

18027 Bishop Avenue
Carson, CA 90746-4019
Phone: (800) 374-3872
Fax: (310) 202-7247
www.evroberts.com



TECHNICAL DATA SHEET
RF 5407
LIQUID EPOXY RESIN

Description

RF 5407 is an easy-to-use, aluminum oxide filled, liquid epoxy resin with excellent electrical insulation properties and high thermal conductivity. RF 5407 can be cured with nearly any hardener to produce a wide range of properties and cure cycles. Several potential curing agents are listed below. Regardless of which curing agent is selected, the resultant plastic will have low shrinkage during cure, excellent thermal stability and conductivity, and be a strong and durable casting.

Because the filler in RF 5407 is a high specific gravity material, it will tend to settle over time. Be sure to mix the RF 5407 at least once during a day when the material is being used. If mixing is difficult, the RF 5407 can be warmed to as high as 150°F. RF 5407 is natural in color and may vary from white to slightly yellow or light grey. Pigments can be added by request. Example pigment colors include white, carbon black, and electrical grade black. A reduced settling version, RF 5407 AS, is available.

Handling Properties, Typical

Property	RF 5407
Mix Ratio: by Weight by Volume	See below
Color	Natural (off white) White Black
Viscosity @ 77°F (25°C), cps	90,000 – 180,000
Viscosity @ 150°F (65°C), cps	2,000 – 4,000
Specific Gravity @ 77°F (25°C)	2.15 – 2.20
Cure Schedule	Various

Physical Properties, Typical Cured Performance

RF 9 Curing Agent

Mix Ratio: 100:9

Pot Life: 30-45 minutes

RF 9 is an accelerated polyamide hardener for general purpose potting.

** Property	Test Method	Unit	Value
Al-Al Lap Shear	ASTM D1002	psi	2400
DSC Tg	ASTM E1356	°C	84
DSC Tg (93°C Post Cure)		°C	98
CTE (below Tg)	ASTM E831	ppm/°C	42
CTE (above Tg)		ppm/°C	110
Thermal Conductivity		W/(m·K)	1.67
Volume Resistivity	ASTM D257	Ohm-cm	

**** Cure:** 3-5 days at ambient temperature

Physical Properties, Typical Cured Performance

RF 14 Curing Agent

Mix Ratio: 100:5

Pot Life: 20-30 minutes

RF 14 is a standard polyamine with reduced vapor pressure. It gives castings with intermediate Tg and excellent chemical resistance.

** Property	Test Method	Unit	Value
Al-Al Lap Shear	ASTM D1002	psi	
DSC Tg	ASTM E1356	°C	84
DSC Tg (93°C Post Cure)		°C	108
CTE (below Tg)	ASTM E831	ppm/°C	38
CTE (above Tg)		ppm/°C	96
Volume Resistivity	ASTM D257	Ohm-cm	

**** Cure:** 3-5 days at ambient temperature

Physical Properties, Typical Cured Performance

RF 24 Curing Agent

Mix Ratio: 100:10.5

Pot Life: 5-6 hours

RF 24 is a long pot life cycloaliphatic hardener for high temperature potting. It is an excellent substitute for aromatic hardeners and can generate Tg's in excess of 150°C with post cure.

** Property	Test Method	Unit	Value
Al-Al Lap Shear (@ 25°C)	ASTM D1002	psi	2600
Lap Shear, PA66, Plasma Treat		psi	1200
DMA Tg – Onset	ASTM E1640-13	°C	134
DMA Tg – Tan δ		°C	157
Moisture Resistance (1000 hr.)	85°C/85RH	%	0.03
CTE – Bellow Tg	ASTM E831	ppm/°C	44
CTE – Above Tg		ppm/°C	130
Thermal Conductivity		W/(m·K)	
Volume Resistivity	ASTM D257	Ohm-cm	1.6x10E15
Dielectric Strength	ASTM D149	V/mil	>400
Dielectric Constant @ 1 MHz	ASTM D150		5.09
Dissipation Factor @ 1 MHz	ASTM D150		.022
Burn Test - Horizontal	UL 94	HB 0	Pass*

- ** **Cure:** 30 minutes at 82°C plus 2 hours at 121°C
- * For indication only. Product is not certified.

Physical Properties, Typical Cured Performance

RF 35 Curing Agent

Mix Ratio: 100:14

Pot Life: 6-8 hours

RF 35 is a trifunctional polyglycol amine. It offers excellent thermal shock resistance with higher Tg than RF 612.

** Property	Test Method	Unit	Value
Al-Al Lap Shear	ASTM D1002	psi	2400
DSC Tg	ASTM E1356	°C	73
CTE (below Tg)	ASTM E831	ppm/°C	40
CTE (above Tg)		ppm/°C	137
Volume Resistivity	ASTM D257	Ohm-cm	

- ** **Cure:** 4 hours at 82°C

Physical Properties, Typical Cured Performance

RF 61 Curing Agent

Mix Ratio: 100:17-34

Pot Life: 1-2 hours

RF 61 is a standard low viscosity polyamide hardener for general purpose potting. It offers good adhesion to a wide variety of substrates, excellent mechanical properties and flexible mix ratio.

** Property	Test Method	Unit	Value
Al-Al Lap Shear	ASTM D1002	psi	2600
DSC Tg	ASTM E1356	°C	52
DSC Tg (60°C Post Cure)		°C	70
CTE (below Tg)	ASTM E831	ppm/°C	44
CTE (above Tg)		ppm/°C	143
Volume Resistivity	ASTM D257	Ohm-cm	

**** Cure:** 3-5 days at ambient temperature

Physical Properties, Typical Cured Performance

RF 612 Curing Agent

Mix Ratio: 100:10

Pot Life: 60-90 minutes

RF 612 is a polyglycol amine that offers outstanding electrical properties and thermal shock resistance in combination with low viscosity.

** Property	Test Method	Unit	Value
Al-Al Lap Shear	ASTM D1002	psi	3000
DSC Tg	ASTM E1356	°C	70
CTE (below Tg)	ASTM E831	ppm/°C	47
CTE (above Tg)		ppm/°C	139
Volume Resistivity	ASTM D257	Ohm-cm	

**** Cure:** 3-5 days at ambient temperature

SAFETY INFORMATION: See Materials Safety Data Sheet for RF 5407 for proper storage and handling.

Notice to Buyer: Exclusion of Warranties and Limitation of Liability

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