AMBERCOMPOSITES

EF8020 ADHESIVE FILM

A Modified Epoxy Structural Film Adhesive with Flexible Cure Schedules

EF8020 adhesive film is a high strength epoxy adhesive formulation supplied in the form of a light weight flexible film. It is intended for metal to metal or sandwich core to skin bonds and has a strong self-filleting action in honeycomb-to-skin bonds. The film is protected on one side by a release paper and on the other by a polythene separator. A lightweight polyester scrim is incorporated into the adhesive film to ensure easy handling whilst cutting and positioning.

EF8020 is compatible for co-cure with Amber Composites 8020 RAPI-PLY series.

CHARACTERISTICS:

- **Flexible low to medium cure schedule 70°C (158°F) to 130°C (266°F)**
- **Available in a range of surface weights (100g/m^2, 200g/m^2, and 300g/m^2).**
- **Tg (DMTA – peak tanδ) 116°C (240°F) after 30 minutes cure @ 120°C (248°F)**
- **High performance bonding in both metallic and composite structures**
- **Accurate control of adhesive distribution, reduce wastage**
- **Excellent filleting to honeycomb, ideal for honeycomb sandwich construction**
- **Suitable for press molding, autoclave and vac bag cure**
- **30 days useable outlife at 20°C (68°F), 12 months freezer storage @ -18°C (0°F)**

Resin Properties	Test Method	Result
Density @ 23°C (74°F)		1.2g/cc
Tg after 1hr at 120°C	DMTA (onset) DMTA (Peak tanδ)	102°C (215°F) 116°C (240°F)

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PROCESSING

Following removal from the freezer, allow the EF8020 to reach room temperature before opening the polythene bag, to avoid moisture condensation. Typically, the thaw time for a full roll of material from storage at -18°C (0°F) will be 4 to 6 hours.

It is important that all substrates to be adhered are de-greased and free from contamination before use.

EF8020 can be successfully cured by vacuum-only, autoclave or press molding processes.

8020 RECOMMENDED CURE TIMES

Cure temperature (°C)	Recommended cure time (hrs)
70	8
80	5.5
100	2
120	0.5

POSTCURE

In applications demanding maximum temperature or environmental resistance e.g. 120°C service temperature, it is essential to develop the glass transition temperature to the maximum level by a suitable postcure.

Ramp from initial cure temperature to 120°C (248°F) at 20°C/hr and hold for 30 minutes minimum, this postcure will result in a Tg of approximately 116°C (peak tan δ) (240°F).

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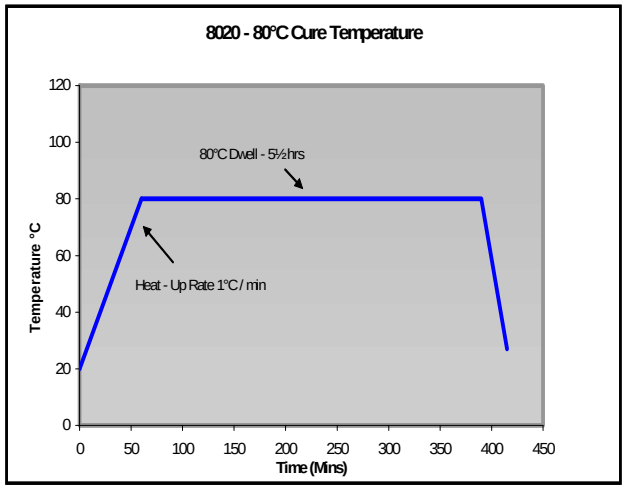
TYPICAL CURE PROFILES

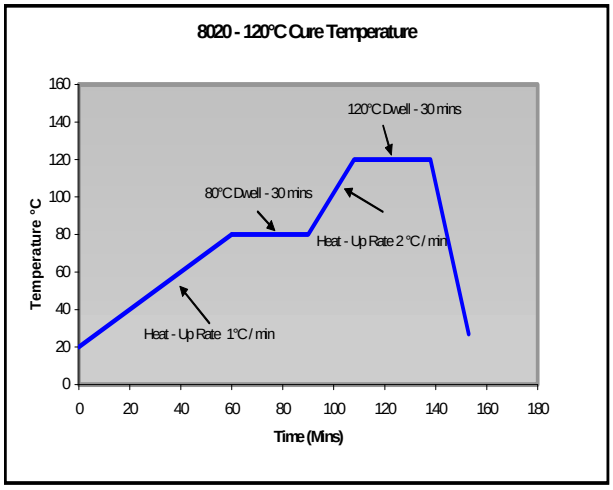
80°C (176°F) Cure Temperature

1.0°C (1.8°F) / minute ramp to 80°C (176°F)
5½ hours dwell @ 80°C (176°F) **Total Time: 6½ hours**



120°C (248°F) Cure Temperature

1.0°C (1.8°F) / minute ramp to 80°C(176°F)
30 minute dwell @ 80°C (176°F)
2.0°C (3.6°F) / minute ramp to 120°C (176°F)
30 minute dwell @ 120°C (176°F) **Total Time: 2hours 20 minutes**



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TYPICAL ADHESIVE PROPERTIES

ADHESIVE PROPERTIES	Test Method	Result
Climbing Drum Peel	DTD 5577	500 N/75mm
Tensile Lap Shear	DTD 557	32 MPa

Molding conditions for the test samples were as follows:
Heated 30 min at 120°C (248°F)
60 P.S.I pressure applied

STANDARD ROLL QUANTITIES

Resin Film Weight Include. Polyester Net (g/m^2)	Roll Length (linear m)	Width (m)
100	20.5	1.22
200	20.5	1.22
300	20.5	1.22

Other roll lengths are available on request.

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

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CAUTION

EF8020 resin film contains a reactive resin system and care must be taken to avoid exothermic heating during the initial cure.

STORAGE

Shelf life is at least 30 days at ambient temperature 20ºC (68ºF)

Refrigerated storage life is 12 months at –18ºC (0ºF)

HANDLING SAFETY

Observe established precautions for handling epoxy resins and fibrous materials.

For further information refer to Material Safety Data Sheet.

FURTHER INFORMATION

Please contact Amber Composites for additional information.