

## Description

RDN-212 is a low-temperature curing epoxy resin system designed for tooling applications. It can be post-cured to produce high-performance tools capable of operating at elevated temperatures.

RDN-212 is ideal for tooling where low-cost master models or low CTE are required.

Typical initial cure cycles of 50 hours at 45°C or 18 hours at 60°C, followed by a post-cure of 2 hours at 200°C, deliver a maximum service temperature of tools up to 220°C.

## Features & Benefits

- ▶ 9 days out-life at 21°C
- ▶ 12 months storage at -18°C
- ▶ Low Initial cure temperatures from 45°C
- ▶ Low prepreg volatile content thanks to hot-melt (no solvent) resin formulation
- ▶ Service temperature up to 220°C after post-cure
- ▶ Excellent drape of prepregs
- ▶ Unsupported (free standing) post-cure

## Neat Resin & Matrix properties

Density: 1.189 g/cm<sup>3</sup>

Tack: High

Enthalpy: 250 J/g

Cured T<sub>g</sub> (DMA, following a 18h cure @60°C + 2h post-cure @200°C):

- ✓ T<sub>g, Onset</sub> 235°C
- ✓ T<sub>g, Peak</sub> 254°C

## Cure Cycles & Properties

Ramp rate 0.5-1.5°C/minute during initial curing

Ramp rate 0.2-0.3°C/minute during post-cure

Cool down 3°C/minute to 60°C

Recommended initial cure cycle 18 hours at 60°C or 50 hours at 45°C

Recommended post-cure cycle 2 hours at 200°C

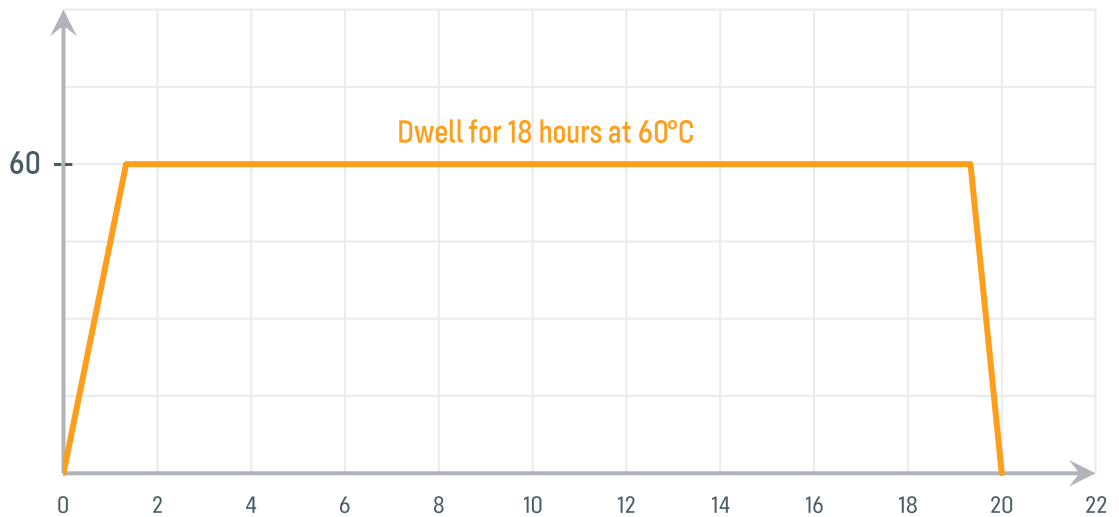
Other curing cycles available on request

	POSSIBLE CURE CYCLES <sup>(1)</sup>		
	45°C - 50h	60°C - 18h	200°C - 2h Post-cure (Free standing)
<b>T<sub>g</sub> dry</b> °C (DSC)	58	75	-
<b>T<sub>g</sub> dry, Peak</b> °C (DMA)	-	-	235
<b>T<sub>g</sub> dry, Onset</b> °C (DMA)	-	-	254

(1) Temperature must be measured by the lagging thermocouple attached to the part.

## Initial 60°C cure schedule

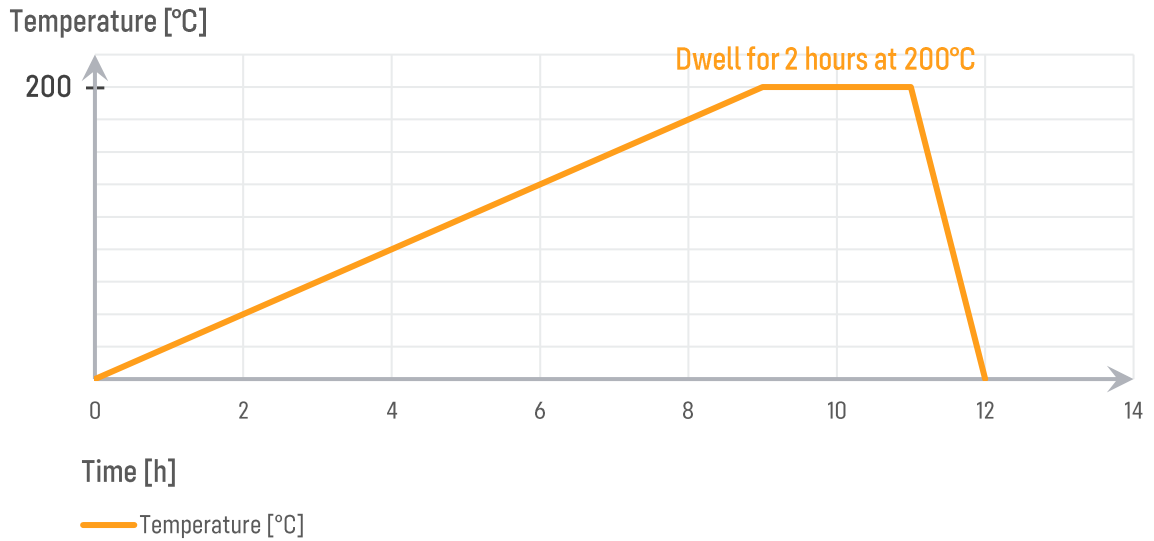
Temperature [°C]



Time [h]

— Temperature [°C]

## Post-cure schedule



## AVAILABILITY

RDN-212 is available as a glass or carbon fabric prepregs.

- Carbon Fabrics:
  - Surface ply – 200 gsm 2x2 Twill
  - Bulk ply – 630 gsm 2x2 Twill
  
- Glass Fabrics:
  - Surface ply – 300 gsm 8H-Satin
  - Bulk ply – 870 gsm 2x2 Twill

Other reinforcements (fabrics and multiaxials) available on request.

## STORAGE

Out life at 21°C – 9 days <sup>(2)</sup>

Storage at -18°C – 12 months <sup>(3)</sup>

Handling: Prepregs must be kept sealed in a polythene bag which must not be opened until thawed to room temperature.

Safety: Refer to Material Safety Data Sheet (MSDS) for complete handling instructions

(2) Accumulated time out of the freezer before the part is cured

(3) Prepregs must be kept sealed in a polythene bag which must not be opened until thawed.

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