

# ABS

## SAFETY DATA SHEET

### 1. Hazards identification

1.1 *Classification of the substance or mixture*  
According to Regulation (EC) No 1272/2008 [CLP]  
This mixture is classified as not hazardous.

1.2 *Label elements*

Labelling (CLP)

Hazard statements: not applicable

Safety precautions: not applicable

Labelling (67/548/EEC or 1999/45/EC)

R phrase(s): not applicable

S phrase(s): not applicable

1.3 *Other hazards*

Dust: Can cause skin, eye and respiratory tract irritation.

Fine dust: explosive

The melted product can cause severe burns.

Swallowing may cause gastrointestinal irritation and pain of guts

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### 2. Composition/information on ingredients

2.1 *Chemical characteristics*

Polymer mixture, enhanced for 3D printing

2.2 *CAS no*

9003-56-9: > 98 % Styrene-acrylonitrile-butadiene copolymer

100-42-5: < 0,1 % Styrene

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### 3. First aid measures

3.1 *Description of first aid measures*

General information: Immediately remove any contaminated clothing, shoes or stockings.

After inhalation: Provide fresh air. Put victim at rest and keep warm. Seek medical attention

In case of skin contact: The melted product can cause severe burns.

Do not attempt to remove molten product, or molten product that has cooled, from skin without medical assistance.

After contact with molten product, cool skin area rapidly with cold water.

Consult physician.

After eye contact: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Consult an eye specialist in the event of irritation.

After swallowing: Rinse mouth with water. Drink one or two glasses of water.

Never give an unconscious person anything through the mouth. seek medical attention

3.2 *Most important symptoms and effects, both acute and delayed*

Dust: Skin irritation, eye irritations and redness

3.3 *Indication of any immediate medical attention and special treatment needed*  
Treat symptomatically

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## 4. Fire fighting measures

### 4.1 *Extinguishing media*

Suitable extinguishing media:

Water spray, Foam, Dry powder, Carbon dioxide (CO<sub>2</sub>).

Unsuitable extinguishing media:

Do not use a solid water stream as it may scatter and spread fire.

### 4.2 *Special hazards arising from the substance or mixture*

In case of fire may be liberated: hydrogen cyanide, carbon monoxide and carbon dioxide (CO<sub>2</sub>).

In case of dust (Fine dust): danger of dust explosion

### 4.3 *Advice for fire fighters*

Fire fighting measures

Wear a self-contained breathing apparatus and chemical protective clothing.

Unusual Fire Hazards:

Do not allow fire water to penetrate into surface or ground water. Fire residuals and contaminated extinguishing water must be disposed of in accordance with the regulations of the local authorities.

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## 5. Accidental release measures

### 5.1 *Personal precautions, protective equipment and emergency procedures*

Provide adequate ventilation.

Wear personal protection equipment. Do not breathe dust.

### 5.2 *Environmental precautions*

Do not allow to penetrate into soil, waterbodies or drains.

### 5.3 *Methods and materials for containment and cleaning up*

Avoid generation of dust. Remove all sources of ignition.

Take up mechanically. Collect in closed containers for disposal.

Additional information: Special danger of slipping by leaking/spilling product.

### 5.4 *Reference to other sections*

Refer to section (8)

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## 6. Handling and storage

### 6.1 *Handling*

Advices on safe handling:

Provide adequate ventilation, and local exhaust as needed. Do not breathe dust.

In the case of the formation of dust: Withdraw by suction.

Molten material: Avoid contact with the substance.

Precautions against fire and explosion:

Take precautionary measures against static discharge. Keep away from sources of ignition.

Use grounding equipment. Use explosion-proof equipment and non-sparking tools/utensils.

Avoid open flames.

Dust forms explosive mixtures with air.

6.2 *Conditions for safe storage, including any incompatibilities*

Requirements for storerooms and containers:

Store in a well-ventilated place. Keep container tightly closed.

Protect against heat /sun rays. Protect from moisture contamination.

Storage class:

11 = Combustible solids

## 7. Exposure controls/personal protection

### 7.1 *Control parameters*

Occupational exposure limit values:

CAS no.	Designation	Type	Limitvalue
	ABS@df	Great Britain: WEL-TWA	10 mg/m <sup>3</sup> Dust limit value inhalable fraction
		Great Britain: WEL-TWA Ireland: 8 hours Ireland: 8 hours	4 mg/m <sup>3</sup> Dust limit value respirable fraction 10 mg/m <sup>3</sup> Dust limit value inhalable fraction 4 mg/m <sup>3</sup> Dust limit value respirable fraction
100-42-5	Styrene	Great Britain: WEL-STEL Gre- at Britain: WEL-TWA Ireland: 15 minutes Ireland: 8 hours	1.080mg/m <sup>3</sup> ; 250 ppm 430 mg/m <sup>3</sup> ; 100 ppm 170 mg/m <sup>3</sup> ; 40 ppm 85 mg/m <sup>3</sup> ; 20 ppm
107-13-1	Acrylonitrile	Great Britain: WEL-TWA Ire- land: 8 hours	4,4 mg/m <sup>3</sup> ; 2 ppm 4,5 mg/m <sup>3</sup> ; 2 ppm (May be absorbed through the skin.)
106-99-0	1,3-Butadiene	Great Britain: WEL-TWA Ireland: 8 hours	22 mg/m <sup>3</sup> ; 10 ppm Carc) 2,2 mg/m <sup>3</sup> ; 1 ppm C1, Mut2

### 7.2 *Exposure controls*

Provide good ventilation and/or an exhaust system in the work area

Occupational exposure controls

Respiratory protection:

Respiratory protection must be worn whenever the WEL levels have been exceeded.

Use filter type A-P2 according to EN 14387.

**Hand protection:**

Protective gloves according to EN 374.

Glove material: Nitrile rubber - Layer thickness: 0,11 mm. Breakthrough time: >480 min.

Observe glove manufacturer's instructions concerning penetrability and breakthrough time. In case of melting: Protective gloves against heat according to EN 407.

Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

**Eye protection:**

Tightly sealed goggles according to EN 166.

**Body protection:**

Wear suitable protective clothing. boots or Wear protective shoes.

**General protection and hygiene measures:**

Molten material: Avoid contact with skin.

Do not inhale dust particles or vapours. Keep away from sources of ignition. Wash hands before breaks and after work.

In case of dust: Particular danger of slipping when spread on the ground.

**Environmental exposure controls**

Do not allow to penetrate into soil, waterbodies or drains.

## 8. Physical and chemical properties

### 8.1 Information on basic physical and chemical properties

Appearance:	Solid Filament
Odour:	Odourless to mild
Colour:	depending on product grade
Odour threshold:	No information available
pH:	Not applicable
Melting/freezing point:	> 100 °C (DIN EN ISO 306)
Initial boiling point and boiling range:	Not applicable
Flash point:	> 400 °C
Evaporation rate:	Not applicable
Flammability (solid, gas):	No information available
Upper/lower flammability or explosive limits:	UEL: No data available LEL: No data available
Vapour pressure:	Not applicable
Vapour density:	Not applicable
Relative density:	at 20 °C: approx. 1,04 g/cm <sup>3</sup> (DIN 53479)
Solubility(ies):	Negligible
Partition coefficient (n-octanol/water):	Not available
Auto-ignition temperature:	not self-igniting
Decomposition temperature:	approx. 300 °C
Viscosity:	Not applicable
Explosive properties:	Dust explosion risk at fine dust
Oxidizing properties:	Oxidising potential: not oxidising

### 8.2 Other Information

Ignition temperature: > 400 °C (DIN 51794)

Bulk density: at 20 °C: approx. 600 kg/m<sup>3</sup> (DIN 53466)

Additional information: No data available

## 9. Stability

### 9.1 Reactivity:

No information available

### 9.2 Chemical stability:

Stable under recommended storage conditions.

### 9.3 Possibility of hazardous reactions:

In case of dust (Fine dust): danger of dust explosion

### 9.4 Conditions to avoid:

Avoid elevated temperatures for prolonged periods of time.

### 9.5 Incompatible materials:

Strong oxidisers

### 9.6 Hazardous decomposition products

In case of fire may be liberated: hydrogen cyanide, carbon monoxide and carbon dioxide (CO<sub>2</sub>).

Thermal decomposition: approx. 300 °C

To avoid thermal decomposition, do not overheat.

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## 10. Toxicological information

### 10.1 Information on toxicological effects

Toxicological effects:

Acute toxicity (oral):	Lack of data.
Acute toxicity (dermal):	Lack of data.
Acute toxicity (inhalative):	Lack of data.
Skin corrosion/irritation:	Lack of data. May cause irritations.
Eye damage/irritation:	Lack of data. May cause irritations.
Sensitisation to the respiratory tract:	Lack of data. Not to be expected
Skin sensitisation:	Lack of data. Not to be expected
Germ cell mutagenicity/Genotoxicity:	Lack of data. Not to be expected
Carcinogenicity:	Lack of data. Not to be expected
Reproductive toxicity:	Lack of data. Not to be expected
Effects on or via lactation:	Lack of data.
Specific target organ toxicity (single exposure):	Lack of data.
Dusts:	Irritating to eyes, respiratory system and skin.
Specific target organ toxicity (repeated exposure):	Lack of data.
Aspiration hazard:	Lack of data.

### Other information:

Styrene: Harmful if inhaled. Causes damage to organs through prolonged or repeated exposure. lung damages. May be fatal if swallowed and enters airways. Causes serious eye irritation. Causes skin irritation.

Acrylonitrile: Toxic by inhalation, in contact with skin and if swallowed.  
May cause cancer. Suspected of damaging the unborn child.  
Causes skin irritation. May cause an allergic skin reaction. Causes serious eye damage.

1,3-Butadiene: May cause cancer. May cause genetic defects.

## Symptoms

### Dust:

Can cause skin, eye and respiratory tract irritation. The melted product can cause severe burns.

### Thermal treatment, Processing:

Irritating to eyes, respiratory system and skin.

In case of ingestion: Swallowing may cause gastrointestinal irritation and pain of guts.

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## 11. Ecological information

### 11.1 Toxicity

Aquatic toxicity: no evidence of aquatic toxicity  
Water Hazard Class: nwg = non-hazardous to water (WGK catalog number 766)

### 11.2 Persistence and degradability

Further details: Biodegradation: Product is not readily biodegradable.  
The product is likely to persist in the environment.

### Effects in sewage plants:

In sewage treatment plants it may be separated mechanically.

### 11.3 Bioaccumulative potential

To avoid bioaccumulation plastics should not be disposed in the sea or in other water environments.

### Partition coefficient n-octanol/water:

No data available

### 11.4 Mobility in soil

No data available

### 11.5 Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

### 11.6 Other adverse effects

#### General information:

Do not allow to enter into ground-water, surface water or drains.

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## 12. Disposal considerations

### 12.1 Waste treatment methods

#### Product

#### Waste key number:

07 02 99 = wastes from the MFSU of plastics, synthetic rubber and manmade fibres  
MFSU = manufacture, formulation, supply and use

#### Recommendation:

With due observance of the regulations laid down by the local authorities, this must be brought to a suitable incineration plant/waste disposal site.

Contaminated packaging

Recommendation: Dispose of waste according to applicable legislation.  
Non-contaminated packages may be recycled.

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### 13. Transport information

Product has been classified as being non-dangerous substance according to transport regulations ADR, RID, IMDG, IATA/ICAO

13.1 *UN number*

Not applicable

13.2 *UN proper shipping name*

Not applicable

13.3 *Transport hazard class(es)*

Not applicable

13.4 *Packing Group*

Not applicable

13.5 *Environmental hazards*

No additional data is available

13.6 *Special precautions for user*

No data available

13.7. *Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code*

Not evaluated

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### 14. Regulatory information

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

National regulations - Great Britain

Hazchem-Code: -

National regulations - USA

Hazard rating systems:

NFPA Hazard Rating: Health: 1 (Slight)

Fire: 1 (Slight)

Reactivity: 0 (Minimal) HMIS Version III Rating:

Health: 1 (Slight)

Flammability: 1 (Slight) Physical Hazard: 0 (Minimal)

Personal Protection: X = Consult your supervisor

14.2 *Chemical Safety Assessment*

For this substance a chemical safety assessment is not required

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### 15. Other information

Information is referenced from other manufacturers.

For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006 and Regulation (EC) No. 2015/830. Label element according to Regulation (EC) No 1272/2008.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.