Safety Data Sheet

according to EU 1907/2006 (REACH) and 1272/2008 (CLP)

Product name: **ABS Plus**

Revision Date: June 1,2016 Print Date: August 23, 2017

Section 1. Identification of the substance/ mixture and of the company/ undertaking

1.1 Product identifier

Product name: 3D Filament AzureFilm **ABS Plus**
This safety data sheet pertains to the following products codes:
FAP171-XXXX and FAP281-XXXX

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

Relevant identified uses: Mixture used for the production of molded plastic articles

1.3 Details of the supplier of the Safety Data Sheet

Supplier: AzureFilm
Address: Orleška cesta 16
6210 Sežana
Slovenia

Telephone: +386(0) 31 718 800
Email: info@azurefilm.com

1.4 Emergency telephone number

Emergency telephone : +386(0) 31 718 800

Section 2. Hazards identification

2.1 Classification of the substance or mixture

Classification according to Directive 67/548/EEC or 1999/45/EC: Not classified as

hazardous (polymeric state) Classification according to Regulation (EC) N° 1272/2008

(CLP): Not classified as hazardous (polymeric state)

2.2 Label elements

Not labelled as hazardous

2.3 Other hazards

vPvB/PBT assessment: not available

Section 3. Composition/information on ingredients

3.1 Composition of the substance/ preparation

Substance or Preparation Substance
Content

CAS	Name	content
9003-56-9	Acrylonitrile-Butadiene-Styrene copolymer	>98 %
-	Additives	≦ 2 %

Impurities Contributing to Hazard None

3.2 Additional information:
Reach Info:

	Pre-registration No.	Registration No.
Acrylonitrile	05-2117149456-38-0000	01-2119474195-34-0045
Styrene	05-2117149462-45-0000	01-2119457861-32-0006 01-2119457861-32-0007 01-2119457861-32-0057 01-2119457861-32-0065 01-2119457861-32-0081
Buta-1,3-diene	05-2117149467-35-0000	01-2119471988-16-0044

3.3 For full text of R- and H-phrases: see section 16

Section 4. First-aid measures

4.1 Description of first aid measures

General notes: Remove affected persons from the danger area, at the same time ensuring your own safety. Remove all contaminated clothing immediately

Following inhalation: In case of gases evolving from melted resin, move subject to fresh air. Treat symptomatically

Following skin contact: In case of pellets or powder, wash with water. In case of smelt, wash affected skin area and clothing with plenty of (soap and) water. Seek medical advice

Following eye contact: In case of pellets or powder, flush with plenty of water for at least 15 minutes. Seek medical advice if any dust particles still remain.
In case of gases evolving from melted resin of high temperature, flush with plenty of water for at least 15 minutes. Seek medical advice if necessary

Following ingestion: Induce vomiting. Rinse mouth with water. Seek medical

advice if necessary Self-protection of the first aider: -

4.2 Most important symptoms & effects both acute & delayed
Dust: Skin irritation, eye irritations and redness

4.3 Indication of any immediate medical attention and special

treatment needed: - Treat symptomatically.
(Decontamination, vital functions)

Section 5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing agents: Water, foam, dry

chemical powder For safety reasons unsuitable

extinguishing agents: -

5.2 Special hazards arising from the substance or mixture: -

5.3 Advice for firefighters

Protective equipment: Self-contained breathing apparatus Further measures: -

5.4 Additional information: -

Section 6. Accidental release measures

6.1 Personal precautions, protective equipment & emergency procedures

Pellets or powder remained on ground may cause slipping Wear protective equipment Ensure adequate ventilation Keep away from ignition sources Keep unprotected persons away

6.2 Environmental precautions

Gather pellets and powder thoroughly to avoid birds or fishes taking from draining water. Do not allow product to reach sewage system or water bodies. Inform respective authorities in case product reaches water, sewage system or soil

6.3 Methods and material for containment and cleaning up

Recovery if not contaminated or disposal

6.4 Reference to other sections

See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment.

Section 7. Handling and storage

7.1 Precautions for safe handling

Protective measures: -

Measures to prevent fire: Prevent from fire around handling area

Measures to prevent aerosol and dust generation: maintain good housekeeping standards to prevent accumulation of dust. To avoid dust explosion resulting from the existence of powder, electrostatics eliminators and grounding should be fixed to such equipment as air transferring pipes, bag filters and hoppers. Use electrically conductive filters for bag filters.

Measures to protect the environment: - Advice on general occupational hygiene:

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7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions: Keep the material at a cool dry place. Protect from direct sunlight, rain and violent temperature fluctuation. Fire is inhibited around storage area.

Requirements for storage rooms and vessels: - Suitable materials and coating: -

Unsuitable materials or coatings: -

Further information on storage conditions: -

7.3 Specific end use(s)

Recommendations: -

Section 8. Exposure controls/personal protection

8.1 Control parameters

Exposure Limits:None established

8.2 Exposure control

Appropriate engineering controls: Install eyes washer and shower in the place of operation. Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits
Personal protection:

- Respiratory protection: Wear masks for cleaning molding machines
- Hand protection: Heat-insulting gloves when handling molten form
- Eye protection: Wear safety glasses for general purpose. Wear chemical goggles for cleaning molding machines
- Skin and body protection: Gloves necessary for handling melted resin
- Hygiene measures: Wash hands after handling

8.3 Environmental exposure controls

Product related measures to prevent exposure:
None specific Instruction measures to prevent exposure: None specific Organizational measures to prevent exposure: None specific Technical measures to prevent exposure: None specific
Environmental exposure controls: Do not allow product to reach sewage system or water bodi

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Section 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Physical state: solid, granulate
Odour	Odourless or negligible
Colour	Natural or off-white
Odour threshold	None
pH	Not applicable
Melting point / freezing point	not determined
Initial boiling point and boiling range	Not applicable
Flash point	404 °C
Evaporation rate	Not applicable
Flammability (solid, gas)	Not available
Upper/lower flammability or explosive limits	45 g/m³ (open cup, powder)
Vapour pressure	Not applicable
Vapour density	Not applicable
Relative density (H_2O=1)	1.03 - 1.10 g/cm³
Bulk density	Not available
Solubility(ies)	Not soluble
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	466 °C
Decomposition temperature	> 300 °C
Viscosity	Not applicable
Explosive properties	Not explosive
Oxidizing properties	Not oxidizing

9.2 Other safety information: -

Section 10. Stability and reactivity

10.1 Reactivity: Non-reactive under normal handling and storage conditions

10.2 Chemical stability: Stable under normal handling and storage conditions

10.3 Possible hazardous reaction: -

10.4 Conditions to avoid: Avoid excessive heat, flames and all sources of ignition

10.5 Incompatible materials: not applicable

10.6 Hazardous decomposition products: not applicable

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Section 11. Toxicological information

11.1 Information on toxicological effects

Toxicological effects:

- Acute toxicity (oral): Lack of data.
- Acute toxicity (dermal): Lack of data.
- Acute toxicity (inhalative): Lack of data.
- Skin corrosion/irritation: Lack of data. May cause irritations.
- Eye damage/irritation: Lack of data. May cause irritations.
- Sensitisation to the respiratory tract: Lack of data. Not to be expected
- Skin sensitisation: Lack of data. Not to be expected
- Germ cell mutagenicity/Genotoxicity: Lack of data. Not to be expected
- Carcinogenicity: Lack of data. Not to be expected
- Reproductive toxicity: Lack of data. Not to be expected
- Effects on or via lactation: Lack of data.
- Specific target organ toxicity (single exposure): Lack of data.
- Dusts: Irritating to eyes, respiratory system and skin.
- Specific target organ toxicity (repeated exposure): Lack of data.

Other information

Styrene:

- Harmful if inhaled. Causes damage to organs through prolonged or repeated exposure.
- lung damages
- May be fatal if swallowed and enters airways.
- Causes serious eye irritation. Causes skin irritation.

Acrylonitrile:

- Toxic by inhalation, in contact with skin and if swallowed.
- May cause cancer. Suspected of damaging the unborn child.
- Causes skin irritation. May cause an allergic skin reaction. Causes serious eye
- damage.

1,3-Butadiene:

- May cause cancer. May cause genetic defects.

Symptoms

- Dust:Can cause skin, eye and respiratory tract irritation.
- The melted product can cause severe burns.
- Thermal treatment, Processing:
- Irritating to eyes, respiratory system and skin.
- In case of ingestion: Swallowing may cause gastrointestinal irritation and pain of gut

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Section 12. Ecological information

12.1 Toxicity

Method	Results	Reference
Short-term aquatic toxicity		
Based on available data on the constituents the classification criteria are not met $LC(50)_{mixture}$ = 5.78 mg/l (additivity and summation method, toxicity information available for 92,5 % of the mixture)		
Long-term aquatic toxicity		
Based on available data on the constituents the classification criteria are met and the mixture is therefore classified as Aquatic Chronic 1 $NOEC_{mixture}$ = 0.0079 mg/l (additivity and summation method, toxicity information available for 78 % of the mixture)		

12.2 Persistence and degradability

Further details:

- Biodegradation: Product is not readily biodegradable.
- The product is likely to persist in the environment.

Effects in sewage plants:

- In sewage treatment plants it may be separated mechanically.

12.3 Bioaccumulative potential

To avoid bioaccumulation plastics should not be disposed in the sea or in other water environments.

12.4 Mobility in soil

no data available

12.5 Results PBT & vPvB assessment

According to the revised Annex XIII of regulation (EC) 1907/2006 and (EC) 253/2011: No information available on the product as such

12.5 Other adverse effects:

General information: Do not allow to enter into ground-water, surface water or drains.

12.7 Additional information: -

Section 13. Disposal considerations

13.1 Waste treatment methods

Product / Packaging disposal: Dispose in accordance with the current local regulations. Waste codes according to European Waste Catalogue: -
Waste treatment-relevant information: Inadequate incineration may generate toxic gases such as CO, HCN, AN and SM Sewage disposal-relevant information: -
Other disposal recommendations:

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Section 14. Transport information

ADR/RID

UN number

Not applicable

14.2UN proper shipping name

Proper Shipping Name: NOT REGULATED

Transport hazard class(es)

Not applicable

14.1 Packing Group

Not applicable

14.2 Environmental hazards

Not considered environmentally hazardous based on available data

14.3 Special precautions for user

Special Provisions: no data available Hazard identification No:no data available

ADNR / ADN

14.1 UN number

Not applicable

14.2 UN proper shipping name

Proper Shipping Name: NOT REGULATED

14.3 Transport hazard class(es)

Not applicable

14.4 Packing Group

Not applicable

14.3 Environmental hazards

Not considered environmentally hazardous based on available data

14.4 Special precautions for user

no data available

14.1 IMDG 14.1 UN number

Not applicable

UN proper shipping name

Proper Shipping Name: NOT REGULATED

14.3 Transport hazard class(es) Not applicable

14.4 Packing Group

Not applicable

14.2 Environmental hazards

Not considered environmentally hazardous based on available data

14.3 Special precautions for user

EMS Number: Not applicable

14.4 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

ICAO/IATA

14.1 UN number

Not applicable

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14.1 UN proper shipping name
Proper Shipping Name: NOT REGULATED
14.2 Transport hazard class(es)
Not applicable
14.3 Packing Group
Not applicable
14.4 Environmental hazards
Not considered environmentally hazardous based on available data
14.6 Special precautions for user
no data available

Section 15. Regulatory information

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

Authorization and / or restrictions on use: None
Other EU regulations: The following substances are under European Seveso regulation:

Substance	Seveso category	Other Seveso categories	Seveso concentrations	Categories
Acrylonitrile	2	9ii 7b	10 % ≤ C < 20 %	2
Buta-1,3-diene	0	8	-	-
Styrene	6	-	C ≥ 12,5 %	-

Other national regulations: -

15.2 Chemical Safety Assessment
For this substance a chemical safety assessment is not yet required.

Section 16. Other information

16.1 Indication of changes
Version 1: First issue according to Regulations (EC) 1907/2006 (REACH) & 1272/2008 (CLP)

16.2 Abbreviations and acronyms

AGS	Ausschuss für Gefahrstoffe	LoW	List of Waste
AF	Assessment Factor	MARPOL	MARine POLlution
BCF	BioConcentration Factor	MIE	Minimum Ignition Energy
CAS	Chemical Abstract Service	N°EC	European Commission number
CMR	Carcinogenic, Mutagenic and Reprotoxic	NFPA	National Fire Protection Association
CSR	Chemical Safety Report	NIOSH	National Institute of Occupational Safety and Health
DFG	German Research Foundation	NOEC	No Obseved Effect Concentration
DNEL	Derived No Effect Level	NOELR	No Observed Effect Loading Rate
EC	European Commission	OECD	Organisation for Economic Co-operation and Development
EC50	Effective Concentration (required to induce a 50% effect)	OEL	Occupational Exposure Limit
EEC	European Economic Community	OSHA	Occupational Safety and Health Administration
EWC	European Waste Catalogue Code	PBT	Persistant Bioaccumulable Toxique
IDLH	Immediately Dangerous to Life or Health	PNEC	Previsible Non Effect Concentration
IBC	International Bulk Chemical	QSAR	Quantitative Structure-Activity Relationship

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Koc	Soil/Water Partition Coefficient	STOT	Specific Target Organ Toxicity
Kow	Octanol/Water Partition Coefficient	TCLo	Toxic Concentration Low
LC50	Lethal Concentration 50	TDLo	Toxic Dose Low
LD50	Lethal Dose 50	UN	United Nations
LEL	Lower Explosive Limit	UVCB	Unknown or Variable Composition Complex Reaction Products, or Biological Materials
LL100	Lethal Loading	vPvB	very Persistent, very Bioaccumulative
LOEC	Lowest Observed Effect Concentration		

16.3 Key literature references and sources for data

www.azurefilm.com

16.4 Relevant R-phrases and/or H-statements (number and full text):

H220	Extremely flammable gas	R10	Flammable
H225	Highly flammable liquid and vapour	R11	Highly flammable
H226	Flammable liquid and vapour	R12	Extremely flammable
H301	Toxic if swallowed	R20	Harmful by inhalation
H311	Toxic in contact with skin	R23/24/25	Toxic by inhalation, in contact with skin and if swallowed
H315	Causes skin irritation		
H317	May cause an allergic skin reaction	R36	Irritating to eyes
H318	Causes serious eye damage	R37	Irritating to respiratory system
H319	Causes serious eye irritation	R38	Irritating to skin
H331	Toxic if inhaled	R40	Limited evidence of a carcinogenic effect
H332	Harmful if inhaled	R41	Risk of serious damage to eyes
H335	May cause respiratory irritation	R43	May cause sensitisation by skin contact
H340	May cause genetic defects	R45	May cause cancer
H350	May cause cancer	R46	May cause inheritable genetic damage
H351	Suspected of causing cancer	R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
H400	Very toxic to aquatic life		
H411	Toxic to aquatic life with long lasting effects	R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

16.5 Training advice: -

16.6 Further information: According to the guidance version 2.0 for monomers and polymers from the European Chemicals Agency dated as of April 2012, the classification of the polymer takes into account the classification of all its constituents, such as unreacted monomers. These constituents in fact should be taken into account for classification of the polymer. This means that the same classification methods as for mixture should be applied to polymer substances.
In order to determine a classification for the studies about the water soluble fraction as well as the absorption should be performed on the polymer as such.

To the best of our knowledge and belief, the information contained herein is accurate and obtained from sources believed to be reliable. No representation is made that the information is complete or the material is suitable for all purposes. The final determination as to the suitability of the user's intended use of the material is the sole responsibility of the user. All materials may present unknown hazards even when used in common applications and accordingly, it is the sole responsibility of the user to understand and address all potential hazards, including those identified herein. The information set forth in Sections 11 and 12 reflects data available as of the date hereof. It is anticipated that such data will be updated.