

# Safety Data Sheet

## Ultrafuse® ABS Green

Revision date : 2022/06/10  
Version: 3.0

Page: 1/10  
(11120809/SDS\_GEN\_US/EN)

### 1. Identification

#### Product identifier used on the label

**Ultrafuse® ABS Green**

#### 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  
Synonyms: ABS Resin

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### 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.

#### Label elements

# Safety Data Sheet

## Ultrafuse® ABS Green

Revision date : 2022/06/10  
Version: 3.0

Page: 2/10  
(11120809/SDS\_GEN\_US/EN)

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

### Hazards not otherwise classified

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

#### 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):  $\geq 0.0$  -  $< 0.2\%$

Synonym: C.I. Pigment White 6

#### acrylonitrile

CAS Number: 107-13-1

Content (W/W):  $\geq 0.0$  -  $< 0.1\%$

Synonym: 2-Propenenitrile; Acrylonitrile, Cyanoethylene

#### Styrene

CAS Number: 100-42-5

Content (W/W):  $\geq 0.0$  -  $< 0.1\%$

Synonym: Vinylbenzene; Styrene, Ethenylbenzene

## 4. First-Aid Measures

### Description of first aid measures

#### General advice:

Remove contaminated clothing. First aid providers should wear personal protective equipment to prevent exposure.

#### 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.

#### If on skin:

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

#### If in 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.

# Safety Data Sheet

## Ultrafuse® ABS Green

Revision date : 2022/06/10  
Version: 3.0

Page: 3/10  
(11120809/SDS\_GEN\_US/EN)

### If swallowed:

Rinse mouth and then drink 200-300 ml of water. Do not induce vomiting. Seek medical attention.

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

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## 5. Fire-Fighting Measures

### Extinguishing media

Suitable extinguishing media:  
water spray, foam, dry powder

### 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.

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## 6. Accidental release measures

### Further accidental release measures:

Avoid dispersal of dust in the air (i.e., clearing dust 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.

### Environmental precautions

# Safety Data Sheet

## Ultrafuse® ABS Green

Revision date : 2022/06/10  
Version: 3.0

Page: 4/10  
(11120809/SDS\_GEN\_US/EN)

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. After decontamination, spill area can be washed with water.

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## 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

Further information on storage conditions: Keep container tightly closed. Avoid extreme heat. Avoid all sources of ignition: heat, sparks, open flame.

Keep container tightly closed. Avoid extreme heat. Avoid all sources of ignition: heat, sparks, open flame.

Storage stability:

Avoid prolonged storage at high temperatures.

Avoid prolonged storage.

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## 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 ;   |

# Safety Data Sheet

## Ultrafuse® ABS Green

Revision date : 2022/06/10  
Version: 3.0

Page: 5/10  
(11120809/SDS\_GEN\_US/EN)

|                  |            |                                                   |
|------------------|------------|---------------------------------------------------|
| 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.

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## 9. Physical and Chemical Properties

|                        |                                                           |
|------------------------|-----------------------------------------------------------|
| Form:                  | filament                                                  |
| Odour:                 | odourless                                                 |
| Odour threshold:       | not applicable, odour not perceivable                     |
| Colour:                | green                                                     |
| pH value:              | not determined                                            |
| Melting point:         | not determined                                            |
| Boiling point:         | not applicable                                            |
| Flash point:           | not applicable                                            |
| 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. |
| Autoignition:          | No data available.                                        |

# Safety Data Sheet

## Ultrafuse® ABS Green

Revision date : 2022/06/10  
Version: 3.0

Page: 6/10  
(11120809/SDS\_GEN\_US/EN)

|                                                     |                                        |
|-----------------------------------------------------|----------------------------------------|
| Vapour pressure:                                    | not determined                         |
| Relative density:                                   | not applicable                         |
|                                                     | 1.05 - 1.07<br>( 25 °C)                |
| Vapour density:                                     | not applicable                         |
| Partitioning coefficient n-octanol/water (log Pow): | not applicable for mixtures            |
| Self-ignition temperature:                          | not self-igniting                      |
| Thermal decomposition:                              | > 300 °C                               |
| Viscosity, dynamic:                                 | not applicable, the product is a solid |
| Viscosity, kinematic:                               | not applicable, the product is a solid |
| Solubility in water:                                | negligible                             |
| 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.

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

### 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

### 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:

> 300 °C

## 11. Toxicological information

### Primary routes of exposure

# Safety Data Sheet

## Ultrafuse® ABS Green

Revision date : 2022/06/10  
Version: 3.0

Page: 7/10  
(11120809/SDS\_GEN\_US/EN)

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.

#### Oral

No data available concerning acute toxicity.

#### Inhalation

No data available concerning acute toxicity.

#### Dermal

No data available concerning acute toxicity.

#### Assessment other acute effects

Assessment of STOT single:

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

#### Irritation / corrosion

Assessment of irritating effects: Irritation is possible when the product comes in contact with the skin, respiratory tract or the eyes.

May cause slight irritation to the skin. May cause slight irritation to the eyes. May cause slight irritation to the respiratory tract.

#### Skin

Prolonged contact with the product can result in skin irritation.

#### Eye

Similar findings as for skin apply to eyes. Dust may cause mechanical eye irritation.

#### Sensitization

Assessment of sensitization: A sensitizing effect on particularly sensitive individuals cannot be excluded.

No data available.

#### Aspiration Hazard

No aspiration hazard expected.

### Chronic Toxicity/Effects

#### Repeated dose toxicity

Assessment of repeated dose toxicity: The information available on the product provides no indication of toxicity on target organs after repeated exposure.

#### Genetic toxicity

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

#### 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.

# Safety Data Sheet

## Ultrafuse® ABS Green

Revision date : 2022/06/10  
Version: 3.0

Page: 8/10  
(11120809/SDS\_GEN\_US/EN)

*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.*

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### Reproductive toxicity

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

### Teratogenicity

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

### Other Information

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

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## 12. Ecological Information

### **Toxicity**

#### Aquatic toxicity

Assessment of aquatic toxicity:

The product has not been tested. The statement has been derived from the structure of the product. There is a high probability that the product is not acutely harmful to aquatic organisms.

#### Assessment of terrestrial toxicity

No data available concerning terrestrial toxicity.

### **Persistence and degradability**

#### Assessment biodegradation and elimination (H<sub>2</sub>O)

Experience shows this product to be inert and non-degradable.

### **Bioaccumulative potential**

#### Bioaccumulation potential

The product will not be readily bioavailable due to its consistency and insolubility in water.

### **Mobility in soil**

#### Assessment transport between environmental compartments

Adsorption to solid soil phase is possible.

### **Additional information**

Other ecotoxicological advice:

No data available.

The product has been assessed on the basis of the components' available data. To some extent data gaps exist for individual components.



# Safety Data Sheet

## Ultrafuse® ABS Green

Revision date : 2022/06/10  
Version: 3.0

Page: 9/10  
(11120809/SDS\_GEN\_US/EN)

### 13. Disposal considerations

**Waste disposal of substance:**

Must be disposed of or incinerated in accordance with local regulations.

**Container disposal:**

Packs that cannot be cleaned should be disposed of in the same manner as the contents.  
Uncontaminated packaging can be re-used.

### 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](http://www.P65Warnings.ca.gov).

**WARNING:** Styrene is known to the State of California to cause cancer. For more information, go to [www.P65Warnings.ca.gov](http://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

# Safety Data Sheet

## Ultrafuse® ABS Green

Revision date : 2022/06/10  
Version: 3.0

Page: 10/10  
(11120809/SDS\_GEN\_US/EN)

SDS Prepared on: 2022/06/10

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 Green 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