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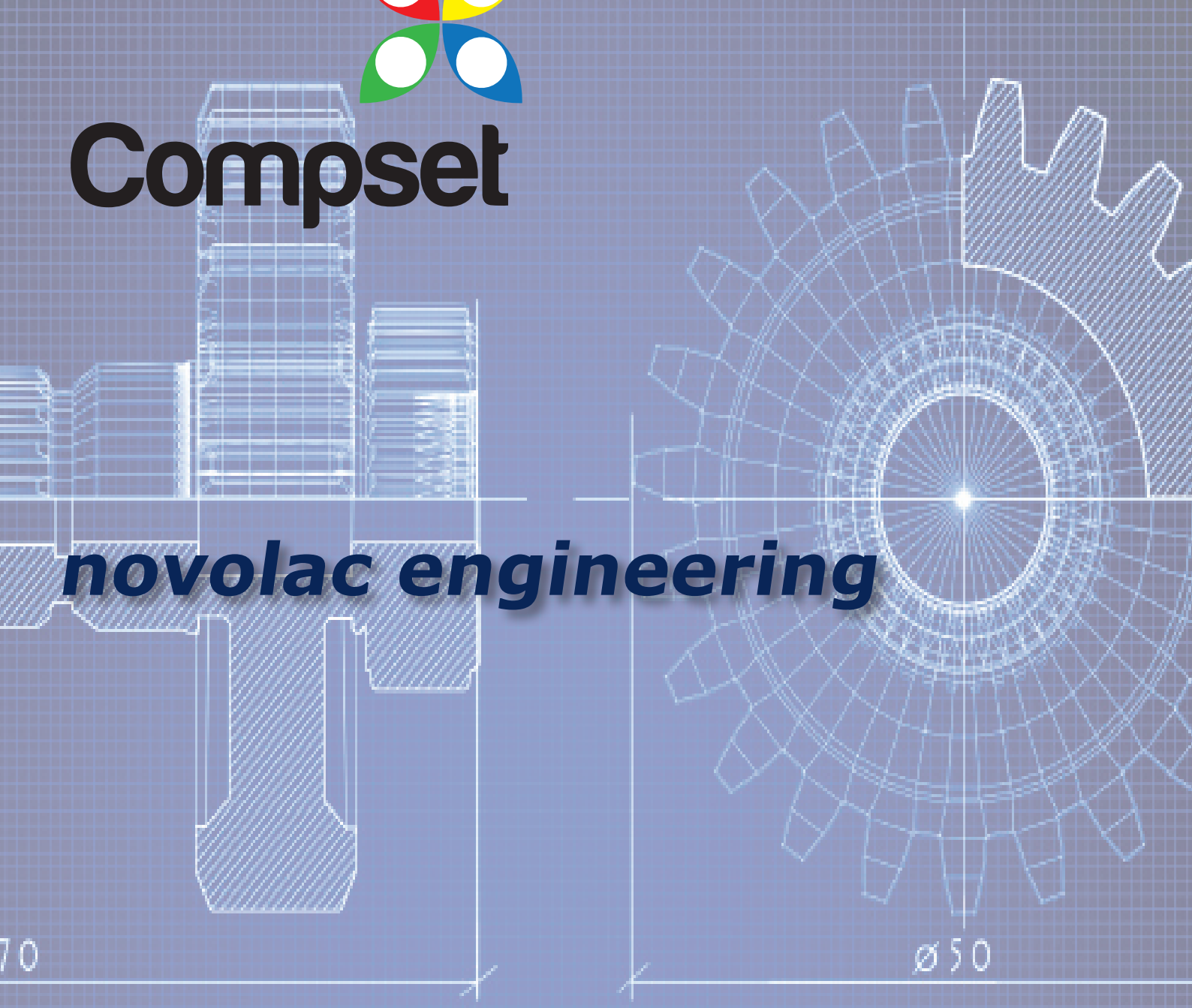
novolac engineering



R7 novolac epoxy system

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Compset Novolac R7 epoxy composite engineering resin

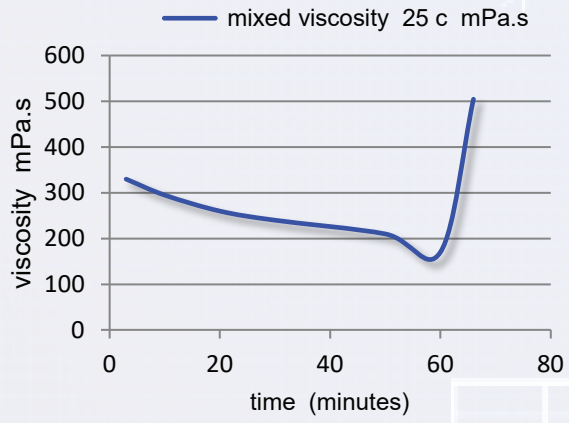
Compset Novolac R7 infusion series is an ultra low viscosity Novolac Epoxy Resin system designed for molding process. Low viscosity and surface tension of the system enables both fast and safe wet out of the composite combined with a capillary action.

As the resin system contains no unreactive diluents or plasticisers, high mechanical properties are obtained. The system exhibits the renown properties associated with novolac resins of high heat resistance and mechanical strength.

This system is used for the manufacture of large composite molds for RTM and VARTM systems. It is also suitable for 120°c Pre-preg molding.

application data

Hardener Grade	H28 Hardener Standard	H33 Hardener Slow
Mixing ratio weight Resin : Hardener	100 parts : 28 parts	100 parts : 33 Parts
Mixed Viscosity mPa.s 25°c	300	300



Significant changes in pot life occur with varying volumes and temperature. When difficult laminations are encountered, smaller mixers may be required. Laminate design including fibre type and content, core size and thickness will significantly influence pot life.

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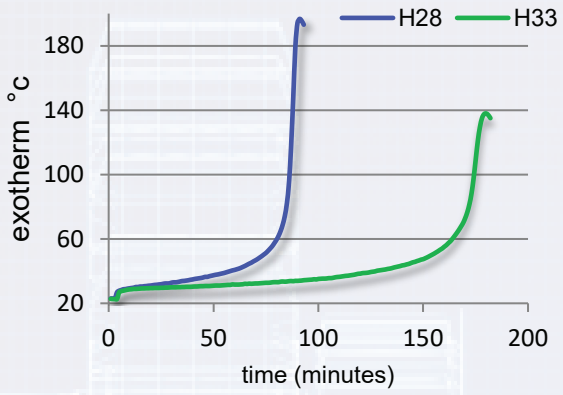
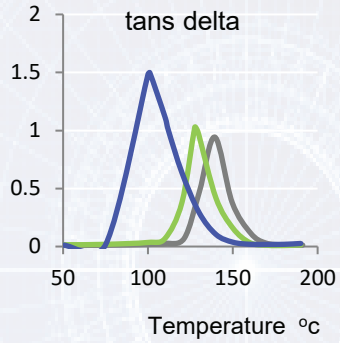
curing data

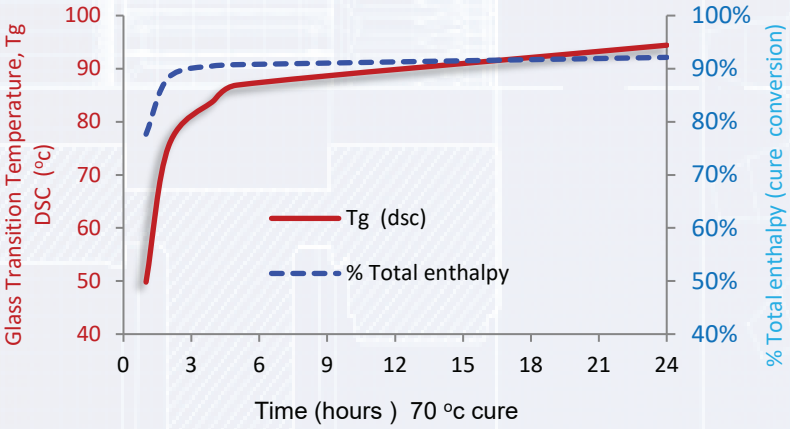
Pot life exotherm 1 kilo mix (water bath)

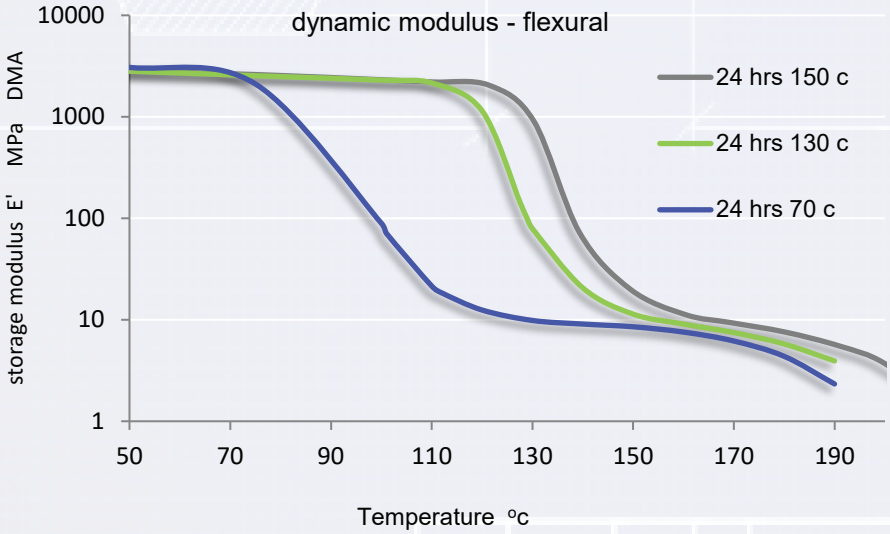


Reactivity

Dynamic	25-200c Jg^-1	514 Jg^{-1}
Dynamic	Tg PI	113 °c







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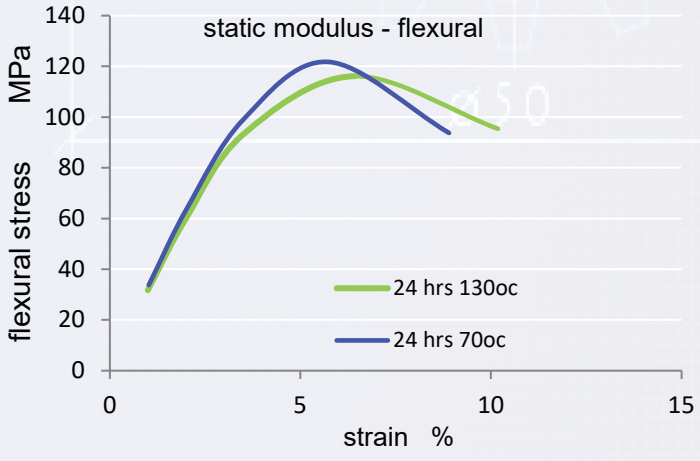
engineering data

Post – Cured Properties		24 hrs 70 °c	24 hrs 130 °c	24 hrs 150 °c
Tg	DSC first pass °c	94	118	123
	ultimate (200 c pass II)	115	119	124
Enthalpy	ΔR Jg^-1	10	0	0
	ΔH Jg^-1	40	0	0
E_f	Modulus MPa Δ 0.035 - 0.020	2370	2100	2420
Flex σ_{fM}	Max Flex strength MPa	122	116	123
Flex ε_{fM}	strain at Flex σ_{fM} %	5.7	6.3	6.6
Flex σ_{fC}	stress MPa conv point 3.5%	99	93	95
Flex σ_{fB}	Ultimate strength MPa	94	95	112
Flex ε_{fB}	strain at Flex σ_{fB} %	9.8	9.9	9.4
Tan α	°c max	112	126	135
Tan δ	°c max	101	128	139

Referenced test methods

Viscosity	ISO 2555
Epoxy Equivalent weight	ISO 3001
Determination of amine nitrogen content	ISO 9702
Reactivity dynamic	ISO 11357-5
Tg	ISO 111357-3
Tg Enthalpy	ISO 111357-5
Flexural Properties	ISO 178
Tensile Properties	ISO 527
Heat Deflection Temperature	ISO 75
Compressive Properties	ASTM D695
Dynamic Mechanical Properties	ASTM D5418
DMA flexural vibration	ISO 6721
DMA shear	ISO 6721



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