

DELRAY Material

Safety Data Sheet

According to EU Directive 1907/2006

Product name: PC-ABS

Date of issue: 31-05-2018

Version: 1.3

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

- 1.1 Trade name:**
PC-ABS
- 1.2 Use of the product:**
3Dprinter Filament
- 1.3 Supplier:**
DELRAY Systems LLC
419 Golf View Lane
Rochester, MI 48309
Phone: 248-218-1916

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
- 2.3 Other hazards**
Dust: Can cause skin, eye and respiratory tract irritation.
In case of dust formation (Fine dust): May form explosible dust-air mixture if dispersed.
The melted product can cause severe burns.
Special danger of slipping by leaking/spilling product.
Results of PBT and vPvB assessment:
This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

3. Composition/information on ingredients

- 3.2. Mixtures**
Chemical characterization: Polymer mixture, enhanced for 3D printing
CAS No.
9003-55-8: Styrene-butadiene copolymer
24936-68-3: Polycarbonate

3.2 Additional information

Non of the substances, named in the Candidate list art. 59 (1,10) of the REACH regulation EC no. 1907/2006 has been used in a concentration > 0,1%.

Reach info:

	Pre-registration No.	Registration No.
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4,4'-isopropylidenediphenol		01-2119457856-23-0028
Methanol	05-2117149506-41-0000	
Ethylene carbonate		01-2119540523-46-0006
Phenol		01-2119471329-32

4. First aid measures

4.1 Description of first aid measures

General information:

If you feel unwell, seek medical advice (show the label where possible). Never give anything by mouth to an unconscious person. Remove affected persons from the danger area, at the same time ensuring your own safety. Remove all contaminated clothing immediately.

After inhalation:

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

In case of 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.

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. Induce vomiting and call a physician. If a person vomits when lying on his back, place him in the recovery position

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

If burn is present, treat as any thermal burn, after decontamination. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. No specific antidote.

Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. Fire fighting measures

5.1 Extinguishing media

Suitable extinguishing media:

Water spray, Dry powder

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 dust formation (Fine dust): May form explosible dust-air mixture if dispersed.

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In case of fire may be liberated: Smoke, hydrocarbons, styrene-monomer, butadiene, aldehydes and acids (organic), carbon monoxide and carbon dioxide (CO₂).

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

May form explosible dust-air mixture if dispersed. Remove all sources of ignition. Provide adequate ventilation. Do not breathe dust. Wear appropriate protective equipment. Take off contaminated clothing and wash it before reuse. Keep unprotected people away.

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. Take up mechanically. Can be reused without regeneration. Additional information: Take precautionary measures against static discharges. Special danger of slipping by leaking/spilling product.

7. Handling and storage

7.1 Handling

Advices on safe handling:

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

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

Molten material: Avoid contact with the substance.

Precautions against fire and explosion:

In case of dust formation (Fine dust): May form explosible dust-air mixture if dispersed. Take precautionary measures against static discharges. Keep away from sources of ignition. Use grounding equipment. Use explosion-proof equipment and non-sparking tools/utensils. Keep away from oxidising agents and strongly acid or alkaline materials.

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.

8. Exposure controls/personal protection

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8.1 Control parameters

Dnel: Dnel/Dmel- values are not available.
PNEC: PNEC- values are not available.

8.2 Exposure controls

Provide good ventilation in the work area. Additional controls are not normally necessary when handling the polymer.

Thermal extrusion: Provide local exhaust ventilation to ensure that the workplace exposure limit is not exceeded.

Use of respiratory protection may be necessary during maintenance activities.

Personal protection equipment

Occupational exposure controls

Respiratory protection: In case of dust formation:
Use filter type A-P2 according to EN 14387.

Hand protection: Protective gloves according to EN 374.
Protective gloves made of fabric or leather.
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.
In case of melting: Impervious heat protective gloves according to EN 407
Glove material: Leather
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 safety shoes

General protection and hygiene measures:
Do not breathe dust.
Take off contaminated clothing and wash it before reuse.
When using do not eat, drink or smoke. Wash hands before breaks and after work.
When handling large quantities, supply emergency spray.
In case of dust formation: Particular danger of slipping on spilled product on the ground.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Solid Filament
Odour	neutral
Colour	depending on product grade
Odour threshold	No information available
pH	Not applicable
Melting/freezing point	No information available
Initial boiling point and boiling range	Not applicable
Flash point	Not applicable
Evaporation rate	Not applicable

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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	No information available
Solubility(ies)	Negligible
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	not self-igniting
Decomposition temperature	$\geq 280^{\circ}\text{C}$
Viscosity	Not applicable
Explosive properties	No information available
Oxidizing properties	No information available

10. Stability

10.1 Reactivity: No information available

10.2 Chemical stability:
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions:
No decomposition if stored and applied as directed

10.4 Conditions to avoid:
Avoid elevated temperatures for prolonged periods of time. Take precautionary measures against static discharges.

10.5 Incompatible materials:
Strong oxidisers

10.6 Hazardous decomposition products
Build-up of dangerous/toxic fumes possible in cases of fire/high temperature.

11. Toxicological information

11.1 Information on toxicological effects

Toxicological effects:

Acute toxicity (oral):	Not applicable
Acute toxicity (dermal):	Not applicable
Acute toxicity (inhalative):	Not applicable
Skin corrosion/irritation:	Not irritating.
Eye damage/irritation:	Lack of data. May cause irritations.
Sensitisation to the respiratory tract:	

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Skin sensitisation:	No sensitization
Dust:	No sensitization
Processing, thermal hazards:	Can cause skin, eye and respiratory tract irritation.
	Vapours: Can cause skin, eye and respiratory tract irritation.
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.

Symptoms

Dust:	Skin irritation, eye irritations and redness The melted product can cause severe burns.
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12. Ecological information

12.1 Toxicity

no relevant information available.

12.2. Persistence and degradability

Difficult to degrade

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 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

Contaminated packaging

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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/DGR

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

Directive 96/82/EC: Update 2003.
Directive 96/82/EC does not apply.

Further information: Reserved for industrial and professional use.

15.2 Chemical Safety Assessment

For this substance a chemical safety assessment is not required

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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. 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.