Safety Data Sheet

According to EU Directive 1907/2006, as amended

Product name: Real filament ABS

Date of issue: 23-7-2018

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

1.1 Trade name: Real filament ABS

1.2 Use of the product: 3Dprinter Filament

1.3 Supplier:
ReprapWorld B.V.
Wagenmaker 6a
2631 RL Nootdorp, The Netherlands
Phone: +31 (0)85 0091531

2. Hazards identification

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

2.2 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

2.3 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.

3. Composition/information on ingredients

3.1 Mixtures:
Chemical characterization: Polymer mixture, enhanced for 3D printing
CAS No. 9003-56-9: > 98 % Styrene-acrylonitrile-butadiene copolymer
CAS No. 100-42-5: < 0,1 % Styrene

4. First aid measures

4.1 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

4.2 Most important symptoms and effects, both acute and delayed
Dust: Skin irritation, eye irritations and redness

4.3 Indication of any immediate medical attention and special treatment needed
Treat symptomatically.

5. Fire fighting measures

5.1 Extinguishing media

Suitable extinguishing media:	Water spray, Dry powder, Carbon dioxide (CO2).
Unsuitable extinguishing media :	Do not use a solid water stream as it may scatter and spread fire.

5.2 Special hazards arising from the substance or mixture
In case of fire may be liberated: hydrogen cyanide, carbon monoxide and carbon dioxide (CO2).
In case of dust (Fine dust): danger of dust explosion

5.3 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.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Provide adequate ventilation.
Wear personal protection equipment. Do not breathe dust.

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

6.3 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.

6.4 Reference to other sections
Refer to section (8)

7. Handling and storage

7.1 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.

7.2 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

8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values:

CAS no.	Designation	Type	Limitvalue
	ABS	Great Britain: WEL-TWA	10 mg/m³ Dust limit value inhalable fraction
		Great Britain: WEL-TWA Ireland: 8 hours Ireland: 8 hours	4 mg/m³ Dust limit value respirable fraction 10 mg/m³ Dust limit value inhalable fraction 4 mg/m³ Dust limit value respirable fraction
100-42-5	Styrene	Great Britain: WEL-STEL Great Britain: WEL-TWA Ireland: 15 minutes	1.080mg/m³; 250 ppm 430 mg/m³; 100 ppm
		Ireland: 8 hours	170 mg/m³; 40 ppm 85 mg/m³; 20 ppm
107-13-1	Acrylonitrile	Great Britain: WEL-TWA Ireland: 8 hours	4,4 mg/m³; 2 ppm 4,5 mg/m³; 2 ppm (May be absorbed through the skin.)
106-99-0	1,3-Butadiene	Great Britain: WEL-TWA Ireland: 8 hours	22 mg/m³; 10 ppm Carc) 2,2 mg/m³; 1 ppm C1, Mut2

8.2 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.

9. Physical and chemical properties

9.1 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^3 (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

9.2 Other Information

Ignition temperature:	> 400 °C (DIN 51794)
Bulk density:	at 20 °C: approx. 600 kg/m^3 (DIN 53466)
Additional information:	No data available

10. Stability

10.1 Reactivity:
No information available

10.2 Chemical stability:
Stable under recommended storage conditions

10.3 Possibility of hazardous reactions:
In case of dust (Fine dust): danger of dust explosion

10.4 Conditions to avoid
Avoid elevated temperatures for prolonged periods of time.

10.5 Incompatible materials:
Strong oxidisers

10.6 Hazardous decomposition products

In case of fire may be liberated:	hydrogen cyanide, carbon monoxide and carbon dioxide (CO2).
Thermal decomposition:	approx. 300 °C To avoid thermal decomposition, do not overheat.

11. Toxicological information

11.1 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.

12. Ecological information

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

12.2 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.

12.3 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

12.4 Mobility in soil
No data available

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

12.6 Other adverse effects
General information: Do not allow to enter into ground-water, surface water or drains.

13. Disposal considerations

13.1 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.

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

14.1 UN number
Not applicable

14.2 UN proper shipping name
Not applicable

14.3 Transport hazard class(es)
Not applicable

14.4 Packing Group
Not applicable

14.5 Environmental hazards
No additional data is available

14.6 Special precautions for user
No data available

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
Not evaluated

15. Regulatory information

15.1 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

15.2 Chemical Safety Assessment
For this substance a chemical safety assessment is not required

16. 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.
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