Safety data sheet

BASF 3D Printing Safety data sheet according to Regulation (EC) No. 1907/2006 as amended from time to time.
Date / Revised: 20.04.2020 Version: 1.0
Date previous version: not applicable Previous version: none
Product: **Ultrafuse® ABS Fusion+ Natural**
(ID no. 995586/SDS_GEN_EU/EN)
Date of print 05.01.2021

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

1.1. Product identifier

Ultrafuse® ABS Fusion+ Natural

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 Bokslootweg 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.

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

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:
Keep patient calm, remove to fresh air.

On skin contact:
Wash thoroughly with soap and water

Skin contact with hot molten substance/product may cause thermal burns. Areas affected by molten material should be quickly placed under cold running water. Solidified product should not be pulled from the skin. Burns caused by molten material require hospital treatment.

On contact with eyes:
Wash affected eyes for at least 15 minutes under running water with eyelids held open.

On ingestion:
Rinse mouth and then drink 200-300 ml of water.

4.2. Most important symptoms and effects, both acute and delayed
Symptoms: (Further) symptoms and / or effects are not known so far

4.3. Indication of any immediate medical attention and special treatment needed
Treatment: Symptomatic treatment (decontamination, vital functions).

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing media
Suitable extinguishing media:
water spray, foam, dry powder, Dry sand

5.2. Special hazards arising from the substance or mixture
nitrogen oxides, carbon oxides
The substances/groups of substances mentioned can be released in case of fire.

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.

SECTION 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures
No special precautions necessary.

6.2. Environmental precautions
Do not discharge into drains/surface waters/groundwater. Contain contaminated water/firefighting water.

6.3. Methods and material for containment and cleaning up

For small amounts: Sweep/shovel up.
For large amounts: Sweep/shovel up. Vacuum up spilled product.
Reclaim for processing if possible. Ensure adequate ventilation. Avoid raising dust.

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 the formation and deposition of dust. 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.

Protection against fire and explosion:
The product is not an oxidizer, not self-combustible and not explosive.

7.2. Conditions for safe storage, including any incompatibilities

Suitable materials for containers: High density polyethylene (HDPE), Low density polyethylene (LDPE), Paper/Fibreboard
Further information on storage conditions: Containers should be stored tightly sealed in a dry place.

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

8.2. Exposure controls

Personal protective equipment

Respiratory protection:
Breathing protection if breathable aerosols/dust are formed. Wear respiratory protection if ventilation is inadequate. Particle filter with medium efficiency for solid and liquid particles (e.g. EN 143 or 149, Type P2 or FFP2)

Hand protection:
Wear refractive gloves while working with the hot melt.

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

Body protection:
No body protection required if used for intended purpose and satisfying generally accepted industrial hygiene rules.

General safety and hygiene measures
Hands and/or face should be washed before breaks and at the end of the shift.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Form:	filament
Colour:	yellow tint
Odour:	odourless
Odour threshold:	not applicable, odour not perceivable
pH value:	not soluble
Melting point:	> 114 °C
Boiling point:	not applicable
Flash point:	not applicable, the product is a solid
Evaporation rate:	The product is a non-volatile solid.
Flammability:	not flammable
Lower explosion limit:	For solids not relevant for classification and labelling.
Upper explosion limit:	For solids not relevant for classification and labelling.
Vapour pressure:	(20 °C) negligible
Relative vapour density (air):	The product is a non-volatile solid.
Solubility in water:	negligible
Partitioning coefficient n-octanol/water (log Kow):	not applicable for mixtures
Self ignition:	not self-igniting
Thermal decomposition:	Gaseous products of degradation can be given off if the product is greatly overheated.
Viscosity, dynamic:	not applicable, the product is a solid

Viscosity, kinematic:
not applicable, the product is a solid
Fire promoting properties: not fire-propagating

9.2. Other information

Self heating ability: It is not a substance capable of spontaneous heating.

Bulk density: 1,075 kg/m3
(20 °C)
Miscibility with water:
immiscible

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
Stable under normal conditions.

10.3. Possibility of hazardous reactions
No hazardous reactions when stored and handled according to instructions.

10.4. Conditions to avoid
Avoid extreme temperatures. Avoid UV-light and other radiation with high energy.

10.5. Incompatible materials

Substances to avoid:
oxidizing agents, acids, bases

10.6. Hazardous decomposition products

Thermal decomposition products:
acrylonitrile, styrene
nitrogen oxides, carbon oxides

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:
Virtually nontoxic after a single ingestion. Virtually nontoxic by inhalation. Virtually nontoxic after a single skin contact.

Experimental/calculated data:
ATE (oral): > 5,000 mg/kg

ATE (by inhalation): > 20 mg/l 4 h
Determined for vapor

ATE (dermal): > 5,000 mg/kg

Irritation

Assessment of irritating effects:
Not irritating to eyes and skin.

Respiratory/Skin sensitization

Assessment of sensitization:
Based on available Data, the classification criteria are not met.

Germ cell mutagenicity

Assessment of mutagenicity:
Not classified, due to lack of data.

Carcinogenicity

Assessment of carcinogenicity:
Not classified, due to lack of data.

Reproductive toxicity

Assessment of reproduction toxicity:
Not classified, due to lack of data.

Developmental toxicity

Assessment of teratogenicity:
Not classified, due to lack of data.

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:
Not classified, due to lack of data.

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. 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 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. Based on long-term (chronic) toxicity study data, the product is very likely not harmful to aquatic organisms.

12.2. Persistence and degradability

Assessment biodegradation and elimination (H2O):
Product is not expected to be readily biodegradable. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

12.3. Bioaccumulative potential

Assessment bioaccumulation potential:
The product has not been tested.

12.4. Mobility in soil

Assessment transport between environmental compartments:
Adsorption in soil: Adsorption to solid soil phase is expected.

12.5. Results of PBT and vPvB assessment

The product does not fulfill the criteria for PBT (Persistent/bioaccumulative/toxic) and vPvB (very persistent/very bioaccumulative).

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

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

Dispose of in accordance with national, state and local regulations.
Contact specialized companies about recycling.

Contaminated packaging:
Dispose of in accordance with national, state and local regulations.
Contaminated packaging should be emptied as far as possible and disposed of in the same manner as the substance/product.

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
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
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

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

15.2. Chemical Safety Assessment

Product is not classified as hazardous.

SECTION 16: Other Information

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.

Safety data sheet

BASF 3D Printing Safety data sheet according to Regulation (EC) No. 1907/2006 as amended from time to time.
Date / Revised: 20.04.2020 Version: 1.0
Date previous version: not applicable Previous version: none
Product: **Ultrafuse® ABS Fusion+ Grey**
(ID no. 995371/SDS_GEN_EU/EN)
Date of print 05.01.2021

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

1.1. Product identifier

Ultrafuse® ABS Fusion+ Grey

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 Bokslootweg 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.

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

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:
Keep patient calm, remove to fresh air.

On skin contact:
Wash thoroughly with soap and water

Skin contact with hot molten substance/product may cause thermal burns. Areas affected by molten material should be quickly placed under cold running water. Solidified product should not be pulled from the skin. Burns caused by molten material require hospital treatment.

On contact with eyes:
Wash affected eyes for at least 15 minutes under running water with eyelids held open.

On ingestion:
Rinse mouth and then drink 200-300 ml of water.

4.2. Most important symptoms and effects, both acute and delayed
Symptoms: (Further) symptoms and / or effects are not known so far

4.3. Indication of any immediate medical attention and special treatment needed
Treatment: Symptomatic treatment (decontamination, vital functions).

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing media
Suitable extinguishing media:
water spray, foam, dry powder, Dry sand

5.2. Special hazards arising from the substance or mixture
nitrogen oxides, carbon oxides
The substances/groups of substances mentioned can be released in case of fire.

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.

SECTION 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures
No special precautions necessary.

6.2. Environmental precautions
Do not discharge into drains/surface waters/groundwater. Contain contaminated water/firefighting water.

6.3. Methods and material for containment and cleaning up

For small amounts: Sweep/shovel up.
For large amounts: Sweep/shovel up. Vacuum up spilled product.
Reclaim for processing if possible. Ensure adequate ventilation. Avoid raising dust.

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 the formation and deposition of dust. 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.

Protection against fire and explosion:
The product is not an oxidizer, not self-combustible and not explosive.

7.2. Conditions for safe storage, including any incompatibilities

Suitable materials for containers: High density polyethylene (HDPE), Low density polyethylene (LDPE), Paper/Fibreboard
Further information on storage conditions: Containers should be stored tightly sealed in a dry place.

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

8.2. Exposure controls

Personal protective equipment

Respiratory protection:
Breathing protection if breathable aerosols/dust are formed. Wear respiratory protection if ventilation is inadequate. Particle filter with medium efficiency for solid and liquid particles (e.g. EN 143 or 149, Type P2 or FFP2)

Hand protection:
Wear refractive gloves while working with the hot melt.

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

Body protection:
No body protection required if used for intended purpose and satisfying generally accepted industrial hygiene rules.

General safety and hygiene measures
Hands and/or face should be washed before breaks and at the end of the shift.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Form:	filament
Colour:	grey
Odour:	odourless
Odour threshold:	
	not applicable, odour not perceivable
pH value:	
	not soluble
Melting point:	> 114 °C
Boiling point:	
	not applicable
Flash point:	
	not applicable, the product is a solid
Evaporation rate:	
	The product is a non-volatile solid.
Flammability:	not flammable
Lower explosion limit:	
	For solids not relevant for classification and labelling.
Upper explosion limit:	
	For solids not relevant for classification and labelling.
Vapour pressure:	
	(20 °C)
	negligible
Relative vapour density (air):	
	The product is a non-volatile solid.
Solubility in water:	negligible
Partitioning coefficient n-octanol/water (log Kow):	
	not applicable for mixtures
Self ignition:	not self-igniting
Thermal decomposition:	Gaseous products of degradation can be given off if the product is greatly overheated.
Viscosity, dynamic:	
	not applicable, the product is a solid

Viscosity, kinematic:
not applicable, the product is a solid
Fire promoting properties: not fire-propagating

9.2. Other information

Self heating ability: It is not a substance capable of spontaneous heating.

Bulk density: 1,075 kg/m3
(20 °C)
Miscibility with water:
immiscible

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
Stable under normal conditions.

10.3. Possibility of hazardous reactions
No hazardous reactions when stored and handled according to instructions.

10.4. Conditions to avoid
Avoid extreme temperatures. Avoid UV-light and other radiation with high energy.

10.5. Incompatible materials

Substances to avoid:
oxidizing agents, acids, bases

10.6. Hazardous decomposition products

Thermal decomposition products:
acrylonitrile, styrene
nitrogen oxides, carbon oxides

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:
Virtually nontoxic after a single ingestion. Virtually nontoxic by inhalation. Virtually nontoxic after a single skin contact.

Experimental/calculated data:
ATE (oral): > 5,000 mg/kg

ATE (by inhalation): > 20 mg/l 4 h
Determined for vapor

ATE (dermal): > 5,000 mg/kg

Irritation

Assessment of irritating effects:
Not irritating to eyes and skin.

Respiratory/Skin sensitization

Assessment of sensitization:
Based on available Data, the classification criteria are not met.

Germ cell mutagenicity

Assessment of mutagenicity:
Not classified, due to lack of data.

Carcinogenicity

Assessment of carcinogenicity:
Not classified, due to lack of data.

Reproductive toxicity

Assessment of reproduction toxicity:
Not classified, due to lack of data.

Developmental toxicity

Assessment of teratogenicity:
Not classified, due to lack of data.

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:
Not classified, due to lack of data.

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. 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 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. Based on long-term (chronic) toxicity study data, the product is very likely not harmful to aquatic organisms.

12.2. Persistence and degradability

Assessment biodegradation and elimination (H2O):
Product is not expected to be readily biodegradable. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

12.3. Bioaccumulative potential

Assessment bioaccumulation potential:
The product has not been tested.

12.4. Mobility in soil

Assessment transport between environmental compartments:
Adsorption in soil: Adsorption to solid soil phase is expected.

12.5. Results of PBT and vPvB assessment

The product does not fulfill the criteria for PBT (Persistent/bioaccumulative/toxic) and vPvB (very persistent/very bioaccumulative).

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

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

Dispose of in accordance with national, state and local regulations.
Contact specialized companies about recycling.

Contaminated packaging:
Dispose of in accordance with national, state and local regulations.
Contaminated packaging should be emptied as far as possible and disposed of in the same manner as the substance/product.

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
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
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

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

15.2. Chemical Safety Assessment

Product is not classified as hazardous.

SECTION 16: Other Information

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.

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Safety data sheet

BASF 3D Printing Safety data sheet according to Regulation (EC) No. 1907/2006 as amended from time to time.
Date / Revised: 20.04.2020 Version: 1.0
Date previous version: not applicable Previous version: none
Product: **Ultrafuse® ABS Fusion+ Black**
(ID no. 995585/SDS_GEN_EU/EN)
Date of print 05.01.2021

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

1.1. Product identifier

Ultrafuse® ABS Fusion+ Black

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 Bokslootweg 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.

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

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:
Keep patient calm, remove to fresh air.

On skin contact:
Wash thoroughly with soap and water

Skin contact with hot molten substance/product may cause thermal burns. Areas affected by molten material should be quickly placed under cold running water. Solidified product should not be pulled from the skin. Burns caused by molten material require hospital treatment.

On contact with eyes:
Wash affected eyes for at least 15 minutes under running water with eyelids held open.

On ingestion:
Rinse mouth and then drink 200-300 ml of water.

4.2. Most important symptoms and effects, both acute and delayed
Symptoms: (Further) symptoms and / or effects are not known so far

4.3. Indication of any immediate medical attention and special treatment needed
Treatment: Symptomatic treatment (decontamination, vital functions).

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing media
Suitable extinguishing media:
water spray, foam, dry powder, Dry sand

5.2. Special hazards arising from the substance or mixture
nitrogen oxides, carbon oxides
The substances/groups of substances mentioned can be released in case of fire.

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.

SECTION 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures
No special precautions necessary.

6.2. Environmental precautions
Do not discharge into drains/surface waters/groundwater. Contain contaminated water/firefighting water.

6.3. Methods and material for containment and cleaning up

For small amounts: Sweep/shovel up.
For large amounts: Sweep/shovel up. Vacuum up spilled product.
Reclaim for processing if possible. Ensure adequate ventilation. Avoid raising dust.

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 the formation and deposition of dust. 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.

Protection against fire and explosion:
The product is not an oxidizer, not self-combustible and not explosive.

7.2. Conditions for safe storage, including any incompatibilities

Suitable materials for containers: High density polyethylene (HDPE), Low density polyethylene (LDPE), Paper/Fibreboard
Further information on storage conditions: Containers should be stored tightly sealed in a dry place.

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

8.2. Exposure controls

Personal protective equipment

Respiratory protection:
Breathing protection if breathable aerosols/dust are formed. Wear respiratory protection if ventilation is inadequate. Particle filter with medium efficiency for solid and liquid particles (e.g. EN 143 or 149, Type P2 or FFP2)

Hand protection:
Wear refractive gloves while working with the hot melt.

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

Body protection:
No body protection required if used for intended purpose and satisfying generally accepted industrial hygiene rules.

General safety and hygiene measures
Hands and/or face should be washed before breaks and at the end of the shift.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Form:	filament
Colour:	black
Odour:	odourless
Odour threshold:	not applicable, odour not perceivable
pH value:	not soluble
Melting point:	> 114 °C
Boiling point:	not applicable
Flash point:	not applicable, the product is a solid
Evaporation rate:	The product is a non-volatile solid.
Flammability:	not flammable
Lower explosion limit:	For solids not relevant for classification and labelling.
Upper explosion limit:	For solids not relevant for classification and labelling.
Vapour pressure:	(20 °C) negligible
Relative vapour density (air):	The product is a non-volatile solid.
Solubility in water:	negligible
Partitioning coefficient n-octanol/water (log Kow):	not applicable for mixtures
Self ignition:	not self-igniting
Thermal decomposition:	Gaseous products of degradation can be given off if the product is greatly overheated.
Viscosity, dynamic:	not applicable, the product is a solid

Viscosity, kinematic:
not applicable, the product is a solid
Fire promoting properties: not fire-propagating

9.2. Other information

Self heating ability: It is not a substance capable of spontaneous heating.

Bulk density: 1,075 kg/m3
(20 °C)
Miscibility with water:
immiscible

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
Stable under normal conditions.

10.3. Possibility of hazardous reactions
No hazardous reactions when stored and handled according to instructions.

10.4. Conditions to avoid
Avoid extreme temperatures. Avoid UV-light and other radiation with high energy.

10.5. Incompatible materials

Substances to avoid:
oxidizing agents, acids, bases

10.6. Hazardous decomposition products

Thermal decomposition products:
acrylonitrile, styrene
nitrogen oxides, carbon oxides

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:
Virtually nontoxic after a single ingestion. Virtually nontoxic by inhalation. Virtually nontoxic after a single skin contact.

Experimental/calculated data:
ATE (oral): > 5,000 mg/kg

ATE (by inhalation): > 20 mg/l 4 h
Determined for vapor

ATE (dermal): > 5,000 mg/kg

Irritation

Assessment of irritating effects:
Not irritating to eyes and skin.

Respiratory/Skin sensitization

Assessment of sensitization:
Based on available Data, the classification criteria are not met.

Germ cell mutagenicity

Assessment of mutagenicity:
Not classified, due to lack of data.

Carcinogenicity

Assessment of carcinogenicity:
Not classified, due to lack of data.

Reproductive toxicity

Assessment of reproduction toxicity:
Not classified, due to lack of data.

Developmental toxicity

Assessment of teratogenicity:
Not classified, due to lack of data.

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:
Not classified, due to lack of data.

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. 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 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. Based on long-term (chronic) toxicity study data, the product is very likely not harmful to aquatic organisms.

12.2. Persistence and degradability

Assessment biodegradation and elimination (H2O):
Product is not expected to be readily biodegradable. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

12.3. Bioaccumulative potential

Assessment bioaccumulation potential:
The product has not been tested.

12.4. Mobility in soil

Assessment transport between environmental compartments:
Adsorption in soil: Adsorption to solid soil phase is expected.

12.5. Results of PBT and vPvB assessment

The product does not fulfill the criteria for PBT (Persistent/bioaccumulative/toxic) and vPvB (very persistent/very bioaccumulative).

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

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

Dispose of in accordance with national, state and local regulations.
Contact specialized companies about recycling.

Contaminated packaging:
Dispose of in accordance with national, state and local regulations.
Contaminated packaging should be emptied as far as possible and disposed of in the same manner as the substance/product.

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
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
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

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

15.2. Chemical Safety Assessment

Product is not classified as hazardous.

SECTION 16: Other Information

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