ROGERS CORPORATION

Advanced Circuit Materials

Advanced Circuit Materials Division
100 N. Dobson Road
Chandler, AZ 85224
Tel: 480-961-1382, Fax: 480-917-5256
www.rogerscorp.com

Data Sheet

R/flex® 1500 Assembly Adhesive

Description

R/flex® 1500 assembly adhesive is an unsupported dry film adhesive especially designed to meet the demanding requirements of electronics assembly operations. It is widely used to affix stiffeners and for mounting hardware to polyimide-based flexible circuits. This modified acrylic adhesive is readily heat-tackable, cross links upon curing for tenacious bond to a variety of materials, and has excellent resistance to many common solvents and other chemicals. It has excellent creep resistance, as well as outstanding bond retention after extended exposure to elevated temperatures; after exposure to 302°F (150°C) for more than ten days, peel strength remained greater than 10 pounds per linear inch (bond to polyimide). For these reasons this versatile adhesive offers advantages in complex assembly applications.

The family of R/flex flexible circuit materials is manufactured under rigorous process control. Process capabilities are continuously monitored for all critical properties. Our manufacturing process assures that R/flex circuit materials are as consistent from lot-to-lot as they are from roll-to-roll and within a roll.

Product Features

- Excellent adhesion to a variety of materials, giving improved performance in demanding applications
- Resistant to many common solvents and other chemicals for greater process latitude
- SPC manufacturing assures minimum variability and maximum lot-to-lot uniformity
- Adhesive available in rolls

Available Configurations:

Many available configurations are not standard. Please check with your Rogers Representative.

Free Film Adhesive

R/flex 1500 adhesive film is supplied with release liner on each side, and it may be punched or die cut.

Thickness: 1 or 2 mil (25 or 50 µm)
(other thicknesses available upon special request)

Carrier film: polyester, polypropylene, coated paper

Release film: polyester, polypropylene, coated paper

Sizes:

Available in rolls 12 and 24 inches wide
(304.8mm and 609.6mm)
(other widths available upon special request)

Storage

R/flex 1500 assembly adhesive film is a B-staged adhesive system which will retain its original properties for a minimum of one year at ambient temperature (~75°F or 24°C) when kept in its original packaging. It is recommended that this adhesive be stored in a clean and dry area.

Applicable Specification

Bonding Films: IPC-4203/22

Typical Values

R/flex® 1500 Assembly Adhesive

Adhesive Type: Thermosetting Modified Acrylic

Property	Units	Value	Test Method
Peel Strength			
Kapton®/adhesive/Kapton	lb./in.	>8	IPC- TM-650 2.4.9
Kapton/adhesive/ treated copper		>8	
Kapton/adhesive/anodized aluminum		>8	
Kapton/adhesive/Ultem®		>5	
Bond Retention after thermal aging			
Bond after 10 days at 150°C	lb./in.	>8	
Solder Float, method B			
550°F (288°C) for 10 seconds	-	PASS	IPC-TM-650, 2.4.13
Outgassing			
Kapton/adhesive (cured)	% wt. loss	<1	ASTM E-595-77
Glass transition temperature	-	40°C	DMA
Limiting Oxygen Index	%	28	
Chemical Resistance			
Isopropanol	%	>90	IPC-TM-650, 2.3.2.A
Toluene		>90	
MEK		>90	
Chlorinated solvents		>90	
Freon® TMS		>90	
2N HC1		>90	
2N NaOH		>90	

Typical values are a representation of an average value for the population of the property. For specification values contact Rogers Corporation.

Recommended Laminating Conditions

____***Heat Tack Cycle***

1) Remove release film (1.4 mil) and heat tack or transfer laminate (see step 2) to stiffener or circuit.
2) Laminate at 265 to 285°F (130 to 140°C) 30 to 90 seconds at 100 psi (minimum).
3) Remove carrier film (1.4 mil) and apply. Repeat step 2 using 300 to 375°F (149 to 190°C). Higher pressure may be necessary for the adhesive to conform to circuit topography. 100 psi is the recommended minimum pressure.
4) For complete cure, and to obtain maximum bond strength, post-bake at 300 to 375°F (149 to 190°C) for 1 to 4 hours.

____***Full Lamination Cycle***

1) Remove release film (1.4 mil) and attach exposed adhesive to device.
2) Remove carrier film (1.4 mil) and attach stiffener to adhesive.
3) Laminate at 365 to 390°F (185 to 200°C) 45 to 60 minutes at 100 psi minimum.

The information in this data sheet is intended to assist you in designing with Rogers'circuit materials. It is not intended to and does not create any warranties express or implied, including any warranty of merchantability or fitness for a particular application. The user should determine the suitability of Rogers'circuit materials for each application.

The world runs better with Rogers. and the Rogers' logo are licensed trademarks of Rogers Corporation
R/flex is a licensed trademark of Rogers Corporation
Kapton and Freon are registered trademarks of DuPont
© 1997, 2002, 2008 Rogers Corporation, Printed in U.S.A.
Revised 12/2008, 0838-1208-.5-CC, **Publication# 14-006**