

# VESTALITE® S 101

(PRELIMINARY)

## GENERAL DESCRIPTION

VESTALITE® S 101 is a curing agent for epoxy resin matrix designed for SMC applications. Systems using VESTALITE® S 101 have a low initial viscosity during compounding, allowing excellent fiber wetting, high fiber volume fraction and efficient processing. The high reactivity of the hardener allows fast curing in about 4 - 5 min at 150 °C.

## SPECIFICATION

Tab.1: Properties of the neat resin system

	Unit	VESTALITE® S 101	Standard Epoxy Resin (EEW ~ 188)
Appearance		Clear, transparent	Yellow, transparent
Density@25°C	g/cm <sup>3</sup>	0.91	1.16
Viscosity@25°C	mPa*s	< 50	~ 13,000
Mixing ratio	(m/m)	25.3	100
Initial viscosity@30°C	mPa*s		~ 1000
Curing time@150°C	min		4 - 5

## HANDLING AND PROCESSING

- We recommend to preheat the resin to 30°C for better processing.  
All other ingredients can be applied at room temperature
- Optional: Mix the internal release agent and the resin
- Mix the hardener and the resin
- The mixture can be processed for at least 30 min
- Produced SMC sheets will solidify after ~6-8 h. They are still meltable at 60-80°C.
- The sheets have to mature for at least 3 days at 25°C. The maturation time can be reduced by increasing the maturation temperature. After maturation the SMC matrix will show a Tg of 45-55°C
- The sheets are storage stable for at least 8 weeks

Tab.2: Molding conditions for SMC sheets

	Unit	Value
Molding pressure	bar	100 - 200
Molding temperature	°C	150
Mold coverage	%	50 - 80
Curing time	min	3 - 4

Fig. 1: Shrinkage behavior of neat resin (method: volume dilatometry)

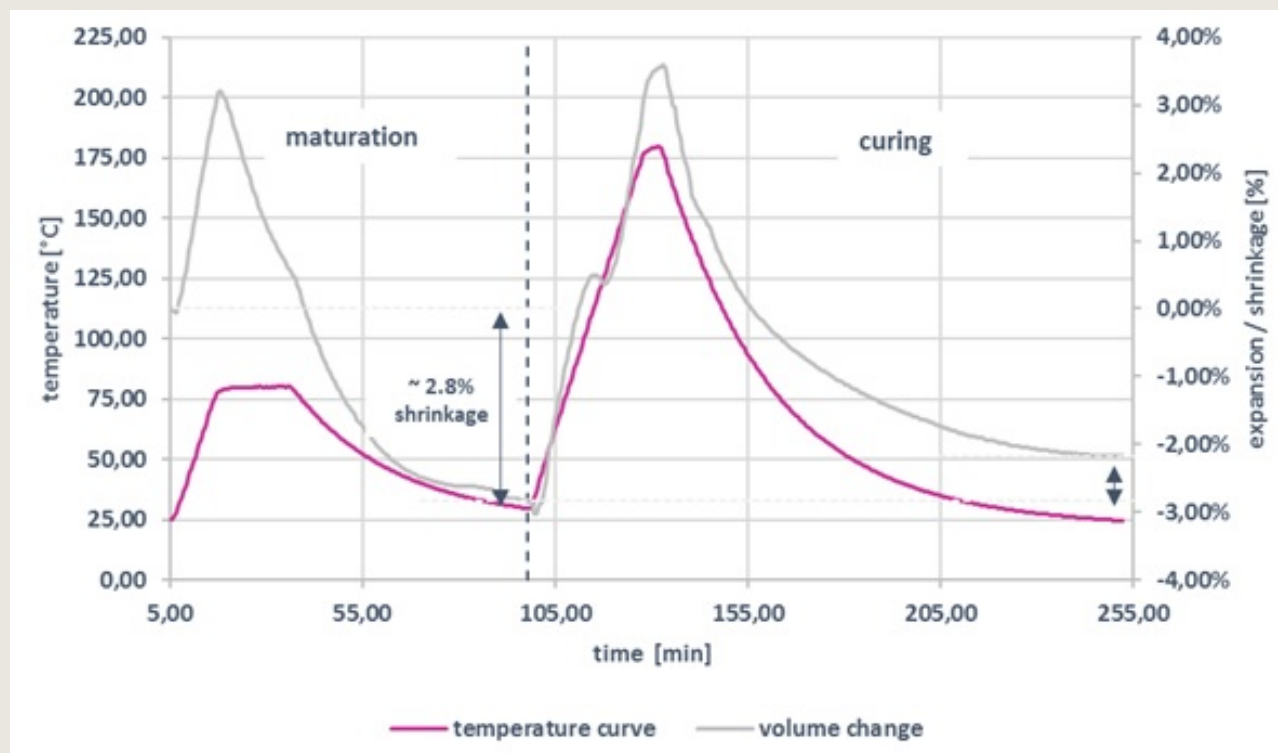
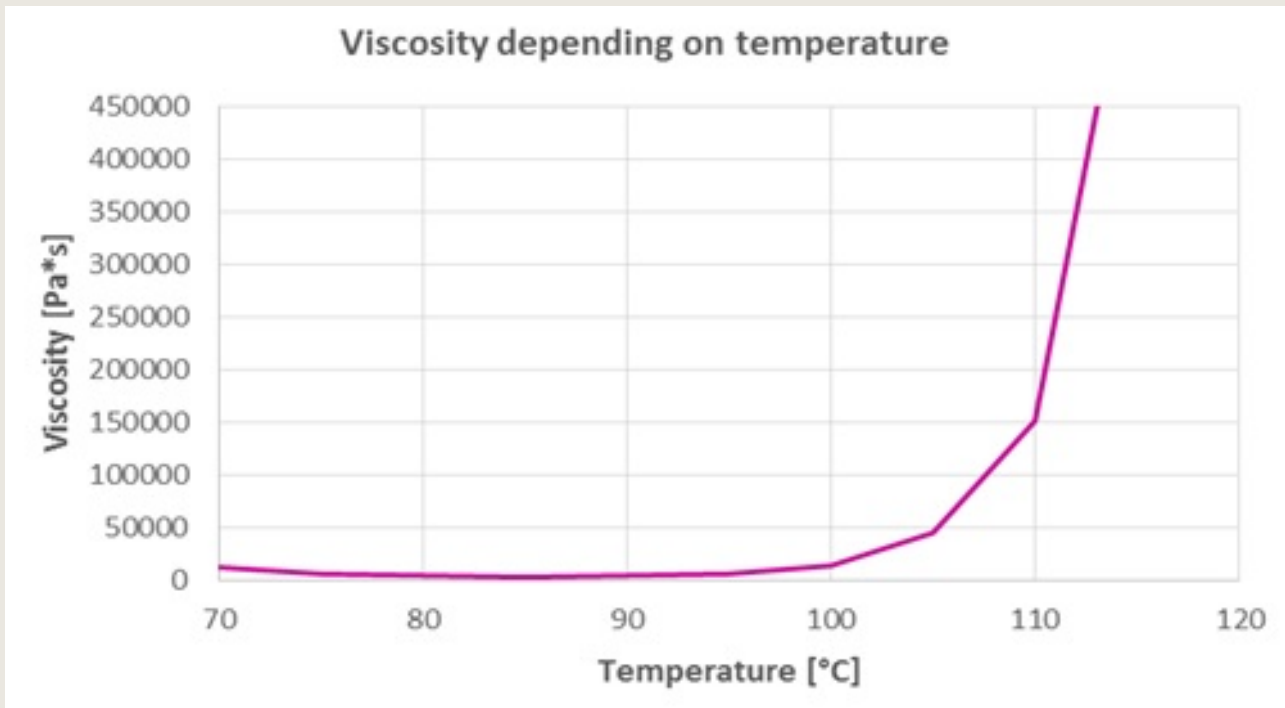


Fig. 2: Viscosity increase depending on temperature for matured SMC material



Tab. 3: Properties of cured neat resin system

	Unit	Value	Standard
Tensile modulus	MPa	2930	DIN EN ISO 527-2
Tensile stress at break	MPa	80	DIN EN ISO 527-2
Tensile strain at break	%	6	DIN EN ISO 527-2
Flexural modulus	MPa	2910	DIN EN ISO 178
Flexural strength	MPa	120	DIN EN ISO 178
Flexural strain at break	%	7	DIN EN ISO 178
Glass Transition temperature (Tg)	°C	120	DIN EN ISO 11357-2
Density	g/cm <sup>3</sup>	1.14	OECD 109

Tab. 4: Emission test of SMC panel

	Unit	Value	Standard
Volatile organic compounds	µg/g	9	PV 3341 / VDA 277

Marl, March 10, 2020; This data sheet replaces all former issues.

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