SECTION 1. IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE COMPANY

IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

Product name:

SMARTFIL® ABS NATURAL
SMARTFIL® ABS IVORY WHITE
SMARTFIL® ABS ORINOCO
SMARTFIL® ABS SUNSET
SMARTFIL® ABS RUBY
SMARTFIL® ABS CHOROPHYLL
SMARTFIL® ABS ANTRACITE
SMARTFIL® ABS SAPPHIRE
SMARTFIL® ABS COBALT
SMARTFIL® ABS TRUE BLACK
SMARTFIL® ABS MIX

Product type: Thermoplastic

RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES DISAGREE

Recommended uses 3D printing filament. Additive manufacturing.

Uses advised against. No information available.

1.3 IDENTIFICATION OF THE COMPANY

SMART MATERIALS 3D PRINTING SL
Polígono Industrial El Retamar · C/ Tomillo 7 – Vial G
23680 Alcalá la Real (Jaen) SPAIN
☎ +34 953 041 993
+34 953 113 527
info@smartmaterials3d.com
www.smartmaterials3d.com

1.4 EMERGENCY PHONE NUMBER

Emergency phone : 112

SECTION 2. HAZARDS IDENTIFICATION

2.1 CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

Regulation (CE) N. º 1272/2008
This mixture is classified as non-hazardous according to Regulation (EC) 1272/2008 [GHS].

2.2 LABEL ELEMENTS

Symbols/Pictograms : None

Warning words : None

Hazard identifications : None

Prudential advice : None

2.3 OTHER HAZARDS

There is no known / No information available.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 SUSTANCE

Not applicable.

3.2 MIXTURE

Nombre químico	N.º Cas	% en peso
Acrylonitrile-Butadiene-Styrene copolymer	9003-56-9	> 98
Styrene	100-42-5	<0.1
Additives and pigment		< 1

SECTION 4. FIRST AIDS

4.1 DESCRIPTION OF FIRST AIDS

Eye contact : In case of irritation caused by the fumes, rinse immediately with plenty of water, also under the eyelids. If symptoms persist, contact your doctor.

Skin contact : With the material at room temperature no adverse effects are expected, in case of contact with the molten filament, quickly cool the affected area with water. Do not separate the solidified product from the skin. Notify the doctor immediately.

Inhalation : After inhaling the vapours emitted by the molten filament, breathe fresh air, rest, if symptoms persist contact your doctor

Ingestion: : Drink water as a precaution. Never give anything by mouth to an unconscious person. Do not induce vomiting without medical assistance.

4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

No information available.

4.3 INDICATION OF INMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED IMMEDIATELY

Symptomatic treatment
Decontamination, vital function.

SECTION 5. FIREFIGHTING MEASURES

5.1 EXTINGUISHING MEDIA

Suitable extinguishing media : Water spray, foam, extinguishing powder, carbon dioxide.

Unsuitable extinguishing media for safety reasons : water jet.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

The combustion of the filament releases fumes, carbon monoxide (CO), carbon dioxide (CO2) and toxic aldehydes.

5.3 ADVICE FOR FIREFIGHTERS

Instructions	: No fighting instruction is required.
Special protective equipment for fire-fighting personnel	: As in any fire, wear a self-contained breathing apparatus on demand MSHA / NIOSH (approved or equivalent) and all necessary protective equipment.

SECTION 6. MEASURES IN CASE OF ACCIDENTAL RELEASE

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

For personnel who are not part of the emergency services	: Wear the mandatory personal protection equipment. Avoid the formation of dust. Remove all ignition sources. Sweep to avoid the risk of slipping.
For emergency personnel	: Use with the appropriate personal protection equipment (see Section 8).

6.2 ENVIRONMENTAL CAUTIONS

- Do not discharge to surface water or sewage system
- Prevent the material from contaminating the water in the subsoil.

6.3 METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP

Sweep and collect solidified material in appropriate containers for disposal. The collected materials are treated as waste.

SECTION 7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING

Recommendations for handling safely	: Use personal protective equipment. Avoid contact with the skin and eyes when handling the molten filament.
General hygiene considerations	: Handle the filament respecting good industrial hygiene and safety practices.

7.2 CONDITIONS FOR SAFE STORAGE, INLUDING ANY INCOMPATIBILITIES

Requirements with respect to the warehouse and the containers	: Store in a dry place, protect from sunlight, store between 10ºC and 40ºC.
Standards in case of joint storage	: It is not necessary.
Additional information on storage conditions	: Store in tightly closed containers in a cool, dry place.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

8.1 CONTROL PARAMETERS

This material can generate particles not classified according to other criteria (PNOC). The US Occupational Safety and Health Administration (OSHA) imposes a PEL / TWA (Permissible exposure level / time-weighted average) value for PNOC of 15 mg / m3 for total dust and 5 mg / m3 for respirable fraction.

The American Conference of Governmental Industrial Hygienists (ACGIH) imposes a TLV / TWA (Product Concentration Limits / Time-weighted Average) for PNOC of 10 mg / m3 for inhalable particles and 3 mg / m3 for respirable particles.

Where reasonably practicable, this should be done using local ventilation and good general extraction. It must have adequate extraction in those places where dust is formed.

Workplace limit values

Chemical name	N.º Cas	Tipe	Limit value
Smartfil ® ABS		Spain: VLA-ED Spain: VLA-ED	10 mg/m^3 3 mg/m^3
Styrene	100-42-5	Spain: VLA-EC Spain: VLA-ED	172 mg/m^3; 40 ppm 86 mg/m^3; 20 ppm

Biological Limit

Chemical name	N.º Cas	Tipe	Limit value	Parameter	Sampling
Styrene	100-45-5	Spain: VLB, urine Spain: VLB, blood	400 mg/g Creatinine 0.2 mg/L	Mandelic acid + phenylglyoxylic acid. Styrene; venous	End of exposure or end of shift

Complementary information.

The product contains very low amounts of residual monomers and process chemicals mainly styrene and ethylbenzene and very low amounts of acrylonitrile, vinyl cyclohexene, butadiene) together with possible decomposition products that may originate in thermal processes. As the identity and content in these components depends on the conditions of the process (temperature, etc.), it will be the responsibility of the user to determine the appropriate protection or safety measures.

8.2 EXPOSURE CONTROLS

Eye protection : None during normal handling and use. Protective goggles with side cover to protect against the molten filament.

Skin and body protection : None during normal handling and use. Wear appropriate work clothes. Wear gloves to protect against burns when using molten material.

Inhalation : Keep air concentrations below recommended exposure limits (where applicable), otherwise an approved respirator should be worn.

Hygiene measures : Handle the filament respecting good industrial hygiene and safety practices.

Engineering controls : Provide local exhaust ventilation systems. The ventilation must be enough to effectively eliminate and prevent the accumulation of dust or fumes that may be generated during and during the handling or thermal processing of the filament.

SECTION 9. FISICAL AND CHEMICAL PROPERTIES

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Form	: Solid
Aspect/appearance	: Filament
Colour	: Various
Odour	: weak, characteristic
Density	:1.04 g/cm^3
Thermal decomposition	: 300ºC
Fusion interval	:220ºC – 280ºC
Autoignition temperature	: not spontaneously flammable
Solubility	: Acetone

9.1 OTHER INFORMATION

No available.

SECCION 10. STABILITY AND REACTIVITY

10.1 REACTIVITY

None are expected under conditions of normal use.

10.2 CHEMICAL STABILITY

Stable under recommended storage conditions.

10.3 POSSIBILITY OF DANGEROUS REACTIONS

None are expected under conditions of normal use.

10.4 CONDITIONS TO BE AVOIDED

Protect from extreme heat. Avoid keeping the resin melted for excessive periods of time at high temperatures. Prolonged exposure will cause degradation of the polymer.

10.5 INCOMPATIBLE MATERIALS

Oxidants. Strong bases.

10.6 STRONG DECOMPOSITION PRODUCTS

After strong overheating of the material, hazardous decomposition products may be released: Hydrogen cyanide, monomers, hydrocarbons, gases / vapors, cyclic low molecular weight oligomers, carbon monoxide and carbon dioxide.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS

Main routes of exposure	: Contact with the eyes, foot, inhalation and ingestion.
Acute toxicity	: Lack of data. There is no evidence of acute toxicity.
Local effects	: Product produced dust can irritate eyes, skin and respiratory system. The particles of the material, like the other inert materials, are mechanically

	irritating to the eyes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.
Specific effects	: May cause skin irritation or dermatitis. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. Inhalation of dust can cause shortness of breath, tightness in the chest, sore throat and cough. The combustion produces irritating smoke.
Long-term toxicity	: No data available.
Mutagenic effects	: In view of the available data, the classification criteria are not met. The chemical structure of the polymer does not raise any suspicion of such an effect.
Reproductive toxicity	: No data available.
Carcinogenic effects	: In view of the available data, the classification criteria are not met. There are no indications of carcinogenicity in humans.
Effects on target organs	: No data available.

SECTION 12. ECOLOGICAL INFORMATION

12.1 ECOTOXICITY

It is not expected to be very toxic, but if they are ingested by birds or aquatic life, they can cause adverse mechanical effects.

12.2 PERSISTENCE AND DEGRADABILITY

The product is not easily biodegradable. The product is probably persistent in the environment.

12.3 POTENTIAL OF BIOACCUMULATION

To avoid bioaccumulation, plastics should not be disposed of at sea or in other aquatic environments.

12.4 MOBILITY

No data available.

12.5 RESULTS OF PBT Y mPmB

This substance does not meet the PBT / vPvB criteria of the REACH Regulation, Annex XIII.

12.6 OTHER ADVERSE EFFECTS

No information available

SECTION 13. DISPONSAL CONSIDERATIONS

13.1 METHODS FOR TREATINGS WASTE

Dispose in accordance with local / regional / national / international regulations. Avoid release to the environment. Incineration must be done in accordance with municipal and state laws, and the laws and regulations of local environmental agencies.

SECTION 14. TRANSPORT INFORMATION

ADR : Not regulated
RID : Not regulated
IATA : Not regulated
IMDG : Not regulated

SECTION 15. REGULATORY INFORMATION

15.1 NORMS / SECURITY, HEALTH AND ENVIRONMENTAL LAW SPECIFIC TO THE MIXTURE SUBSTANCE

No information available.

15.2 CHEMICAL SAFETY EVALUATION

Non-applicable

SECTION 16. OTHER INFORMATION

The data that can be extracted from this safety sheet is based on the current state of our knowledge, this information should be treated as a guide for transportation, safe storage and handling. The information provided does not constitute any guarantee of product qualities. In addition, it is the user's responsibility to handle the product in accordance with local regulations and regulations.

The information provided in this security sheet does not generate any contractual legal relationship.