

Safety data sheet

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BASF 3D Printing Safety data sheet according to Regulation UK SI 2019/758 and UK SI 2020/1577 as amended from time to time.

Date / Revised: 08.05.2023

Version: 4.0

Date previous version: 15.12.2022

Previous version: 3.0

Date / First version: 21.01.2020

Product: **Ultrasint® TPU 88A polyurethane powder**

(ID no. 30755985/SDS_GEN_GB/EN)

Date of print 02.10.2023

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

1.1. Product identifier

Ultrasint® TPU 88A polyurethane powder

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

Recommended use: Polymer

1.3. Details of the supplier of the safety data sheet

Company:

BASF 3D Printing Solutions GmbH
Speyerer Str. 4
69115 Heidelberg, Germany

Contact address:

BASF plc
4th and 5th Floors, 2 Stockport Exchange
Railway Road, Stockport, SK1 3GG
UNITED KINGDOM

Telephone: +44 161 475 3000

E-mail address: product-safety-uk-and-ireland@basf.com

1.4. Emergency telephone number

International emergency number:

Telephone: +49 180 2273-112

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

For the classification of the mixture the following methods have been applied: extrapolation on the concentration levels of the hazardous substances, on basis of test results and after evaluation of experts. The methodologies used are mentioned at the respective test results.

According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

Lieferant / Supplier:
Carl Roth GmbH + Co KG
Schoemperden 2-5
76185 Karlsruhe, Germany
+49 721 5606 0
sicherheit@carlroth.de

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No need for classification according to GHS criteria for this product.

2.2. Label elements

According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

The product does not require a hazard warning label in accordance with GHS criteria.

2.3. Other hazards

According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

Dust can form an explosive mixture with air.

SECTION 3: Composition/Information on Ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Chemical nature

Polymer based on: polyurethane, stabilizing agents, additives

Hazardous ingredients (GHS)

No particular hazards known.

SECTION 4: First-Aid Measures

4.1. Description of first aid measures

Remove contaminated clothing.

If inhaled:

Remove the affected individual into fresh air and keep the person calm.

On skin contact:

Burns caused by molten material require hospital treatment.

On contact with eyes:

In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. If irritation develops, seek medical attention.

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On ingestion:

Immediately rinse mouth and then drink 200 - 300 ml water, do not induce vomiting, seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms: (Further) symptoms and / or effects are not known so far

Hazards: No hazards anticipated.

4.3. Indication of any immediate medical attention and special treatment needed

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing media

Suitable extinguishing media:

water spray, dry powder, carbon dioxide, foam

Unsuitable extinguishing media for safety reasons:

water jet

5.2. Special hazards arising from the substance or mixture

Endangering substances: carbon monoxide, Carbon dioxide, hydrogen cyanide, nitrogen oxides, isocyanate

Advice: The substances/groups of substances mentioned can be released in case of fire. Dust explosion hazard.

5.3. Advice for fire-fighters

Special protective equipment:

Wear a self-contained breathing apparatus.

SECTION 6: Accidental Release Measures

High risk of slipping due to leakage/spillage of product. Dust can form an explosive mixture with air.

6.1. Personal precautions, protective equipment and emergency procedures

No special precautions necessary.

6.2. Environmental precautions

No special precautions necessary.

6.3. Methods and material for containment and cleaning up

For small amounts: Sweep/shovel up.

For large amounts: Sweep/shovel up.

Avoid raising dust. Use spark-proof tools and explosion-proof equipment.

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6.4. Reference to other sections

Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

SECTION 7: Handling and Storage

7.1. Precautions for safe handling

Provide suitable exhaust ventilation at the drying process and in the area surrounding the melt outlet of processing machines.

Protection against fire and explosion:

Avoid whirling up the material/product because of the danger of dust explosion.

7.2. Conditions for safe storage, including any incompatibilities

Segregate from foods and animal feeds.

Suitable materials for containers: Paper/Fibreboard, High density polyethylene (HDPE), Low density polyethylene (LDPE)

Further information on storage conditions: Keep container tightly closed. Protect against moisture.

7.3. Specific end use(s)

For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

Components with occupational exposure limits

| No substance specific occupational exposure limits known.

The release and quantity of the stated substance is dependent on the processing conditions.

| Particles, not otherwise specified, inhalable

TWA value 10 mg/m³ (WEL/EH 40 (UK)), Inhalable dust

| Particles, not otherwise specified, respirable

TWA value 4 mg/m³ (WEL/EH 40 (UK)), Respirable dust

8.2. Exposure controls

Personal protective equipment

Respiratory protection:

Breathing protection if breathable aerosols/dust are formed. Particle filter with low efficiency for solid particles (e.g. EN 143 or 149, Type P1 or FFP1)

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Hand protection:

Chemical resistant protective gloves (EN ISO 374-1)

Eye protection:

Safety glasses with side-shields (frame goggles) (e.g. EN 166)

Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

General safety and hygiene measures

Wearing of closed work clothing is recommended. When using, do not eat, drink or smoke. Hands and/or face should be washed before breaks and at the end of the shift. At the end of the shift the skin should be cleaned and skin-care agents applied.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Form:	powder	
Colour:	white	
Odour:	odourless	
Odour threshold:	not applicable	
pH value:	not applicable	
softening temperature:	> 120 °C	
boiling temperature:	not applicable	
Flash point:	not applicable, the product is a solid	
Evaporation rate:	Value can be approximated from Henry's Law Constant or vapor pressure.	
Flammability:	Not a flammable solid according to UN transport regulations division 4.1 and GHS chapter 2.7.	(UN Test N.1 (ready combustible solids))
Lower explosion limit:	For solids not relevant for classification and labelling.	
Upper explosion limit:	For solids not relevant for classification and labelling.	
Ignition temperature:	> 400 °C	
Vapour pressure:	not applicable	

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Density:	approx. 1.2 g/cm ³ (20 °C)
Relative density:	approx. 1.1 - 1.2 (20 °C)
Relative vapour density (air):	not applicable
Solubility in water:	insoluble
Partitioning coefficient n-octanol/water (log K _{ow}):	not applicable for mixtures
Self ignition:	Temperature: > 248 °C not self-igniting
Thermal decomposition:	No decomposition if stored and handled as prescribed/indicated. > 230 °C Thermal decomposition above the indicated temperature is possible. Prolonged thermal loading can result in products of degradation being given off.
Viscosity, dynamic:	
Explosion hazard:	not applicable, the product is a solid Product is not explosive, however a dust explosion could result from an air / dust mixture.
Fire promoting properties:	not fire-propagating

9.2. Other information

Self heating ability:	It is not a substance capable of spontaneous heating.	
Minimum ignition energy:	< 30 mJ (1,000 hPa, 20 - 24 °C)	(DIN EN 13821)
	Inductivity: 1 mH	
	Grain size distribution: 0.2 - 350 µm	
	The product is capable of dust explosion.	
Bulk density:	400 - 600 kg/m ³ (20 °C)	
Grain size distribution	77.27 µm	(D50, Volumetric Distribution, other (measured))
	particles 77.27 µm	50 %
	particles 47.07 µm	50 %
	165.9 µm	(D90, Volumetric Distribution, other (measured))
	particles 165.9 µm	90 %
	particles 81.55 µm	90 %
Other Information:	If necessary, information on other physical and chemical parameters is indicated in this section.	

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SECTION 10: Stability and Reactivity

10.1. Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Corrosion to metals: No corrosive effect on metal.

10.2. Chemical stability

The product is stable if stored and handled as prescribed/indicated.

10.3. Possibility of hazardous reactions

Dust explosion hazard.

10.4. Conditions to avoid

Avoid all sources of ignition: heat, sparks, open flame. Avoid dust formation. Avoid impact, friction and electrostatic loading.

10.5. Incompatible materials

Substances to avoid:

No substances known that should be avoided.

10.6. Hazardous decomposition products

Possible thermal decomposition products:
carbon monoxide, Carbon dioxide, hydrogen cyanide
isocyanates, nitrogen oxides

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:

Virtually nontoxic after a single skin contact. Virtually nontoxic by inhalation. Virtually nontoxic after a single ingestion.

Irritation

Assessment of irritating effects:

Not irritating to the eyes. Not irritating to the skin. The product has not been tested. The statement has been derived from the properties of the individual components.

Respiratory/Skin sensitization

Assessment of sensitization:

The chemical structure does not suggest a sensitizing effect. The product has not been tested. The statement has been derived from the properties of the individual components.

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Germ cell mutagenicity

Assessment of mutagenicity:

The chemical structure does not suggest a specific alert for such an effect. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Carcinogenicity

Assessment of carcinogenicity:

The chemical structure does not suggest a specific alert for such an effect. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Reproductive toxicity

Assessment of reproduction toxicity:

The chemical structure does not suggest a specific alert for such an effect. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Developmental toxicity

Assessment of teratogenicity:

The chemical structure does not suggest a specific alert for such an effect. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Specific target organ toxicity (single exposure)

Assessment of STOT single:

Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:

Repeated dermal uptake of the substance did not cause substance-related effects. Repeated inhalative uptake of the substance did not cause substance-related effects. Repeated oral uptake of the substance did not cause substance-related effects. The product has not been tested. The statement has been derived from the properties of the individual components.

Aspiration hazard

No aspiration hazard expected.

Other relevant toxicity information

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The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

SECTION 12: Ecological Information

12.1. Toxicity

Assessment of aquatic toxicity:

There is a high probability that the product is not acutely harmful to aquatic organisms.

12.2. Persistence and degradability

Assessment biodegradation and elimination (H₂O):

Poorly biodegradable. The product has not been tested. The statement has been derived from the properties of the individual components.

Elimination information:

Poorly biodegradable.

12.3. Bioaccumulative potential

Assessment bioaccumulation potential:

Does not significantly accumulate in organisms.

The product has not been tested. The statement has been derived from the properties of the individual components.

12.4. Mobility in soil

Assessment transport between environmental compartments:

Adsorption in soil: Adsorption to solid soil phase is not expected. The product has not been tested. The statement has been derived from the properties of the individual components.

12.5. Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not contain a substance fulfilling the PBT (persistent/bioaccumulative/toxic) criteria or the vPvB (very persistent/very bioaccumulative) criteria.

12.6. Other adverse effects

The product does not contain substances that are listed in Annex I of Regulation (EC) 2037/2000 on substances that deplete the ozone layer.

12.7. Additional information

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Adsorbable organically-bound halogen (AOX):
This product contains no organically-bound halogen.

Other ecotoxicological advice:

The product has not been tested. The statement has been derived from the properties of the individual components. The product has been assessed on the basis of the components' available data. To some extent data gaps exist for individual components. According to our present knowledge and experience dangers which are not covered by the current labeling are not to be expected.

SECTION 13: Disposal Considerations

13.1. Waste treatment methods

Observe national and local legal requirements.

The UK Environmental Protection (Duty of Care) Regulations (EP) and amendments should be noted (United Kingdom).

Waste key:

07 02 13 waste plastic

Contaminated packaging:

Dispose of in accordance with national, state and local regulations.

SECTION 14: Transport Information

Land transport

ADR

	Not classified as a dangerous good under transport regulations
UN number or ID number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

RID

	Not classified as a dangerous good under transport regulations
UN number or ID number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for	None known

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user

Inland waterway transport

ADN

	Not classified as a dangerous good under transport regulations
UN number or ID number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user:	None known

Transport in inland waterway vessel

Not evaluated

Sea transport

IMDG

	Not classified as a dangerous good under transport regulations
UN number or ID number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user:	None known

Air transport

IATA/ICAO

	Not classified as a dangerous good under transport regulations
UN number or ID number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user:	None known

14.1. UN number or ID number

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See corresponding entries for "UN number or ID number" for the respective regulations in the tables above.

14.2. UN proper shipping name

See corresponding entries for "UN proper shipping name" for the respective regulations in the tables above.

14.3. Transport hazard class(es)

See corresponding entries for "Transport hazard class(es)" for the respective regulations in the tables above.

14.4. Packing group

See corresponding entries for "Packing group" for the respective regulations in the tables above.

14.5. Environmental hazards

See corresponding entries for "Environmental hazards" for the respective regulations in the tables above.

14.6. Special precautions for user

See corresponding entries for "Special precautions for user" for the respective regulations in the tables above.

14.7. Maritime transport in bulk according to IMO instruments

Maritime transport in bulk is not intended.

SECTION 15: Regulatory Information

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

Directive 2012/18/EU - Control of Major Accident Hazards involving dangerous substances (EU):
Listed in above regulation: no

If it is intended to use materials for the manufacture of consumer goods (e. g. products which will come into contact with foodstuffs or with the skin, toys) or medical products, national and international regulations have to be observed. Where no regulations exist, consumer goods or medical products must at least comply with European legislation. We recommend contacting our Sales and our Product Safety departments.

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

The data should be considered when making any assessment under the Control of Substances Hazardous to Health Regulations (COSHH), and related guidance, for example, 'COSHH Essentials' (United Kingdom).

15.2. Chemical Safety Assessment

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Chemical Safety Assessment not yet performed due to registration timelines. Exposure scenarios for the mixture can not be provided at the moment because exposure scenarios are not yet available for all relevant substances due to registration timelines. For advice on essential measures see sections 7 and 8 of this safety data sheet.

SECTION 16: Other Information

Any other intended applications should be discussed with the manufacturer. Corresponding occupational protection measurements must be followed.

Abbreviations

ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road.
ADN = The European Agreement concerning the International Carriage of Dangerous Goods by Inland waterways. ATE = Acute Toxicity Estimates. CAO = Cargo Aircraft Only. CAS = Chemical Abstract Service. CLP = Classification, Labelling and Packaging of substances and mixtures. DIN = German national organization for standardization. DNEL = Derived No Effect Level. EC50 = Effective concentration median for 50% of the population. EC = European Community. EN = European Standards. IARC = International Agency for Research on Cancer. IATA = International Air Transport Association. IBC-Code = Intermediate Bulk Container code. IMDG = International Maritime Dangerous Goods Code. ISO = International Organization for Standardization. STEL = Short-Term Exposure Limit. LC50 = Lethal concentration median for 50% of the population. LD50 = Lethal dose median for 50% of the population. TLV = Threshold Limit Value. MARPOL = The International Convention for the Prevention of Pollution from Ships. NEN = Dutch Norm. NOEC = No Observed Effect Concentration. OEL = Occupational Exposure Limit. OECD = Organization for Economic Cooperation and Development. PBT = Persistent, Bioaccumulative and Toxic. PNEC = Predicted No Effect Level. PPM = Parts per million. RID = The European Agreement concerning the International Carriage of Dangerous Goods by Rail. TWA = Time Weight Average. UN-number = UN number at transport. vPvB = very Persistent and very Bioaccumulative.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

Vertical lines in the left hand margin indicate an amendment from the previous version.