

Security data sheet
Following laws (CE) n° 1907/2006, Article 31

Safety Data Sheet POLYCARBONATE INNOVATEFIL®

1. Identification of the substance or mixture and company responsible for product identification manufacturing / marketing:

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1.1 Identification

INNOVATEFIL® POLYCARBONATE

1.2 Forms of use

Uses: Filament for 3D printing FDM supports any printer type

1.3 Company



SMART MATERIALS 3D

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INNOVATEFIL® by Smart Materials 3D

1.3 Emergency phone: 112

2. Hazards identification

2.1 Classification

- Classification according to Regulation (EC) No 1272/2008: The product is not classified according to the CLP regulation.
- Classification according to the directive 67/548/CEE or Directive 1999/45/CE: Not classified.
- Classification System: Not required to identify the product according to the calculation procedure in the latest valid version of the "General Classification guideline for preparations of the EU"

3. Composition

- Poly-(4,4'isopropyliden diphenyl carbonate) (CAS: 25971-63-5)

3.1 Chemical characterization: Mixes

Description: Polymer

Dangerous components: Non-applicable.

Other components: Non-applicable

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4. First aids:

4.1 Description of First Aids

- General instruction: Change clothes impregnated with the product.
- In case of inhalation: Supply fresh air. In case of disturbances, consult a doctor.
- After inhalation of decomposition products, breathe fresh air, rest, seek medical help.
- In case of skin contact: Wash with soap and water. Visit your doctor if irritation continues skin.
- After contact with molten product, cool rapidly with cold water. No skin separating the solidified product. Call a doctor immediately.
- In case of eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor. Remove contact lenses, if present and easy. Continue rinsing.
- If swallowed: Rinse mouth and drink plenty of water. Do not induce vomiting. Consult doctor in case of persistent symptoms.

5. Firefighting measures:

5.1 Suitable extinguishing media

As appropriate for surrounding fire. Extinguish with carbon dioxide, dry chemical, foam or water spray.

5.2. Unsuitable extinguishing media for safety reasons

None known.

5.3 Special hazards arising from the substance or mixture

Formation of toxic gases if heated or fire.

Irritant gases / vapors.

During a fire, they can be released:

- Smoke
- Carbon monoxide (CO) and carbon dioxide (CO₂)
- carbonic hydrogens
- Hydrogen cyanide (HCN)

Under certain conditions, during the fire may traces of other toxic materials.

Measures Accidental Spill: Personal precautions

5.4 Advice for firefighters

Protective equipment: Wear protective breathing apparatus independent of the ambient air.

6. Measures in case of accidental release

6.1 Personal precautions,

- Protective equipment and emergency procedures
- Avoid dust formation.
- Do not breathe dust.
- Keep away from sources of ignition.
- Avoid eye contact.
- Danger of slipping on spilled product or pouring.

6.2 Environmental cautions:

Do not discharge into drains / surface water / ground water.

6.3 Methods and materials for containment and cleaning up:

Allow to solidify, pick up mechanically

Dispose of the material collected according to regulations.

7. Handling and Storage:

7.1. Precautions for safe handling

- Ensure good ventilation / exhaustion at the workplace.
- Avoid dust formation.
- Do not inhale fumes / dust produced.
- Remove regularly dust that inevitably form.
- Avoid contact with the eyes and skin.
- Complying value / it is of the CMA.
- Avoid contact with the product I heat.

Prevention of fire and explosion:

- Protect against electrostatic charges.
- Keep away from sources of ignition - No smoking.
- Protect from heat.
- The enrichment of fine dust in presence of air can lead to danger of dust explosion.

7.2. Conditions for safe storage, including any incompatibilities

- Requirements to be met by storerooms and receptacles:
Innovatefil® POLYCARBONATE is delivered in a vacuum bag with a great barrier against moisture so that the filament cannot absorb humidity. Before bagging, the filament follows the strictest quality controls by dehumidifying the raw material until the moisture content is lower than 0.02%. During the process the filament is cooled down by dry air and next it is bagged to make sure the product is the highest quality. Once the product is unpacked we recommend to keep it in a dry and dark environment. For an optimal

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use it is advisable to use a preheating and dehumidification system on the machine. If not maintained in a suitable environment the material can absorb up to 0.5% of atmospheric humidity, this could create water vapour in the extrusion that will bring a poor surface finish.

8. Exposure controls / personal protection

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8.1 Control parameters

A continuous supply of fresh air to the workplace together with removal of processing fumes through exhaust systems is recommended. Processing fumes may contain small amounts of carbon dioxide, diphenyl-carbonate, phenol and substituted phenols.

Ventilation requirements must be locally determined to limit.

8.2 Personal protection equipment.

General safety and hygiene:

- Keep away from foodstuffs, beverages, and food.
- Do not eat, drink, smoke, or sniff snuff during work.
- Do not breathe dust / smoke / mist.
- Avoid contact with eyes and skin.
- Wash hands before breaks and after work.

Breathing equipment:

- Surely concentrations below the value of the CMA does not require special measures.

Protection of hands:

- For use of chemical protective gloves is required.
- For handling product, 1 heat / cast heat resistant gloves.

Eye protection:

- Protection glasses

Body protection:

- For handling, hot / molten heat resistant protective clothing product.

9. Fisical and chemical properties:

- A. Appearance: Trasnparent
- B. Odor: Odourless
- C. Odour Threshold: NA
- D. pH: NA
- E. Boiling Point (° C): NA
- F. Melting point (° C): NA
- G. Softening point (° C): 220 ~ 230°C
- H. Evaporation Rate: NA
- I. Properties Flammable / Explosive: NA
- J. Vapor pressure / vapor density: NA
- K. Relative density: 1.2
- L. Solubility: Insoluble
- M. Octanol / water partition: NA
- N. Auto-ignition temperature: NA
- O. Decomposition temperature: NA

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P. Viscosity: NA

Q. Other properties: NA

10. Stability and reactivity

10.1 Reactivity

Non-applicable

10.2 Chemical stability

Thermal decomposition / conditions to be avoided:

- No decomposition with storage and proper handling.
- Avoid impact, friction, heat, sparks, and electrostatic charges.

10.3 Possibility of dangerous reactions.

Non-applicable.

10.4 Conditions to be avoided

Attacked by strong oxidizing agent.

10.5 Strong decomposition products

- Irritant gases / vapours.
- Toxic gases / vapours.
- Smoke.
- Carbon monoxide (CO) and carbon dioxide (CO₂) emissions

11. Toxicological Information

11.1 Information on toxicological effects

The following information is based on a consideration of the properties of the main components of this mixture.

on the skin: Dust may cause mechanical irritation.

- Ingestion: Predicted to be low toxicity under normal conditions of handling and use.
- Inhalation: Mechanical irritation of the respiratory tract.
- Skin Contact: Repeated and/or prolonged skin contact may cause irritation. In the event of contact with molten product: Thermal Burns (molten polymer will adhere to skin and cause severe burns).
- Eye Contact: Dust may have irritant effect on eyes. Permanent damage is unlikely.
- Long Term Exposure: Chronic effects are unlikely.

12. Ecological information

12.1 Ecotoxicity

It is not expected to be very toxic, but if ingested by birds or aquatic life, can cause adverse mechanical effects

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12.2 Mobility

Bioconcentration is not expected because of the high molecular weight (MW > 1000). In the terrestrial environment, material is expected to remain in the soil. In the aquatic environment material will sink and remain in the sediment.

12.3 Persistence and degradability

This solid water-insoluble polymeric are expected to be inert in the environment. Surface degradation is expected with exposure to sunlight. Appreciable biodegradation is not expected.

12.4 Additional ecological information

General instructions: CPA 1 (auto classification): not dangerous for water.

12.5 Results of PBT y mPmB

PBT: Non-applicable.

mPmB: Non-applicable.

13 Disposal considerations

13.1 Methods for treating waste

Recommendation: Disposal according to official regulations.

European waste catalog:

Allocation of waste codes according to the European waste list depends on the source generating the waste.

Contaminated packaging:

Recommendation: Disposal according to official regulations.

14 Transport information

Not regulated.

15 Regulatory information

This product complies with the Chemical Substance Inventory requirements of the U.S.A EPA Toxic Substance Control Act (TSCA).

16 Other information

The data is based on the current state of knowledge, but it is not a guarantee of the product features and it is not legally valid in a contractual relationship.

The statements made here should describe the product with regard to the necessary safety precautions – they are not meant to guarantee definite characteristics – but they are based on our present up-to-date knowledge.