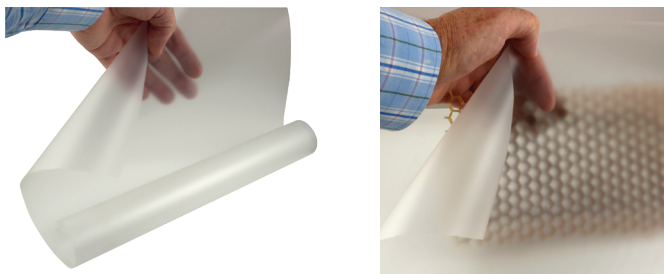


L-F610

Reformable epoxy adhesive film

L-F610 is a reformable epoxy-based adhesive film that combines the adhesive benefits of being an epoxy with the processing ease and flexibility of being a thermoplastic.

This technology is a good candidate when typical thermoplastic adhesive films are not performing adequately. L-F610 is also a solution to replace messy and time consuming liquid epoxy solutions.



Key Product Attributes

- High strength, rigidity, and toughness
- High strain-to-failure - up to 40%
- Short cycle times needed for bonding
- Long shelf life
- Unlike most epoxy adhesive films, it can be stored at room temperature
- Flexible, clear, and low odor
- Fully thermoplastic
- Recyclable
- Repairable / formable
- Debonding / healing capability

Processing Guide

- Dry to the touch film and hotmelt material. The film needs no release paper, it is non-tacky.
- The adhesive will develop adhesion with heat and pressure:

- Temperature: Typical bonding temperature range 140°C / 285°F - 176°C / 390°F (depending on substrate). Lower temperatures better suited for cellulosic products. Processing Temperatures should not exceed 230°C / 445°F.
- Typical time: 1 to 15 minutes. Actual time, temperature and pressure will vary depending on bonding substrates and desired adhesion strength.
- Gel time: There is no gel time since this epoxy is thermoplastic. It solidifies below T_g (80°C / 176°F). The quicker the material cools down, the quicker it solidifies. Handling time can vary from seconds to minutes depending on the application.

Storage

UV exposure: First test results show no impact on the adhesive performance. Tests in progress.

Material should be stored below 32°C / 89°F, away from all sources of heat and sunlight.

Technical Data

TYPICAL PROPERTIES				
		L-F610		Test Methods
Physical Properties	Color	Clear		
	Thickness	Available in 0.0025" (63.5 μ m), 0.005" (127 μ m), 0.010" (254 μ m)		
	Weight	0.016 lbs/ft ³ (75.67 g/m ²), 0.031 lbs/ft ³ (151.34 g/m ²), 0.062 lbs/ft ³ (302.68 g/m ²) respectively		
	Standard Width	1.542 m / 60 in		
	Tg (Amorphous)	80°C / 176°F		
	O2TR, BU (60% RH; 23 °C)	0.8 BU		
	CO2TR, BU (60% RH; 23 °C)	3.9 BU		
	Yield Stress	8400 psi / 58 MPa		
	Break Stress	6900 psi/ 47.6 MPa		
	Break Elongation	40%		
	Flex Modulus	387,000 psi / 2.67 GPa		
	Notched Izod	13 J / m / 0.2 ft-lb / in		
	Creep	Testing in progress		
Optical Properties	Clarity	99%		(ASTM D 1003)
	Haze	2.7%		(ASTM D 1003)
	Light Transmittance	93%		(ASTM D 1003)
	Yellowness Index	2.1%		(ASTM D 925)
LAP SHEAR OF ADHESIVE FILM				
Substrate	Surface Treatment	Test Temperature	LS Strength	Failure
Galvanized Steel (G/10)	Degreased	23°C	15 MPa	95% CF
Aluminum	Sand Paper	23°C	13 MPa	95% CF
Aluminum	Chemical Deoxidation	23°C	19 MPa	95% CF
Aluminum	Chemical Deoxidation	-55°C	16.5 MPa	95% CF
Aluminum	Chemical Deoxidation	80°C	14.4 MPa	95% CF
Aluminum*	Sand Paper	23°C	11 MPa	95% CF
Epoxy and Glass Fiber	Cleaned with Alcohol	Room Temperature	13 MPa	100% CF

Good resistance to:

- Hydrocarbons
- Non-polar solvents

Poor resistance to:

- Polar solvents
- Acids
- Alcohols

Solubility in select solvents:

- Dimethylformamide (DMF)
- Tetrahydrofuran (THF)

Potential Health Hazards

- Skin: Negligible (potential sensitizer).
- Eyes: May cause slight, temporary irritation.
- Inhalation: Avoid fumes from decomposing material.

Use Proper PPE

- Skin: Protective garments, i.e. gloves- nitrile or latex.

Heat resistant gloves if there is potential for contact with hot/molten material.

- Eye Protection: Goggles if there is potential contact due to splashing/spraying of hot/molten material.
- Respiratory Protection: Provide ventilation during thermal processing.

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