Polymaker™ PC-PBT 112000021502

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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Polymaker™ PC-PBT

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use:
3D Printing Filamentt

1.3 Details of the supplier of the safety data sheet

Building 6&7&11, No.2, Hai Cheng Road,
Chang Shu Economic & Technological Development Zone,
215513, People's Republic of China

Tel.: +86 0512-52058005
Email: zhenggang.cai@polymaker.com

1.4 Emergency telephone number

+86 0512-52058005

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

No classification in accordance with the Regulation (EC) No. 1272/2008.

2.2 Label elements

No labeling necessary according to the Regulation (EC) No. 1272/2008.

2.3 Other hazards

No information available.

SECTION 3: Composition/information on ingredients

Type of product: Mixture

3.2 Mixtures

Polymer blend based on bisphenol A-polycarbonate

No dangerous ingredients according to REACH-Regulation (EC) No. 1907/2006.

Candidate List of Substances of Very High Concern for Authorisation
This product contains no substances of very high concern in concentrations where an information obligation applies (REACH Regulation (EC) No. 1907/2006, Article 59).

SECTION 4: First aid measures

4.1 Description of first aid measures

In case of skin contact: CONTACT WITH THE HOT MELT: Cool immediately with plenty of water. Do not remove product crusts which may have formed neither forcibly nor by applying any solvents to the skin involved. To obtain treatment for possible burns, and appropriate skin care, seek medical advice immediately.

The following information refers to the handling of the product at room temperature. In case of skin contact wash affected areas thoroughly with soap and plenty of water.

4.2 Most important symptoms and effects, both acute and delayed

Notes to physician: No information available.

4.3 Indication of any immediate medical attention and special treatment needed

Therapeutic measures: No information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: sprayed water jet, extinguishing powder, Carbon dioxide (CO2), Foam, Dry chemical

5.2 Special hazards arising from the substance or mixture

Burning releases carbon monoxide, carbon dioxide, oxides of nitrogen and traces of hydrogen cyanide. In the event of fire and/or explosion do not breathe fumes.

5.3 Advice for fire-fighters

Firemen must wear self-contained breathing apparatus.

Do not allow contaminated extinguishing water to enter the soil, ground-water or surface waters.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Granules - slip hazard!

6.2 Environment related measures

Do not flush into surface water or sanitary sewer system.

6.3 Methods and material for containment and cleaning up

Use mechanical handling equipment. Avoid dust formation.

6.4 Reference to other sections

For further disposal measures see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Under recommended processing conditions small amounts of residues of monomers and residual solvent may be emitted. Provided good ventilation and/or local exhaust systems are used, the Workplace Exposure Limit(s) stated in section 8 should not be exceeded.

In case of mechanical processing, dust must be removed by effective exhaust ventilation.

Keep away from foodstuffs, drinks and tobacco. Wash hands before breaks and at end of work and use skin-protecting ointment. Change contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities

No special storage conditions required.

Storage class (TRGS 510) : 11: Combustible Solids

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

The regulations for the substances listed below must be observed when processing this product, particularly if processing takes place at elevated temperatures. In our experience the provision of effective fresh-air and exhaust ventilation equipment at the points where vapors may be generated will ensure compliance with the tolerance limits quoted below.

Substance	CAS-No.	Basis	Type	Value	Ceiling Limit Value	Remarks
styrene	100-42-5	TRGS 900				Listed.
styrene	100-42-5	TRGS 900		20 ppm 86 mg/m3	2	Y
styrene	100-42-5	TRGS 900	STEL CL			Category II: substances with a resorptive effect.
Ethylbenzene	100-41-4	EU ELV	TWA	100 ppm 442 mg/m3		Indicative
Ethylbenzene	100-41-4	EU ELV	STEL	200 ppm 884 mg/m3		Indicative
Ethylbenzene	100-41-4	EU ELV				Dermal absorption possible
Ethylbenzene	100-41-4	TRGS 900				Listed.
Ethylbenzene	100-41-4	TRGS 900				Dermal absorption possible
Ethylbenzene	100-41-4	TRGS 900		20 ppm 88 mg/m3	2	Y
Ethylbenzene	100-41-4	TRGS 900	STEL CL			Category II: substances with a resorptive effect.
phenol	108-95-2	EU ELV	TWA	2 ppm 8 mg/m3		Indicative
phenol	108-95-2	EU ELV				Dermal absorption possible
phenol	108-95-2	EU ELV	STEL	4 ppm 16 mg/m3		Indicative
phenol	108-95-2	TRGS 900				Listed.
phenol	108-95-2	TRGS 900				Dermal absorption possible
phenol	108-95-2	TRGS 900		2 ppm 8 mg/m3	2	
phenol	108-95-2	TRGS 900	STEL CL			Category II: substances with a resorptive effect.

4-tert-butylphenol	98-54-4	TRGS 900				Listed.
4-tert-butylphenol	98-54-4	TRGS 900		0,08 ppm 0,5 mg/m3	2	
4-tert-butylphenol	98-54-4	TRGS 900				Dermal absorption possible
4-tert-butylphenol	98-54-4	TRGS 900	STEL CL			Category II: substances with a resorptive effect.
chlorobenzene	108-90-7	EU ELV	TWA	5 ppm 23 mg/m3		Indicative
chlorobenzene	108-90-7	EU ELV	STEL	15 ppm 70 mg/m3		Indicative
chlorobenzene	108-90-7	TRGS 900				Listed.
chlorobenzene	108-90-7	TRGS 900		10 ppm 47 mg/m3	2	Y
chlorobenzene	108-90-7	TRGS 900	STEL CL			Category II: substances with a resorptive effect.
2,2-Bis-(4-hydroxyphenyl)-propane (4,4'-Isopropylidenediphenol)	80-05-7	EU ELV	TWA	2 mg/m3		Indicative
2,2-Bis-(4-hydroxyphenyl)-propane (4,4'-Isopropylidenediphenol)	80-05-7	TRGS 900				Listed.
2,2-Bis-(4-hydroxyphenyl)-propane (4,4'-Isopropylidenediphenol)	80-05-7	TRGS 900	STEL CL			Category I: substances for which the localized effect has an assigned OEL or for substances with a sensitizing effect in respiratory passages.
2,2-Bis-(4-hydroxyphenyl)-propane (4,4'-Isopropylidenediphenol)	80-05-7	TRGS 900		5 mg/m3	1	Y
Tetrahydrofuran	109-99-9	EU ELV	STEL	100 ppm 300 mg/m3		Indicative
Tetrahydrofuran	109-99-9	EU ELV				Dermal absorption possible
Tetrahydrofuran	109-99-9	EU ELV	TWA	50 ppm 150 mg/m3		Indicative
Tetrahydrofuran	109-99-9	TRGS 900				Listed.
Tetrahydrofuran	109-99-9	TRGS 900		50 ppm 150 mg/m3	2	Y
Tetrahydrofuran	109-99-9	TRGS 900				Dermal absorption possible
Tetrahydrofuran	109-99-9	TRGS 900	STEL CL			Category I: substances for which the localized effect has an assigned OEL or for substances with a sensitizing effect in respiratory passages.
General limiting value of dust		TRGS 900		10 mg/m3	2	inhalable fraction
General limiting value of dust		TRGS 900		3 mg/m3	2	alveolar fraction
General limiting value of dust		TRGS 900	STEL CL			Category II: substances with a resorptive effect.

8.2 Exposure controls

Respiratory protection
In case of dust formation use respiratory equipment with filter type particle filter P1 according to EN 143.

Hand protection
Suitable materials for safety gloves; EN 374:
Polyvinyl chloride - PVC (>= 0.5 mm)
Contaminated and/or damaged gloves must be changed.

Eye protection
Wear eye/face protection.

Skin and body protection
Wear suitable protective clothing.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance:	granular
Colour:	different according to colouration
Odour:	odourless
pH:	not applicable
Softening point:	100 - 200 °C
Upper/lower flammability or explosive limits:	not applicable
Vapour pressure:	not applicable
Density:	ca. 1,1 - 1,4 g/cm³
Bulk density:	600 - 800 kg/m3
Water solubility:	practically insoluble
Auto-ignition temperature:	not applicable
Ignition temperature:	> 320 °C
Decomposition temperature:	>= 380 °C
Viscosity, dynamic:	not applicable

9.2 Other information

The indicated values do not necessarily correspond to the product specification. Please refer to the product information sheet or the technical information sheet for specification data.

SECTION 10: Stability and reactivity

10.1 Reactivity

This information is not available.

10.2 Chemical stability

Fumes evolved by overheating during improperly processing or by burning may be injurious to health.

10.3 Possibility of hazardous reactions

No hazardous reactions observed.

10.4 Conditions to avoid

This information is not available.

10.5 Incompatible materials

This information is not available.

10.6 Hazardous decomposition products

Caused by smouldering and incomplete combustion toxic fumes mainly consisting of CO and CO2 may be developed.

Under recommended processing conditions small amounts of emissions may occur.

The regulations for the substances listed below must be observed when processing this product, particularly if processing takes place at elevated temperatures.

acrylonitrile
Index-No. 608-003-00-4
CAS-No.: 107-13-1
Classification (1272/2008/CE): Flam. Liq. 2 H225 Carc. 1B H350 Repr. 2 H361d Acute Tox. 3 Inhalative H331 Acute Tox. 3 Dermal H311 Acute Tox. 3 Oral H301 STOT SE 3 H335 Skin Irrit. 2 H315 Eye Dam. 1 H318 Skin Sens. 1 H317 Aquatic Chronic 2 H411

styrene
Index-No. 601-026-00-0
CAS-No.: 100-42-5
Classification (1272/2008/CE): Flam. Liq. 3 H226 Acute Tox. 4 Inhalative H332 Asp. Tox. 1 H304 Eye Irrit. 2 H319 Skin Irrit. 2 H315 STOT SE 3 H335 STOT RE 1 Inhalative H372 Aquatic Chronic 3 H412 Repr. 2 H361d

1,3-butadiene
Index-No. 601-013-00-X
CAS-No.: 106-99-0
Classification (1272/2008/CE): Flam.Gas 1 H220 Press. Gas Muta. 1B H340 Carc. 1A H350

4-Vinylcyclohexene
EC-No.: 202-848-9
CAS-No.: 100-40-3
Classification (1272/2008/CE): Carc. 2 H351 Flam. Liq. 2 H225 Skin Irrit. 2 H315 Asp. Tox. 1 H304 Repr. 2 H361 Aquatic Chronic 3 H412

Ethylbenzene
EC-No.: 202-849-4
CAS-No.: 100-41-4
Classification (1272/2008/CE): Flam. Liq. 2 H225 Asp. Tox. 1 H304 Acute Tox. 4 Inhalative H332 STOT RE 2 Inhalative H373 Aquatic Chronic 3 H412

phenol
Index-No. 604-001-00-2
CAS-No.: 108-95-2
Classification (1272/2008/CE): Muta. 2 H341 Acute Tox. 3 Inhalative H331 Acute Tox. 3 Dermal H311 Acute Tox. 3 Oral H301 Skin Corr. 1B H314 Eye Dam. 1 H318 STOT RE 2 H373 Aquatic Chronic 2 H411

4-tert-butylphenol
Index-No. 604-090-00-8
CAS-No.: 98-54-4
Classification (1272/2008/CE): Skin Irrit. 2 H315 Eye Dam. 1 H318 Repr. 2 H361f Aquatic Chronic 1 H410

chlorobenzene
Index-No. 602-033-00-1
CAS-No.: 108-90-7
Classification (1272/2008/CE): Flam. Liq. 3 H226 Acute Tox. 4 Inhalative H332 Skin Irrit. 2 H315 Aquatic Chronic 2 H411

2,2-Bis-(4-hydroxyphenyl)-propane (4,4'-Isopropylidenediphenol)
CAS-No.: 80-05-7
Classification (1272/2008/CE): Repr. 1B H360F STOT SE 3 Inhalative H335 Eye Dam. 1 H318 Skin Sens. 1 H317 Aquatic Chronic 2 H411

Tetrahydrofuran
Index-No. 603-025-00-0
CAS-No.: 109-99-9
Classification (1272/2008/CE): Acute Tox. 4 Oral H302 Eye Irrit. 2 H319 Carc. 2 H351 STOT SE 3 H335

SECTION 11: Toxicological information

Toxicological studies on the product are not yet available.

11.1 Information on toxicological effects

Acute toxicity, oral
No data available.

Acute toxicity, dermal
No data available.

Acute toxicity, inhalation
No data available.

Primary skin irritation
No data available.

Primary mucosae irritation
No data available.

Sensitisation
No data available.

Subacute, subchronic and prolonged toxicity
No data available.

Carcinogenicity
No data available.

Reproductive toxicity/Fertility
No data available.

Reproductive toxicity/Teratogenicity
No data available.

Genotoxicity in vitro
No data available.

Genotoxicity in vivo
No data available.

STOT evaluation – one-time exposure
No data available.

STOT evaluation – repeated exposure
No data available.

Aspiration toxicity
No data available.

Additional information
According to our experience and information the product has no harmful effects on health if properly handled.

SECTION 12: Ecological information

Ecotoxicological studies of the product are not available.

Do not allow to escape into waterways, wastewater or soil.

12.1 Toxicity

No data available.

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

No data available.

12.6 Other adverse effects

The product is practically insoluble in water. In view of its consistency and insolubility in water, no ecological problems are to be expected if the product is properly handled. The product is not readily biodegradable.

SECTION 13: Disposal considerations

Dispose in accordance with applicable international, national and local laws, ordinances and statutes.

For disposal within the EC, the appropriate code according to the European Waste Catalogue (EWC) should be used.

13.1 Waste treatment methods

After containers have been emptied as thoroughly as possible (e.g. by pouring, scraping or draining until "drip-dry"), they can be sent to an appropriate collection point set up within the framework of the existing take-back scheme of the chemical industry. Containers must be recycled in compliance with national legislation and environmental regulations.

The product is suitable for mechanical recycling. After appropriate treatment it can be remelted and reprocessed into new moulded articles. Mechanical recycling is only possible if the material has been selectively retrieved and carefully segregated according to type.

None disposal into waste water.

SECTION 14: Transport information

ADR/RID

14.1 UN number	:	Not dangerous goods
14.2 UN proper shipping name	:	Not dangerous goods
14.3 Transport hazard class(es)	:	Not dangerous goods
14.4 Packing group	:	Not dangerous goods
14.5 Environmental hazards	:	Not dangerous goods

ADN

14.1 UN number	:	Not dangerous goods
14.2 UN proper shipping name	:	Not dangerous goods
14.3 Transport hazard class(es)	:	Not dangerous goods
14.4 Packing group	:	Not dangerous goods
14.5 Environmental hazards	:	Not dangerous goods

IATA

14.1 UN number	:	Not dangerous goods
14.2 UN proper shipping name	:	Not dangerous goods
14.3 Transport hazard class(es)	:	Not dangerous goods
14.4 Packing group	:	Not dangerous goods
14.5 Environmental hazards	:	Not dangerous goods

IMDG

14.1 UN number	:	Not dangerous goods
14.2 UN proper shipping name	:	Not dangerous goods
14.3 Transport hazard class(es)	:	Not dangerous goods

14.4 Packing group : Not dangerous goods
14.5 Environmental hazards : Not dangerous goods

14.6 Special precautions for user

See section 6 - 8.

Additional information : Not dangerous cargo.
Keep dry.

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

SECTION 15: Regulatory information

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

Water contaminating class (Germany)
nw not water endangering
(in accordance with Annex 1 to the Directive on Water-Hazardous Substances)

15.2 Chemical Safety Assessment

A Chemical Safety Assessment has not been conducted for this substance / mixture resp. its components.

SECTION 16: Other information

Full text of the hazard statements of the CLP classification (1272/2008/CE) referred to under sections 2, 3 and 10.

H220	Extremely flammable gas.
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H340	May cause genetic defects.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H351	Suspected of causing cancer.
H360F	May damage fertility.
H361	Suspected of damaging fertility or the unborn child.
H361d	Suspected of damaging the unborn child.
H361f	Suspected of damaging fertility.
H372	Causes damage to organs through prolonged or repeated exposure if inhaled.
H373	May cause damage to organs through prolonged or repeated exposure.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

The safety data sheet is also valid for corresponding MBS... types.

Further information
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.