

Safety Data Sheet

Ultrafuse® ABS Fusion+ Grey

Revision date : 2022/08/09
Version: 3.0

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(11128208/SDS_GEN_US/EN)

1. Identification

Product identifier used on the label

Ultrafuse® ABS Fusion+ Grey

Recommended use of the chemical and restriction on use

Recommended use*: 3D Printing; for industrial use only

Unsuitable for use: Uses other than recommended

* The "Recommended use" identified for this product is provided solely to comply with a Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

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 CORPORATION
100 Park Avenue
Florham Park, NJ 07932
USA
Telephone: +1 973 245-6000

Emergency telephone number

24 Hour Emergency Response Information

CHEMTREC: 1-800-424-9300

BASF HOTLINE: 1-800-832-HELP (4357)

Other means of identification

Chemical family: Polymer

2. Hazards Identification

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Classification of the product

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

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Label elements

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

Hazards not otherwise classified

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

Labeling of special preparations (GHS):

This product is not combustible in the form in which it is shipped by the manufacturer, but may form a combustible dust through downstream activities (e.g. grinding, pulverizing) that reduce its particle size. UNDER HOT MELT PROCESSING CONDITIONS, WEAR PERSONAL PROTECTIVE EQUIPMENT TO PREVENT THERMAL BURNS.

3. Composition / Information on Ingredients

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Titanium dioxide

CAS Number: 13463-67-7
Content (W/W): ≥ 0.3 - $< 1.0\%$
Synonym: C.I. Pigment White 6

Styrene

CAS Number: 100-42-5
Content (W/W): ≥ 0.0 - $< 0.1\%$
Synonym: Vinylbenzene; Styrene, Ethenylbenzene

acrylonitrile

CAS Number: 107-13-1
Content (W/W): ≥ 0.0 - $< 0.1\%$
Synonym: 2-Propenenitrile; Acrylonitrile, Cyanoethylene

4. First-Aid Measures

Description of first aid measures

General advice:

Remove contaminated clothing.

If inhaled:

Keep patient calm, remove to fresh air.

If on skin:

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.

If in eyes:

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

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If swallowed:

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

Most important symptoms and effects, both acute and delayed

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

Information on: Titanium dioxide

Symptoms: Overexposure may cause:, rhinitis, irritation of the mucous membranes, irritates the eyes and respiratory tract, nausea, headache, vomiting, dizziness, diarrhea, abdominal cramps

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

Indication of any immediate medical attention and special treatment needed

Note to physician

Treatment: Symptomatic treatment (decontamination, vital functions).

5. Fire-Fighting Measures

Extinguishing media

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

Special hazards arising from the substance or mixture

Hazards during fire-fighting:

acrylonitrile, Styrene, fumes/smoke, nitrogen oxides, carbon oxides

Vapors/fumes may contain traces of combustible substances. The smoke may contain unidentified toxic and/or irritating compounds. Traces of the substances/groups of substances mentioned can be released in case of fire.

Advice for fire-fighters

Protective equipment for fire-fighting:

Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Further information:

Dusty conditions may ignite explosively in the presence of an ignition source causing flash fire.

6. Accidental release measures

Further accidental release measures:

Avoid dispersal of dust in the air (e.g. by clearing dusty surfaces with compressed air). Avoid the formation and build-up of dust - danger of dust explosion. 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.

Personal precautions, protective equipment and emergency procedures

Wear suitable personal protective clothing and equipment. Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice.

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Environmental precautions

Do not allow to enter soil, waterways or waste water channels.

Dispose of in compliance with the environmental protection requirements.

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.

7. Handling and Storage

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:

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. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Refer to NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids (2013 Edition) for safe handling.

Conditions for safe storage, including any incompatibilities

Segregate from oxidizing agents.

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.

Storage stability:

Protect against moisture.

8. Exposure Controls/Personal Protection

Components with occupational exposure limits

Styrene	OSHA Z2:	TWA value 100 ppm ;
	OSHA Z2:	max. conc. 600 ppm ;
	OSHA Z2:	CLV 200 ppm ;
	ACGIH, US:	STEL value 20 ppm ;
	ACGIH, US:	TWA value 10 ppm ;

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acrylonitrile	ACGIH, US:	TWA value 2 ppm ;
	OSHA, US:	STEL value 10 ppm ;
	OSHA, US:	TWA value 2 ppm ;
	OSHA, US:	OSHA Action level 1 ppm ;
	ACGIH, US:	Skin Designation ; Danger of cutaneous absorption
	ACGIH, US:	Skin Designation ; Danger of cutaneous absorption
Titanium dioxide	ACGIH, US:	TWA value 10 mg/m3 ;
	OSHA Z1:	PEL 15 mg/m3 Total dust ;

Advice on system design:

It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Use only appropriately classified electrical equipment and powered industrial trucks.

Personal protective equipment

Respiratory protection:

Wear respiratory protection if ventilation is inadequate. Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator.

Hand protection:

Wear gloves to prevent contact during mechanical processing and/or hot melt conditions.

Eye protection:

Safety glasses with side-shields. Wear splash goggles to protect from hot molten substance/product.

Body protection:

Standard work clothes and shoes.

General safety and hygiene measures:

Avoid inhalation of dust. Wear protective clothing to prevent contact during mechanical processing and/or hot melt conditions. Wash soiled clothing immediately.

9. Physical and Chemical Properties

Form:	filament
Odour:	odourless
Odour threshold:	not applicable, odour not perceivable
Colour:	grey
pH value:	not soluble
Melting point:	> 114 °C
Boiling point:	not applicable
Flash point:	not applicable, the product is a solid
Flammability:	not flammable
Lower explosion limit:	For solids not relevant for classification and labelling.

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Upper explosion limit:	For solids not relevant for classification and labelling.
Autoignition:	No data available.
Vapour pressure:	(20 °C) negligible
Bulk density:	1,075 kg/m3 (20 °C)
Vapour density:	The product is a non-volatile solid.
Partitioning coefficient n-octanol/water (log Pow):	not applicable for mixtures
Self-ignition temperature:	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
Solubility in water:	negligible
Miscibility with water:	immiscible
Evaporation rate:	The product is a non-volatile solid.

10. Stability and Reactivity

Reactivity

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

Corrosion to metals:

No corrosive effect on metal.

Oxidizing properties:

not fire-propagating

Chemical stability

Stable under normal conditions.

Possibility of hazardous reactions

The product is chemically stable.

No hazardous reactions when stored and handled according to instructions.

Conditions to avoid

Temperature: > 300 degrees Celsius

Prolonged exposure to elevated temperatures may result in exothermic decomposition accompanied by a pressure build-up in sealed containers. Avoid all sources of ignition: heat, sparks, open flame.

Incompatible materials

oxidizing agents, acids, bases

Hazardous decomposition products

Decomposition products:

Hazardous decomposition products: acrylonitrile, Styrene, monomers, gases/vapours, oxides, hydrocarbons, cyclic low molecular weight oligomers, Gaseous products of degradation can be given off if the product is greatly overheated.

Thermal decomposition:

Gaseous products of degradation can be given off if the product is greatly overheated.

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11. Toxicological information

Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Acute toxicity

Assessment of acute toxicity: Inhalation of particulates may cause respiratory tract irritation. Ingestion may cause gastrointestinal disturbances. Contact with molten product may cause thermal burns. The resin in pelleted form poses a low hazard. No other known acute effects.

Assessment other acute effects

Assessment of STOT single:

Based on available data, the classification criteria are not met.

Irritation / corrosion

Assessment of irritating effects: Not irritating to eyes and skin. May cause mechanical irritation.

Sensitization

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

Aspiration Hazard

No aspiration hazard expected.

Chronic Toxicity/Effects

Repeated dose toxicity

Assessment of repeated dose toxicity: Based on available data, the classification criteria are not met.

Genetic toxicity

Assessment of mutagenicity: Based on available data, the classification criteria are not met.

Carcinogenicity

Assessment of carcinogenicity: Contains a compound classified as IARC Group 2B (possibly carcinogenic to humans). Based on available data, the classification criteria are not met.

Information on: Titanium dioxide

Assessment of carcinogenicity: IARC (International Agency for Research on Cancer) has classified this substance as group 2B (The agent is possibly carcinogenic to humans). In long-term studies in rats in which the substance was given by inhalation, a carcinogenic effect was observed. Tumors were only observed in rats after chronic inhalative exposure to high concentrations which caused sustained lung inflammation. In long-term studies in rats and mice in which the substance was given by feed, a carcinogenic effect was not observed. Dermal exposure is not expected to be carcinogenic.

Reproductive toxicity

Assessment of reproduction toxicity: Based on available data, the classification criteria are not met.

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Teratogenicity

Assessment of teratogenicity: Based on available data, the classification criteria are not met.

Other 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.

12. Ecological Information

Toxicity

Aquatic 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.

Assessment of terrestrial toxicity

No data available concerning terrestrial toxicity.

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.

Bioaccumulative potential

Assessment bioaccumulation potential

The product has not been tested.

Mobility in soil

Assessment transport between environmental compartments

Adsorption to solid soil phase is expected.

Additional information

Add. remarks environm. fate & pathway:

Due to the consistency of the product, dispersion into the environment is impossible. Therefore no negative effects on the environment may be anticipated based on the present state of knowledge.

Other ecotoxicological advice:

No data available.

13. Disposal considerations

Waste disposal of substance:

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

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Container disposal:

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.

14. Transport Information

Land transport

USDOT

Not classified as a dangerous good under transport regulations

Sea transport

IMDG

Not classified as a dangerous good under transport regulations

Air transport

IATA/ICAO

Not classified as a dangerous good under transport regulations

15. Regulatory Information

Federal Regulations

Registration status:

Chemical TSCA, US released / listed

EPCRA 311/312 (Hazard categories): Refer to SDS section 2 for GHS hazard classes applicable for this product.

Safe Drinking Water & Toxic Enforcement Act, CA Prop. 65:

WARNING: Entering this area can expose you to styrene from filaments containing acrylonitrile butadiene styrene (ABS) used in 3D printers. For more information, go to www.P65Warnings.ca.gov.

WARNING: This product can expose you to chemicals including STYRENE, which is known to the State of California to cause cancer, and ETHYLENE GLYCOL (INGESTED), which is known to the State of California to cause birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

NFPA Hazard codes:

Health: 1 Fire: 1 Reactivity: 0 Special:

16. Other Information

SDS Prepared by:

BASF 3D Printing NA Product Regulations

SDS Prepared on: 2022/08/09

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We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

Ultrafuse® ABS Fusion+ Grey BASF CORPORATION WILL NOT MAKE ITS PRODUCTS AVAILABLE TO CUSTOMERS FOR USE IN THE MANUFACTURE OF MEDICAL DEVICES WHICH ARE INTENDED FOR PERMANENT IMPLANTATION IN THE HUMAN BODY OR IN PERMANENT CONTACT WITH INTERNAL BODILY TISSUES OR FLUIDS.

This product is of industrial quality and unless otherwise specified or agreed intended exclusively for industrial use.

END OF DATA SHEET