

> CYCOM[®] 7714 EPOXY RESIN

TECHNICAL DATA SHEET



DESCRIPTION

CYCOM[®] 7714 resin is a 250°F (121°C) curing epoxy resin with good 200°F (93°C) dry service capability. CYCOM 7714 is formulated for autoclave or press mold processing but has been successfully vacuum bag processed. Aramid and glass woven fabric impregnated with CYCOM 7714 will retain excellent tack and drape for up to 10 days at room temperature. The standard cure for CYCOM 7714 resin is two hours at 250°F (121°C). No post cure is required for 200°F (93°C) dry service capability.

CYCOM 7714 is a solvent resistant, self-extinguishing resin designed for use in structural laminates and honeycomb core sandwich panels for aircraft. The aramid and glass fabric prepregs adhere well to the tool and core during lay-up. When cured, they bond tenaciously to honeycomb core without the use of adhesives.

CYCOM 7714 can be impregnated via solution process on all available fabrics and roving. However, this resin is used primarily on aramid and glass fibers. CYCOM 7714 is completely cocurable with CYCOM[®] 7714A resin which provides considerable design flexibility with respect to the use of hybrid lay-ups.

FEATURES & BENEFITS

- 250°F (121°C) cure
- Available on aramid and glass fabric and roving
- Self-extinguishing
- Self-adhesive
- Solvent resistant
- 200°F (93°C) dry service temperature
- Autoclave, press mold or vacuum bag processing
- Co-curable with CYCOM 7714A
- Shelf life of 6 months at 0°F (-18°C), 10 days at 72°F (22°C)

SUGGESTED APPLICATIONS

- Structural laminates and honeycomb core sandwich panels for aircraft

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CHARACTERISTICS & PROPERTIES

Table 1 | Typical Properties: Kevlar[®] 49 fiber reinforced plain weave fabric

Typical Cytec Engineered Materials product code: MXM 7714/120K

Mechanical Properties	Test Temperature		
	-65 °F (-54°C)	Room Temp.	160°F (71°C)
0° Tensile Properties			
Strength, ksi (MPa)	60 – 70 (414 – 483)	60 – 70 (414 – 483)	55 – 65 (379 – 448)
Modulus, Msi (GPa)	3 – 5 (21 – 35)	3 – 4 (21 – 28)	3 – 4 (21 – 28)
0° Compressive Properties			
Strength, ksi (MPa)	35 – 45 (241 – 310)	25 – 35 (172 – 241)	15 – 25 (103 – 172)
Modulus, Msi (GPa)	3 – 4 (21 – 28)	3 – 4 (21 – 28)	2 – 3 (14 – 21)
Interlaminar Shear Properties			
Strength, ksi (MPa)	5 – 6 (35 – 41)	5 – 7 (35 – 48)	4 – 5 (28 – 35)

Property values listed are typical for laminates with 50 – 55% fiber volume.

Table 2 | Typical Properties: Kevlar[®] 49 fiber reinforced crow foot satin fabric

Typical Cytec Engineered Materials product code: MXM 7714/285K

Mechanical Properties	Test Temperature		
	-65 °F (-54°C)	Room Temp.	160°F (71°C)
0° Tensile Properties			
Strength, ksi (MPa)	65 – 80 (448 – 552)	65 – 80 (448 – 552)	60 – 75 (414 – 517)
Modulus, Msi (GPa)	3 – 4 (21 – 28)	3 – 4 (21 – 28)	3 – 4 (21 – 28)
0° Compressive Properties			
Strength, ksi (MPa)	30 – 40 (207 – 276)	20 – 30 (138 – 207)	15 – 25 (103 – 172)
Modulus, Msi (GPa)	3 – 4 (21 – 28)	3 – 4 (21 – 28)	3 – 4 (21 – 28)
0° Flexural Properties			
Strength, ksi (MPa)	-	55 – 65 (379 – 448)	-
Modulus, Msi (GPa)	-	3 – 4 (21 – 28)	-
Interlaminar Shear Properties			
Strength, ksi (MPa)	5 – 6 (35 – 41)	5 – 6 (35 – 41)	4 – 5 (28 – 35)

Property values listed are typical for laminates with 50 – 55% fiber volume.

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Table 3 | Typical Properties: E-glass fiber reinforced 8 harness satin

Typical Cytec Engineered Materials product code: MXM 7714/1581, MXB 7714/7781

Mechanical Property	Room Temp.
0° Tensile Properties	
Strength, ksi (MPa)	50 – 60 (345 – 414)
Modulus, Msi (GPa)	3 – 4 (21 – 28)
0° Compressive Properties	
Strength, ksi (MPa)	48 – 55 (331 – 379)
Modulus, Msi (GPa)	3 – 4 (21 – 28)
0° Flexural Properties	
Strength, ksi (MPa)	65 – 75 (448 – 517)
Modulus, Msi (GPa)	3 – 4 (21 – 28)
Interlaminar Shear Properties	
Strength, ksi (MPa)	8 – 9 (55 – 62)

Property values listed are typical for laminates with 50 – 55% fiber volume.

APPLICATION NOTES

Layup Procedure

Recommended lay-up procedures for CYCOM 7714 are shown in Figure 1 and Figure 2

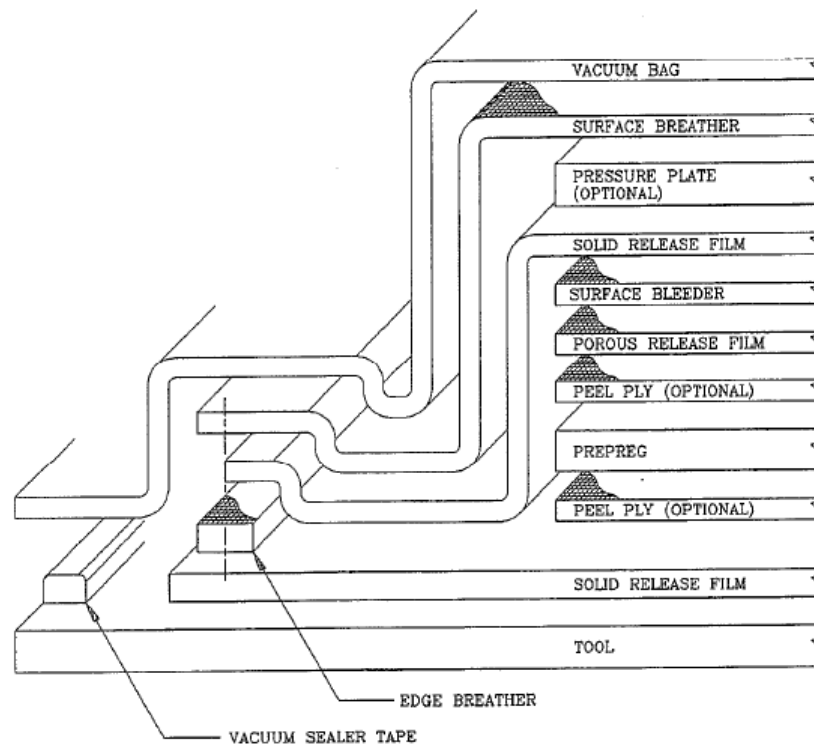


Figure 1 | Recommended Lay-up L-3 for CYCOM 7714 Epoxy Prepreg

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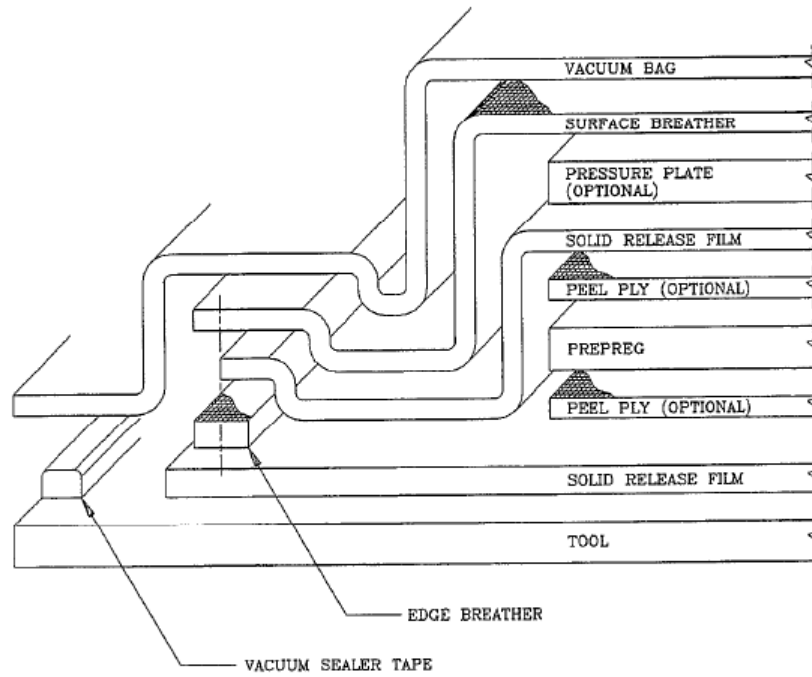


Figure 2 | Recommended Lay-up L-6 for CYCOM 7714 Epoxy Prepreg

Cure Procedure

Recommended cure procedures for CYCOM 7714 are shown in

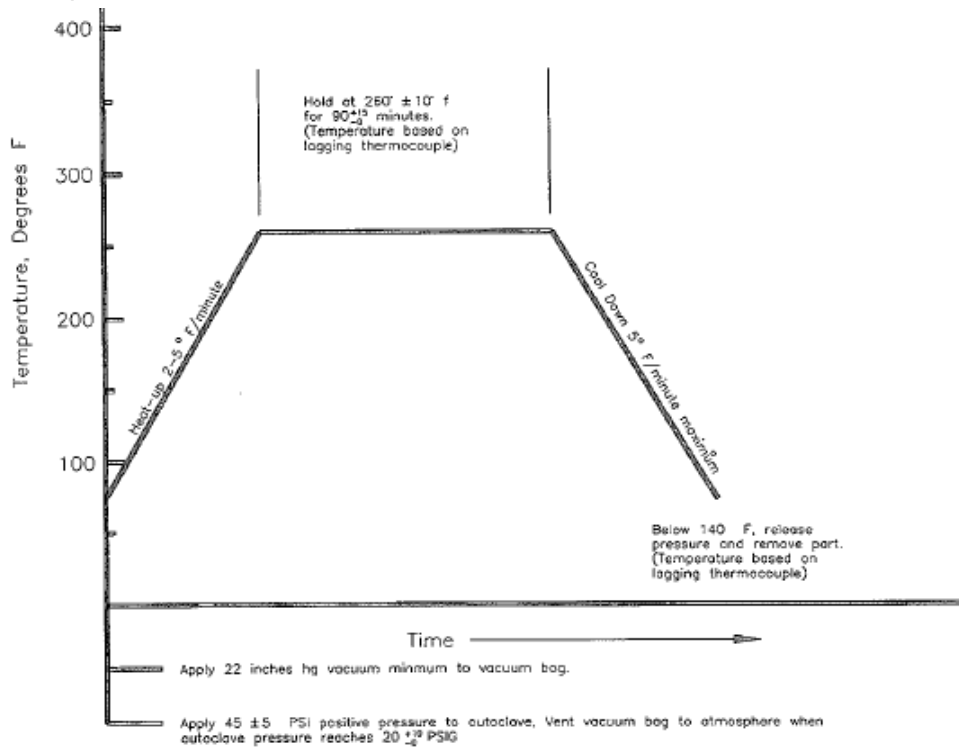


Figure 3 | Recommended Cure Profile C-6 for CYCOM 7714 Epoxy Prepreg

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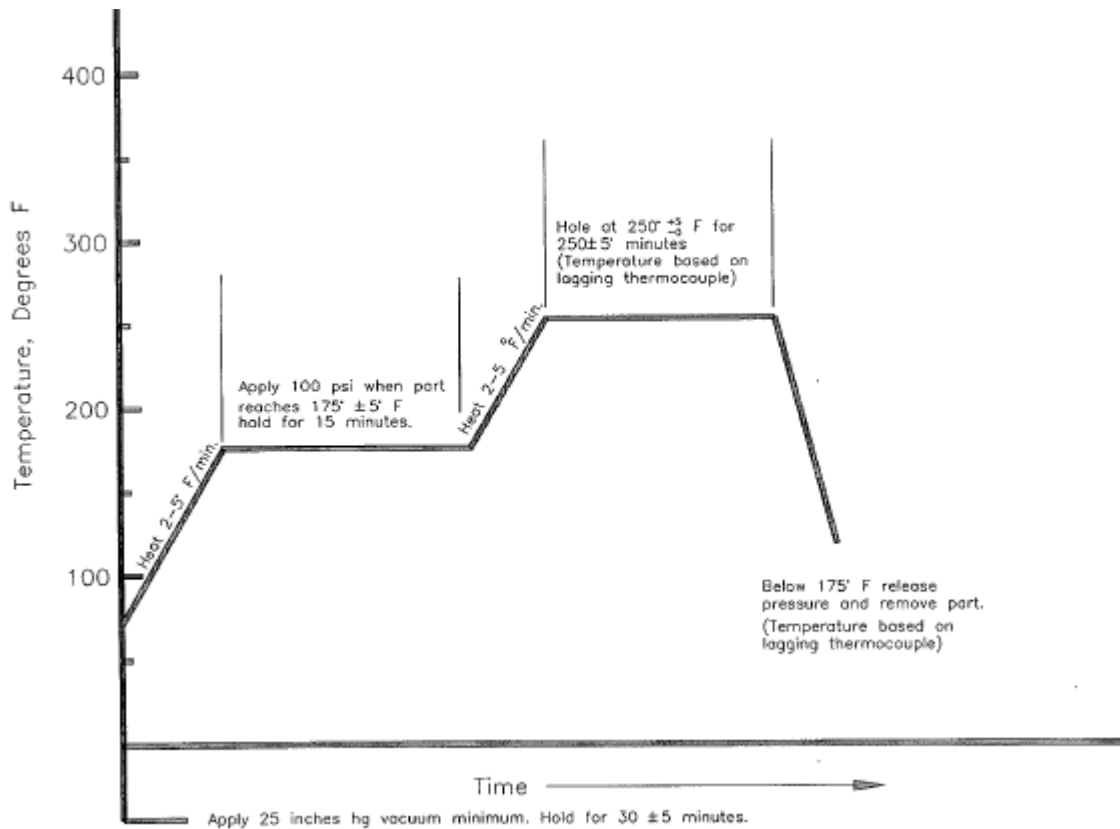


Figure 4 | Recommended Cure Profile C-7 for CYCOM 7714 Epoxy Prepreg

PRODUCT HANDLING AND SAFETY

Cytec Engineered Materials recommends wearing clean, impervious gloves when working with epoxy resin systems to reduce skin contact and to avoid contamination of the product.

Materials Safety Data Sheets (MSDS) and product labels are available upon request and can be obtained from any Cytec Engineered Materials Office.

DISPOSAL OF SCRAP MATERIAL

Disposal of scrap material should be in accordance with local, state, and federal regulations.

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