

User's Guide

AccuPaste™ **Heating Paste**

REF

TC-1000
TC-1010

AccuPaste™ Heating Paste

User's Guide

Version No.: 1.1 (2016-09)

Please read all the information in booklet before using the unit



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I. PRODUCT DESCRIPTION

AccuPaste™ Heating Paste is composed of high performance carbon nanotube materials. A coating layer maintains the heat-resistance property under high temperature environment (maximum of 320℃), unlike general heating paste. Temperature elevation rate of the *AccuPaste™* is faster than the sheath heater, which is nichrome line type, and electric efficiency is excellent at low voltage. Moreover, waste production, such as air pollution, noise, and electromagnetic waves, is low due to use of a radiant heat of CNT paste. Application of *AccuPaste™* Heating Paste can be heat generating material due to its high heat conductivity, the ESD/EMI shielding material based on its electric conductivity, and transparent conductive film for touch screen. In addition, high performance heating apparatus can be manufactured with the *AccuPaste™*. Also it will have a slim design. Thus producing a premium class heating apparatus. Recently, there are difficulty in implementing high performance heating apparatus due to limitation of the existing materials. Therefore the demand for high-performance new materials has increased. *AccuPaste™* will meet these requirements.



AccuPaste™ Heating Paste

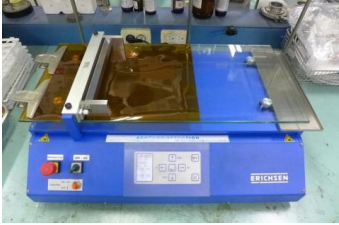
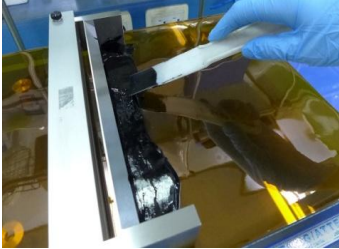

II. Specification of Product (TC-1000)

Classification	Specification	Note
Main component	Ceramic Resin	
Appearance	Black	With eyes
Workable temperature	-20 ~ 320 °C	
Viscosity (cP)	About 430,000	Rotational Rheometer
Drying condition	30 min at 300 °C	Hot-air drying
Sheet resistance (Ω/\square)	About 7.6×10^1 (10 μm coating thickness)	ASTM D991
Volume resistivity ($\Omega\cdot\text{cm}$)	7.7×10^{-2}	ASTM D991
Storage condition	Room temp.	Sealing

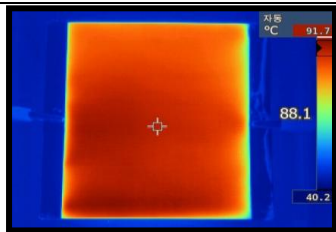
III. Storage Condition

AccuPaste™ Heating Paste must be stored in sealed condition and at room temperature. If the storage temperature drops below zero degree, the product can become frozen. If the storage temperature rises up to 90°C, the composition ratio of paste can change due to the evaporation of solvent.

IV.A User Manual of *AccuPaste™* Heating Paste



Pictures	Procedure
	<p>1. In order to coat equipments using <i>AccuPaste™</i>, prepare a coating equipments, such a scalpel blade, bar coater, and screen printer, etc.</p>
	<p>2. Place a paste with a suitable amount of <i>AccuPaste™</i> on a PI (Polyimide) film. Use a PI film that can withstand temperature of 250℃</p>
	<p>3. Spread the paste uniformly on a film using coating equipment. Using slow coating speed can form a coating layer of uniform thickness.</p>


	<p>4. For heat curing, place the film coated with the paste in a dry oven. Heat the film at 300°C for 30 min.</p>
	<p>5. Production of heating layer is complete.</p>
	<p>6. Attach thin copper electrodes on both sides of the heating film. Silver paste is used as an adhesive. As shown in picture on the left, the width of thin copper electrode is 1 cm.</p>



7. If a voltage is applied on both side electrodes, a film generates heat.

V. TROUBLESHOOTING

	Problems	Solutions
1		When thick layer of heating paste is formed, it can crack during heat curing step. If you need a layer above 500 μm , you must repeat coating process of thin layer (about 100~200 μm) multiple times.
2		Flexibility of heating film decreased when thick layer of heat paste is applied. In order to produce flexible heating film it must have paste thickness below 500 μm .

3		Flexibility of heating film decreased when thick layer of heat paste is applied. In order to produce flexible heating film it must have paste thickness below 500 μm .
4	When heating temperature is low.	If heating temperature of film is low, increase the voltage on both electrodes or narrow the gap of both electrodes.

VI. ORDERING INFORMATION

Cat. No.	Specification	Size	Price
CNT Heating Paste:			
TC-1000-1	CNT Heating Paste	100 ml	Inquire
TC-1000-2	CNT Heating Paste	500 ml	Inquire
TC-1000-3	CNT Heating Paste	1 L	Inquire

*** Please inquiry for bulk orders**

Technical Support and Ordering

To ask any detailed information of our products or to place an order, please email nano-support@bioneer.com

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