

Printing date 10/02/2012

Reviewed on 10/02/2012

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

Tel +1 952 937 3000

Fax +1 952 937 0070

In Europe:

C.S.B. GmbH

Parkstraße 29

D-47829 Krefeld

Germany

Tel.: +49-2151-6520860

Fax: +49-2151-6520869

E-Mail: info@csb-online.de· **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)**· **HMIS**

| | | |
|------------|---|----------------|
| HEALTH | 0 | Health = 0 |
| FIRE | 0 | Fire = 0 |
| REACTIVITY | 0 | Reactivity = 0 |

· **Other hazards**· **Results of PBT and vPvB assessment**· **PBT:** Not applicable.· **vPvB:** Not applicable.

USA

(Contd. on page 2)

Printing date 10/02/2012

Reviewed on 10/02/2012







Trade name: PC-ABS

(Contd. of page 1)

3 Composition/information on ingredients

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

- **Dangerous components:**

| | | |
|----------|---|-------|
| 100-42-5 | Styrene | ≤0.1% |
| |  Xn R20;  Xi R36/38 R10 | |
| |  Flam. Liq. 3, H226;  Acute Tox. 4, H332;  Skin Irrit. 2, H315;  Eye Irrit. 2, H319 | |

- **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 (NO_x)
 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.

(Contd. on page 3)

USA

Printing date 10/02/2012

Reviewed on 10/02/2012

Trade name: PC-ABS

(Contd. of page 2)

- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
 Pick up mechanically.
 Dispose of the collected material according to regulations.
- **Reference to other sections**
 See Section 8 for information on personal protection equipment.
 See Section 13 for disposal information.

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/m ³ , 100 ppm Long-term value: 215 mg/m ³ , 50 ppm |
| TLV | Short-term value: 170 mg/m ³ , 40 ppm Long-term value: 85 mg/m ³ , 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.

(Contd. on page 4)

USA

Printing date 10/02/2012

Reviewed on 10/02/2012

Trade name: PC-ABS

(Contd. of page 3)

- **Breathing equipment:**
If all workplace limits are observed and good ventilation is ensured, no special precautions necessary.
Use breathing protection in case of dust formation.
Dust proof mask - particle filter mask filter
- **Protection of hands:**
No chemical-protective gloves required.
Use heat resistant gloves when handling hot/molten product.
- **Eye protection:** *Safety glasses*
- **Body protection:** *Wear heat-resistant protective clothing when handling hot/molten product.*

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Appearance:

- | | |
|------------------------|--------------------------|
| Form: | <i>solid</i> |
| Color: | <i>Black</i> |
| Odor: | <i>Nearly odorless</i> |
| Odor threshold: | <i>no data available</i> |

· **pH-value:** *Not applicable*

· Change in condition

- | | |
|-------------------------------------|-----------------------|
| Melting point/Melting range: | <i>Not applicable</i> |
| Boiling point/Boiling range: | <i>Not applicable</i> |
| Fusion temperature / range: | <i>200°C (392 °F)</i> |

· **Flash point:** *Not applicable*

· **Ignition temperature:** *482°C (900 °F)*

· **Decomposition temperature:** *277°C (531 °F)*

· **Auto igniting:** *Product is not selfigniting.*

· **Danger of explosion:** *Product does not present an explosion hazard.*

· Explosion limits:

- | | |
|---------------|-----------------------|
| Lower: | <i>Not determined</i> |
| Upper: | <i>Not determined</i> |

· **Oxidizing properties** *Not applicable*

· **Vapor pressure:** *negligible*

· **Density at 20°C (68 °F):** *1.2 g/cm³ (10.014 lbs/gal)*

· Solubility in / Miscibility with

Water: *Insoluble*

· Viscosity:

- | | |
|-------------------|-----------------------|
| dynamic: | <i>Not applicable</i> |
| kinematic: | <i>Not applicable</i> |

· **Other information** *No further relevant information available.*

10 Stability and reactivity

· Reactivity

· Chemical stability

· Thermal decomposition / conditions to be avoided:

Temperature over 270 °C

(Contd. on page 5)

USA

Printing date 10/02/2012

Reviewed on 10/02/2012

Trade name: PC-ABS

(Contd. of page 4)

- *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 (NO_x)*
 - 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.*

(Contd. on page 6)

USA

Printing date 10/02/2012

Reviewed on 10/02/2012

Trade name: PC-ABS

(Contd. of page 5)

- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to local/official regulations.

14 Transport information

| | |
|--|--|
| · UN-Number | Void |
| · DOT, ADR, ADN, IMDG, IATA | Void |
| · UN proper shipping name | Void |
| · DOT, ADN, IMDG, IATA | Void |
| · ADR | Void |
| · Transport hazard class(es) | |
| · DOT, ADR, ADN, IMDG, IATA | |
| · 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.

USA

(Contd. on page 7)

Printing date 10/02/2012

Reviewed on 10/02/2012

Trade name: PC-ABS

(Contd. of page 6)

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-phras(e)s are those of the ingredient(s) and do(es) NOT represent the classification of the preparation.

· Department issuing MSDS:

*C.S.B. GmbH Phone: +49 - 2151 - 652086-0
Parkstraße 29 Fax: +49 - 2151 - 652086-9
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)*

USA