

**Material Safety Data Sheet**

Version No.: 1.0(Rev. date : 2023-06-02)

# CNT Heating Paste (TC-1030)

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## 1. Product and company identification

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Phone: +82-42-930-8591

Creation Date: 05/14

Trade Name/Synonyms: AccuPaste CNT Heating Paste

Chemical Family: Carbon Nanotube, Terpineol, Ethyl cellulose, Ceramic Binder, and Disperser

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## 2. Hazards identification

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### Hazard Description:

F Highly Flammable

### NFPA Ratings (Scale 0-4):

Health = 1

Flammability = 3

Reactivity = 2

### Pictogram



Signal word      Danger

**Emergency Overview:** Harmful by inhalation, in contact with skin and if swallowed. Irritating to the eyes, respiratory

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system and skin.

The toxicological properties of this material have not been thoroughly investigated. Use prudent laboratory practices for handling chemical substances of unknown toxicity.

**Potential Health Effects:**

Skin Contact: Short Term Exposure: Possible Irritant  
Long Term Exposure: No information available

Eye Contact: Short Term Exposure: Possible Irritant  
Long Term Exposure: No information available

Ingestion: Short Term Exposure: Possible Irritant  
Long Term Exposure: No information available

Inhalation: Short Term Exposure: Possible Irritant  
Long Term Exposure: No information available

Injection: Short Term Exposure: Possible Irritant  
Long Term Exposure: No information available

**CARCINOGEN/REPRODUCTIVE TOXIN STATUS:**

OSHA: Not Listed  
NTP: Not Listed  
IARC: Not Listed

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**3. Composition/information on ingredients**

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Active Component: Carbon Nanotube

**Description: (CAS Number)**

Carbon Nanotube (Graphite CAS Number: 7782-42-5); 2%

Terpineol (CAS Number: 8006-39-1); 80%

Ethyl Cellulose (CAS Number: 9004-57-3); 3%

Ceramic Binder (CAS Number: N/A); 12%

Disperser (CAS Number: N/A); 3%

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**4. First aid measures**

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**Skin Contact:** Remove contaminated clothing. Flush affected area with water and then wash with soap or mild detergent and water. Observe for signs of irritation. If irritation is present, get medical attention.

**Eye Contact:** Wash eyes with large amounts of water or normal saline for at least 15 minutes. Observe for signs of irritation. If irritation is present, get medical attention.

**Ingestion:** Get medical attention.

**Inhalation:** Remove from exposure area to fresh air immediately. Get medical attention immediately.

**Injection:** If accidentally injected, get medical attention.

**Note to Physician:** There is no specific antidote. Treat symptomatically and supportively.

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## 5. Fire-fighting measures

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**Suitable Extinguishing Agents:** Use any means suitable for extinguishing surrounding fire. If material is burning, use dry powder.

**Protective Equipment:** Wear self-contained respirator. Wear fully protective impervious suit.

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## 6. Accidental release measures

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**Person-related safety precautions:** Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation. Keep away from ignition sources.

**Measures for environmental protection:** Do not allow material to be released to the environment without proper governmental permits.

**Measures for cleaning/collecting:** Ensure adequate ventilation. Do not flush with water or aqueous cleansing agents. Keep away from ignition sources.

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## 7. Handling and storage

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Handling

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**Information for safe handling:** Keep container tightly sealed. Store in cool, dry place in tightly closed containers. Ensure good ventilation at the workplace. Prevent formation of dust.

**Information about protection against explosions and fires:** Keep ignition sources away. Protect against electrostatic charges. Fumes can combine with air to form an explosive mixture. Substance/product may be self ignitable.

### Storage

**Requirements to be met by storerooms and receptacles:** Store in a cool location.

**Information about storage in one common storage facility:** Store away from oxidizing agents. Do not store together with acids.

**Further information about storage conditions:** Store under dry inert gas. Keep container tightly sealed. Store in cool, dry conditions in well sealed containers. Protect from humidity and water

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## 8. Exposure controls / personal protection

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**Exposure Controls:** Use in laboratory hood or other ventilated device. Occupational exposure limits for this substance have not been established by OSHA, ACGIH, or NIOSH. Use prudent laboratory practices for handling chemical substances of unknown toxicity.

**General protective and hygienic measures:** The usual precautionary measures for handling chemicals should be followed. Keep away from foodstuffs, beverages and feed. Remove all soiled and contaminated clothing immediately. Wash hands before breaks and at the end of work. Avoid contact with the eyes. Avoid contact with the skin.

**Eye Protection:** Employees must wear splash-proof or dust-resistant safety goggles to prevent eye contact with this substance.

**Clothing:** Employee must wear appropriate protective clothing (laboratory coat with long sleeves) and equipment to prevent skin contact with this material.

**Gloves:** Employee must wear appropriate protective gloves to prevent contact with this material.

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## 9. Physical and chemical properties

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**Description:** Black liquid

**Melting point:** Not determined

**Boiling point:** Not determined

**Vapor pressure:** Not determined

**Vapor density:** Not determined

**Flash point:** Not applicable

**Flammability:** Highly flammable

**Decomposition temperature:** Not determined

**Explosion limits:** Not determined

**Solubility in water:** insoluble

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## 10. Stability and Reactivity

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**Stability:** Stable under normal temperatures and pressure.

**Solubility:** Insoluble in water or organic solvents.

**Decomposition products:** Decomposition will not occur if used and stored according to specifications.

**Materials to be avoided:** Acids and Water/moisture.

**Polymerization:** Not applicable

**Dangerous reactions:** No dangerous reactions known.

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## 11. Toxicological information

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**Acute toxicity:**

Primary irritant effect

On the skin: Irritant to skin.

On the eye: Irritant effect.

Sensitization: Sensitization possible through skin contact.

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**Subacute to chronic toxicity:** Absorption of silver compounds by ingestion, inhalation or through broken skin can cause argyria, a permanent bluish-grey discoloration of the skin, conjunctiva and mucous membranes.

**Subacute to chronic toxicity:** The Registry of Toxic Effects of Chemical Substances (RTECS) reports the following effects in laboratory animals:

Tumorigenic – equivocal tumorigenic agent by RTECS criteria.

Tumorigenic – tumors at site of application

**Additional toxicological information:** To the best of our knowledge the acute and chronic toxicity of these materials is now fully known.

EPA-D: Not classifiable as to human carcinogenicity: inadequate human and animal evidence of carcinogenicity or no data are available.

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## 12. Ecological information

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**Environmental impact rating (0-4):** No data available.

**Degradability:** No data available.

**LOG BIOCONCENTRATION FACTOR (BCF):** No data available.

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## 13. Disposal considerations

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Observed all Federal, State, and Local Regulations.

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## 14. Transport information

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Ship as a non-regulated material. No transportation restrictions apply. The acute toxicity profile does not warrant shipment as a hazardous material (DOT) or a dangerous good (IATA).

**Dot regulations**

Hazard class: None

**Land transport ADR/RID (cross-border)**

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ADR/RID class: None

**Maritime transport IMDG**

IMDG class: None

**Air transport ICAO-TI and IATA-DGR**

ICAO/IATA class: None

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## 15. Regulatory information

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EINECS/ELINCS: No

NDSL/DSL: No

TSCA STATUS: No

CERCLA SECTION 103 (40 CFR 302.4): No

SARA SECTION 302 (40 CFR 355.30): No

SARA SECTION 304 (40 CFR 355.40): No

SARA SECTION 313 (40 CFR 372.65): No

OSHA PROCESS SAFETY (29 CFR 1910.119): No

CALIFORNIA PROPOSITION 65: No

SARA ACUTE HAZARD (40 CFR 370.21): No

CHRONIC HAZARD: No

FIRE HAZARD: No

REACTIVITY HAZARD: No

SUDDEN RELEASE HAZARD: No

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## 16. Other information

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Bioneer Corporation makes no warranty or representation to its completeness, accuracy or currency. This material is intended for use by persons with pertinent technical skills and at their discretion and risk. It is the responsibility of the user to determine the product's suitability for its intended use, the product's safe use, and the product's proper disposal. Disposal of hazardous material may be subject to federal, state or local laws or regulations.

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