Product Datasheet

SP&S Specialty Polymers and Services

Ultralane® 768

FLEXIBLE URETHANE STAKING ADHESIVE

Ultralane® 768 is a one part flexible urethane adhesive designed for bonding and staking of components on PCBs. The cured adhesive is low outgassing, low in ionic contamination, and provides excellent thermal shock resistance and hydrolytic stability. The adhesive is non-foaming and when cured is compatible with most types of conformal coatings. The cured Ultralane® 768 exhibits excellent resistance to solder processing temperatures and is resistant to most common cleaning materials.

The adhesive is a medium viscosity liquid that dispenses easily from syringes. It can be supplied in custom colors, viscosities, or with spacer beads for bond-line control by request.

BENEFITS:

- Meeting NASA outgassing requirements
- Removeable/ reworkable with mild heat.
- Excellent chemical, environmental, and thermal shock resistance

PROPERTIES	VALUE	TEST METHOD
Visual Appearance	translucent liquid	
Density	0.95 g/cm³	ASTM E-201
Viscosity, at 25ºC	10,000 cps	ASTM D-2393
Flash Point	>100°C	ASTM D-92
Mix Ratio by weight and volume:	1 part (use as supplied)	
Pot life, 3cc (~3g) mass, at 25ºC	≥ 3 hours	
Gel time at 70ºC	≥ 30 minutes	
Cure Schedules: 3-7 days at 25ºC **or** 1 hour at 70ºC **or** 30 minutes at 95ºC.		

CURED PROPERTIES	VALUE	TEST METHOD
Hardness, Shore A at 25°C	55 - 75	
Tensile Lap Shear Strength at 25°C	300 - 600 psi	ASTM D-1002
Glass Transition Temperature (Tg)	13°C	
Coefficient of Thermal Expansion		ASTM E-381
Alpha 1 / below Tg	80 ppm/°C	
Alpha 2 / above Tg	224 ppm/°C	
Thermal conductivity	0.13 BTU/FT-hr-°F	
Flexibility of cured film on mandrel	Pass	Fed-Std-141C, method 6221
Shear Modulus by Rheometrics		
At -50°C	116,000 psi (8 x 10^9 dynes)	
At 100°C	725 psi (5 x 10^7 dynes)	
Hydrolytic Stability	Pass	Mil-I-46058
Thermal Shock	Pass	Mil-Std-202, method 107B
Dielectric Withstand Voltage	Pass at 2 amps	Mil-Std-202, method 301
Insulation Resistance		Mil-Std-202, method 302B
During testing (average)	>1 x 10^9 ohms	

After testing (average)	>2.5 x 10^{12} ohms	
Solvent Resistance		
Freon TF immersion (3 min. vapor, 3 min. immersion, 3 min. vapor)		Pass
1,1, trichloroethane immersion (3 min. vapor, 3 min. immersion, 3 min. vapor)		Pass
Isopropanol (IPA) – 24 hour immersion		Pass
Outgassing		ASTM E-595
Total Mass Loss (TML)	0.45%	
Collectible Condensable Volatile Materials (CCVM)	<0.01%	

PROCESSING AND APPLICATION INSTRUCTIONS:

Ultralane 768 is supplied in frozen syringes packaged in insulated containers and shipped with dry ice. Syringes sizes available include 1cc, 3cc, 5cc, and 10cc syringes and custom filling levels are available. Syringe styles include HSW manual (thumb plunger operated) syringes and EFD piston operated syringe that are dispensed with air pressure or a dispensing gun. Many other syringe brands and types are available by request. Leur lock dispensing needles can be used with most syringe sizes and types to achieve fine control of the adhesive deposit. For best adhesion apply the adhesive to clean, dry surfaces.

Cured adhesive bonds can be reworked or removed by heating the deposit to about 120°C - 150°C. At this temperature, the adhesive becomes more elastic and has a weaker bond strength, so bonded components can be lifted and twisted to break the adhesive bond. Any remaining adhesive can be removed, while hot using an orange stick or other non-scratching tool to push and/or scrape the adhesive from the surface.

STORAGE GUIDELINES:

Store this product materials in a freezer that is maintained at -40ºC/-40ºF or colder. Exposure to temperatures warmer than -40ºC may cause the viscosity to increase and reduce the work-life and shelf-life of the product. When stored at -40ºC, these products will have a minimum shelf-life of 6 months from the date of shipment and when stored at -80ºC or colder, the shelf-life will be at least 9 months from the date of shipment.

HANDLING PRECAUTIONS & PERSONAL HYGENIE

Mandatory and recommended industrial hygiene procedures should be followed whenever these products are being handled and processed. For additional information please consult the corresponding material safety data sheets.

Ultralane 768

WARNING! CONTAINS ORGANIC ISOCYANATE – Can cause skin irritation, eye irritation, allergic respiratory reaction, and allergic skin reaction. Harmful if inhaled. Avoid contact with eyes, skin, or clothing. Wear eye protection and impervious gloves when handling. Wash thoroughly after handling. Avoid breathing vapor or mist. Keep containers closed when not in use. Use only with adequate ventilation. Do not take internally.

FIRST AID

In case of contact: **Skin** – Immediately wash skin thoroughly with mild soap and water. Remove contaminated clothing and wash before reuse. Destroy contaminated shoes and other articles made of leather. **Eyes** – Immediately flush eyes with plenty of water for 15 minutes and get prompt medical attention. **Inhalation** - Remove person to fresh air. Administer oxygen or artificial respiration if necessary. Call a physician. **Ingestion** - Do not induce vomiting. Dilute with plenty of water and contact physician immediately. Never give anything by mouth to an unconscious person.

DISCLAIMER:

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