

Description

RDN-115 is a high performance hotmelt epoxy resin system optimized for cost-efficient manufacturing.

RDN-115 is engineered for automotive, sports and industrial applications.

RDN-115 is recommended for curing at 80 – 120°C at short cure cycles of 1 h to 6 h via Autoclave or Out-of-Autoclave curing.

Features & Benefits

- ▶ 60 days out life at 21°C
- ▶ 12 months storage at -18°C
- ▶ 80 to 120°C flexible curing cycle
- ▶ Up to 140°C dry Tg following 120°C cure
- ▶ Controlled flow of the resin

Neat Resin & Matrix properties

Density: 1.257 g/cm³

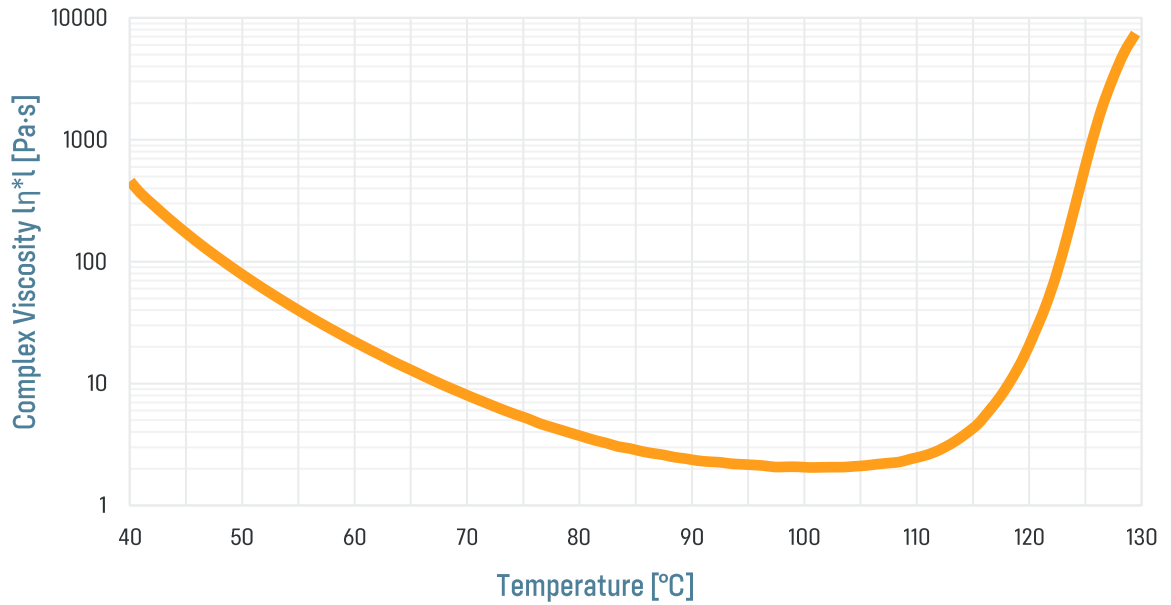
Tack: Moderate

Cured Tg (DMA, following a 1h cure @120°C):

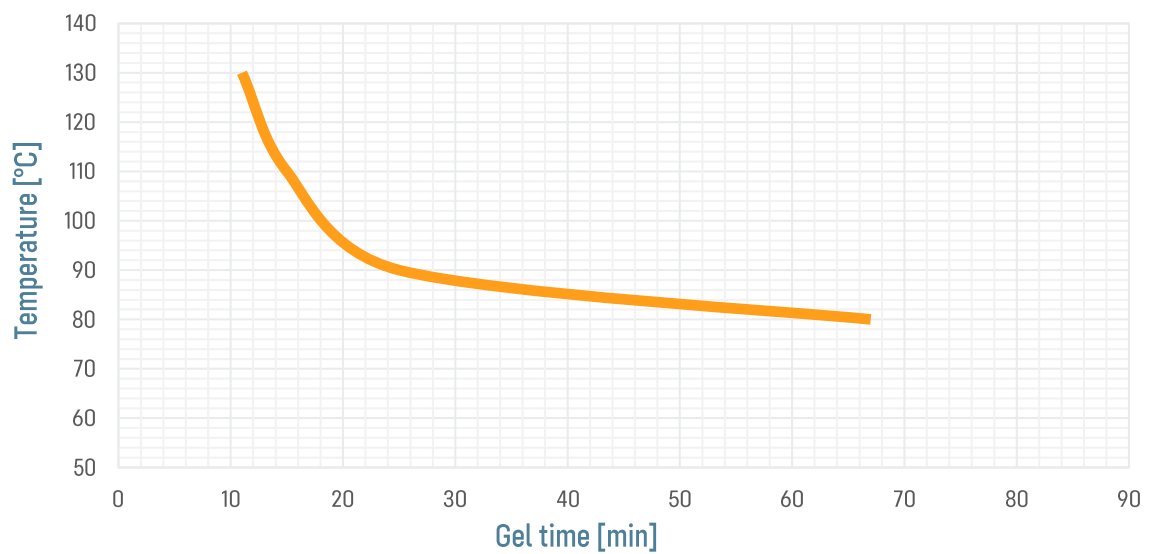
- ✓ T_{g, Onset} 126°C
- ✓ T_{g, Peak} 140°C

Viscosity profile

Dynamic Complex Viscosity of RDN-115 @ 2°C/min



Gel Time



Cure Cycles & Properties

	POSSIBLE CURE CYCLES ⁽¹⁾		
	120°C - 1 h	80°C - 4 h	80°C - 6 h
T_g dry, Onset °C (DMA)	126	80	90
T_g dry, Peak °C (DMA)	140	105	108

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

Recommended autoclave cure cycle

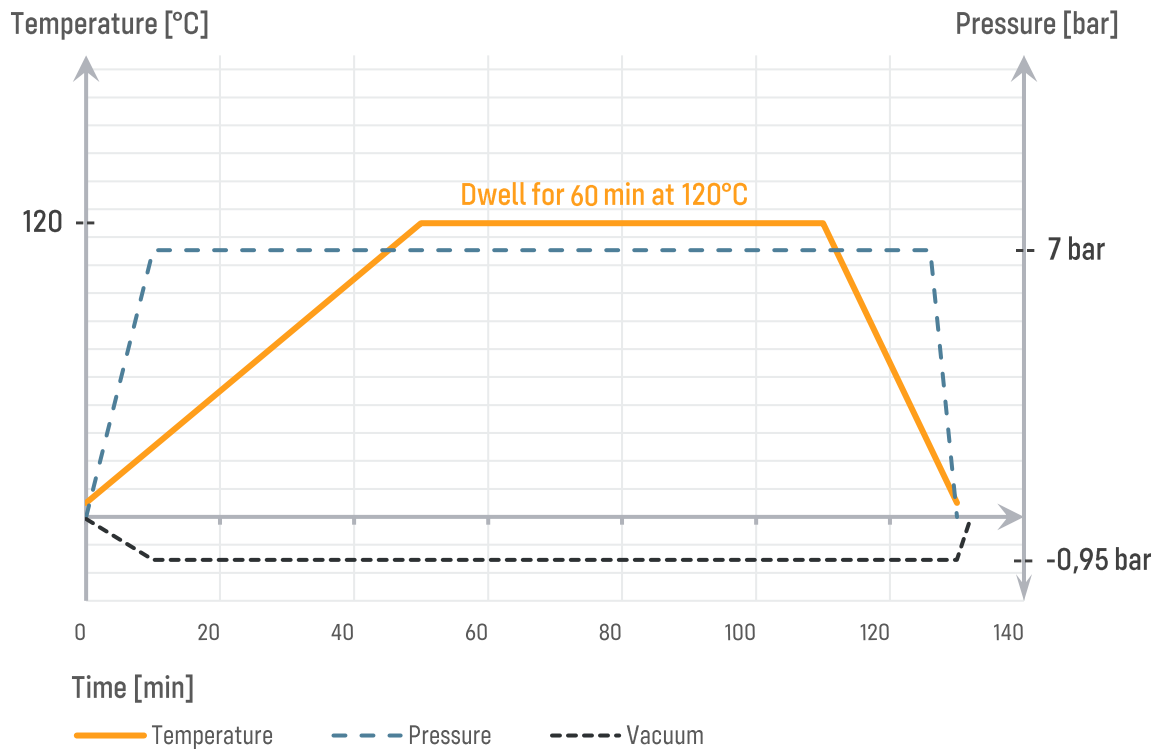
Vacuum bag pressure Minimum of 950mbar

Autoclave pressure 2-7 bar

Ramp rate 1 to 3°C/minute

Recommended cure cycle 60 minutes at 120°C

Cool-down Maximum of 5°C/minute to 60°C



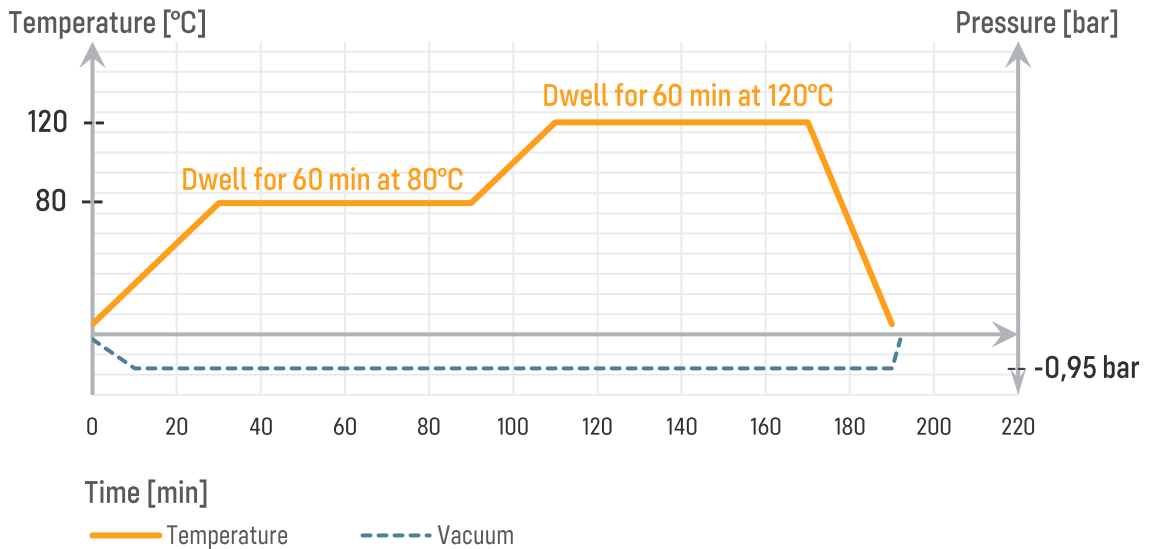
Recommended oven cure cycle

Vacuum bag pressure Minimum of 950mbar

Ramp rate 0.3 to 2°C/minute

Recommended cure cycle 60 minutes at 80°C + 60 minutes at 120°C

Cool down Maximum of 5°C/minute to 60°C



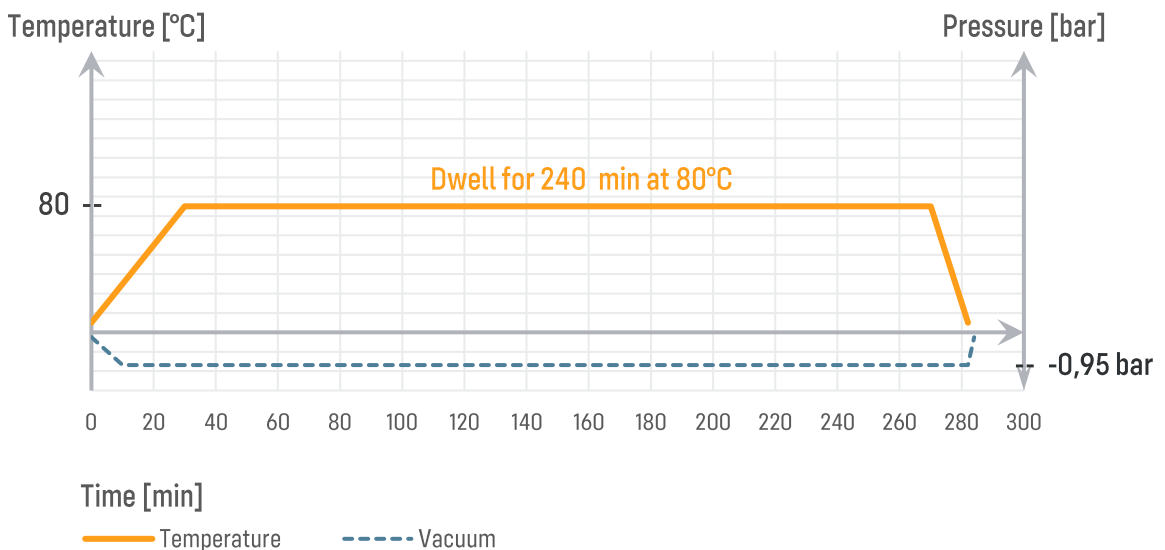
Alternative oven cure cycle

Vacuum bag pressure Minimum of 950mbar

Ramp rate 0.3 to 2°C/minute

Recommended cure cycle 240 minutes at 80°C

Cool down Maximum of 5°C/minute to 60°C



Post-cure

When curing at temperatures below 120°C, it is recommended to carry out post-curing to obtain maximum properties.

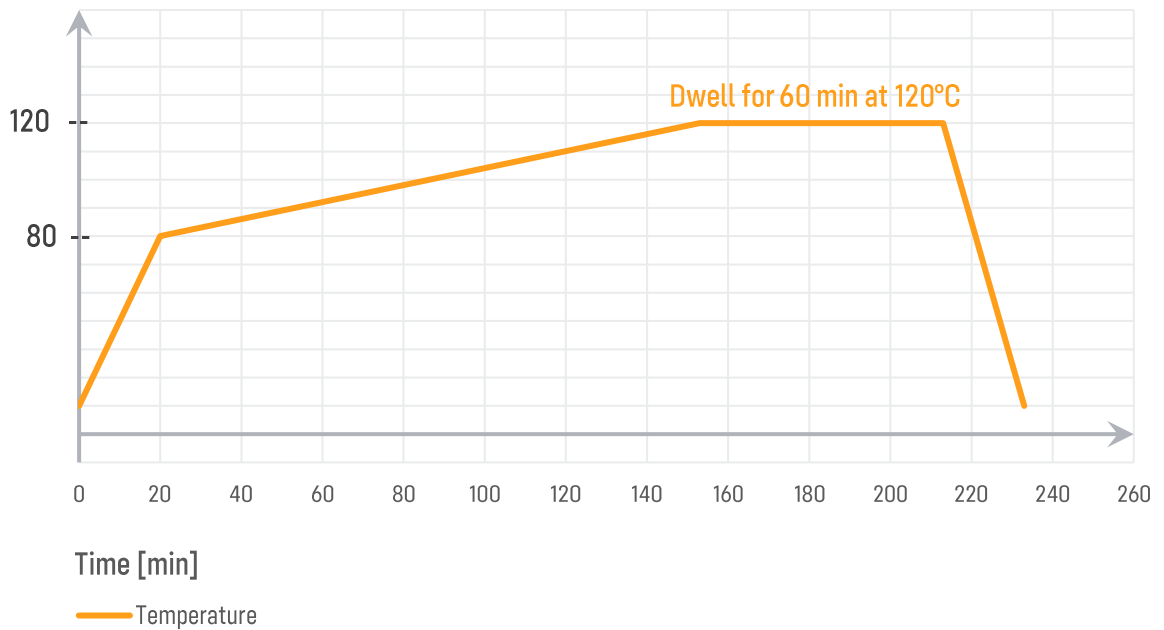
Heat the parts to the temperature at which the initial curing was carried out at a speed of no more than 3°C/minute.

Ramp rate 0.3°C/minute

Recommended cure cycle 60 minutes at 120°C

Cool down Maximum of 5°C/minute to 60°C

Temperature [°C]



Cured Woven Prepreg Properties

Physical Properties	Units	RDN-115.200TC
Weave/Fiber		Twill/200 gsm/ 3K-HS
Nominal Resin content	wt%	40
Theoretically Calculated Cured Ply Thickness	mm	0.225

Mechanical Properties

All tensile and compression data are normalized to $V_f = 55\%$

Cure Cycle: 60 min at 120°C; Pressure 5 bar (Autoclave)

Mechanical Properties	Units	Method	RDN-115.200TC
			RTD (23°C)
Glass Transition Temperature	°C	ASTM D7028	141/159
Tg Dry, DMA (Onset/Peak)			105/125
Tg Wet ⁽²⁾ DMA (Onset/Peak)			
Tensile strength [0°]	MPa	ASTM D3039	770
Tensile modulus [0°]	GPa		59
Compression strength [0°]	MPa	ASTM D6641	680
Compression modulus [0°]	GPa		61
In-plane Shear Strength	MPa	ASTM D3518	70
In-plane Shear Modulus	GPa		3.8
ILSS	MPa	ASTM D2344	75

(2) Wet – 14 days immersion in water at 70°C

AVAILABILITY

RDN-115 is available as a fabric prepreg or unidirectional prepreg:

- Based on glass or carbon fiber
- Based on UD and standard woven fabrics
- Based on lightweight fabrics with spread yarn
- Semipregs (prepregs impregnated on one side) for vacuum molding

STORAGE

Out life at 21°C – 60 days ⁽³⁾

Storage at -18°C – 12 months ⁽⁴⁾

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

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

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

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