# SMARTFIL® ABS FIREPROOF Safety Data Sheet

## 1. Identification of the substance/preparation and of the company:



### 1.1. Trade name

SMARTFIL®ABS FIREPROOF

### 1.2. Use of the product

Filament for FFF/FDM technology based 3D printing

### 1.3. Company

**SMART MATERIALS 3D**

Pol. Ind. El Retamar · C/ Tomillo 7 – Vial G

23680 Alcalá la Real (Jaén) SPAIN

Tel. (+34) 953 041 993 - Fax. (+34) 953 113 527

info@smartmaterials3d.com - www.smartmaterials3d.com

**SMARTFIL®** *by Smart Materials 3D*

### 1.4. Emergency pone number: 112

## 2. Hazards identification

### 2.1. Clasification

- According to EU Directive 1272/2008: Not classified
- According to EU Directive 67/548/CEE or 1999/45/CE: Not classified

### 2.2. Label elements

Labelling according to EU guidelines:

The product is not subject to classification according to the calculation methods of the "General Classification Guideline for Preparations of the EU" as issued in the latest valid version.

Usual preventive measures should be considered for the manipulation of chemical products.

### 2.3. Other hazards

- PBT y mPmB results:

  PBT: Not applicable

  mPmB: Not applicable



## 3. Composition/information on ingredients

### 3.1. Composition

- ABS (Acrylonitrile-Butadiene-Styrene) – 99% CAS:9003-56-9
- Tetrabromobisphenol A < 17%, CAS: 79-94-7
- Antimony Trioxide < 5%, CAS: 1309-64-4

### 3.2. Chemical chacacteristics: Mixures

Description: Polymer

Dangerous components: Not applicable

Other components: Not applicable

## 4. First-aid measures:

### 4.1. First-aid measures description

- General instruction: Change your clothes if they are stained with the product.
- In case of inhalation: Supply fresh air. Consult doctor in case of complaints.
- After decomposed product inhalation, supply fresh air, rest and receive medical assistance.
- In case of skin contact: wash off with plenty of wáter and soap. Visit a doctor if you suffer from continuous itchy skin.
- After contact with the molten product, cool rapidly with cold water the región affected. Do not pull solified product away from the skin. Call a doctor immediately.
- In case of eye contact: Rinse opened eye for several minutes under running wáter. If symptoms persist, consult a doctor. Remove contact lenses if it is possible. Keep rinsing
- In case of ingestion: Rinse the mouth and then drink plenty of water. Do not induce vomiting. In case of persistent symptoms consult doctor.

### 4.2. Most important symptoms and effects, both acute and delayed

Delayed effects: Suspicious of causing cancer.

### 4.3. Indication of any immediate medical attention and special treatment needed

Ensure that medical staff is aware of the material used and take appropriate safety precautions.

## 5. Firefighting measures:

### 5.1. Extinguishing media:

Any method is applicable.

### 5.2. Unsuitable extinguishing media for safety reasons:

Water with full jet.

Carbon dioxide $CO_2$.

### 5.3. Special hazards arising from the substance or mixture

Formation of toxic gases is possible during heating or in case of fire.

Irritant gases.

In case of fire, the following can be released:

- Fumes
- Carbon monoxide (CO) and carbon dioxide ($CO_2$)
- Hydrocarbons
- Hydrocyanic acid (HCN)

Under certain conditions, other toxic materials can be generated during a fire.

In case of accidental dispersion: Personal precautions.

### 5.4. Advise for firefighters

Special protective equipment: Wear self-contained breathing apparatus (SCBA).

## 6. Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Avoid dust formation.

Do not inhale the dust.

Keep away ignition sources.

Avoid eye contact.

Danger of slipping by leaked/spilled product.

### 6.2. Environmental precautions:

Do not allow to enter sewers/ surface or ground water.

### 6.3. Methods and material for containment and cleaning up:

Let it solidify, pick up mechanically.

Dispose of the material collected according to regulations.

# 7. Handling and storage:

## 7.1. Precautions for safe handling

Ensure enough ventilation in the working position.

Avoid dust formation.

Do not inhale produced fumes/dusts.

Remove regularly the inevitably formed dust.

Avoid eye and skin contact.

Comply the rules of the CMA.

Avoid contact with the product when heated.

- Information about fire - and explosion protection:

Protect against electrostatic charges.

Keep away from ignition sources – Do not smoke.

Protect from heat.

The accumulation of fine dust combined with the presence of air may result in danger of dust explosion.

## 7.2. Conditions for safe storage, including any incompatibilities

- Requirements to be met by storerooms and receptacles:


- Information about storage in one common storage facility: Not required.
- Further information about storage conditions: Store in cool, dry conditions in well sealed receptacles.

# 8. Exposure controls/personal protection

Additional information about engineering measures:

No additional information, consult section 7.

## 8.1. Control parameters

Ingredients with limit values that require monitoring at the workplace: Do not exceed the dust concentration value.

In spite of some of the additives used may have exposure guidelines, these additives are encapsulated in the product, therefore it is not likely their exposure under normal handling conditions.

Additional instructions: The lists valid during the making were used as basis.

### ·8.2. Exposure controls

Personal protective equipment.

**General protective and hygienic measures:**

Keep it away from foodstuffs, drinks and feeds.

Do not eat, drink or smoke while working.

Do not inhale dust/smoke/mist.

Avoid eye and skin contact.

Wash hands before break and at the end of work.

**Respiratory protection**:

There are not special measures required in concentrations lower than the CMA limit values.

**Hand protection**:

It is not required to wear chemical protective gloves.

Wear heat-resistant gloves when handling the melted/hot product.

**Eye protection**:

Protective glasses

**Body protection**:

Wear heat-resistant clothes for handling the hot/melted product.

## 9. Physical and chemical properties:

A. Appearance: White
B. Smell: Faint
C. Odour Threshold: NA
D. pH: NA
E. Boiling temperature (ºC): NA
F. Melting temperature (ºC): 220
G. Softening temperature (ºC): 93
H. Evaporation rate: NA
I. Flamability / Explosive properties: NA
J. Steam pressure/ Steam density: NA
K. Relative density: 1.16 – 1.195
L. Solubility: Acetone
M. Octanol / Water partition coefficient: NA
N. Self-ignition temperature: 466 ºC
O. Decomposition temperature: > 300 ºC

P. Viscosity: NA

Q. Other properties: NA

## 10. Stability and reactivity

### 10.1. Reactivity

See 10.3.

### 10.2. Chemical stability

Thermal decompostion / conditions to be avoided:

- The product does not decompose with a proper handling and storage.
- Avoid knocks, heat, sparks and electrostatic charges.

### 10.3. Possibility of hazardous reactions

The accumulation of fine dust combined with the presence of air may result in danger of dust explosion.

This material can burn but it does not ignite easily.

Toxic and irritant gases can be produced while combustion.

Inhaling this material may be hazardous.

### 10.4. Conditions to avoid

Avoid extreme heat, fires or any ignition source.

Avoid contact with incompatible materials and conditions.

### 10.5. Incompatible materials

Strong oxidants, combustible materials, toxic gases.

### 10.6. Hazardous decomposition products

Irritant gases.

Toxic gases.

Smoke.

Carbon monoxide (CO) and carbon dioxide ($CO_2$).

Hydrocarbons.

Hydrocyanic acid.

Styrene.

Aldehydes.

Phenol.

Acrylonitrile.

Nitrogen oxides (NOx).

# 11. Toxicological information

## 11.1. Information on toxicological effects

**Acute toxicity**:

- Oral: Based on the available information, it does not meet the classification criteria.
- Skin: Based on the available information, it does not meet the classification criteria.
- Inhalation: Based on the available information, it does not meet the classification criteria.

**Primary irritant effect**:

- On the skin: Dust may cause mechanical irritation.
- On the eye: Dust may cause mechanical irritation.
- Sensitization: There is no knowledge of any sensitizer.
- Subacute to chronic toxicity: Data not available.
- Additional toxicological information: According to our experience and all the information available to us, the product is not expected to present a health hazard if it is handed properly and according to the purposes specified.
- CMR effects (Cancinogenicity, Mutagenicity and toxicity for reproduction): Based on current information, there is no CMR effect.
- Molten material may cause burns.
- In case of ingestion it may cause gastrointestinal irritation and pain in intestines.

# 12. Ecological information

## 12.1. Ecotoxicity:

Short-term aquatic toxicity: Based on the available information from constituents, it does not meet the classification criteria

- LC(50)mixture = 5.78 mg/l (addition method, toxicity information available for the 92.5% of the mixure)

Long-term aquatic toxicity: Classified as aquatic chronic toxicity 1.

- NOECmixture = 0.0079 mg/l (addition method, toxicity information available for the 78% of the mixure)

Terrestrial plant toxicity: Method according to the OECD 208 directive

- 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol:

NOEC = 20 mg/kg soil dw

LOEC = 78 mg/kg soil dw

Basis for effect: growth

Not expected to be acutely toxic, but material in pellet or bead form may mechanically cause adverse effects if ingested by waterfowl or aquatic life.

### 12.2. Movility:

Bioconcentration is not envisaged due to the high molecular weight (MW> 1000). In the terrestrial environment, material is expected to remain in the soil. In the aquatic environment, material will sink and remain in the sediment.

### 12.3. Persistence and degradability:

This water-insoluble polymeric solid is expected to be inert in the environment. Sunlight exposure generates superficial degradation. It is not biodegradable.

### 12.4. Other adverse effects:

General notes: Water hazard class 1 (Self-assessment): slightly hazardous for water.

### 12.5. Results of PBT and vPvB assessment

PBT: Not applicable.

mPmB: Not applicable.

## 13. Disposal considerations:

### 13.1. Waste treatment methods

Recommendation: Disposal must be made according to official regulations.

**European Waste Catalogue (EWC)**:

Waste disposal key numbers from EWC have to be assigned depending on origin and processing.

**Contaminated packaging**:

Recommendation: Disposal must be made according to official regulations.

## 14. Transport information

Unregulated.

## 15. Regulatory information

Unregulated.

## 16. Other information:

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.