AI TECHNOLOGY INC
70 Washington Road
Princeton Jct., NJ 08550
(609) 799-9388 fax (609) 799-9308
E-Mail: ait@aitechnology.com
Internet: http://www.aitechnology.com

SAFETY DATA SHEET

EMERGENCY PHONE: 1-800-424-9300

1) PRODUCT IDENTIFICATION

Product: ME7159

Product Type: Epoxy adhesive

Product Description: Diamond filled epoxy paste adhesive.

Recommendation On Use:
High power substrate and component attach.

General Use:
Die Attach and Substrate Attach

Restriction On Use:
Intended for designated use only

2) HAZARD IDENTIFICATION

WHMIS Classification: D2B Toxic material causing other effects. Slight skin irritant.

GHS Classification: Skin irritation (Category 2)

Signal Word: Warning

GHS Label elements: H315 Skin irritation. P280 Wear protective gloves, eye and face protection.

Precautionary Statement:
For industrial use only

Physical Appearance:
Paste (gray color)

Immediate Concerns:
Avoid contact with skin and eyes.

Primary Route Entry:
Skin

Medical Conditions Aggravated:
Not Determined

Potential Health Effects:

Eyes:
Irritant

Skin:
Adverse symptoms may include irritation and redness

Ingestion:
Aspiration hazard if swallowed

Inhalation:
Low inhalation toxicity. May cause symptoms similar to those from ingestion.

Signs and Symptoms of Overexposure:

Eyes:
Irritation, watering and redness can result in burns which can lead to blindness

Skin:
Skin sensitization may be evidenced by rashes, especially hives

Ingestion:
Causes burning of mouth, throat and stomach with abdominal and chest pain ,nausea, vomiting

Inhalation:
May cause breathing to become difficult

Acute Toxicity:
Can cause vomiting and irritation of the throat and stomach

Chronic Exposure:
Repeated skin contact may cause a persistent irritation or dermatitis. Repeated inhalation may cause lung damage

Carcinogenicity:
Not classifiable as a carcinogen

Mutagenicity:
Not Determined

Reproductive Effects:
Long term exposure may damage the fetus and male reoroductive organs and sperm

Teratogenic Effects:
Not Determined.

Target Organ Stament:
Not Determined

Sensitization:
May cause sensitization

3) COMPOSITION / INFORMATION ON INGREDIENTS

MATERIAL:	CAS NO	%
Diamond powder	7782-40-3	65-85
Epoxy admixture	25085-99-8	10-25
1-Methyl-2-pyrrolidinone	872-50-4	05-10

* For Powders Only, In Adhesive Product, Powders Are Bound In Adhesive And Values Are Not Applicable.

4) FIRST AID MEASURES

First Aid Eye:
Immediately flush eyes with eyewash solution or clean water holding the eyelids apart for 15 minutes. If symptoms develop, seek medical attention.

First Aid Skin:
Wash with soap and water. If symptoms develop, seek medical attention.

First Aid Inhale:
Move to fresh air and keep at rest. Seek medical attention if symptoms develop

First Aid Ingest:
Do not induce vomiting. No treatment is necessary unless large quantities of product are ingested. However, get medical advice.

Physician Note:
No specific treatment. Treat symptomatically.

Acute Symptoms:
Seek medical treatment

Delayed Symptoms: Seek medical treatment

5) FIRE FIGHTING MEASURES

Flammable Class: 1

Flame Propagation or Burning Rate of Solids: Not Determined.

General Hazard: Toxic fumes may be evolved when this material is involved in a fire.

Extinguish Media: Sodium Bicarbonate and water

Hazardous Combustion Products: Carbon monoxide, oxides of nitogen, formaldehyde, cyanide

Fire Fighting Procedures:
Use self-contained breathing apparatus; decomposition and combustion products may be toxic.

Unsuitable Firefighting Equipment:
Not determined

Suitable Firefighting Equipment: Self-contained breathing apparatus should be available for fire fighters.

Sensitive to Static Discharge No

Sensitive to Impact: No

6) ACCIDENTAL RELEASE MEASURES

Small Spill: Cover with sand and place in waste containers for disposal

Large Spill: Contain spill and place in waste containers for proper disposal

Water Spill: Contain spill and use correct equipment to remove from water

Land Spill: Contain spill and place in waste containers for proper disposal

General Procedures:
Use the necessary tools and protective equipment for the situation.

Release Notes:
Not Determined

7) HANDLING AND STORAGE

Handling:
Use latex gloves and safety glasses. Use at ambient temperature

Storage:
Store at -40°C to maintain shelf life

8) EXPOSURE CONTROLS / PERSONAL PROTECTION

PPE Eye and Face: Use protective glasses or goggles.

PPE Skin: Latex Gloves and Lab Coat.

Engineering Controls:

	OSHA PEL	ACGIH TLV	EINECS
PPE Respiratory: Not normally required.	10 mg/m³ *	10 mg/m³ *	
PPE Ventilation: Use well ventilated hood when heating materials	None Establilshed	None Established	
PPE Other: Personal protective equipment should be worn based on the task being performed	None Established	None Established	

Work Hygienic Practices: Use well ventilated hood when heating materials

9) PHYSICAL AND CHEMICAL PROPERTIES

Flashpoint and Method: Not Determined

Lower Flammable Limits: Not Determined

Upper Flammable Limits: Not Determined

Physical State: -25°C

Autoignition Temperature: Not Determined

Odor: Slight chemical odor

Color: White

Odor Threshold:

Vapor Pressure: Not Determined.

pH: Not Determined

Vapor Density: Not Determined

Boiling Point: Not Determined

Freezing Point: -25°C

Melting Point: Not determined

Solubility in Water: None

Evaporation Rate: Not Determined.

Density: 2.3

Specific Gravity: 2.3

Viscosity: 295,000 cp ±20% (0.5rpm, 25°C)

Molecular Weight: Not Determined.

Coeff. Oil/Water: Not Determined.

Appearance: White paste

10) STABILITY AND REACTIVITY

Hazardous Polymerization: Will not occur.

Chemical Stability: Stable under normal handling and storage condition

Polymerization: May occur

Conditions to Avoid: Excessive heat. Do not store near heat or flame

Hazardous Decomposition Products:
Thermal degradation could produce carbon monoxide, carbon dioxide and unindentified organic compounds.

Incompatibility Materials:
There is no danger when product is cured.

11) TOXICOLOGICAL INFORMATION

Acute:

Eyes: Stable **Dermal LD50:** Not Determined **Oral LD50:** Not Determined **Inhalation LC50:** Not Determined

Eye Effects: May cause burning and watery eyes

Skin Effects: Not Determined

Carcinogenicity:

IARC: Not Determined **NTP:** Not Determined **OSHA:** None

Sensitization: May cause sensitization by skin contact

Reproductive Effects: Not tested

TARGET ORGANS:

Eyes: Irriting **Skin:** Irriting, may cause rash **Gastrointestinal:** Not Determined **Respiratory System:** Not Determined

Teratogenic Effects: May cause sensitization by skin contact

Mutagenicity: Not Determined

12) ECOLOGICAL INFORMATION

Ecotoxicity: No known significant effects or critical hazards

Mobility in Soil: Not Determined

Persistence and Degradability: Not Determined

Bioaccumulative Potential: Not Determined

13) DISPOSAL CONSIDERATIONS

Disposal Method: Cure at 150°C for 2 hrs and dispose of according to the environmental rules and regulations at the location.

For Large Spills: Contain spill and use proper container and protective equipment to clean up spill

Product Disposal: Disposal of this product should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements

Empty Container: Disposal of empty container should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements

14) TRANSPORT INFORMATION

Road and Rail (ADR/RID)

Transport Information: Not Regulated

Kemler Number: Not Regulated

Hazard Class: Irritant

Air (CIAO/IATA)

Shipping Name: Not Regulated

Technical Name: N.A.

UN Number: N.A.

Primary Hazard Class: N/A

Packing Group: N.A.

Label: N.A.

Vessel (IMO/IMDG)

Shipping Name: Not Regulated

Technical Name: N.A.

UN Shipping Name: N.A.

Primary Hazard Class: N.A.

Packing Group: N.A.

Label: N.A.

15) REGULATORY INFORMATION

TCSA: This product, or its components, are liste on or are exempt from the Toxic Substance Control Act (TSCA) Chemical Substance Inventory.

Skin: Not determined

Gastrointestinal: Not Determined

Respiratory System: Not Determined

16) OTHER INFORMATION

HMIS Health Rating (1-4): 2

HMIS Flammability Rating (1-4): 1

HMIS Physical Hazard Rating (1-4): 0

Long Term Health Effects (Y/N): N

Note: All ingredients in this product are on the Toxic Substances Control Act (TSCA) inventory or are not required to be listed.
No ingredient in this product is known to be carcinogenic.
Ingredients listed on the New Jersey "RIGHT TO KNOW" substance list: 1-Methyl-2-pyrrolidinone CAS# 872-50-4 Substance# 3716
This product is compliant to RoHS. This product contains N-Methyl-2-pyrrolidinone which is a Substance of Very High Concern (EU REACH).

Section X: HMIG: Health-2, Flammability-1, Reactivity-0, Protective Equipment-G

Version: D - 1/13/2025

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PRIMA-BOND

ME7159

Stress-Free, Ultra High Thermally Conductive Reworkable Epoxy Paste Adhesive

IDEAL FOR:

High Power Die Attach
Substrate and Component Reworkability
Mismatched CTE's

DESCRIPTION:

ME7159 is a reworkable, diamond filled, electrically insulating and thermally conductive epoxy paste adhesive. It exhibits outstanding flexibility for bonding materials with highly mismatched CTE's (i.e., alumina to aluminum, silicon to copper). The ultra high thermal conductivity of this diamond filled material makes it useful for bonding high-powered, large area die and components.

It can be readily reworked at 80-100°C.

AVAILABILITY:

ME7159 is available in syringes for automatic needle dispense applications or in jars. Both viscosity and thixotropic index can be modified to your specific needs.

APPLICATION PROCEDURES:

(1) Thaw at ambient for 30 minutes before using.

(2) Dispense adhesive onto clean substrate.

(3) Pre-bake adhesive at 60°C from 30 to 60 minutes or 80°C for 30 minutes to achieve optimum bonding. Pre-bake not needed in all applications.**

(4) Cure according to one of the recommended schedules.

TYPICAL PROPERTIES*

Electrical Resistivity (150°C/ 60 min)	>1x10^{14} ohm-cm
Dielectric Strength (Volts/mil)	>750
Glass Transition Temp.(°C)	-25 ±10%
Current Carrying Capabilities	N/A
Lap-Shear Strength	>1000 psi >6.9 N/mm²
Device Push-off Strength	>1800 psi >12.4 N/mm²
Hardness (Type)	80-100 (A) 33-63 (D) ±10
Cured Density (gm/cc)	2.3 ±10%
Thermal Conductivity	80 Btu-in/hr-ft²-°F ±10% 11.4 W/m-°C ±10%
Linear Thermal Expansion Coeff. (ppm/°C)	120 ±15%
Maximum Continuous Operation Temp. (°C)	<150
Pot Life	
Avg. Viscosity(0.5 rpm, 25°C) (Brookfield DV-1,spindle CP51)	295,000 cp ±20%
Thixotropic Index	

* Properties given are typical values and not intended for use in preparing specifications. The user is advised to evaluate the product in the manner the product is intended to be used in manufacturing and in the final product.

CURE SCHEDULES:

Temperature	Time	Pressure
80°C	8 hr	
100°C	4 hr	
125°C	2 hr	
150°C	1 hr	

** For higher temperature curing, above 125°C and/or bonding area of over 1cm x 1cm, it is recommended that the dispensed adhesive be pre-baked, open-faced without parts at 60°C for 60 to 120 minutes or 80°C for 45-90 minutes before parts are mounted and cured.

Version 2.1 by adding back the zero degree storage temperature for 3 months in the shelf life section of this datasheet. All other sections remain the same.

SHELF LIFE:

Storage temperature	Shelf Life
-40°C	1 year
<0°C	3 months
Pot Life	5 days @ <25°C

CAUTION: This product may cause skin irritation. Avoid skin contact. If contact does occur, wash immediately with soap and water. Please refer SDS for more details.

The information contained herein is believed to be reliable. All recommendations or suggestions are made without guarantee inasmuch as conditions and methods of commercial use are beyond our control. Properties given are typical values and not intended for use in preparing specifications. The user is advised to evaluate the product in the manner the product is to be used in manufacturing and in the final product. Under no circumstance shall AI Technology be liable for accidental, consequential or other damages arising from the use or handling of this product.

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