Preliminary Product Datasheet

SP&S Specialty Polymers and Services

Ultralane® 708

HIGH PURITY, LOW OUTGASSING URETHANE STAKING ADHESIVE

Ultralane® 708 is a one part urethane adhesive designed for bonding and staking of components on PCBs and other high performance applications. The cured adhesive is low outgassing, low in ionic contamination, and provides excellent hydrolytic stability. Ultralane 708A/B is a pre-mixed and frozen formulation that is mercury free and contains anti-oxidants to give increased resistance to temperatures above 125°C. The adhesive is non-foaming and highly resistant to blistering during curing or use. It is resistant to temperature exposure during solder processing, extremely resistant to thermal shock and vibration, and is resistant to most common cleaning materials including IPA.

Ultralane® 708 has a low, flowable viscosity with a surface tension that allows it to wick under devices. It can be applied using robotic dispensing units or manually and is available in several different colors including opaque white, opaque black, and transparent blue. The Ultralane 708 system can be provided in other colors or with glass spacer beads in sizes such as 3, 5, or 7 mils by request. Please contact us to discuss the development of a custom variant if that would be helpful for your application.

SUGGESTED APPLICATIONS:

- Bonding & Staking PC components to protect against vibration & thermal shock.
- Flexible protective coating for electronic devices

HANDLING PROPERTIES	VALUE	TEST METHOD
Ultralane 708		
Visual Appearance	White, black, or light blue liquid	
Density, Part A	0.95 g/cm³	ASTM E-201
Viscosity, Part A, @ 25ºC	~ 9000 cps	ASTM D-2393
Flash Point	>93°C	ASTM D-92
Mix Ratio by weight and volume:	1 component – use as-is	
Pot life, 5cc/10g. mass	> 3 hours at 25ºC	
Cure Schedules: minimum cure is 48-72 hours at 25ºC **or** 1 hour at 70ºC **or** 30 minutes at 95ºC. Additional time at room temperature may be required to reach maximum properties.		

CURED PROPERTIES	VALUE	TEST METHOD
Density	1.04 g/cm³	ASTM D-792
Hardness, Shore A at 25°C	65 +/- 10A	
After 300 hrs. aging at 150°C	72A (typical increase is less than 5 shore A points)	
Tensile Lap Shear Strength		ASTM D-1002
at 25°C / at 93°C	550 psi / 130 psi	

Glass Transition Temperature (Tg)	12°C	
Coefficient of Thermal Expansion		ASTM E-381
Alpha 1 / below Tg	79 ppm / °C	
Alpha 2 / above Tg	223 ppm / °C	
Thermal conductivity	0.225 W/mK	ASTM D-2214
Volume Resistivity at 25°C	3×10^{14}	ASTM D-257
Dielectric Withstand Voltage	>2.0 microamperes	
Outgassing		ASTM E-595
Total Mass Loss (TML)	0.55%	
Collectible Condensible Volatile Materials (CCVM)	0.01%	

Note: typical values are based on a 16 hour at 160°F / 71.6°C cure or 1 hour cure at 160°F / 71.6°C + 72 hours at 25C to ensure full cure and equilibration of the samples.

PROCESSING AND APPLICATION INSTRUCTIONS :

The Ultralane 708/B is supplied in silicone-free manual syringes in 1cc, 3cc, or 5cc sizes or in air/piston dispensed syringes in 3cc or 5cc sizes. Syringes are shipped with dry ice and should be stored at -40C or colder upon receipt. When store at -40°C or colder the syringes will have a shelf-life of at least 6 months from date of shipment. Storage at -85°C continuously will allow for a shelf-life of at least 12 months from date of shipment.

Thaw for 10 – 20 minutes or until fully defrosted. Remove any condensation using an absorbent cloth before opening the syringes. If working in a high humidity environment and using a room temperature cure, consider using a desiccant chamber or a low temperature oven cure set to 25 - 30°C in order to avoid a surface reaction with moisture during curing that could lead to unwanted stickiness.

STORAGE GUIDELINES:

Store at -40C or colder. Storage at -65°C or -80°C may improve viscosity stability during storage and extend the shelf-life of the stored syringes.

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 708

WARNING! CONTAINS ORGANIC ISOCYANATE – Causes 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:

IMPORTANT: The following supersedes Buyer's documents. **SELLER / MANUFACTURER MAKES NO REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, INCLUDING OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE**. No statements herein are to be construed as inducements to infringe any relevant patent. Under no circumstances shall Seller / Manufacturer be liable for incidental, consequential, or indirect damages for alleged negligence, breach of warranty, strict liability, tort, or contract arising in connection with the product(s). Buyer's sole remedy and Seller's sole liability for any claims shall be Buyer's purchase price. Data and results presented are based on controlled or laboratory work and must be confirmed by Buyer by testing for its intended conditions of use. The product(s) has not been tested for, and is therefore not recommended for, uses for which prolonged contact with mucous membranes, abraded skin, or blood is intended; or for uses for which implantation within the human body is intended.

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