

SECTION 1 Chemical product and company identification

Chemical Chinese name	: PC (透明, 黑色, 白色)
Chemical English name	: PC (Transparent, Black, White)
Name of company	: UltiMaker
Title	: Supplier
Address	: The Netherlands Geldermalsen Watermolenweg 2
Zip code	: 4191 PN
Tel.	: +31 (0) 88 383 4000 (9 AM - 5 PM CET)
E-mail	: Product-Compliance@Ultimaker.com
Emergency number	: +31 (0) 88 383 4000 (during office hours: 9 AM - 5 PM CET)
Recommended use of the chemical	: 3D-Printer filament
Restricted use of the chemical	: This product must not be used in applications other than those identified above, without first seeking advice of the supplier

SECTION 2 Hazards identification

Emergency overview

Appearance: Filament, Various colours. Non flammable. This water-insoluble polymeric solid is expected to be inert in the environment. Not readily biodegradable. The product is non-reactive under normal conditions of use, storage and transport
To our knowledge, this product does not present any particular risk, provided it is handled in accordance with good occupational hygiene and safety practice

GHS hazard classification

Other hazards not mentioned above are Not applicable or No data is available.

Label elements

No data available

Physical and chemical hazards

No additional information available

Health hazards

Symptoms/effects : No acute and delayed symptoms and effects are observed

Symptoms/effects after skin contact : Risk of thermal burns on contact with molten product

Environmental hazards

No additional information available

Other hazards

Risk of thermal burns on contact with molten product

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SECTION 3 Composition/information on ingredients

Product form : Mixture.

Ingredient(s)	Concentration or concentration ranges (w/w %)	CAS No.
Polycarbonate	70 – 100	25037-45-0
Carbon black (Additive for PC Black)	< 2	1333-86-4
Titanium dioxide (Additive for PC White, Black)	< 1	13463-67-7

SECTION 4 First-aid measures

Description of necessary first-aid measures

- First-aid measures general : If you feel unwell, seek medical advice (show the label where possible)
- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
In molten state: Hazardous vapours may be released
- First-aid measures after skin contact : In case of contact with molten product, cool rapidly with water and seek immediate medical attention. Do not attempt to remove molten product from skin because skin will tear easily.
Burns caused by molten material must be treated clinically.
Wash skin with plenty of water and soap.
Take off contaminated clothing.
- First-aid measures after eye contact : Rinse eyes with water as a precaution.
In the event of contact with molten product: Immediately flush eyes thoroughly with water for at least 15 minutes.
Get immediate medical advice/attention.
- First-aid measures after ingestion : If you feel unwell, seek medical advice

Most important symptoms/effects

- Symptoms/effects : No acute and delayed symptoms and effects are observed
- Symptoms/effects after skin contact : Risk of thermal burns on contact with molten product

Advices for first aid responders

No additional information available

Notes for the doctor

- Other medical advice or treatment : Treat symptomatically

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SECTION 5 Fire-fighting measures

Extinguishing media

- Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire: Water spray, Dry powder, Foam, Carbon dioxide
- Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire

Specific hazards

- Hazardous decomposition products in case of fire : Under fire conditions, hazardous fumes will be present: Carbon dioxide, Carbon monoxide, Nitrogen oxides, traces of Hydrogen cyanide
- Explosion hazard : Material can accumulate some static charge during transfer
Prevent build-up of electrostatic charges (e.g. by grounding)

Advice for firefighters and protective measures

- Firefighting instructions : No additional information available
- Protection during firefighting : Do not attempt to take action without suitable protective equipment
Self-contained breathing apparatus
Complete protective clothing
- Precautionary measures fire : Do not allow run-off from fire-fighting to enter drains or water courses

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

- Heat and ignition sources : Keep away from heat, sparks and flames
Keep out of direct sunlight
- General measures : No additional information available
- Personal Precautions, Protective Equipment and Emergency Procedures : No additional information available

For non-emergency personnel

- Protective equipment : Wear recommended personal protective equipment
Refer to section 8.2
Remove contaminated clothing and shoes
- Emergency procedures : None in particular
In molten state: Do not breathe vapours
Ventilate spillage area
Avoid contact with skin, eyes and clothing

For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment
For further information refer to section 8: "Exposure controls/personal protection"

Environmental precautions

- Avoid release to the environment
- Notify authorities if product enters sewers or public waters

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Methods and material for containment and cleaning up

- Methods for cleaning : No additional information available
- Methods and Equipment for Containment and Cleaning up : Sweep up and put in a closed container for disposal
If melted: allow liquid to solidify before taking it up
- For containment : No additional information available

Prevention measures for secondary accidents

- Prevention Measures for Secondary Accidents : No additional information available
- Other information : Dispose of materials or solid residues at an authorized site

SECTION 7 Handling and storage

Handling

- Precautions for safe handling : Ensure good ventilation of the work station
In molten state: Do not breathe vapours
Avoid contact with skin, eyes and clothing
Wear personal protective equipment
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice
Do not eat, drink or smoke when using this product.
Always wash hands after handling the product
Contaminated work clothing should not be allowed out of the workplace.
Wash contaminated clothing before reuse.
- Local and general ventilation : No additional information available

Storage

- Storage conditions : To guarantee the quality and properties of the product:
Store in a well-ventilated place.
Store in original container
Keep container tightly closed to avoid moisture absorption and contamination
- Material used in packaging/containers : No additional information available
- Storage temperature : -20 – 30 °C (Relative air humidity: <50%)
- Heat and ignition sources : Keep away from heat, sparks and flames
Keep out of direct sunlight

SECTION 8 Exposure controls / Personal protection equipment

Occupational exposure limits

Carbon black (Additive for PC Black) (1333-86-4)	
China - Occupational Exposure Limits	
Local name	炭黑粉尘 # Carbon black dust

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Carbon black (Additive for PC Black) (1333-86-4)	
OEL TWA	4 mg/m³ 总尘
Remark (CN)	G2B（对人可疑致癌 (Possibly carcinogenic to humans)）
Regulatory reference	GBZ 2.1-2019
Titanium dioxide (Additive for PC White, Black) (13463-67-7)	
China - Occupational Exposure Limits	
Local name	二氧化钛粉尘 # Titanium dioxide dust
OEL TWA	8 mg/m³ 总尘
OEL chemical category (CN)	Possibly carcinogenic to humans dust
Catalogue of Occupational Hazard Factors	Category 1 - Dusts
Remark (CN)	G2B（对人可疑致癌 (Possibly carcinogenic to humans)）
Regulatory reference	GBZ 2.1-2019

Biological limit values

No additional information available

Monitoring methods

No additional information available

Appropriate engineering controls

Use process enclosures, local exhaust ventilation or other engineering controls to keep airborne levels below specified exposure limits. If user operations generate dust, fumes or mist, use ventilation to keep exposure to airborne particles below the exposure limit.
Ventilation conditions (1 printer): Provide a good standard of general ventilation, not less than 2 air changes per hour (assumes a room volume of: 30 m³)

Personal protective equipment

- Thermal hazard protection

: Risk of thermal burns on contact with molten product
Hazardous vapours may be released
In molten state: Wear respiratory protection/heat resistant gloves
- Environmental exposure controls

: Avoid release to the environment.
- Other information

: Handle in accordance with good industrial hygiene and safety procedures
Do not eat, drink or smoke when using this product.
Wash hands immediately after handling the product
Take off contaminated clothing and wash before reuse.
- Hand protection

: None under normal conditions
Use insulated gloves when handling this material hot

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Type	Material	Permeation	Thickness (mm)	Penetration	Standard
In molten state: , Chemically resistant protective gloves, Heat-resistant.	Polyvinylchloride (PVC).	6 (> 480 minutes).	>0.5		EN 374, EN 407.

Eye protection : None under normal use
In molten state: Wear eye protection

Type	Use	Characteristics	Standard
Safety glasses with side shields.	In molten state.		EN 166.

Skin and body protection : None under normal use
In molten state: Wear suitable protective clothing

Type	Standard
Long sleeved protective clothing, chemical resistant.	EN 13688.

Respiratory protection : None under normal use
In molten state: In case of insufficient ventilation, wear suitable respiratory
equipment

Device	Filter type	Condition	Standard
Air-Purifying Respirator (APR), disposable.	Type B/P2.		EN 140, EN 14387.

SECTION 9 Physical and chemical properties

Physical state : Solid
Appearance : Filament
Colour : Various colours
Odour : Slight
pH : No data available
Melting point : 145 – 160 °C
Freezing point : Not applicable
Boiling point : Not applicable
Flash point : Not applicable
Auto-ignition temperature : > 450 °C
Decomposition temperature : ≥ 380 °C.
Flammability : Non flammable
Vapour pressure : No data available
Relative vapour density at 20°C : No data available
Density : 1.18 – 1.2 g/cm³ (25°C)
Solubility : No data available

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Solubility in water	: Insoluble
Partition coefficient n-octanol/water (Log Pow)	: No data available
Viscosity, kinematic	: Not applicable
Explosive limits (vol %)	: Not applicable
Lower explosive limit (LEL)	: No data available
Upper explosive limit (UEL)	: No data available
Radioactive	: No
Explosive properties	: Not explosive
Oxidising properties	: Non oxidizing
Particle size distribution	: Not applicable

SECTION 10 Stability and reactivity

Chemical stability	: Stable under normal conditions
Reactivity	: The product is non-reactive under normal conditions of use, storage and transport
Possibility of hazardous reactions	: No dangerous reactions known under normal conditions of use
Conditions to avoid	: None under recommended storage and handling conditions (see section 7). To avoid thermal decomposition, do not overheat
Incompatible materials	: No additional information available
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced Under fire conditions, hazardous fumes will be present: Carbon dioxide, Carbon monoxide, Nitrogen oxides, traces of Hydrogen cyanide
Other properties	: No additional information available

SECTION 11 Toxicological information

Acute toxicity	
Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified
Skin corrosion/irritation	
Skin corrosion/irritation	: Not classified
Serious eye damage/eye irritation	
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitisation	
Respiratory or skin sensitisation	: Not classified

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Germ cell mutagenicity

Germ cell mutagenicity : Not classified

Carcinogenicity

Carcinogenicity : Not classified

Reproductive toxicity

Reproductive toxicity : Not classified

STOT - single exposure

STOT-single exposure : Not classified

STOT - repeated exposure

STOT-repeated exposure : Not classified

Aspiration hazard

Aspiration hazard : Not classified

PC (Transparent, Black, White)	
Viscosity, kinematic	Not applicable
Density	1.18 – 1.2 g/cm ³ (25°C)

SECTION 12 Ecological information

Ecotoxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

Hazardous to the aquatic environment, short-term (acute) : Not classified

Hazardous to the aquatic environment, long-term (chronic) : Not classified

Titanium dioxide (Additive for PC White, Black) (13463-67-7)	
LC50 fish 1	> 1000 mg/l

Persistence and degradability

PC (Transparent, Black, White)	
Persistence and degradability	This water-insoluble polymeric solid is expected to be inert in the environment Not readily biodegradable

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Bioaccumulative potential

No additional information available

Mobility in soil

No additional information available

Other adverse effects

Classification procedure (Ozone) : No data available

SECTION 13 Disposal considerations

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

Contaminated container and packaging : No additional information available

Additional information : No additional information available

Product/Packaging disposal recommendations : Empty containers should be taken for recycling, recovery or waste in accordance with local regulation

Regional legislation (waste) : Dispose of in accordance with relevant local regulations

SECTION 14 Transport information

In accordance with JT/T 617 / IMDG / IATA

Overland transport (JT/T 617)	Transport by sea	Air transport
UN number		
Not regulated for transport		
Proper shipping name		
Not regulated	Not regulated	Not regulated
Transport hazard class(es)		
Not regulated	Not regulated	Not regulated
Packing group		
Not regulated	Not regulated	Not regulated
Environmental hazards		
Not regulated	Not regulated	Not regulated
No supplementary information available		

Special transport precautions

Overland transport (JT/T 617)

Not regulated

Transport by sea

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Not regulated

Air transport

Not regulated

SECTION 15 Regulatory information

New Chemical Substance Environmental Management Registration Measures (MEE Order 12 of 2020)

Inventory of Existing Chemical Substances : Contains listed substance(s)

in China (IECSC)

Polycarbonate (CAS-No. 25037-45-0)

Carbon black (CAS-No. 1333-86-4)

Titanium oxide (CAS-No. 13463-67-7)

Law of the People's Republic of China on the Prevention and Control of Occupational Diseases

Catalogue for Classification of Hazardous : Contains listed substance(s)

Factors of Occupational Diseases

Carbon black dust (CAS-No. 1333-86-4)

Titanium dioxide dust (CAS-No. 13463-67-7)

SECTION 16 Other information

SDS Reason for revision

: Not applicable

Abbreviations and acronyms

CAS-No.

Chemical Abstract Service number

CAS

Chemical Abstract Service number

EN

European Standard

GHS

Globally Harmonized System of Classification and Labelling of Chemicals

IATA

International Air Transport Association

IMDG

International Maritime Dangerous Goods

OEL

Occupational Exposure Limit

SDS

Safety Data Sheet

TWA

Time Weighted Average

Training advice

: Ensure staff are informed of and trained on the nature of exposure and basic actions to minimise exposure.

Indication of changes

Not applicable

Safety Data Sheet (SDS), China

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