



APTEK LABORATORIES, INC.

ISO 9001 / AS9100 Certified

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TECHNICAL DATA & INFORMATION

DIS-A-PASTE® 2008-A/B

Thermally conductive urethane potting/encapsulating compound

PRODUCT DESCRIPTION

DIS-A-PASTE 2008-A/B is a two component, mineral filled, electrically insulating soft urethane paste adhesive. It is designed for the potting of sensors and to dissipate device generated heat.

DIS-A-PASTE 2008-A/B is a 100% solids, solvent free system that will not form voids during cure or outgas after being fully cured.

DIS-A-PASTE 2008-A/B is a lowered viscosity version of DIS-A-PASTE 2000-A/B

DIS-A-PASTE 2008-A/B is a non-TDI based urethane system which has outstanding reversion resistance and physical stability when subjected to high heat and humidity environments. As a urethane, this system displays higher ionic purity than epoxy systems minimizing the chance of corrosion around sensitive components and circuitry.

KEY FEATURES AND BENEFITS

- Low modulus/high elongation for minimum stress to sensitive components and ceramic substrates
- Low Tg for excellent low temperature cycling and performance
- Excellent substrate adhesion; superior to silicones
- Exceeds NASA outgassing requirements for high vacuum environments
- Available in easy-to-use, pre-measured kits to minimize handling and processing

HANDLING INFORMATION

Mix ratio, parts by weight: 100 (2008-A) / 10 (2008-B)

Work life, @ 25°C, 25 gm mass, mins. 40

Handling Notes:

1. Check for filler settlement in Part A with clean, dry, metal spatula. If necessary, remix slowly by hand until uniform. To minimize filler separation during storage, material can be refrigerated; however, still make sure to homogenize before use.

2. Prior to use, examine Part B bottle for crystallization or formation of an insoluble white precipitate which is a solid dimer of the liquid Part B. If no precipitate is noted, use as is. If precipitate is noted, it is not harmful; however, follow the instructions listed below for best results.

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DO NOT SHAKE BOTTLE

- Place unopened Part B bottles into an air circulating oven at 45-60°C until clear amber to slightly hazy liquid is evident (white precipitate layer may also be present).
- Carefully remove bottles from oven without disturbing contents. If liquid contains gelled material - DO NOT USE! To use Part B, decant clear liquid out of bottle without disturbing the precipitate
- Excess Part B has been packaged to insure sufficient supply of liquid.
- Use entire bottle of Part B for each application if possible.
- Unused portion must be blanketed with dry nitrogen or argon and resealed to avoid moisture contamination.
- Store at 25°C; <50% RH

MIXING

Bulk packaging:

Weigh 100 parts of DIS-A-PASTE 2008 Part A into a clean, dry, glass, metal, or plastic container and then add 10 parts of DIS-A-PASTE 2008 Part B. Machine mix on slow speed or hand stir with glass or metal stirrer until complete and thorough blending is achieved. Care should be taken to avoid any source of moisture contamination or air entrapment during mix.

Pre-measured kits:

There is no need for a scale when DIS-A-PASTE 2008-A/B is supplied in pre-measured kits. Drain entire contents of Part B bottle into Part A container (this takes ~15 seconds). Mix thoroughly by hand with clean, dry, metal spatula until uniform. Ensure that any material on the inside of the part A lid is included in the mixture. Do not create bubbles during mixing, if possible.

Care should be taken to avoid any source of moisture contamination or air entrapment during mix. Relative humidity during mixing and processing should be maintained below 50%. For best results, and a void free bond line, vacuum mixture at less than 10 mm Hg for 3-5 minutes after "break".

CURE SCHEDULE

8 hours @ 80°C
or
4 hours @ 100°C

Notes:

1. For best results and a void free encapsulation, vacuum mixture at less than 10 mm Hg for 5-10 minutes.
2. As typical with urethane systems, a relaxation/stabilization period of 2-4 days at room temperature after heat cure is recommended before testing or service.

TYPICAL PROPERTIES

(values not to be used for specification purposes)

<u>CHARACTERISTICS</u>	<u>2008-A</u>	<u>2008-B</u>	<u>TEST METHOD</u>
Color	Off-white	Pale yellow to amber	Visual
Clarity	Opaque	Clear to hazy	Visual
Specific Gravity	1.46±.05	1.24±.05	ASTM D-1475
Viscosity @25°C, cps	25,000	45	ASTM D-1824
Flash point, °C	>200	>150	ASTM D-92
Shelf life @ 25°C, months factory sealed containers	6	6	
<u>CURED PHYSICAL PROPERTIES</u>	<u>DIS-A-PASTE 2008-A/B</u>		<u>TEST METHOD</u>
Hardness, Durometer A, ½" casting	66		ASTM D-2240
Lap shear, Al to Al, @25°C, psi	300		ASTM D-1002
Tensile strength, @25°C, psi	600		ASTM D-412
@-50°C, psi	3000		
@100°C, psi	550		
Elongation, @ 25°C, %	350		ASTM D-412
@-50°C, %	300		
@100, %	125		
Young's Modulus (automatic), @25°C, psi	400		ASTM D-412
@-50°C, psi	2000		
@100°C, psi	300		
Glass transition temp., °C	-65		ASTM E-831
CTE, in/in/C	alpha 1	31 X 10 ⁻⁶	ASTM E-831
	alpha 2	225 X 10 ⁻⁶	ASTM E-831
Thermal conductivity, W/mK	0.37		ASTM C-518-04
Outgassing @ 10 ⁻⁶ Torr			
TML, %	0.26		ASTM E-595
CVCM, %	0.02		ASTM E-595
Fungus resistance	Non-nutrient		ASTM G-21
<u>CURED ELECTRICAL PROPERTIES</u>	<u>DIS-A-PASTE 2008-A/B</u>		<u>TEST METHOD</u>
Volume resistivity @ 25°C, ohm-cm	7.0 x 10 ¹⁴		ASTM D-257

		DIS-A-PASTE 2008-A/B
Dissipation factor (D) @25°C, KHz	0.03	ASTM D-150
Dielectric constant (K) @ 25°C, 1 KHz	5.8	ASTM D-150
Dielectric strength, 0.125" thick, Volts/mil	340	ASTM D-149

SAFETY AND FIRST AID

DIS-A-PASTE 2008-A is a mineral filled polyol resin that is safe to handle when used properly. It is judged to be low in toxicity and to be rated as a slight skin irritant. Avoid contact with skin and eyes and use in a well-ventilated area and avoid breathing vapors. In case of eye contact, flush with fresh clean water for at least 15 minutes; for skin contact, wash thoroughly with soap and water. If swallowed, drink at least one pint of water and call a physician. Refer to Material Safety Data Sheet for more details.

DIS-A-PASTE 2008-B is an organic isocyanate which may cause severe eye and skin irritation with direct contact. Inhalation of vapors may result in breathlessness, severe coughing, chest discomfort, and irritation of mucous membranes. Avoid skin and eye contact and use in a well-ventilated, hooded area. In case of eye contact, flush profusely with fresh clean water and contact a physician. For skin contact, wash thoroughly with soap and water. If inhaled, move subject to fresh air and provide water to drink. If swallowed, dilute with at least one pint of water and contact physician immediately. Refer to Material Safety Data Sheet for more details.

Current Revision: 02/26/21 - mjb

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