

## *Technical data sheet*

# Epoxy infusion System Hardener Polynt SIN B15 and Polynt SIN B17

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### Description:

**Polynt SIN B15 and Polynt SIN B17** are epoxy resin hardeners based on anhydride, specially formulated for resin infusion process at room temperature.

The hardener in combination with Bisphenol A epoxy resin modified with specific reactive diluent shows high fluidity and excellent wetting properties assuring high flowing also at low temperatures.

### Application:

Production of articles in composite material with medium/high performance, large structural components realized with mould injection, infusion or vacuum bagging technologies (eg: boat, windmill blades, etc.).

### Mixing and Handling:

Weight carefully hardener, Polynt SIN B15 or Polynt SIN B17 and epoxy resin in a 1/1 weight ratio. Hardener and resin must be homogeneously mixed by mechanical stirrer or appropriated equipment, avoiding air absorption to the final mixture.

Mix the system components only before utilization, as soon as the material is mixed the reaction begins.

System reactivity depends from the mixed product mass.

Large mass develops substantial reaction heat (exothermic reaction) increasing system reactivity, whereas small mass with greater thermal exchange reduces cross-linking speed.

Polynt SIN B15 and SIN B17 differ from each other for the different reactivity.

This property allows better management of required infusion time in relation to the size of the producing piece and working conditions (temperature).

The different types of hardeners, if required, can be blended to optimize the gel and curing time according to the requirements and timelines for processing requests.

The two products are perfectly compatible with each other.

To use a mix of two different hardeners you should weigh and mix the required amount of each in advance and then disperse the hardener mix in epoxy resin.  
Also in this case the resin/hardener ratio is 1/1 by weight.

## Curing

Post curing treatment is recommended to get system stability and generate optimum mechanical properties.

Suggested general post curing conditions: 10 – 15 hours @ 70°C (155 - 160 F)

## Components Characteristics

### Hardener Polynt SIN B15 and SIN B17

Characteristic	Unit	Value
Appearance		Liquid
Color		Dark green
Density @ 25°C	g/ml	1,20 – 1,21
Viscosity @ 15°C	mPa.s	200 – 230
Viscosity @ 20°C	mPa.s	130 – 160
Viscosity @ 25°C	mPa.s	90 – 120
Viscosity @ 30°C	mPa.s	70 - 90

## Epoxy resin

Epoxy resin Bisphenol A (EE 185-195) modified with specific bi-functional reactive diluent.

## System Characteristics

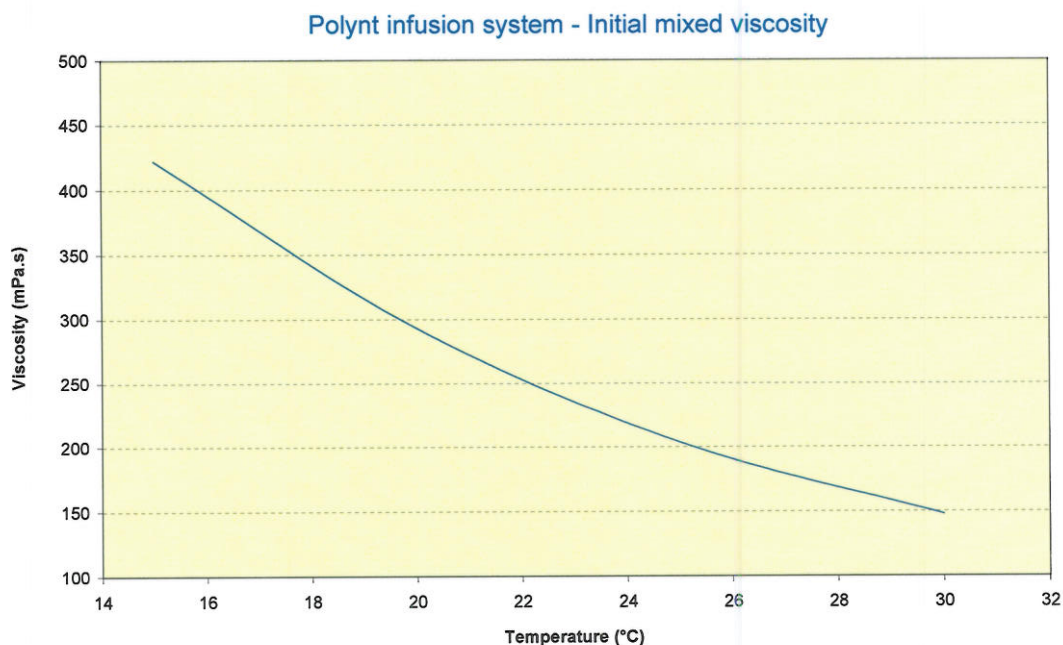
Standard System:

Hardener Polynt SIN B15 or SIN B17: 100 by weight

Epoxy resin Bisphenol A + Reactive diluent: 100 by weight

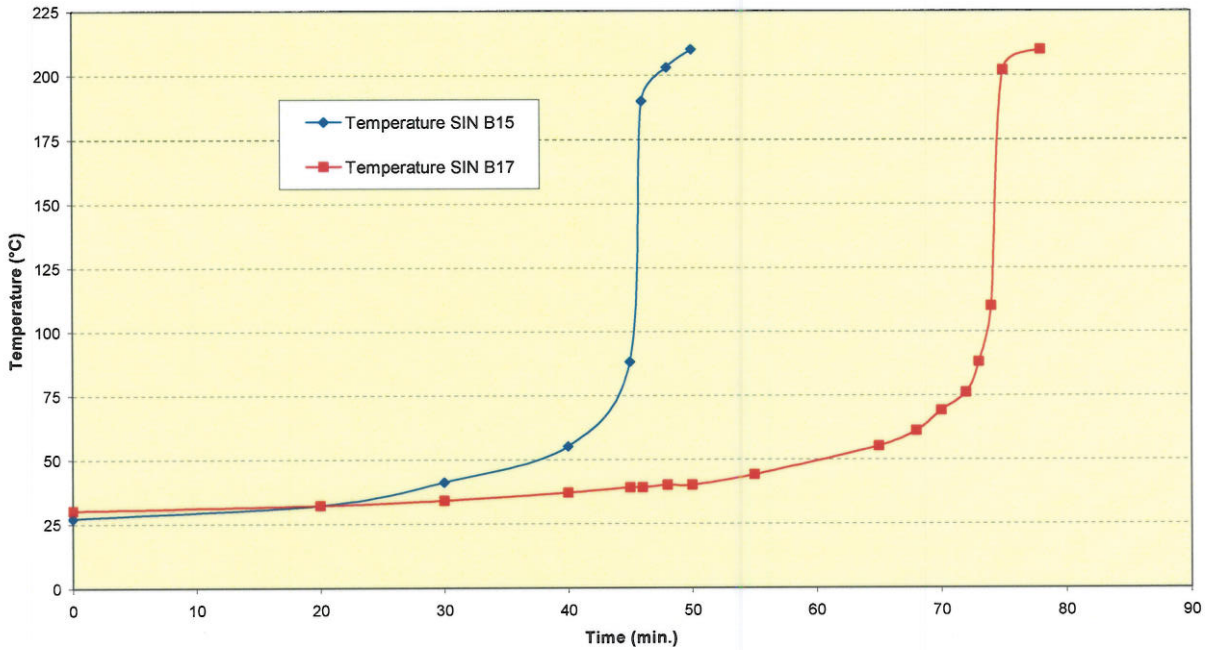
System properties can vary depending of epoxy resin component.

Characteristic	Unit	Value
Appearance		Liquid
Color		Dark green
Initial system viscosity @ 15°C	mPa.s	400 – 600
Initial system viscosity @ 20°C	mPa.s	250 – 450
Initial system viscosity @ 25°C	mPa.s	170 – 250
Initial system viscosity @ 30°C	mPa.s	120 – 200

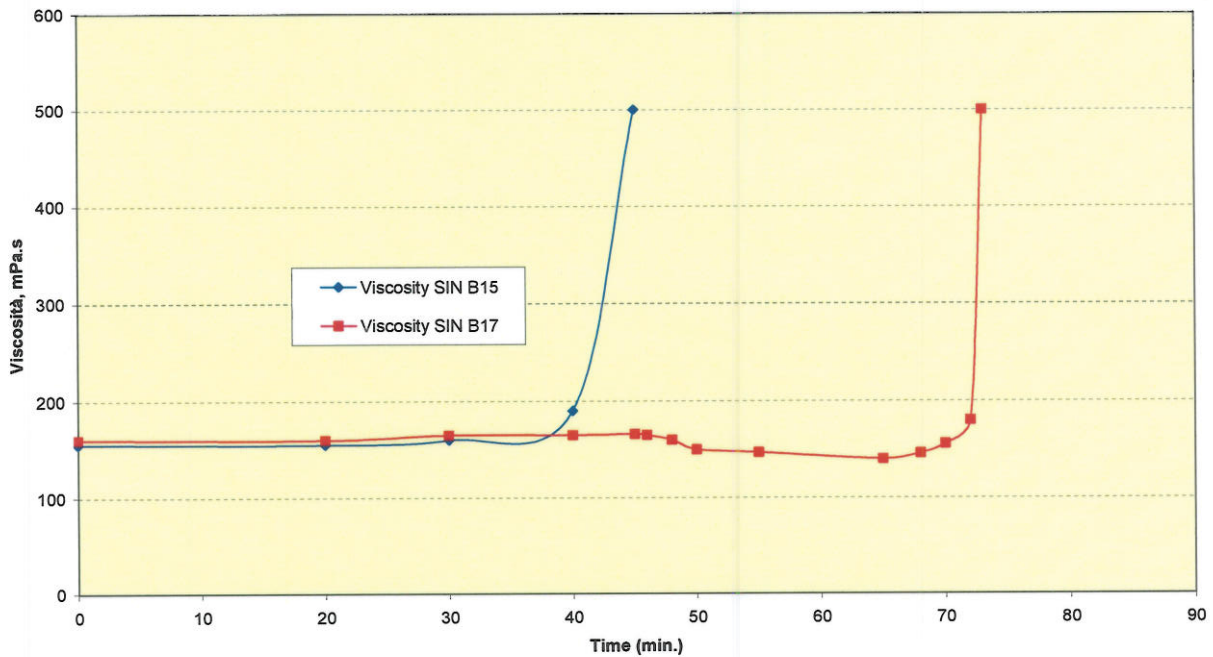


## System properties

Exothermal profile infusion system SIN B17 vs. SIN B15  
 Test mass 10 kg - Test temperature 28°C



Viscosity profile infusion system SIN B17 vs. SIN B15  
 Test mass 10 kg - Test temperature 28°C



## Cured Matrix System Mechanical Properties

**System:** Hardener Polynt SIN B15 or SIN B17+ Epoxy resin Bisphenol A + Reactive diluent.

**Mixing ratio hardener/resin:** 1/1 by weight

**Cure in the mould:** 4 h @ 40°C + 24 h @ ambient temperature.

**Post cure in the mould:** 15 h @ 90°C.

Cured Matrix Properties	
Tensile Strength, (MPa)	75
Elastic Modulus, (MPa)	2955
Elongation at break, (%)	6,0
Flexural strength, (MPa)	122
Flexural Modulus, (MPa)	2950
Elongation at max. load, (%)	6,2
Glass Transition, (DSC), °C	98
HDT (C°)	94
ΔH, (J/g)	7,2
Barcol Hardness	34

## Handling and storage

**Packaging:** Steel painted drums.

**Storage:** Store away from open flames and other potential ignition sources.  
Protect from moisture, store at temperature below 30°C (86 F)

**Shelf life:** 6 months from production date.

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