

## CYCOM® 97714A

Ideally suited to aerospace applications CYCOM® 97714A resin is a 250°F (121°C) curing epoxy resin with good 200°F (93°C) dry and 160°F (71°C) wet service capability.

CYCOM® 97714A is based on the same chemistry as CYCOM® 7714A.

CYCOM® 97714A has improved flatwise tension strength when compared to similar materials with no detriment to other mechanical properties when autoclave processed. The prepreg can also be press molded and vacuum bag processed and is co-curable with a number of other resin systems, providing design flexibility with respect to the use of hybrid lay-ups.

The standard cure is two hours at 250°F (121°C). No post cure is required for 160°F (71°C) wet service capability. CYCOM® 97714A is impregnated via solution techniques.

### Features and Benefits

- 250°F (121°C) Cure
- Flame Retardant
- Laminate and sandwich panel usage
- Used as a self-adhesive system
- Meets NASA outgassing requirements
- Used as self adhesive system
- 200°F (93°C) dry service temperature
- 160°F (71°C) wet service temperature
- Autoclave press mold, or vacuum bag processed
- Shelf Life 6 months at 0°F (-18°C)
- Handling Life 10 days at 75°F (24°C)
- Co-cureable with CYCOM® 7701, CYCOM® 7714 and CYCOM® 7714A systems

## CHARACTERISTICS

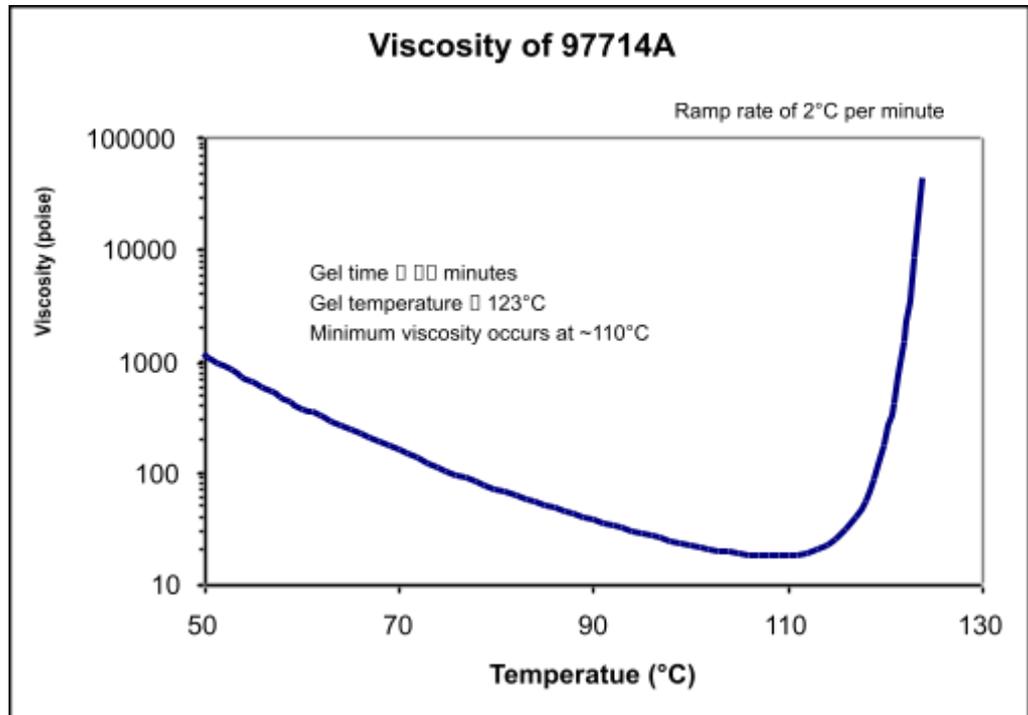
**Table 1 | Physical Properties**

Property	CYCOM 97714A	Test Method
Cured Resin Density pcf (g/cc)	78.7- 79.9 (1.26 - 1.28)	ASTM D 792
Shelf Life	6 months at or below 0°F (-18°C) from date of shipment	
Shop Life	10 days at or below 75°F (24°C)	

**Table 2 | Product Availability**

Property	Description
Roll Width	42 & 60 in (107 & 152 cm)
Roll Length	60 yds (55 m)



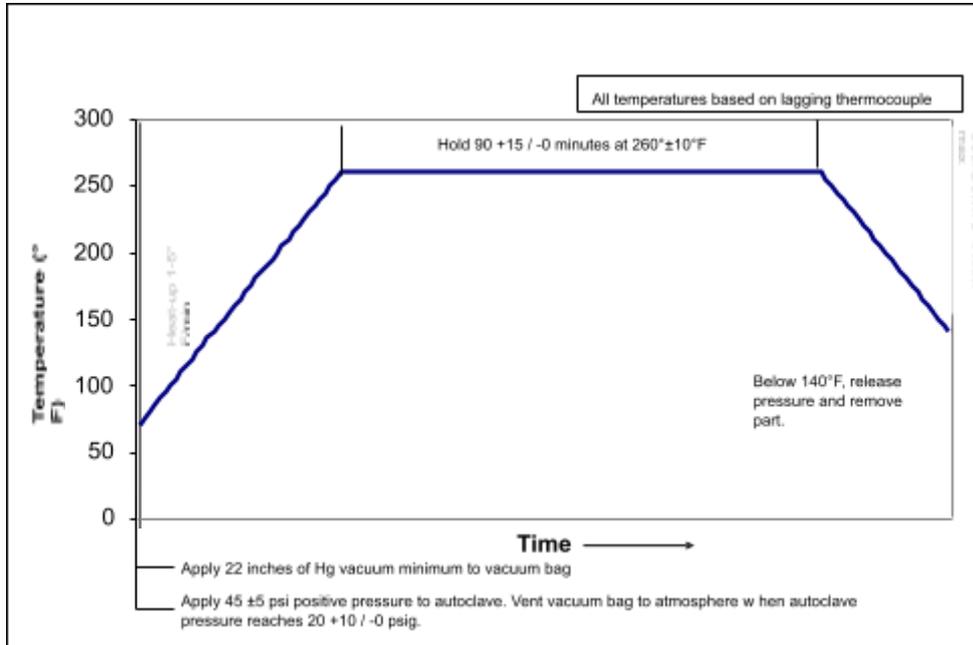
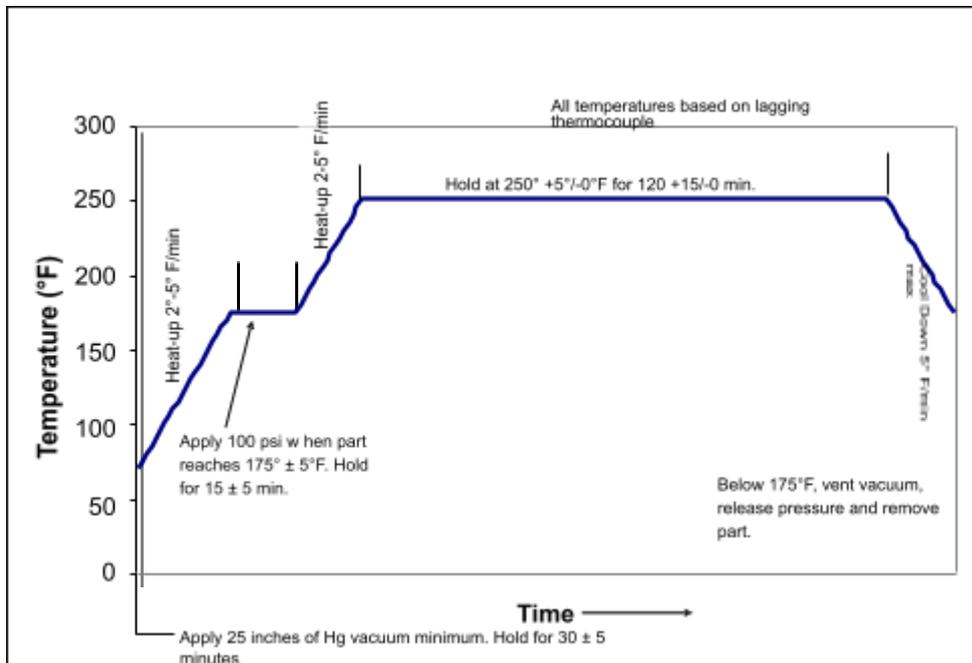
**Resin Viscosity****Figure 1| CYCOM® 97714A Viscosity Profile**

**PROPERTIES**
**Table 3 | Mechanical Properties of CYCOM® 97714A Prepreg of Standard Modulus Carbon Fiber [33Msi (228 GPa)]**

Property	Test Condition	PW T300	8HS T300	Test Method
0° Tensile Strength ksi (MPa)	160°F (71°C)	75-110 (517 -758)	-	ASTM D 3039
0° Tensile Modulus Msi (GPa)	160°F (71°C)	7.5-8.5 (52-59)	-	ASTM D 3039
0° Tensile Failure Strain %	160°F (71°C)	1.0 -1.3	-	ASTM D 3039
90° Tensile Strength ksi (MPa)	-65°F (-54°C) 75°F (24°C)	98 (676) 95 (655)	- 110 -135 (760-930)	ASTM D 3039
90° Tensile Modulus Msi (GPa)	-65°F (-54°C) 75°F (24°C)	8 (55) 8 (55)	- 7 -10 (48-70)	ASTM D 3039
90° Tensile Failure Strain %	160°F (71°C)	1.0 -1.3	-	ASTM D 3039
0° Compression Strength ksi (MPa)	75°F (24°C) 160°F (71°C)	75-100 (517-689) 60-85 (414 -586)	90 -110 (620 -760) -	ASTM D 695
0° Compression Modulus Msi (GPa)	75°F (24°C) 160°F (71°C)	6.5-9 (45-62) 6.5-9 (45-62)	- -	ASTM D 695
90° Compression Strength ksi (MPa)	-65°F (-54°C)	107 (738)	-	ASTM D 695
90° Compression Modulus Msi (GPa)	-65°F (-54°C)	8 (55)	-	ASTM D 695
0° Flexural Strength ksi (MPa)	-65°F (-54°C) 75°F (24°C) 160°F (71°C)	120 -140 (827 -965) 120-140 (827-965) 90-110 (621-758)	- - -	ASTM D 790
0° Flexural Modulus Msi (GPa)	-65°F (-54°C) 75°F (24°C) 160°F (71°C)	7 - 9 (48-62) 7 - 9 (48-62) 7 - 9 (48-62)	- - -	ASTM D 790
0° Interlaminar Shear Strength ksi (MPa)	-65°F (-54°C) 75°F (24°C) 160°F (71°C)	11 - 13 (76-90) 8 - 11 (55 -76) 6 - 8 (41-55)	- 9-12 (62-83) -	ASTM D 2344
Flatwise Tensile Strength psi (MPa)	-65°F (-54°C) 75°F (24°C) 160°F (71°C)	847 (5.8) 625 -1080 (4.3-7.4) 816 -958 (5.6-6.6)	- - -	ASTM C 297
Long Beam Flex Load lb (N)	-65°F (-54°C) 75°F (24°C) 160°F (71°C)	227 (1010) 190 (845) 153 (680)	- - -	ASTM C 393
Long Beam Flex P/Y lb/in (N/mm)	-65°F (-54°C) 75°F (24°C) 160°F (71°C)	167-205 (29.2-35.9) 169 -193 (29.6 -33.8) 159 -185 (27.8-32.4)	- - -	ASTM C 393

Property values listed are typical for laminates with 55 to 60% fiber volume



**PROCESSING**
**Recommended Cure Cycles**

**Figure 2 | CYCOM® 97714A Straight Cure Cycle**

**Figure 3 | CYCOM® 97714A Step Cure Cycle**


### Preparation for Laminate Curing

Treat surfaces that lay-up will touch with a release agent. As each ply of material is positioned, work out any wrinkles or entrapped air with a paddle or roller before removing the backing. Take care not to distort the material during lay-up. Insert a thermocouple into the lay-up near the center ply of the thickest edge section, outside the net trim line.

To eliminate porosity, keep the resin under pressure during cure with the use of a compressible dam. Use permeable fluorocarbon coated fabric to facilitate resin bleed. This material should be placed directly on the lay-up with sufficient layers of dry glass fabric (bleeder plies) to absorb the excess resin. Non-permeable fluorocarbon coated fabric should be placed over bleeder plies to protect the bag system in vacuum or autoclave cures.

Install a vacuum bag by standard techniques. Insert at least two vacuum ports through the bag, connecting one to a vacuum source and the other, at a point furthest away from the source, to a calibrated vacuum gage. Position part in oven or autoclave and draw vacuum to check for bag or system leaks.

The following figures show the recommended lay-ups for CYCOM® 97714A materials:

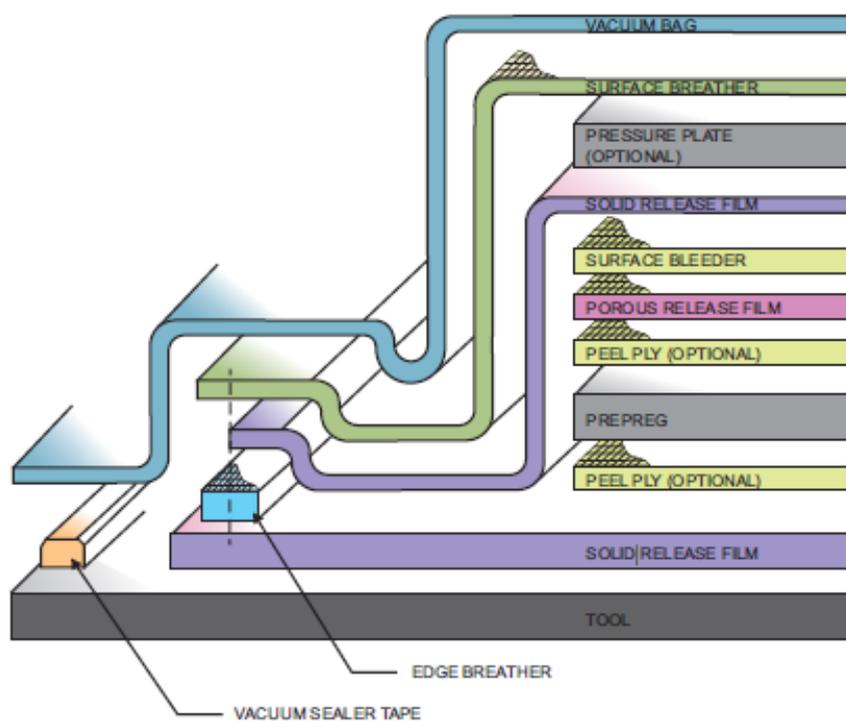
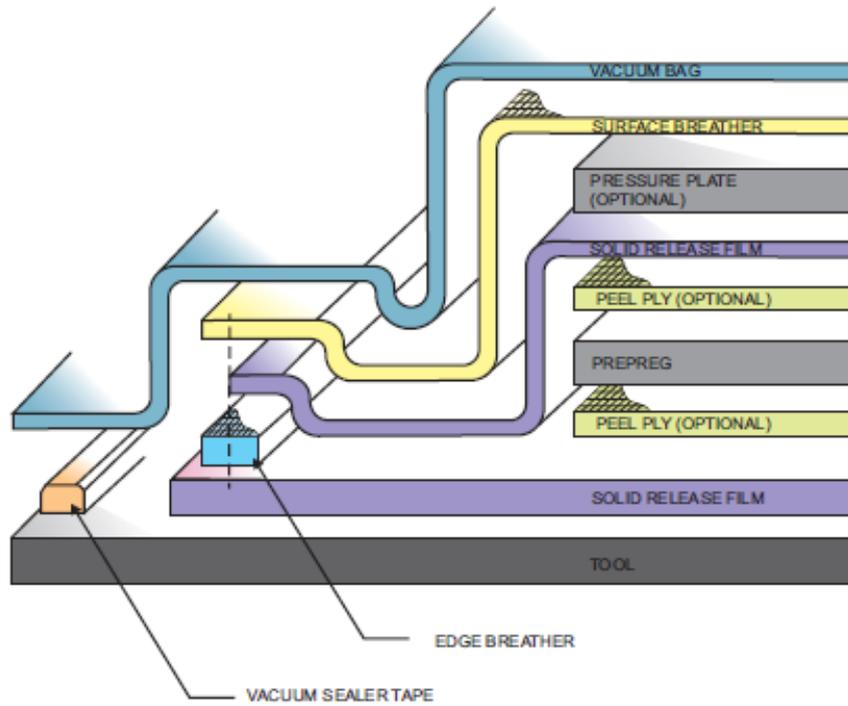


Figure 5 | Bleed Lay-up





**Figure 6 | No Bleed Lay-up**

### HEALTH & SAFETY

Please refer to the product SDS for safe handling, personal protective equipment recommendations and disposal considerations.

