

PRODUCT DATA SHEET

DESCRIPTION

Toray MicroPly™ EF72 adhesive film is a modified, high-strength, structural epoxy film adhesive for metal-to-metal or sandwich-core-to-skin bonds. EF72 has a strong self-filleting action in honeycomb-to-skin bonds.

Toray MicroPly™ EF72 film adhesive is protected on one side by a release paper and on the other by a polythene separator. A lightweight polyester carrier is incorporated into the adhesive film to ensure easy handling whilst cutting and positioning.

Toray MicroPly™ EF72 is compatible for co-cure with many of Toray's E700 series prepregs that cure at 120°C.

FEATURES

- ▶ Accurate control of adhesive distribution
- ▶ Excellent filleting to honeycomb core, ideal for honeycomb sandwich construction
- ▶ High performance bonding in both composite and metallic structures
- ▶ Suitable for press molding, autoclave, and vacuum bag cure
- ▶ Medium tack level, clean, and easy to apply
- ▶ No solvents, low volatile content
- ▶ Available in a range of surface weights (100g/m², 200g/m², and 300g/m²)
- ▶ Long out life at ambient temperature

PRODUCT TYPE

120°C (248°F) Cure

Modified Epoxy Structural Adhesive Film

TYPICAL NEAT RESIN PROPERTIES

Density	1.20 g/cm ³ at 23°C (73°F)
T _g (DSC)	112°C (233°F)

TYPICAL APPLICATIONS

- ▶ Composite and metallic skin bonding to lightweight cores

SHELF LIFE

Out Life: 30 days at 20°C (68°F)

Storage Life: 12 months at -18°C (< 0°F)

Out life is the maximum time allowed at room temperature before cure.

To avoid moisture condensation:

Following removal from cold storage, allow the prepreg to reach room temperature before opening the polythene bag. Typically, the thaw time for a full roll of material from storage at -18°C (0°F) will be 4 to 6 hours.



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MicroPly™

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TYPICAL ADHESIVE PROPERTIES

Resin Film Weight (g/m ²)	Test Description	Condition	Method	Result
100	Tensile lap shear (LS)	RTD	ASTM D 1002	25 MPa/3.6 ksi
300	Climbing drum peel (CDP)	RTD	ASTM D 1781-98	370 N/75 mm
300	Tensile lap shear (LS)	RTD	ASTM D 1002	32 MPa/4.6 ksi

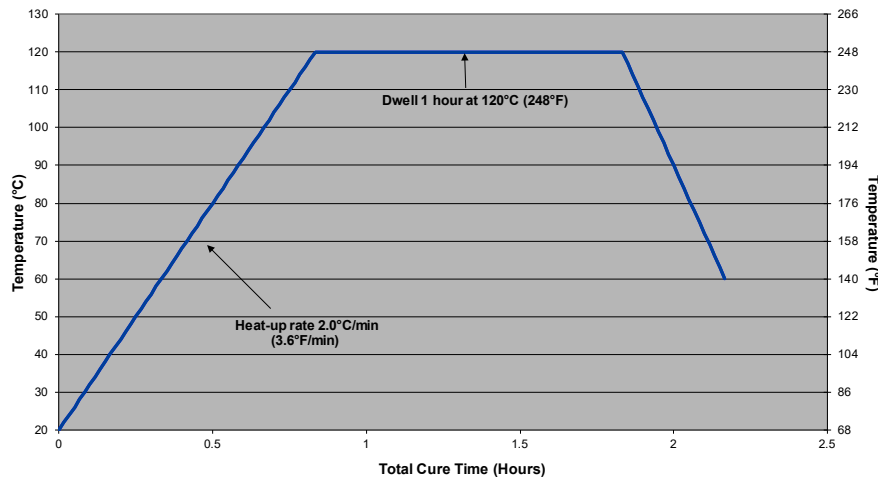
Climbing drum peel (CDP) RTD at 20°C (68°F)
 Molding conditions for the test samples were as follows: Heated for 60 minutes at 120°C (248°F). 30 psi vented vacuum pressure applied.

STANDARD ROLL QUANTITIES

Resin Film Weight Including Polyester Carrier (g/m ²)	Roll Length (linear m [ft])	Width (m [ft])
100	40 (121)	1.25 (4)
200	40 (121)	1.25 (4)
300	40 (121)	1.25 (4)

The film is supplied on rolls with a polyester carrier. The film is protected by release paper on one side and polythene separator on the other.

INITIAL MINIMUM 120°C CURE SCHEDULE



RECOMMENDED CURE CYCLE

- ▶ In pressure cycles, vent vacuum line to atmosphere after pressure has reached 1.5 bar
- ▶ Cure for 60 minutes at 120°C (248°F). It is recommended that heat-up rates of 2°C (3.6°F) to 5°C (9°F)/min are employed
- ▶ Allow to cool to 60°C (140°F) prior to releasing vacuum and removal from mold

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PROCESSING

- ▶ It is important that all substrates to be adhered are de-greased and free from contamination before use
- ▶ Following removal from refrigerated storage, allow resin film to reach room temperature before opening the polythene bag, to avoid moisture condensation

HANDLING SAFETY

Observe established precautions for handling epoxy resins and fibrous materials.

For further information, refer to the Safety Data Sheet, available from Toray Advanced Composites, Langley Mill.