1. Identification of the substance / preparation and of the company

1.1 Trade name
Breakaway

1.2 Use of the product
3D printer filament

1.3 Supplier
Ultimaker B.V.
Watermolenweg 2
4191 PN, Geldermalsen
The Netherlands

Emergency phone number
In case of toxicological emergency, contact your doctor

2. Hazards identification according to regulation (EC) No 1272/2008 and GHS

2.1 Classification of the substance or mixture
No risk exists to the health of users if the product is handled and processed properly

2.2 Label elements
-

2.3 Other hazards
Not known

3. Composition / information on ingredients

3.1 Composition
Not applicable

3.2 Mixture
Thermoplastic polyurethane
Polylactic acid – CAS 9051-89-2

4. First-aid measures

4.1 Description of first-aid measures

General advice
If you feel unwell, seek medical advice (show the label where possible). Never give anything by mouth to an unconscious person.

Inhalation
In case of inhalation of gases released from molten filament, move person into fresh air.

Skin contact
Wash with soap and water. Seek medical attention if symptoms occur. If burned by contact with hot material, cool molten material adhering to skin as quickly as possible with water – do not try to peel it off. Seek medical attention, if necessary, for removal and treatment of the burns.

Eye contact
Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses. Seek medical attention if symptoms persist. If molten material contacts the eye, immediately flush with plenty of water for at least 15 minutes. Seek medical attention immediately.

Ingestion
Not probable. Seek medical advice in case ingestion occurs.

Note to physician
Treat symptomatically.
4.2 Most important symptoms and effects, both acute and delayed
Burns should be treated as thermal burns. The material will come off as healing occurs; therefore immediate removal from skin is not necessary

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. Firefighting measures

5.1 General advice
Material can accumulate static charges which may cause an electrical spark (ignition source). Use proper bonding and/or grounding procedures

5.2 Extinguishing media
Use dry chemical powder for small fires. For large fire use water spray, fog, or foam

Unsuitable extinguishing media: water jet

5.3 Special hazards arising from the substance or mixture
Burning produces unpleasant and toxic fumes: carbon oxides (COx), nitrogen oxides (NOx), hydrogen cyanide (HCN), hydrocarbons

5.4 Advice for firefighters
Use self-contained breathing apparatus and full protective clothing

6. Accidental release measures

6.1 Personal precautions, protective equipment, and emergency procedures
Avoid breathing gases released from molten filament. Ensure adequate ventilation, especially in confined areas

6.2 Environmental precautions
No data available

6.3 Methods and materials for containment and cleaning up
Allow to solidify molten material. Dispose of waste and residue according to local regulations

6.4 Reference to other sections
-

7. Handling and storage

7.1 Precautions for safe handling
Avoid contact with molten material. Take precautionary measures against static discharges

7.2 Conditions for safe storage, including any incompatibilities
Product should be stored in a dry and cool place at temperatures between -20 to +30 °C and below 50% relative humidity. Avoid direct sunlight. Take precautions to avoid static discharges

7.3 Specific end use(s)
Filament for 3D printing

8. Exposure controls / personal protection

8.1 Control parameters
None

DNEL
No data available

PNEC
No data available

8.2 Exposure controls
Eye protection
Use safety glasses for prolonged staring at printing

Skin and body protection
Good practices suggest to minimize skin contact. When material is heated, wear gloves to protect against thermal burns
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>Appearance</td>
<td>Filament</td>
</tr>
<tr>
<td>Color</td>
<td>White</td>
</tr>
<tr>
<td>Odor</td>
<td>Slight</td>
</tr>
<tr>
<td>Flash point</td>
<td>-</td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>-</td>
</tr>
<tr>
<td>Thermal decomposition</td>
<td>&gt; 280 °C</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>-</td>
</tr>
<tr>
<td>Melting point / range</td>
<td>-</td>
</tr>
<tr>
<td>Density</td>
<td>~ 1.22 g/cm³</td>
</tr>
<tr>
<td>Water solubility</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>-</td>
</tr>
</tbody>
</table>

9.2 Other information

10. Stability

10.1 Reactivity

Stable under recommended storage conditions

10.2 Chemical stability

Stable if stored and handled as indicated

10.3 Possibility of hazardous reactions

No decomposition or hazardous reactions if stored and applied as directed

10.4 Conditions to avoid

Print temperatures above 240 °C (at standard printing speeds). Avoid all sources of ignition: heat, sparks, open flames, etc.

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

See 5.2
11. Toxicological information

11.1 Information on toxicological effects

Principal routes of exposure  
Eye contact, skin contact, inhalation, ingestion

Acute toxicity  
Not hazardous in normal industrial use

Skin corrosion / irritation  
Not irritating. Molten polymer will adhere to the skin, thereby causing thermal burns

Serious eye damage / eye irritation  
If molten polymer gets in contact with the eyes, it can cause serious burns

Respiratory or skin sensitization  
No sensitization

Reproductive toxicity  
No data available

Carcinogenicity  
No data available

12. Ecological information

12.1 Toxicity  
No data available

12.2 Persistence and degradability  
No data available

12.3 Bio accumulative potential  
No data available

12.4 Mobility in soil  
No data available

12.5 Results of PBT and vPvB assessment  
No data available

12.6 Other adverse effects  
Not classified as environmentally hazardous. Disposal of large contents could have a negative effect on the environment

13. Disposal considerations

13.1 Waste treatment methods  
In accordance with local and national regulations

14. Transport information

ADR  
Not regulated

RID  
Not regulated

IATA  
Not regulated

IMDG  
Not regulated

Special precautions for user  
Keep away from strong oxidizers and sources of ignition
15. Regulatory information

Not meant to be all-inclusive – selected regulations represented

15.1 Safety, health, and environmental regulations / legislation specific for the substance or mixture

US Regulations:
- Sara 313 title III: Not listed
- TSCA Inventory List: Not listed
- OSHA hazard category: Not listed
- CERCLA: Not listed
- WHMIS: Not listed
- State right-to-know requirements: Not listed

Other Inventories:
- Canada DSL Inventory List: Not listed
- REACH / EU EINECS: Not listed
- NEHAPS: Not listed
- Japan (ECL/MITI): Not listed
- Australia (AICS): Not listed
- Korean toxic substances control act (ECL): Not listed
- Philippines inventory (PICCS): Not listed
- Chinese chemical inventory (IECSC): Not listed

15.2 Chemical Safety Assessment
No data available

16. Other information

The information provided in this Safety Data Sheet (SDS) is based on current knowledge and experience. This information is provided without warranty. This information should help to make an independent determination of the methods to ensure proper and safe use and disposal of the filament

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