
Segregate from foods and animal feeds.

Storage stability:
Protect against moisture.

SECTION 8  EXPOSURE CONTROLS / PERSONAL PROTECTION

Personal Protective Equipment (PPE)

Hygiene Measures: No smoking, eating or drinking allowed when using this product. Wash hands before breaks and at end of work shifts.

Hand Protection: Wear gloves to prevent contact during mechanical processing and/or hot melt conditions.

Respiratory Protection: Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator as needed.

Eye Protection: Wear splash goggles to protect from hot molten substance/product.

Protective Clothing: Impermeable protective clothing is recommended

Engineering Controls: Provide local exhaust ventilation to control dust.

Additional Protective Measures: Employees should wash their hands and face before eating, drinking, or using tobacco products. Educate and train employees in the safe use and handling of this product.
**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Water Solubility:</th>
<th>Boiling Point:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form: Solid</td>
<td>Insoluble</td>
<td>N/A</td>
</tr>
<tr>
<td>Color: Black</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Odor: Faint Odor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vapor Pressure: N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flash Point: &gt;300 °C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Gravity: 1.14 - 1.16 g/cm³ (20°C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auto-Ingition Temp: N/A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SECTION 10 CHEMICAL STABILITY AND REACTIVITY INFORMATION**

**Reactivity:**
- Corrosion to metals: No corrosive effect on metal.
- Oxidizing properties: Not an oxidizer.

**Chemical Stability:**
The product is stable if stored and handled as prescribed/indicated.
- Possibility of hazardous reactions: The product is chemically stable. No hazardous reactions if stored and handled as prescribed/indicated.
- Conditions to avoid: No conditions known that should be avoided.
- Incompatible materials: No substances known that should be avoided.

**Hazardous Decomposition:**
- carbon monoxide, carbon dioxide, hydrogen cyanide

**SECTION 11 TOXICOLOGICAL INFORMATION**

**Primary routes of exposure:**
Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

**Acute Toxicity/Effects:**
Acute toxicity
Assessment of acute toxicity: Inhalation of particulates may cause respiratory tract irritation. Ingestion may cause gastrointestinal disturbances. Contact with molten product may cause thermal burns. The resin in pelleted form poses a low hazard.

**Oral**
- Type of value: LD50
- Species: rat
- Value: > 5,000 mg/kg

**Assessment of irritating effects**
Assessment of irritating effects: Not irritating to the eyes. Not irritating to the skin.

**Sensitization**
Assessment of sensitization: The chemical structure does not suggest a sensitizing effect.
SAFETY DATA SHEET

Chronic Toxicity/Effects

Repeated dose toxicity
Assessment of repeated dose toxicity: No known chronic effects.
Repeated exposure to the substance by dermal administration leads to effects similar to those found after single exposure. Repeated exposure to the substance by inhalative administration leads to effects similar to those found after single exposure. Repeated exposure to the substance by oral administration leads to effects similar to those found after single exposure.

Genetic toxicity
Assessment of mutagenicity: The chemical structure does not suggest a specific alert for such an effect.

Reproductive toxicity
Assessment of reproduction toxicity: The chemical structure does not suggest a specific alert for such an effect.

Teratogenicity
Assessment of teratogenicity: The chemical structure does not suggest a specific alert for such an effect.

Other Information
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Symptoms of Exposure

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11., No significant reaction of the human body to the product known.

Medical conditions aggravated by overexposure
Data available do not indicate that there are medical conditions that are generally recognized as being aggravated by exposure to this substance/product.

SECTION 12 ECOLOGICAL INFORMATION

Toxicity
No data available for this product.
The components in this product are either non-hazardous or do not have any ecotoxicity data associated with them.

Aquatic toxicity
Assessment of aquatic toxicity:
There is a high probability that the product is not acutely harmful to aquatic organisms. The product has not been tested. The statement has been derived from the properties of the individual components.

Toxicity to fish
No data available.

Aquatic invertebrates
No data available.

Aquatic plants
No data available.

Aquatic toxicity
Information on: Propanol, oxybis-, dibenzoate

Persistence and degradability
Assessment biodegradation and elimination (H2O)
Poorly biodegradable.

Elimination information
Poorly biodegradable.

Mobility in soil
Assessment transport between environmental compartments
Due to the product characteristics the test is impossible.

Additional information
Adsorbable organically-bound halogen (AOX):
This product contains no organically-bound halogen.

Other ecotoxicological advice:
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.
SAFETY DATA SHEET

SECTION 13 DISPOSAL CONSIDERATIONS

General Information:
Dispose of spilled or waste product in accordance with all local, state, and federal regulations.

Disposal Methods:
In accordance with local authority regulations, take to special waste incineration plant.

SECTION 14 TRANSPORTATION INFORMATION

<table>
<thead>
<tr>
<th>Sea Transport</th>
<th>Air Transport</th>
<th>DOT (Department of Transportation)</th>
<th>CANADA Transport of Dangerous Goods</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMDG:</td>
<td>ICAO/IATA:</td>
<td>CFR Road:</td>
<td>TDG Road:</td>
</tr>
<tr>
<td>Not Regulated</td>
<td>Not Regulated</td>
<td>Not Regulated</td>
<td>Not Regulated</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CFR Rail:</td>
<td>TDG Rail:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not Regulated</td>
<td>Not Regulated</td>
</tr>
</tbody>
</table>

SECTION 15 REGULATORY INFORMATION

United States
SARA Section 311/312: Not Hazardous
EPCRA 311/312: Not Hazardous
NFPA Sections: Health: 1 Fire: 0 Reactivity: 0
Notification Status: TSCA Notification: Yes
California Proposition 65 Statement: This product does not contain any substance(s) which are defined by the state of California to cause cancer, birth defects, or other reproductive effects.

SECTION 16 OTHER INFORMATION

Labeling According to EU Directive Regulation (EC) NO. 1272/2008:
R&S Phrases: Not Required
Hazard Symbol: Not Required
Issue Date: 3/6/2017
NFPA Ratings:
Health: 1
Flammability: 0
Reactivity: 0

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