



# Material Safety Data Sheet

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

<b>Product:</b>	ABS for extrusion-based 3D printing
<b>Manufacturer:</b>	Conrad Electronic SE
<b>Address:</b>	Klaus-Conrad-Str. 1, D-92240 Hirschau
<b>Telephone:</b>	+49 (0) 9604 / 40 - 8988
<b>Date:</b>	16.02.2017

## 2. Hazards Identification

### 2.1 Classification of the substance of mixture

#### 2.1.1 Classification according to Directive 67/548/EEC or 1999/45/EC as amended

This substance does not meet the criteria for classification according to Directive 67/548/EEC as amended.

#### 2.1.2 Classification according to Regulation (EC) No 1272/2008 as amended

This substance does not meet the criteria for classification according to Regulation (EC) 1272/2008 as amended.

### 2.2 Label elements

Not applicable.

### 2.3 Other hazards

Not likely to be an irritant in the solid form. Danger of burns when heated/molten material is handled.

## 3. Composition/information on ingredients

### 3.1 Substances

Chemical Name	CAS No.	Weight %	Exposure Limits
Acrylonitrile-Butadiene-Styrene copolymer	9003-56-9	>98	None
Additives	-	≤2	None



## **4. First aid measures**

### **4.1 Description of first aid measures**

Remove affected persons from the danger area, at the same time ensuring your own safety. Remove all contaminated clothing immediately.

#### **4.1.1 Inhalation:**

In case of gases evolving from melted resin, move subject to fresh air. Treat symptomatically

#### **4.1.2 Skin contact:**

In case of pellets or powder, wash with water. In case of smelt, wash affected skin area and clothing with plenty of (soap and) water. Seek medical advice

#### **4.1.3 Eye contact:**

In case of pellets or powder, flush with plenty of water for at least 15 minutes. Seek medical advice if any dust particles still remain.

In case of gases evolving from melted resin of high temperature, flush with plenty of water for at least 15 minutes. Seek medical advice if necessary

#### **4.1.4 Ingestion:**

Induce vomiting. Rinse mouth with water. Seek medical advice if necessary

### **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. (Decontamination, vital functions)

## **5. Fire-fighting measures**

### **5.1 Suitable extinguishing media**

Water, foam, dry chemical powder

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

not applicable

### **5.3 Advice for fire fighters**

Protective equipment: Self-contained breathing apparatus



## **6. Accidental release measures**

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

Filaments remained on ground may cause slipping

Wear protective equipment

Ensure adequate ventilation

Keep away from ignition sources

Keep unprotected persons away

### **6.2 Environmental precautions**

Do not allow product to reach sewage system or water bodies. Inform respective authorities in case product reaches water, sewage system or soil

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

Recovery if not contaminated or disposal

## **7. Handling and storage**

### **7.1 Precautions for safe handling**

#### **Measures to prevent fire:**

Prevent from fire around handling area

#### **Measures to prevent aerosol and dust generation:**

Maintain good housekeeping standards to prevent accumulation of dust. To avoid dust explosion resulting from the existence of powder, electrostatics eliminators and grounding should be fixed to such equipment as air transferring pipes, bag filters and hoppers. Use electrically conductive filters for bag filters.

### **7.2 Conditions for safe storage**

Store in ambient temperatures. Avoid exposure to high moisture levels. No special restrictions on storage with other products. Keep the material at a cool dry place. Protect from direct sunlight, rain and violent temperature fluctuation. Fire is inhibited around storage area.

## **8. Exposure controls/personal protection**

### **8.1 Control parameters**

#### **Exposure Limits:**

None established

### **8.2 Engineering controls**

Provide appropriate exhaust ventilation at places where dust is formed or the material is molten, such as during printing.

### **8.3 Personal protective equipment**

Wear gloves when handling hot/molten material.



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### 9. Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

Appearance:	Filament, Solid
Color:	Various
Odor:	Odorless or negligible
Odor threshold:	None
pH:	Not applicable
Melting point/freezing point:	Not determined
Boiling point:	Not applicable
Flash point:	404 °C
Evaporation rate:	Not applicable
Flammability:	Not available
Upper/lower flammability or explosive limits:	45 g/m <sup>3</sup> (open cup, powder)
Vapor pressure:	Not applicable
Vapor density:	Not applicable
Relative density:	1.03-1.10 g/cm <sup>3</sup>
Solubility:	Not soluble
Partition coefficient (n-octanol/water):	No data available
Auto-ignition temperature:	466 °C
Decomposition temperature:	Onset of decomposition > 380 °C
Viscosity:	Not applicable

### 10. Stability and reactivity

#### 10.1 Reactivity

Non-reactive under normal handling and storage conditions

#### 10.2 Chemical stability

Stable under normal handling and storage conditions

#### 10.3 Possibility of hazardous reactions

Data no available

#### 10.4 Conditions to avoid

Avoid excessive heat, flames and all sources of ignition

#### 10.5 Incompatible materials

not applicable

#### 10.6 Hazardous decomposition products

not applicable



## 11. Toxicological information

### 11.1 Likely routes of exposure

**Inhalation:**

Dust irritates the respiratory system, and may cause coughing and difficulties in breathing.

**Skin contact:**

Dust may irritate skin.

**Eye contact:**

Dust may irritate the eyes.

**Ingestion:**

May cause discomfort if swallowed.

### 11.2 Symptoms

Dust may irritate throat and respiratory system and cause coughing. Direct contact with eyes may cause temporary irritation.

### 11.3 Information on 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.



## **12. Ecological information**

### **12.1 Toxicity**

#### **Short-term aquatic toxicity:**

Based on available data on the constituents the classification criteria are not met.

LC(50)mixture = 5.78 mg/l (additivity and summation method, toxicity information available for 92,5 % of the mixture)

#### **Long-term aquatic toxicity:**

Based on available data on the constituents the classification criteria are met and the mixture is therefore classified as Aquatic Chronic 1. NOECmixture = 0.0079 mg/l (additivity and summation method, toxicity information available for 78 % of the mixture)

### **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.

### **12.4 Mobility in soil**

no data available

### **12.5 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 / Packaging disposal:**

Dispose in accordance with the current local regulations.

#### **Waste treatment-relevant information:**

Inadequate incineration may generate toxic gases such as CO, HCN, AN and SM



## **14. Transport information**

### **ADR/RID**

#### **14.1 UN number**

Not applicable

#### **14.2 UN proper shipping name**

Proper Shipping Name: NOT REGULATED

#### **14.3 Transport hazard class(es)**

Not applicable

#### **14.4 Packing Group**

Not applicable

#### **14.5 Environmental hazards**

Not considered environmentally hazardous based on available data

#### **14.6 Special precautions for user**

Special Provisions: no data available Hazard identification No: no data available

### **ADNR / ADN**

#### **14.1 UN number**

Not applicable

#### **14.2 UN proper shipping name**

Proper Shipping Name: NOT REGULATED

#### **14.3 Transport hazard class(es)**

Not applicable

#### **14.4 Packing Group**

Not applicable

#### **14.5 Environmental hazards**

Not considered environmentally hazardous based on available data

#### **14.6 Special precautions for user**

no data available



## Material Safety Data Sheet

### IMDG

**14.1 UN number**

Not applicable

**14.2 UN proper shipping name**

Proper Shipping Name: NOT REGULATED

**14.3 Transport hazard class(es)**

Not applicable

**14.4 Packing Group**

Not applicable

**14.5 Environmental hazards**

Not considered environmentally hazardous based on available data

**14.6 Special precautions for user**

EMS Number: Not applicable

**14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable

### ICAO/IATA

**14.1 UN number**

Not applicable

**14.2 UN proper shipping name**

Proper Shipping Name: NOT REGULATED

**14.3 Transport hazard class(es)**

Not applicable

**14.4 Packing Group**

Not applicable

**14.5 Environmental hazards**

Not considered environmentally hazardous based on available data

**14.6 Special precautions for user**

no data available





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### 15. Regulatory information

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

Authorization and / or restrictions on use: None

Other EU regulations: The following substances are under European Seveso regulation:

Substance	Seveso category	Other Seveso categories	Seveso concentrations	Categories
Acrylonitrile	2	9ii 7b	$0 \% \leq C < 20 \%$	2
Buta-1,3-diene	0	0	-	-
Styrene	6	-	$C \geq 12.5 \%$	-

#### 15.2 Chemical Safety Assessment

For this substance a chemical safety assessment is not yet required.

### 16. Other information

#### **Declare to reader**

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. This shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.