Tectonic 3D

Safety Data Sheet

SECTION 1 – Identification of the substance/mixture and of the company

Product Name PYRA PC/ABS FR
Chemical Name Polycarbonate/acrylonitrile butadiene styrene
Pure substance/mixture Mixture

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

Application Additive Manufacturing
Used advised against Not identified.

Section 1.3 – Details of the supplier of the safety data sheet

Manufacturer

Tectonic 3D B.V.
High Tech Campus 9
5656 AE Eindhoven
The Netherlands
Tel +31 (0) 408517575
https://www.tectonic-3d.com/

E-mail address info@tectonic-3d.com

Section 1.4 – Emergency telephone number

Europe
Emergency telephone +31 (0) 408517575 (08.00-17.00 CET)

United Kingdom See above.

SECTION 2 - Hazards Identification Summary

Section 2.1 – Classification of the substance or mixture

Classification according to Regulation (EC) N0. 1272/2008 [CLP]
Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

Section 2.2 – Label elements

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

Symbols/Pictograms
Not applicable.

Signal word
Not applicable.

Hazard Statements
Not applicable.

Precautionary Statements
Not applicable.

Section 2.3 – Other Hazards
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3 – Composition/information on ingredients

Section 3.1 – Substances
Not applicable

Section 3.2 – Mixtures

Chemical Name	EC No	CAS No	REACH Registration Number	Weight %	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Polycarbonate	Polymer	103598-77-2	No data available	70 - 80	Not classified
Aromatic polyphosphate	605-913-3	181028-79-5	No data available	12 -16	Not classified
Acrylonitrile/butadiene/ styrene resin	Polymer	9003-56-9	No data available	10-15	Not classified

SECTION 4 – First Aid Measures

Section 4.1 – Description of first aid measures
General adivice:
First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation
Move to fresh air in case of accidental inhalation of dust or fumes from overheating or combustion. Consult a physician after significant exposure.

Skin Contact
Wash off with plenty of water. Seek first aid or medical attention as needed. If molten material comes in contact with the skin, do not apply ice but cool under ice water or running stream of water. DO NOT attempt to remove the material from skin. Removal could result in severe tissue damage. Seek medical attention immediately. Suitable emergency safety shower facility should be immediately available.

Eye Contact
Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and

	continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.
Ingestion	If swallowed, seek medical attention. May cause gastrointestinal blockage. Do not give laxatives. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur and show SDS.

Section 4.2 – Most important symptoms and affects, both acute and delayed

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Section 4.3 – Indication of any immediate medical attention and special treatment needed

Notes to physician: If burn is present, treat as any thermal burn, after decontamination. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

SECTION 5 – Firefighting Measures

Section 5.1 – Extinguishing media

Suitable extinguishing media

Water, Dry chemical fire extinguishers and carbon dioxide fire extinguishers.

Unsuitable extinguishing media

None known.

Section 5.2 – Special hazards arising from the substance or mixture

Specific hazards during fire fighting	: Pneumatic conveying and other mechanical handling operations can generate combustible dust. To reduce the potential for dust explosions, do not permit dust to accumulate. Dense smoke is produced when product burns.
Hazardous combustion products	**:** During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides, Carbon monoxide, Carbon dioxide. Combustion products may include trace amounts of: Styrene, Hydrogen cyanide, Phenolic compounds.

Section 5.3 – Advice for firefighters

Special protective equipment for firefighters	: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves) If protective equipment is not available or not used, fight fire from a protected location or safe distance

Further information	: Keep people away. Isolate fire and deny unnecessary entry Soak thoroughly with water to cool and prevent re-ignition. Cool surroundings with water to localize fire zone. Handheld dry chemical or carbon dioxide extinguishers may be used for small fires.

Section 6 – Accidental Release Measures

Section 6.1 – Personal precautions, protective equipment and emergency procedures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	: Spilled material may cause a slipping hazard. Use appropriate safety equipment. For additional information,refer to Section 8, Exposure Controls and Personal Protection.

Section 6.2 – Environmental precautions

Environmental precautions	:Prevent from entering soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Section 6.3 – Methods and material for containment and cleaning

Methods for cleaning up	: Contain spilled material if possible. Sweep up. Collect in suitable and properly labeled containers. Plastic drums.

Section 6.4 – Reference to other sections

References to other sections, if applicable, have been provided in the previous sub-sections.

Section 7 – Handling and Storage

Section 7.1 – Precautions for safe handling

Advice on safe handling	: No smoking, open flames or sources of ignition in handling and storage area. Good housekeeping and controlling of dusts are necessary for safe handling of product. Avoid breathing process fumes. Use with adequate ventilation. When appropriate, unique handling information for containers can be found on the product label. Workers should be protected from the possibility of contact with molten resin. Do not get molten material in eyes, on skin or clothing. Pneumatic conveying and other mechanical handling operations can generate combustible dust. To reduce the potential for dust explosions, electrically bond and ground equipment and do not permit dust to accumulate. Dust can be ignited by static discharge.

Section 7.2 – Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	: Store in accordance with good manufacturing practices.

Section 7.3 – Specific end use(s)

See the Technical data sheet (sTDs) for further information

Section 8 – Exposure Controls/Personal Protection

8.1 – Control parameters

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Although some of the additives used in this product may have exposure guidelines, these additives are encapsulated in the product and no exposure would be expected under normal handling conditions.

Section 8.2 – Exposure Controls

8.2. Appropriate engineering controls

Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

8.2.2. Individual protection measures, such as personal protective equipment

Eye/face protection	Use safety glasses (with side shields). Safety glasses (with side shields) should be consistent with EN 166 or equivalent. If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles. Chemical goggles should be consistent with EN 166 or equivalent. If exposure causes eye discomfort, use a full-face respirator (meeting standard EN 136) with organic vapor cartridge (meeting standard EN14387).
Skin and Body protection	Hand protection: Chemical protective gloves should not be needed when handling this material. Consistent with general hygienic practice for any material, skin contact should be minimized. Use gloves to protect from mechanical injury. Selection of gloves will depend on the task. Use gloves with insulation for thermal protection (EN407), when needed. Other protection: No precautions other than clean body-covering clothing should be needed.
Respiratory protection	Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. Use an approved air-purifying respirator when vapors are generated at increased temperatures or when dust or mist is present. Use the following CE approved air-purifying respirator: When dust/mist are present use a/an Particulate filter, type P2 (meeting standard EN 143). When combinations of vapors, acids, or dusts/mists are present use a/an Organic vapor cartridge with a particulate pre-filter, type AP2 (meeting standard EN 14387).

8.2.3. Environmental exposure controls

See SECTION 7: Handling and storage and SECTION 13: Disposal considerations for measures to prevent excessive environmental exposure during use and waste disposal.

Section 9 – Physical and Chemical Properties

Section 9.1 – Information on basic physical and chemical properties

Appearance	Filament
Color	Black
Odor	Odorless to mild
Odor threshold	No data available

Property	Value	Remarks Method
PH		Not determined
Melting point		DSC, 10K/min | DIN EN ISO 11357-3
Freezing point		Not determined
Boiling point / boiling range		Not determined
Flash point		-
Evaporation rate		Not determined
Flammability (solid, gas)		Not determined
Explosive limits		Not determined
Upper explosive limits		Not determined
Lower explosive limits		Not determined
Vapor Pressure		Not determined
Vapor Density		Not determined
Relative Density		Not determined
Water Solubility		Insoluble in cold water
Solubility(ies)		No information available
Partition Coefficient		No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000).
Autoignition Temperature		No information available
Decomposition Temperature		No information available
Kinematic Viscosity		No information available
Dynamic Viscosity		No information available
Explosive properties		No information available
Oxidizing properties		None of the components are classified for oxidizing properties.
Density		No information available
Bulk Density		No information available

Section 9.2 – Other information

Property	Value	Remarks Method
Molecular weight		No information available
Particle size		No determined

Section 10 – Stability and Reactivity

Section 10.1 – Reactivity
No dangerous reaction known under conditions of normal use.

Section 10.2 – Chemical stability
The product is stable under storage at normal ambient temperatures.

Section 10.3 – Possibility of hazardous reactions
Polymerization will not occur.

Section 10.4 – Conditions to avoid
Avoid temperatures above 340 °C .Exposure to elevated temperatures can cause product to decompose.

Section 10.5 – Incompatible materials
None known.

Section 10.6 – Hazardous decomposition products
Decomposition products depend upon temperature, air supply and the presence of other materials. Processing may release fumes and other decomposition products. At temperatures exceeding melt temperatures, polymer fragments can be released. Fumes can be irritating. Decomposition products can include and are not limited to: Carbon monoxide. Carbon dioxide, Aromatic compounds, Hydrocarbons, Phenolics ,Polymer fragments.

Section 11 – Toxicological Information

Section 11.1 – Information on toxicological effects
Acute toxicity (represents short term exposures with immediate effects - no chronic/delayed effects known unless otherwise noted)

Acute oral toxicity
Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.
May cause choking if swallowed.

Single dose oral LD50 has not been determined.

Typical for this family of materials.
LD50, Rat, > 5 000 mg/kg Estimated.

Information for components:

Polycarbonate
LD50, Rat, > 5 000 mg/kg

Aromatic polyphosphate
LD50, Rat, > 2 000 mg/kg No deaths occurred at this concentration.

Acrylonitrile/butadiene/ styrene resin
Single dose oral LD50 has not been determined.

Acute dermal toxicity
No adverse effects anticipated by skin absorption.

The dermal LD50 has not been determined.

Typical for this family of materials.
LD50, Rabbit, > 2 000 mg/kg Estimated.

Information for components:

Polycarbonate
LD50, Rabbit, > 2 000 mg/kg No deaths occurred at this concentration.

Aromatic polyphosphate
LD50, Rat, > 2 000 mg/kg No deaths occurred at this concentration.

Acrylonitrile/butadiene/ styrene resin
The dermal LD50 has not been determined.

Acute inhalation
No adverse effects are anticipated from single exposure to dust. Vapors released during thermal processing may cause respiratory irritation.

The LC50 has not been determined.

Information for components:

Polycarbonate
The LC50 has not been determined.

Aromatic polyphosphate
At room temperature, exposure to vapor is minimal due to low volatility. For respiratory irritation and narcotic effects: No relevant data found.

Acrylonitrile/butadiene/ styrene resin
The LC50 has not been determined.

Skin corrosion/irritation
Prolonged contact is essentially non-irritating to skin.
Mechanical injury only.

Under normal processing conditions, material is heated to elevated temperatures; contact with the material may cause thermal burns.

Information for components:

Aromatic polyphosphate
Brief contact is essentially non-irritating to skin.
Prolonged contact is essentially non-irritating to skin.

Information for components:
Aromatic polyphosphate
May cause slight eye irritation. Corneal injury is unlikely.

Serious eye damage/eye irritation
Solid or dust may cause irritation or corneal injury due to mechanical action.
Elevated temperatures may generate vapor levels sufficient to cause eye irritation. Effects may include discomfort and redness.

Respiratory or skin sensitization
For skin sensitization:
No relevant data found.

For respiratory sensitization:
No relevant data found.

Information for components:

Aromatic polyphosphate
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity STOT – Single exposure
The substance or mixture is not classified as specific target organ toxicant, single exposure.

Aspiration hazard
Based on physical properties, not likely to be an aspiration hazard.

Information for components:

Aromatic polyphosphate
Based on physical properties, not likely to be an aspiration hazard.

Chronic toxicity (represents longer term exposures with repeated dose resulting in chronic/delayed effects - no immediate effects known unless otherwise noted)

Specific Target Organ Systemic Toxicity STOT – Repeated exposure
Additives are encapsulated in the product and are not expected to be released under normal processing conditions or foreseeable emergency.

Information for components:

Aromatic polyphosphate
Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Carcinogenicity
No relevant data found

Information for components:

Aromatic polyphosphate
No relevant data found.

Teratogenicity
No relevant data found
Information for components:

Aromatic polyphosphate
No relevant data found.

Reproductive toxicity
No relevant data found.

Information for components:
Aromatic polyphosphate
No relevant data found.

Mutagenicity
No relevant data found.

Information for components:
Aromatic polyphosphate
In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Section 11.2 – Information on other hazards

Endocrine disrupting properties	
Endocrine disrupting potential	: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Section 12 – Ecological Information

Section 12.1 – Toxicity
Acute toxicity to fish:
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.

Section 12.2 – Persistence and degradability
Biodegradability: This water-insoluble polymeric solid is expected to be inert in the environment. Surface photodegradation is expected with exposure to sunlight. No appreciable biodegradation is expected.

Section 12.3 – Bio accumulative potential
Bioaccumulation: No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000).

Section 12.4 – Mobility in soil
In the terrestrial environment, material is expected to remain in the soil.
In the aquatic environment, material will sink and remain in the sediment.

Section 12.5 – Results of PBT and vPvB assessment
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels

of 0.1% or higher.

No relevant data found.

Section 12.6 – Endocrine disrupting properties

Endocrine disrupting potential : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Section 12.7 – Other adverse effects

No relevant data found.

Section 13 – Disposal Considerations

Section 13.1 – Waste treatment methods

Waste from residues/unused products

For uncontaminated material the disposal options include mechanical and chemical recycling or energy recovery. In some countries landfill is also allowed. For contaminated material the options remain the same, although additional evaluation is required. For all countries the disposal methods must be in compliance with national and provincial laws and any municipal or local by-laws. All disposal methods must be in compliance with the EU framework Directives 2008/98/EC and their subsequent adaptations, as implemented in National Laws and Regulations, as well as EU Directives dealing with priority waste streams. Transboundary shipment of wastes must be in compliance with Regulation (EC) No. 1013/2006 and subsequent modifications.

The definitive assignment of this material to the appropriate EWC group and thus its proper EWC code will depend on the use that is made of this material. Contact the authorized waste disposal services.

Section 14 – Transport Information

14.1 UN Number	Not regulated as a dangerous good
14.2 UN Proper Shipping Name	Not regulated as a dangerous good
14.3 Transport Hazard Class(es)	Not regulated as a dangerous good
14.4 Packing Group	Not regulated as a dangerous good
14.5 Environmental hazards	Not regulated as a dangerous good
14.6 Special Precautions For User	Not applicable
14.7 Transport In Bulk According to IMO instruments	Not applicable for product supplied

Section 15 – Regulatory Information

Section 15.1 – Safety, health and environmental regulation/legislation specific for the substance or mixture

REACH Regulation (EC) No 1907/2006

This product contains only components that have been either registered, are exempt from registration, are regarded as registered or are not subject to registration according to Regulation (EC) No. 1907/2006 (REACH)., Polymers are exempted from registration under REACH. All relevant starting materials and additives have been either registered or are exempt from registration according to Regulation (EC) No. 1907/2006 (REACH)., The indications of the REACH registration status are provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. It is the buyer´s/user´s responsibility to ensure that his/her understanding of the regulatory status of this product is correct.

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.
Listed in Regulation: Not applicable

Further information
Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.

Section 15.2 – Chemical Safety assessment
Not applicable

Section 16 - Other information

Key or legend to abbreviations and acronyms used in the safety data sheet

Issue Date	23-Oct-2023
Revision Date	23-February-2026
Revision Note	No information available

This safety data sheet complies with the requirements of: Regulation (EC) No. 1907/2006, COMMISION REGULATION (EU) No. 830/2015 of 20 May 2015

End of Safety Data Sheet