Following laws (CE) no 1907/2006, Article 31

SECTION 1. IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND COMPANY RESPONSIBLE FOR PRODUCT IDENTIFICATION MANUFACTURING / MARKETING:

1.1 IDENTIFICATION.

VOLUMIC 3D HARDFLEX ULTRA

1.2 FORMS OF USE.

Uses: Filament for FDM 3D printing compliant with Volumic 3D printers.

1.3 COMPANY.

VOLUMIC 3D
12bis Rue Louis GARNERAY
06300 NICE – France

Téléphone: +33 9 500 27 400
Email: info@volumic3d.com
Internet: www.volumic3d.com

1.3 EMERGENCY PHONE:

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SECTION 2. HAZARDS IDENTIFICATION.

2.1 CLASSIFICATION.

Classification according to Regulation (EC) No 1272/2008: The product is not classified according to the CLP regulation.

Classification according to the directive 67/548/CEE or Directive 1999/45/CE: Not classified.

SECTION 3. COMPOSITION.

3.1 CHEMICAL CHARACTERIZATION: MIXES.

Description: Polymer, polyurethane, stabilizers, additives.
Dangerous components: Non-applicable.
Other components: Non-applicable

SECTION 4. FIRST AIDS:

4.1 DESCRIPTION OF FIRST AIDS .

General instruction: Change clothes impregnated with the product.
After contact with molten product, cool rapidly with cold water. No skin separating the solidified product. Call a doctor immediately.
In case of eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor. Remove contact lenses, if present and easy. Continue rinsing.

SECTION 5. FIREFIGHTING MEASURES:

5.1 SUITABLE EXTINGUISHING MEDIA.

As appropriate for surrounding fire. Extinguish with carbon dioxide, dry chemical, foam or water spray.

5.2. UNSUITABLE EXTINGUISHING MEDIA FOR SAFETY REASONS .

None known.

5.3 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE.

Formation of toxic gases if heated or fire.
Irritant gases / vapors.
During a fire, they can be released:
- Smoke
- Carbon monoxide (CO) and carbon dioxide (CO_2)
- carbonic hydrogens
- Hydrogen cyanide (HCN)

Under certain conditions, during the fire may traces of other toxic materials.
Measures Accidental Spill: Personal precautions

5.4 ADVICE FOR FIREFIGHTERS.

Protective equipment: Wear protective breathing apparatus independent ambient air.
Measures in case of accidental release

SECTION 6. MEASURES IN CASE OF ACCIDENTAL RELEASE

6.1 PERSONAL PRECAUTIONS.

Keep away from sources of ignition.
Avoid eye contact.
Danger of slipping on spilled product or pouring.

6.2 ENVIRONMENTAL CAUTIONS:

Do not discharge into drains / surface water / ground water.

6.3 METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP:

Allow to solidify, pick up mechanically
Dispose of the material collected according to regulations.

SECTION 7. HANDLING AND STORAGE:

7.1. PRECAUTIONS FOR SAFE HANDLING.

Ensure good ventilation / exhaustion at the workplace.
Remove regularly dust that inevitably form.
Complying value / it is of the CMA.
Avoid contact with the product I heat.
Prevention of fire and explosion: No special measures are not recommended.

7.2. CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES.

Requirements to be met by storerooms and receptacles:
VOLUMIC 3D HARDFLEX ULTRA is delivered in a vacuum bag with a great barrier against moisture so that the filament cannot absorb humidity. Before bagging, the filament follows the strictest quality controls by de humidifying the raw material until the moisture content is lower than 0.02%. Once the product is unpacked

we recommend to keep it in a dry and dark environment. If not maintained in a suitable environment the material can absorb up to 0.5% of atmospheric humidity, this could create water vapour in the extrusion that will bring a poor surface finish.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION.

8.1 CONTROL PARAMETERS.

Components with exposure limit values in the workplace:
The product contains only traces of the substances mentioned.
101-68-8: 4,4'-methylenediphenyl diisocyanate; 4,4'-diphenylmethane diisocyanate
VLA-ED value 0.052 mg / m3; 0.005 ppm (LEP (Spain))

8.2 PERSONAL PROTECTION EQUIPMENT.

General safety and hygiene:
Keep away from foodstuffs, beverages, and food.
Do not eat, drink, smoke, or sniff snuff during work.

Breathing equipment:
Surely concentrations below the value of the CMA does not require special measures.

Protection of hands:
For handling product, I heat / cast heat resistant gloves.

Eye protection:
Protection glasses.

Body protection:
For handling, hot / molten heat resistant protective clothing product.

SECTION 9. FISICAL AND CHEMICAL PROPERTIES:

Appearance: Trasnparent
Odor: Odourless
Odour Threshold: NA
pH: NA
Boiling Point (° C): NA
Melting point (° C): NA
Softening point (° C): NA
Evaporation Rate: NA
Properties Flammable / Explosive: NA
Vapor pressure / vapor density: NA
Relative density: 1.1-1.2
Solubility: Insoluble
Octanol / water partition: NA
Auto-ignition temperature: >400°C
Decomposition temperature: NA
Viscosity: NA
Other properties: NA

SECTION 10. STABILITY AND REACTIVITY.

10.1 REACTIVITY.

Non-applicable.

10.2 CHEMICAL STABILITY.

Thermal decomposition / conditions to be avoided:
No decomposition with storage and proper handling.
Avoid impact, friction, heat, sparks, and electrostatic charges.

10.3 POSSIBILITY OF DANGEROUS REACTIONS.

Non-applicable.

10.4 CONDITIONS TO BE AVOIDED.

Non-applicable.

10.5 STRONG DECOMPOSITION PRODUCTS.

Irritant gases / vapours.
Toxic gases / vapours.
Smoke.
Carbon monoxide (CO) and carbon dioxide (CO_2) emissions.
Hydrocyanic acid; Hydrogen cyanide, isocyanates, nitrogen oxides.

SECTION 11. TOXICOLOGICAL INFORMATION.

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS.

The following information is based on a consideration of the properties of the main components of this mixture.

On the skin: Dust may cause mechanical irritation.
Ingestion: Predicted to be low toxicity under normal conditions of handling and use.
Inhalation: Mechanical irritation of the respiratory tract.
Skin Contact: Taking into account the chemical structure, there is no indication of a sensitizing effect.
Eye Contact: Dust may have irritant effect on eyes. Permanent damage is unlikely.
Long Term Exposure: Chronic effects are unlikely.

SECTION 12. ECOLOGICAL INFORMATION.

12.1 ECOTOXICITY.

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

12.2 MOBILITY.

Bioconcentration is not expected because of 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 solid water-insoluble polymeric are expected to be inert in the environment. Surface degradation is expected with exposure to sunlight. Appreciable biodegradation is not expected.

12.4 ADDITIONAL ECOLOGICAL INFORMATION.

General instructions: CPA 1 (auto classification): not dangerous for water.

12.5 RESULTS OF PBT Y MPMB.

PBT: Non-applicable.
mPmB: Non-applicable.

SECTION 13 DISPOSAL CONSIDERATIONS.

13.1 METHODS FOR TREATING WASTE.

Recommendation: Disposal according to official regulations.

European waste catalog:
Allocation of waste codes according to the European waste list depends on the source generating the waste.

Contaminated packaging:
Recommendation: Disposal according to official regulations.

SECTION 14 TRANSPORT INFORMATION.

Not regulated.

SECTION 15 REGULATORY INFORMATION.

Not regulated.

SECTION 16 OTHER INFORMATION.

The data is based on the current state of knowledge, but it is not a guarantee of the product features and it is not legally valid in a contractual relationship.

The statements made here should describe the product with regard to the necessary safety precautions – they are not meant to guarantee definite characteristics – but they are based on our present up-to-date knowledge.