

Safety data sheet

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BASF 3D Printing Safety data sheet according to Regulation (EC) No. 1907/2006 as amended from time to time.

Date / Revised: 11.02.2020

Version: 3.0

Date previous version: 11.02.2020

Previous version: 2.0

Product: **Ultrafuse BVOH**

(ID no. 959791/SDS_GEN_EU/EN)

Date of print 13.02.2020

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

1.1. Product identifier

Ultrafuse BVOH

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

Recommended use: 3D Printing, for industrial use only

1.3. Details of the supplier of the safety data sheet

Company:

BASF 3D Printing Solutions B.V.
Eerste Bokslotweg 17
7821 AT Emmen, Netherlands

Contact address:

BASF SE
67056 Ludwigshafen
GERMANY

Telephone: +49 621 60-0

E-mail address: global.info@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.

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According to Regulation (EC) No 1272/2008 [CLP]

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

2.2. Label elements

Globally Harmonized System, EU (GHS)

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

2.3. Other hazards

According to Regulation (EC) No 1272/2008 [CLP]

The product may cause burns, if handled in the melted state.

SECTION 3: Composition/Information on Ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Chemical nature

polymer blend based on: alcohols

Hazardous ingredients (GHS)

according to Regulation (EC) No. 1272/2008

| 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. Assist in breathing if necessary. If symptoms persist, seek medical advice.

On skin contact:

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Wash thoroughly with soap and water. Burns caused by molten material require hospital treatment. If irritation develops, seek medical attention.

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.

On ingestion:

Keep patient calm, remove to fresh air. Immediate medical attention required.

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

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

Hazards: No hazard is expected under intended use and appropriate handling.

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:
dry powder, foam, carbon dioxide

Unsuitable extinguishing media for safety reasons:
water jet

Additional information:

Water jet can rapidly spread fire.

5.2. Special hazards arising from the substance or mixture

harmful vapours, carbon oxides

Evolution of fumes/fog. The substances/groups of substances mentioned can be released in case of fire. Under certain conditions in case of fire other hazardous combustion products may be generated.

5.3. Advice for fire-fighters

Special protective equipment:

Wear a self-contained breathing apparatus.

Further information:

Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

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SECTION 6: Accidental Release Measures

High risk of slipping due to leakage/spillage of product.

6.1. Personal precautions, protective equipment and emergency procedures

No special precautions necessary.

6.2. Environmental precautions

Discharge into the environment must be avoided.

6.3. Methods and material for containment and cleaning up

For small amounts: Sweep/shovel up.

For large amounts: Sweep/shovel up. Pack in tightly closed containers for disposal.

Dispose of contaminated material as waste according to item 13.

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

Avoid inhalation of dusts/mists/vapours. Ensure adequate ventilation. Provide suitable exhaust ventilation at the drying process and in the area surrounding the melt outlet of processing machines. Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges. Avoid the formation and deposition of dust.

Protection against fire and explosion:

The product is not an oxidizer, not self-combustible and not explosive. Avoid dust formation. Dust in sufficient concentration can result in an explosive mixture in air. Handle to minimize dusting and eliminate open flame and other sources of ignition.

7.2. Conditions for safe storage, including any incompatibilities

Further information on storage conditions: Containers should be stored tightly sealed in a dry place. Do not store in steel or stainless steel containers; polyethylene is the preferred material.

Storage stability:

Avoid extreme heat.

Avoid freezing.

Frost sensitive

The packed product will be damaged by high temperatures.

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

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8.2. Exposure controls

Personal protective equipment

Respiratory protection:

Wear respiratory protection if ventilation is inadequate. Suitable respiratory protection for higher concentrations or long-term effect: (Particle filter EN 143 P1)

Hand protection:

Chemical resistant protective gloves (EN 374)

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: | filament | |
| Colour: | white to light yellow | |
| Odour: | vinegar-like | |
| Odour threshold: | not determined | |
| pH value: | 5 - 7 | |
| melting range: | 150 - 300 °C | |
| Boiling point: | The product is a non-volatile solid. | |
| Flash point: | > 200 °C | (closed cup) |
| Evaporation rate: | The product is a non-volatile solid. | |
| Flammability: | not highly flammable | |
| Lower explosion limit: | For solids not relevant for classification and labelling. | |
| Upper explosion limit: | For solids not relevant for classification and labelling. | |

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| | |
|---|--|
| Ignition temperature: | 440 °C |
| Vapour pressure: | No data available. |
| Relative density: | Study does not need to be conducted. |
| Relative vapour density (air): | The product is a non-volatile solid. |
| Solubility in water: | completely soluble |
| Solubility (qualitative) solvent(s): | N, N-dimethylformamide, Methane, sulfinylbis-soluble |
| Partitioning coefficient n-octanol/water (log Kow): | not applicable for mixtures |
| Self ignition: | not self-igniting |
| Thermal decomposition: | No decomposition if stored and handled as prescribed/indicated. Prolonged thermal loading can result in products of degradation being given off. |
| Viscosity, dynamic: | not applicable, the product is a solid |
| Explosion hazard: | not explosive |
| Fire promoting properties: | not fire-propagating |

9.2. Other information

| | |
|---------------|--|
| SADT: | Not a substance liable to self-decomposition according to UN transport regulations, class 4.1. |
| Bulk density: | approx. 1,140 kg/m ³ |

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

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

10.4. Conditions to avoid

| Avoid dust formation. Avoid deposition of dust.

10.5. Incompatible materials

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Substances to avoid:
| oxidizing agents

10.6. Hazardous decomposition products

| Thermal decomposition products:
| Prolonged thermal loading can result in products of degradation being given off.

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:

Virtually nontoxic after a single ingestion. The product has not been tested. The statement has been derived from the properties of the individual components.

Irritation

Assessment of irritating effects:

May cause slight irritation to the eyes. The product has not been tested. The statement has been derived from the properties of the individual components.

Experimental/calculated data:

| Skin corrosion/irritation: May cause mechanical irritation.

Serious eye damage/irritation: May cause slight irritation to the eyes.

Respiratory/Skin sensitization

Assessment of sensitization:

No applicable information available.

Germ cell mutagenicity

Assessment of mutagenicity:

No applicable information available.

Carcinogenicity

Assessment of carcinogenicity:

No applicable information available.

Reproductive toxicity

Assessment of reproduction toxicity:

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No applicable information available.

Developmental toxicity

Assessment of teratogenicity:

No applicable information available.

Specific target organ toxicity (single exposure)

No data available.

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

Assessment of repeated dose toxicity:

No applicable information available.

Aspiration hazard

| No aspiration hazard expected.

Other relevant toxicity information

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

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):

Product is not expected to be readily biodegradable.

12.3. Bioaccumulative potential

Assessment bioaccumulation potential:

The product has not been tested.

12.4. Mobility in soil

Assessment transport between environmental compartments:

Volatility: Study technically not feasible.

Adsorption in soil: Due to the product characteristics the test is impossible.

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12.5. Results of PBT and vPvB assessment

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

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

SECTION 13: Disposal Considerations

13.1. Waste treatment methods

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

Contaminated packaging:
Completely emptied packagings can be given for recycling.

SECTION 14: Transport Information

Land transport

ADR

| | |
|------------------------------|--|
| | Not classified as a dangerous good under transport regulations |
| UN 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: | Not applicable |
| UN proper shipping name: | Not applicable |

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Transport hazard class(es): Not applicable
 Packing group: Not applicable
 Environmental hazards: Not applicable
 Special precautions for user: None known

Inland waterway transport

ADN

Not classified as a dangerous good under transport regulations
 UN 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: 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: Not applicable
 UN proper shipping name: Not applicable
 Transport hazard class(es): Not applicable
 Packing group: Not applicable
 Environmental hazards: Not applicable

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Special precautions for user None known

14.1. UN number

See corresponding entries for "UN 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. Transport in bulk according to Annex II of MARPOL and the IBC Code

| | |
|---------------------|---------------|
| Regulation: | Not evaluated |
| Shipment approved: | Not evaluated |
| Pollution name: | Not evaluated |
| Pollution category: | Not evaluated |
| Ship Type: | Not evaluated |

SECTION 15: Regulatory Information

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

Prohibitions, Restrictions and Authorizations

Annex XVII of Regulation (EC) No 1907/2006: Number on List: 69

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

15.2. Chemical Safety Assessment

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Chemical Safety Assessment not required

SECTION 16: Other Information

Assessment of the hazard classes according to UN GHS criteria (most recent version)

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.