

RCGA-PE68 – Polyurethane Encapsulation and Potting Resin for Junction Boxes and Enclosures

Junction boxes and enclosures are designed to provide protection for the electrical components and connections from environmental stresses and contaminants. They are expected to preserve the long-term electrical performance integrity of the module and prevent tampering with the connections and electronics inside.

Constant environmental stresses may lead to junction box failure over time. Outdoor exposure to variable weather conditions can lead to water penetration of the box, moisture-vapor permeation across seals, moisture condensation onto the connections in the box and soluble salt in the moisture vapor can deposit onto the connectors thus causing corrosion and electrical failure. No matter where or how the degradation or damages to a junction box occurs, the end results are the same – uncertainty and a down system.

RCGA-PE68 potting and encapsulation resin belonging to the RCGA family of 2-component polyurethane resin provides an excellent solution to the above problems. It protects the electrical connections from premature failure by covering them with a solid rubberized texture resin encapsulation preventing moisture intrusion. The resin also keeps dusts, salts and moisture away from the connections. It also provides excellent mechanical protection from impact stresses and unwanted human tampering with the connections and components.

Product General Characteristics

Voltage Level:

0.6/1KV (AC), 0.6/1.5KV (DC)
3.6kV (AC)
6 KV (AC) – under certain conditions

Applications:

Indoor
Outdoor
Underground
Underwater

Features:

Easy-of-use, (mix and pour)
Good adhesion to metal, rubber and polymer
Resistant to UV-radiation, alkaline earth, salt and chemical agents
High impact stress resistant
Fast curing time
Immediate operation.

Specifications:

Tested and Certified to:
BS 7933-1:2007, HD 631.1.S1:2007
Conforms to: BS EN 50393:2006, CELENEC HD 623
Flame Retardant to: UL 94 criteria point V0 with RCGA-B-PE68 Resin



Polyurethane Resin Material

Radiform offers a varieties of polyurethane cast resin material suitable for filling of cable splicing joints for power cables up to 10KV, control instrumentation cables, signal cables and communication cables. The same resin material can also be used for potting and encapsulation of junction boxes and enclosures of electrical connections and components. All resins are halogen free and RoHs compliance.

RCGA – Soft-elastic 2-component polyurethane rein designed for application in filling of cable splicing joints of electrical power cable up to 10KV, and as well as for communication, instrumentation and signal cables. The resin has a high resistance to ultra-violet rays is suitable for out-door above ground applications with direct constant exposure to sunlight. It high resistance to impact stress, alkaline earth, salt and chemical agents make it excellent for used in under ground and water installations. This family of resin is also highly suitable for potting and encapsulation of electrical components, connections and unction boxes.

The resin is type-tested and certified to confirm to BS 7933-1:2007, HD 631.1.S1: 2007 standard and is used in our standard cable splicing joints for application up to 0.6/1.0KV (AC) and 0.6/1.5KV (DC).

Basic Product Properties:

Properties	Units	Value
Gel time	Minutes	14
Hardness	Shore D	45
Tensile Strength	N/mm ²	> 4.0
Water absorption (30 days/23°C)	%	< 1.0
Aging (weight loss) 28 days/120°C	%	< 1.0
Dielectric Strength	KV/mm	>20
Temperature Resistance	°C	-25 to +120

RCGA-B - polyurethane cast resin is a flame retardant soft-elastic 2-component cast resin compound suitable for filling of cable splicing joints of electrical power cable up to 1KV (AC)/1.5KV (DC), as well as for control, communication, instrumentation and signal cables in fire hazardous environment. RCGA-B grade of resin are used in our cable splicing joints where flame retardant is required. The product flame-retardant conforms to UL94, criteria point V0. It is also suitable for potting and encapsulation of electrical and electronic components, and junction boxes where flame retardant is required.

Basic Product Properties:

Properties	Units	Value
Gel time	Minutes	15
Hardness	Shore D	40
Tensile Strength	N/mm ²	6.0
Water absorption (30 days/23°C)	%	< 1.0
Aging (weight loss) 28 days/120°C	%	< 1.0
Dielectric Strength	KV/mm	>20
Flammability	UL 94	V-0 @ 3mm
Temperature Resistance	°C	-25 to +120

Polyurethane Resin Packs

Radiform offers 2-component polyurethane resin packed in two-chamber mixing bag and in vacuumed packed tins for easy field and production floor application.

The airtight and moisture proof bag provides excellent protection for the resin from contamination and extend its shelf life.

The separator clip separating the activator and the resin provides easy and clean mixing. The transparent poly-bag which store the material provides good visual when mixing the resin and activator; ensuring the material are well mixed before application.



Packing Dimensions:

Content ML	Part Number RCGA Resin For Joint Box	Part Number RCGA-B Resin For Joint Box	Part Number RCGA-PE68 for Potting & Encapsulation	Part Number RCGA-B-PE68 for Potting & Encapsulation	Nominal Shelf-life in Room Temp <35 deg C
100	RCGA-100	RCGA-B-100	RCGA-PE68-100	RCGA-B-PE68-100	18 months
170	RCGA-170	RCGA-B-170	RCGA-PE68-170	RCGA-B-PE68-170	18 months
200	RCGA-200	RCGA-B-200	RCGA-PE68-200	RCGA-B-PE68-200	18 months
350	RCGA-350	RCGA-B-350	RCGA-PE68-350	RCGA-B-PE68-350	18 months
470	RCGA-1000	RCGA-B-1000	RCGA-PE68-1000	RCGA-B-PE68-1000	18 months
1000	RCGA-1000	RCGA-B-1000	RCGA-PE68-1000	RCGA-B-PE68-1000	18 months
1200	RCGA-2000	RCGA-B-1200	RCGA-PE68-1200	RCGA-B-PE68-1200	18 months
1500	RCGA-1500	RCGA-B-1500	RCGA-PE68-5000	RCGA-B-PE68-1500	18 months

Polyurethane Resin (Bulk Pack)

The bulk pack resins are supplied in tins and the resin and activator should be mixed at room temperature for at least three minutes using a wide stirrer to avoid air entrapment for on site application. As for potting and encapsulation done in large quantities on production floor, it is recommended to use resin mixing and dosing equipment for efficient and reliable application.

Packing Dimensions:

Content Litre	Part Number RCGA Resin For Joint Box	Part Number RCGA-B Resin For Joint Box	Part Number RCGA-PE68 for Potting & Encapsulation	Part Number RCGA-B-PE68 for Potting & Encapsulation	Nominal Shelf-life in Room Temp <35 deg C
1.5	RCGA-1.5L	RCGA-B-1.5L	RCGA-PE68-1.5L	RCGA-B-PE68-1.5L	18 months
2	RCGA-2.0L	RCGA-B-2.0L	RCGA-PE68-2.0L	RCGA-B-PE68-2.0L	18 months
5	RCGA-5.0L	RCGA-B-5.0L	RCGA-PE68-5.0L	RCGA-B-PE68-5.0L	18 months
25	RCGA-25L	RCGA-B-25L	RCGA-PE68-25L	RCGA-B-PE68-25L	18 months

- Resin can be supplied in other quantities (standard 25 and/or 30 gallons drums)

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