

Product name: PLACTIVE™

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MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product name: PLACTIVE™

Product Use: A biopolymer plus additive based on copper zeolites which can be used for 3D Printer Filament for Material Extrusion

Supplier: Copper3D Inc.

Information mail: contact@copper3d.com

2. HAZARDS IDENTIFICATION

Hazard Statement: None

Precautionary Statement: None

Signal word: None

Pictogram: None

Potential health effects: See Section 11 for more information

Other Hazards: See Section 7 and 8 for additional information

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3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	Weight %	OSHA Exposure Limits:	ACGIH Exposure Limits:
Poly lactide resin 9051-89-2	>99	None	None
NanoCu PCZ001 (Zeolite 4A: 75% Copper Hydroxyacetate: 25%)	< 1	None	None

All ingredients in quantities > 1.0% (0.1% for carcinogens) that are potentially hazardous per OSHA definitions.

Other standards: This material can generate Particulates Not Otherwise Classifiable (PNOC). The Occupational Safety and Health Administration (OSHA) PEL/TWA for PNOC is 15 mg/m³ for total dust and 5 mg/m³ for the respirable fraction. The American Conference of Governmental Industrial Hygienists (ACGIH) TLV/TWA for PNOC is 10 mg/m³ for inhalable particulates and 3 mg/m³ for respirable particulates.

4. FIRST AID MEASURES

Eye contact: Immediately rinse the eye with plenty of clean running water for at least 15 minutes. Remove contact lenses, if present and easy to do. Rinse thoroughly the inner side of the eye lid. Get medical attention as soon as possible.

Skin contact: In case of contact with **melted material**, fully cool down by pouring plenty of water over the clothing. Then take off clothing, cover with clean gauze and get medical attention immediately. Get medical attention if appearance changes, irritating pain occurs or feeling unwell.

Inhalation: If you feel unwell by inhalation of vapor or gas, move to fresh air and keep at rest in a position comfortable for breathing. Call a doctor if you feel unwell.

Ingestion: If swallowed by accident, keep at rest and get medical attention immediately. Avoid vomit entering into respiratory tract. Do not induce vomiting unless instructed by a doctor.

Indication of any immediate medical attention and special treatment needed: Treat symptomatically.

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5. FIRE-FIGHTING MEASURES

Flammability:

Autoignition temperature: 388°C

Flammability Limits in Air:

Flammable limits in air - lower (%): Not applicable

Flammable limits in air - upper (%): Not applicable

General fire hazards: No unusual fire or explosion hazards noted.

Extinguishing media:

Suitable extinguishing media: Water fog, Foam, dry chemical powder, Carbon dioxide (CO₂)

Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

Special hazards arising from the substance or mixture: During fire, hazardous gases may be formed

Special protective equipment for firefighters: Self-contained breathing apparatus and full protective clothing must be worn in case of fire

Specific methods: Use standard firefighting procedures and consider the hazards of other involved materials

Under fire conditions: Cool containers / tanks with water spray. Water mist may be used to cool closed containers. Fine dust dispersed in air may ignite. Risks of ignition followed by flame propagation or secondary explosions shall be prevented by avoiding accumulation of dust, e.g. on floors and ledges.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel:

Keep unnecessary personnel away.

For personal protection, see section 8 of the SDS

For emergency responders:

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Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS 6.2.

Environmental precautions: Avoid discharge into drains, water courses or onto the ground

Methods and material for containment and cleaning up: Stop the flow of material, if this is without risk. Following product recovery, flush area with water

Reference to other sections:

For personal protection, see section 8 of the SDS.

7. HANDLING AND STORAGE

Precautions for safe handling: Handle in a well-ventilated area. Installation of local exhaust at 3D printers area is recommended when many printers are operated at once Keep away from fire (ignition source) and store at ambient temperature.

Storage: Protect from water, moisture and direct sunlight and store indoors at ambient temperature and well-ventilated. No special restrictions on storage with other products.

Precautions: No special precautions required.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Occupational exposure limits: No exposure limits noted for ingredient(s)

Biological limit values: No biological exposure limits noted for the ingredient(s)

Recommended monitoring procedures: Follow the standard monitoring procedures

Derived no-effect level (DNEL): Not available

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9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance physical state: Filament Shape

Color: Red, Blue and Green.

Odor: Neutral

Melting point / melting range: 200-230°C (392- 446°F)

Autoignition temperature: 388°C

Combustibility: Flammable when exposed to any ignition source

Water solubility: Insoluble

Solubility in other solvents: Not determined

10. STABILITY AND REACTIVITY

Reactivity: None expected under conditions of normal use. The product is stable and non-reactive under normal conditions of use, storage and transport

Chemical stability: Stable under recommended storage conditions.

Conditions to avoid: Exposing to direct ignition sources.

Materials to avoid: Oxidizing agents, Strong bases

Hazardous decomposition products: It decomposes at high temperature heating and thereby may generate hazardous gas (e.g. Carbon Hydride or Aldehydes).

Incompatible materials: No data available.

Self reactivity: None

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11. TOXICOLOGICAL INFORMATION

General information: Occupational exposure to the substance or mixture may cause adverse effects.

Information on likely routes of exposure:

Inhalation: No adverse effects due to inhalation are expected.

Skin contact: No adverse effects due to skin contact are expected

Eye contact: Direct contact with eyes may cause temporary irritation

Ingestion: May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure.

Information on toxicological effects

Mutagenic effects: Not mutagenic in AMES Test.

Reproductive toxicity: No data is available on the product itself.

Carcinogenic effects: classification is not possible

Target organ effects: classification is not possible

12. OTHER INFORMATION INCLUDING INFORMATION ON PREPARATION AND REVISION OF THE SDS

Label information: PLACTIVE™

Recommended restrictions: None

Prepared by: Copper3D Inc.

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