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

- Product identifier
  - Trade name: PC-ABS
- Relevant identified uses of the substance or mixture and uses advised against
- Application of the substance / the preparation: Filament for Stratasys® Inc. FDM™ modeler
- Details of the supplier of the safety data sheet
  - Manufacturer/Supplier:
    Stratasys, Inc.
    7665 Commerce Way
    Eden Prairie, MN 55344
    USA
  - In Europe:
    C.S.B. GmbH
    Parkstraße 29
    D-47829 Krefeld
    Germany
- Information department: Sales / Technics
- Emergency telephone number: see above

2 Hazards identification

- Classification of the substance or mixture
  - The product is not classified according to the Globally Harmonized System (GHS).
- Classification according to Directive 67/548/EEC or Directive 1999/45/EC: Void
- Classification system:
  - The product does not have to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
- Label elements
  - GHS label elements: Void
  - Hazard pictograms: Void
  - Signal word: Void
  - Hazard statements: Void
  - Classification system
  - NFPA ratings (scale 0-4)
    - Health = 0
    - Fire = 0
    - Reactivity = 0
- HMIS
  - HEALTH: Health = 0
  - FIRE: Fire = 0
  - REACTIVITY: Reactivity = 0
- Other hazards
  - Results of PBT and vPvB assessment
    - PBT: Not applicable.
    - vPvB: Not applicable.
3 Composition/information on ingredients

- Chemical characterization: Mixtures
- Description: Polycarbonate-Acrylonitrile/Butadiene/Styrene polymer blend

<table>
<thead>
<tr>
<th>Dangerous components:</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-42-5 Styrene</td>
</tr>
<tr>
<td>≥ 0.1%</td>
</tr>
<tr>
<td>Xn R20, Xi R36/38</td>
</tr>
<tr>
<td>R10</td>
</tr>
<tr>
<td>Flamm. Liq. 3, H226;</td>
</tr>
<tr>
<td>Acute Tox. 4, H332;</td>
</tr>
<tr>
<td>Skin Irrit. 2, H315;</td>
</tr>
<tr>
<td>Eye Irrit. 2, H319;</td>
</tr>
</tbody>
</table>

- Additional information: For the wording of the listed risk phrases refer to section 16.

4 First aid measures

- Description of first aid measures
- General information: Remove contaminated clothing.
- After inhalation: Supply fresh air; consult doctor in case of complaints.
- After skin contact: After contact with the molten product, cool rapidly with cold water. Do not pull solidified product away from the skin. Call a doctor immediately.
- After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
- After swallowing: Rinse out mouth and then drink plenty of water. Get medical advice/attention if you feel unwell.
- Most important symptoms and effects, both acute and delayed: No further relevant information available.
- Indication of any immediate medical attention and special treatment needed: No further relevant information available.

5 Firefighting measures

- Extinguishing media
- Suitable extinguishing agents: CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- For safety reasons unsuitable extinguishing agents: Water with full jet.
- Special hazards arising from the substance or mixture:
  - Nitrogen oxides (NOx)
  - Carbon monoxide and carbon dioxide
  - Irritant gases/vapors
  - In certain fire conditions, traces of other toxic gases cannot be excluded, e.g.:
    - Hydrogen cyanide (HCN)
    - Styrene
    - Hydrocarbons
- Advice for firefighters
- Protective equipment: Use suitable respiratory protective device.
- Additional information:
  - Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures:
  - Avoid formation of dust.
  - Do not breathe dust.
  - Avoid contact with eyes.
Trade name: PC-ABS

7 Handling and storage

- **Precautions for safe handling**
  Prevent formation of dust.
  If dust/smoke is developed, avoid breathing dust/smoke.
  Avoid contact with eyes.
  Avoid contact with hot product.
  Make sure that all applicable workplace limits are observed.

- **Information about protection against explosions and fires:** No special measures required.

- **Conditions for safe storage, including any incompatibilities**

- **Storage**
  - **Requirements to be met by storerooms and receptacles:**
    Observe all local and national regulations for storage of water polluting products.
  - **Information about storage in one common storage facility:** Not required.
  - **Further information about storage conditions:**
    Store in cool, dry conditions in well sealed receptacles.
    Store receptacle in a well ventilated area.

- **Specific end use(s)**
  No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**
  Observe all workplace limits for dust:
  - TLV inhalable dust: 15 mg/m³ OSHA
  - TLV respirable dust: 5 mg/m³ OSHA

**100-42-5 Styrene**

- **PEL**
  - Short-term value: C 200; 600* ppm
  - Long-term value: 100 ppm
  - *5-min peak in any 3 hrs
- **REL**
  - Short-term value: 425 mg/m³, 100 ppm
  - Long-term value: 215 mg/m³, 50 ppm
- **TLV**
  - Short-term value: 170 mg/m³, 40 ppm
  - Long-term value: 85 mg/m³, 20 ppm
  - BEI

- **Additional information:** The lists that were valid during the creation were used as basis.

- **Exposure controls**

- **Personal protective equipment**

- **General protective and hygienic measures**
  Keep away from foodstuffs, beverages and feed.
  Do not inhale dust / smoke / mist.
  Avoid contact with the eyes.
  Wash hands before breaks and at the end of work.
**Material Safety Data Sheet**

Trade name: PC-ABS

**9 Physical and chemical properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td></td>
</tr>
<tr>
<td>Form</td>
<td>solid</td>
</tr>
<tr>
<td>Color</td>
<td>Black</td>
</tr>
<tr>
<td>Odor</td>
<td>Nearly odorless</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>no data available</td>
</tr>
<tr>
<td><strong>pH-value</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Change in condition</strong></td>
<td></td>
</tr>
<tr>
<td>Melting point/Melting range</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Boiling point/Boiling range</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Fusion temperature / range</td>
<td>200°C (392 °F)</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Ignition temperature</strong></td>
<td>482°C (900 °F)</td>
</tr>
<tr>
<td><strong>Decomposition temperature</strong></td>
<td>277°C (531 °F)</td>
</tr>
<tr>
<td><strong>Auto igniting</strong></td>
<td>Product is not selfigniting.</td>
</tr>
<tr>
<td><strong>Danger of explosion</strong></td>
<td>Product does not present an explosion hazard.</td>
</tr>
<tr>
<td><strong>Explosion limits</strong></td>
<td></td>
</tr>
<tr>
<td>Lower</td>
<td>Not determined</td>
</tr>
<tr>
<td>Upper</td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Oxidizing properties</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Vapor pressure</strong></td>
<td>negligible</td>
</tr>
<tr>
<td><strong>Density at 20°C (68 °F)</strong></td>
<td>1.2 g/cm³ (10.014 lbs/gal)</td>
</tr>
<tr>
<td><strong>Solubility in / Miscibility with Water</strong></td>
<td>Insoluble</td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td></td>
</tr>
<tr>
<td>dynamic</td>
<td>Not applicable</td>
</tr>
<tr>
<td>kinematic</td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Other information</strong></td>
<td>No further relevant information available.</td>
</tr>
</tbody>
</table>

**10 Stability and reactivity**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reactivity</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Chemical stability</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Thermal decomposition / conditions to be avoided</strong></td>
<td>Temperature over 270 °C</td>
</tr>
</tbody>
</table>

(Contd. on page 3)
35.0.2 No decomposition if used and stored according to specifications.

- **Possibility of hazardous reactions**: No dangerous reactions known
- **Conditions to avoid**: No further relevant information available.
- **Incompatible materials**: Strong oxidizing agents, Acids
- **Hazardous decomposition products**: Nitrogen oxides (NOx), Carbon monoxide and carbon dioxide, Acrylonitril, Hydrogen cyanide (prussic acid), Styrene, Hydrocarbons

**11 Toxicological information**

- **Information on toxicological effects**
  - **Acute toxicity**:
  - **Primary irritant effect**:
    - **on the skin**: Dust particles may mechanically irritate the skin.
    - **on the eye**: Dust particles may mechanically irritate the eye.
  - **Sensitization**: No sensitizing effects known.
  - **Additional toxicological information**: When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

- **Carcinogenic categories**
  - **IARC (International Agency for Research on Cancer)**
    - 100-42-5 Styrene 2B
    - 107-13-1 Acrylonitrile 2B
  - **NTP (National Toxicology Program)**
    - 107-13-1 Acrylonitrile R

**12 Ecological information**

- **Toxicity**
  - **Aquatic toxicity**: No further relevant information available.
  - **Persistence and degradability**: No further relevant information available.
  - **Other information**: The product is difficultly biodegradable.
  - **Bioaccumulative potential**: No further relevant information available.
  - **Mobility in soil**: No further relevant information available.
  - **Additional ecological information**:
    - **General notes**: Water hazard class 1 (Self-assessment) (German regulation): slightly hazardous for water.
    - **Results of PBT and vPvB assessment**
      - **PBT**: Not applicable.
      - **vPvB**: Not applicable.
    - **Other adverse effects**: No further relevant information available.

**13 Disposal considerations**

- **Waste treatment methods**
- **Recommendation**: Disposal must be made according to local/official regulations.
Trade name: PC-ABS

(Contd. of page 5)

14 Transport information

- UN-Number
  - DOT, ADR, ADN, IMDG, IATA Void
- UN proper shipping name
  - DOT, ADN, IMDG, IATA Void
  - ADR Void
- Transport hazard class(es)
  - DOT, ADR, ADN, IMDG, IATA Void
  - Class Void
- Packing group
  - DOT, ADR, IMDG, IATA Void
- Special precautions for user
  - Not applicable.
- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
  - Not applicable.
- Transport/Additional information:
  - Not dangerous according to the above specifications.
- UN "Model Regulation": -

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  - SARA Section 355 (extremely hazardous substances)
    - 107-13-1 Acrylonitrile
  - TSCA (Toxic Substances Control Act)
    - 9003-56-9 Acrylonitrile/butadiene/styrene copolymer
    - 100-42-5 Styrene
    - 107-13-1 Acrylonitrile
  - Cancerogenity categories
  - MAK (German Maximum Workplace Concentration)
    - 100-42-5 Styrene
- GHS label elements Void
- Hazard pictograms Void
- Signal word Void
- Hazard statements Void
- National regulations
  - Water hazard class:
    - Water hazard class 1 (Self-assessment) (German regulation): slightly hazardous for water.
  - Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

(Contd. on page 7)
Trade name: PC-ABS

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- Relevant phrases
  The(se) R-phrase(s) are those of the ingredient(s) and do(es) NOT represent the classification of the preparation.

- Department issuing MSDS:
  C.S.B. GmbH
  Parkstraße 29
  D-47829 Krefeld
  Germany

- Abbreviations and acronyms:
  ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  IMDG: International Maritime Code for Dangerous Goods
  DOT: US Department of Transportation
  IATA: International Air Transport Association
  NFPA: National Fire Protection Association (USA)
  HMIS: Hazardous Materials Identification System (USA)