

Arathane^â 7768

One-component thermal transfer adhesive

General

Arathane 7768 is a single-component, polyurethane adhesive specifically formulated as a thermal transfer material with high purity and particularly low outgassing characteristics. It is non-foaming, eliminating the blistering of subsequently applied conformal coatings. Arathane 7768 also possesses high hydrolytic stability, extremely good thermal shock resistance, and resistance to solder processing temperatures, and most common cleaning chemicals.

Arathane 7768 is low in viscosity and high in surface tension which allows easy flow under devices. It can be processed through automatic dispensing equipment if required.

Applications

Arathane 7768 can be used for bonding, filleting, and protection of components on printed wiring boards or in other applications where high thermal expansion mismatches are problematic.

Advantages

High purity
Non-foaming, low outgassing (meets NASA requirements)
Easily reworked
Excellent hydrolytic stability
Excellent thermal shock resistance giving improved reliability
High surface tension which facilitates flow under components
Resistant to 1,1,1-trichloroethane and trichlorotrifluoroethane

Typical Properties***Arathane 7768**

Viscosity @ 21°C, cPs	< 12,000
Percent solids	100
Density, g/cm ³ / lb./ft ³	0.95 / 59
Flash point, COC, °C	> 93
As supplied form	Translucent Liquid
Operating temperature, °C	
(Continuous)	115
(Intermittant)	220
Shelf life, months	3

* Typical properties are based on Huntsman's test methods. Copies are available upon request.

Packaging & Storage

Arathane 7768 is considered non-hazardous for shipping purposes. However, this product is packaged in special Styrofoam cartons containing enough dry ice for a limited storage life of approximately 96 hours during shipment. Upon receipt, frozen syringes must be transferred to freezer storage below -40°C to ensure product shelf life reliability. Special care should be taken when handling dry ice in order to avoid severe skin damage or potential of asphyxiation in unventilated areas. Contact Customer Service for packaging information.

Processing

Arathane 7768 is premixed, frozen and packed in dry ice at the factory for your convenience. Avoid handling dry ice or frozen syringes from factory container with bare hands. Temperature is below -75°C, and serious skin burns and permanent damage could occur. Always store frozen syringes below -40°C for best shelf life.

To thaw, remove syringe(s) from freezer storage and allow to equilibrate at room temperature only (30°C maximum). Do not attempt to quick thaw by heating, as this will greatly reduce work life. Typical thawing time for a 3cc syringe is approximately 15 minutes at 25°C.

Work life, 3cc syringe, hours	at 25°C	3
Gel time, min	at 70°C	30
Recommended cure, hours	at 70°C	1

Physical Properties (typical values)	Tensile lap shear at 25°C, psi	350
	Aluminum substrate	55 – 65
	Durometer Hardness Shore A,	0.13
	Thermal conductivity, Colora, BTU/ft.hr. -°F	13
	Glass transition temperature, Tg, °C	
	Coefficient of thermal expansion, in/in/°C	
	Alpha 1	80×10^{-6}
	Alpha 2	225×10^{-6}
	Flexibility	Pass
	Complex shear modulus, dyne/cm ² , psi (Rheometrics Dynamic Viscometer)	
	@ -50°C	8×10^9
	@ 100°C	5×10^7
	Solvent resistance	
Immersion in Freon TF (3 min / 3 min / 3 min)	Pass	
Immersion in TCE (1.5 min / 1.5 min / 1.5 min)	Pass	
Electrical Properties (typical values)	Dielectric withstand	2.0
	Voltage, amp	Pass
	Hydrolytic stability	Pass
	Thermal shock	Pass
	Insulation resistance	
	during testing, avg., Ω	$> 1 \times 10^9$
after testing, avg., Ω	$> 2.5 \times 10^{12}$	

**Handling/Safety
Precautions**

Do not handle or use until the Material Safety Data Sheets for resin and hardener have been read and understood.

Arathane 7768

Warning! Contains organic isocyanate. Causes eye and skin irritation, and possible eye burns. May cause allergic respiratory and skin reaction. Harmful if inhaled. Harmful if swallowed. Avoid contact with eyes, skin, or clothing. Wear chemical splash goggles and impervious gloves when handling. Wash thoroughly after handling. Avoid breathing vapor or mist. Keep container closed when not in use. Use only with adequate ventilation. Do not take internally.

First Aid**In case of contact:**

Skin: Immediately wash with soap and water. Remove contaminated clothing and launder before reuse. Discard contaminated shoes and other articles made of leather.

Eyes: Immediately flush with water for at least 15 minutes. Call a physician.

Ingestion: If conscious, give plenty of water to drink. Do not induce vomiting. Call a physician.

Inhalation: Remove person to fresh air. Administer oxygen or artificial respiration if necessary. Call a physician.

Other: Referral to physician is recommended if there is any question about the seriousness of an injury

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