



# SAFETY SHEET

## FILAMENT | ANTIBACTERIEN ULTRA

V 1.0 | 18-12-2018

**VOLUMIC**  
IMPRIMANTES 3D

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

### 1.1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

Product name: ANTIBACTERIAL ULTRA  
Product type: Thermoplastic

### 1.2 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

VOLUMIC 3D  
12bis Rue Louis GARNERAY  
06300 NICE France  
info@volumic3d.com

### 1.4 EMERGENCY PHONE NUMBER

Emergency phone : 112

## SECTION 2. HAZARDS IDENTIFICATION

### 2.1 CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

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

Symbols/Pictograms  
Regulation n°1272/2008 (CLP)



Hazard statements:

Eye irritation, cat 1: H318 - Causes serious eye damage  
Acute Aquatic Toxicity, cat 1: H410 - Very toxic to aquatic life with long lasting effects. \_ H302 - Harmful if swallowed \_ H315 - Causes skin irritation

Precautionary statements:

P271: Use only outdoors or in a well-ventilated area.  
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P312: Call a POISON CENTER or doctor if you feel unwell.  
P280: Wear protective gloves / clothing / glasses / masks.  
P305+P351+P338: IN CASE OF CONTACT WITH THE EYES: Rinse carefully with water for several minutes. Re move contact lenses, if present and easy. Keep clarifying.  
P273: To avoid it's releasing into the environment.  
P501: Dispose of the content / container in an authorized professional service.

### 2.3 OTHER HAZARDS

There is no known / No information available.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 SUSTANCE

Mixture of PLA with compound formed by PLA containing modified clay.



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### 3.2 MIXTURE

Chemical name - N.º Cas - % weight  
Silver (active ingredient) - 7440-22-4 - 0.01-0.1  
Cetyltrimethylammonium bromide - 57-09-0 - 0.25-1  
Bentonite - 1302-78-9 - 01-mai  
Polylactic acid (PLA) - 9051-89-2 - 92-100

## 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. Remove the lenses if you have them. 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

Acute and delayed effects are listed in Sections 2 and 11.

### 4.3 INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED IMMEDIATELY

No information available.

## SECTION 5. FIREFIGHTING MEASURES

### 5.1 EXTINGUISHING MEDIA

Suitable extinguishing media: Any method is applicable  
Unsuitable extinguishing media for safety reasons : None known

### 5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

The combustion of the filament releases fumes, carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>) 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).



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### 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, INCLUDING ANY INCOMPATIBILITIES

Requirements with respect to the warehouse and the containers: Store in a dry place, protect from sunlight, store between 10°C and 40°C.  
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

None established  
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 / m<sup>3</sup> for total dust and 5 mg / m<sup>3</sup> 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 / m<sup>3</sup> for inhalable particles and 3 mg / m<sup>3</sup> 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.

### 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.



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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Form : Solid  
Aspect/appearance: Filament  
Colour: White  
Odour: sweet  
Density: 1.25 g/cm<sup>3</sup>  
Thermal decomposition: 250°C  
Fusion interval: 180°C – 230°C  
Autoignition temperature: 388°C  
Solubility: Indeterminate

### 9.1 OTHER INFORMATION

No available.

## SECTION 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

Temperatures above (240 ° C). 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

See section 5.2

## SECTION 11. TOXICOLOGICAL INFORMATION

### 11.1 INFORMATION ON TOXICOLOGICAL EFFECTS

Main routes of exposure: Contact with the eyes, foot, inhalation and ingestion.

Acute toxicity: In animal studies, no effect was observed on the organs studied after ingestion or dermal exposure.

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 diarrhea.

Specific effects: May cause skin irritation or dermatitis. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Inhalation of dust can cause shortness of breath, tightness in the chest, sore throat and cough.

The combustion produces irritating smoke.

Long-term toxicity: Does not cause allergic skin reactions in skin sensitization studies with guinea pigs.

Mutagenic effects: Non-mutagenic in the AMES test.

Reproductive toxicity: No data available.

Carcinogenic effects: This product does not contain any carcinogen or possible carcinogen as stated in the OSHA, IARC or NTP lists

Effects on target organs: In studies carried out on animals, no effect on the organs studied was observed



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after ingestion or dermal exposure.  
Skin: LD50/dermal/rabbit > 2000 mg/kg  
Ingestion: LD50/oral/rat > 5000 mg/kg

## SECTION 12. ECOLOGICAL INFORMATION

### 12.1 ECOTOXICITY

EC50/72h/algae > 1100 mg/L

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

Inherently biodegradable in industrial composting conditions.

### 12.3 POTENTIAL OF BIOACCUMULATION

Bioaccumulation is not expected

### 12.4 MOBILITY

Bio-concentration is not expected due to high molecular weight (MW > 1000). In the terrestrial environment, it is expected that the material remains in the soil. In the aquatic environment material, it will sink and remain in the sediment.

### 12.5 RESULTS OF PBT Y mPmB

Not applicable

### 12.6 OTHER ADVERSE EFFECTS

No information available

## SECTION 13. DISPOSAL 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



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### 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.

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