

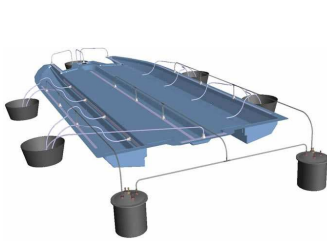


RESOLTECH HTG 160

Hardener HTG 165

High TG Structural Infusion Epoxy Systems

- High T_g 160°C
- Low viscosity and high wetting out properties
- High interlaminar & impact resistance properties



RESOLTECH HTG 160 / HTG 165 epoxy system is very high TG infusion resin specially formulated for the production of tooling and large structural composites parts requiring TG's and service temperatures up to 160°C.

This new generation system, optimized with **low viscosity, high wetting properties and excellent air release**, is suitable for the manufacture of large structures and composite parts by wet lay-up, infusion, injection moulding or filament winding while guaranteeing low toxicity working conditions to the users. The stable low viscosity vs temperature makes of the HTG 160 system a prime choice for infusion process.

This system guarantees **high inter-laminar** properties and impact resistance thanks to its **exceptional wetting properties** even on aramid reinforcements.

Laminates can be released from the moulds after a low temperature cure cycle (8h @ 50°C). Final thermo-mechanical properties will be obtained after a post curing cycle defined according later in this technical data sheet.

Resin HTG-160

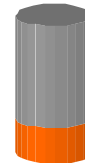
Hardener 165

High TG infusion epoxy resin system

MIXING RATIO

Resin HTG 160
Hardener HTG 165

100 pbw
18,5 pbw



Warning: the mixing ratio must be accurately followed. It is not possible to change the ratio, it would result in lower mechanical properties. The mixture should be thoroughly stirred to ensure full homogeneity. It is important to note that epoxy systems tend to heat up much faster in a pot than as a thin film. It is preferable to only mix the necessary amount usable within the given pot life. Keeping the mixture in flat open containers reduces the risks of exothermic reaction.

APPLICATION

The standard procedure of working with epoxy systems applies this system. The HTG 160 system can be applied by brush, roller, infused or injected. In case of laminating over a cured surface without peel ply, it is required to deglaze, clean and degrease the support prior to laminating. It is recommended to have workshop temperature conditions between **18-25°C** in order to facilitate the mixing and the reinforcement fibers impregnation. A lower temperature will increase the viscosity of the mix as well as its pot life. On the contrary, a higher temperature will reduce the viscosity and the pot life of the mix. For more information, please refer to the applications technical bulletins (TechNotes), available on request.

PHYSICAL CHARACTERISTICS @ 23°C

Visual aspect

HTG 160 : Opalescent neutral to light yellow liquid
HTG 165 : Neutral to transparent yellow liquid.
Mix : Neutral to transparent yellow liquid.

Density

REFERENCES	HTG 160	HTG 165	Mix
Density	1.17	0.95	1.02

Resin HTG-160

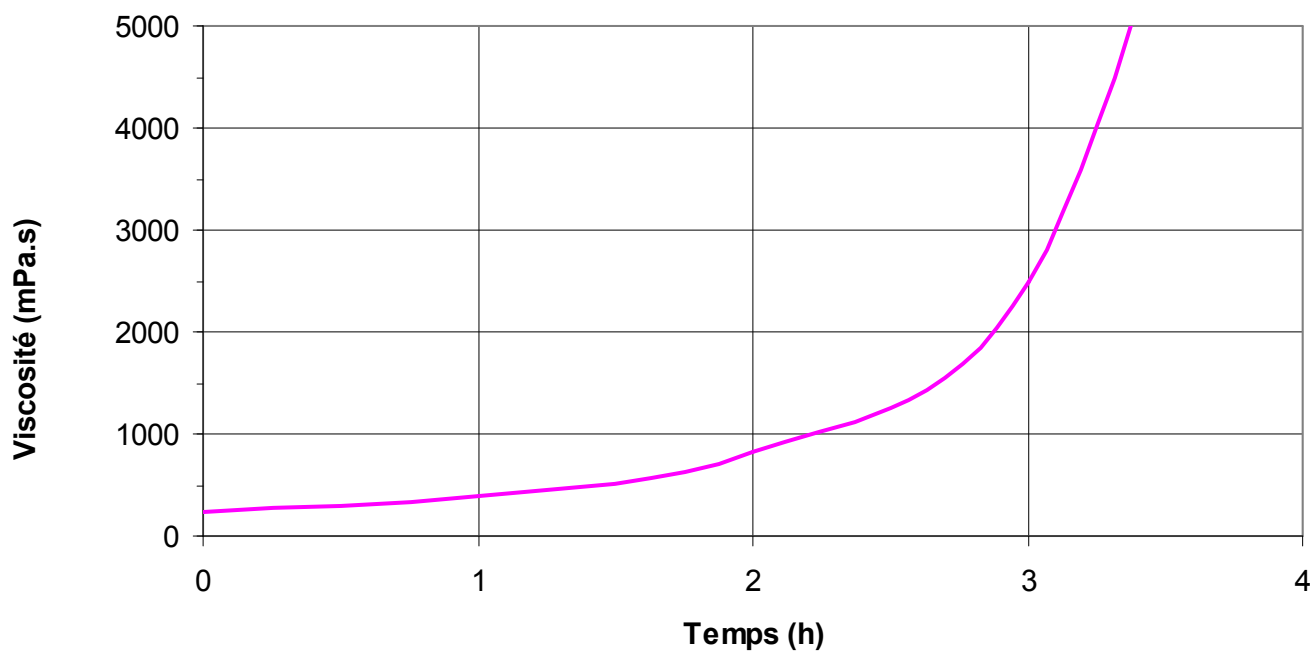
Hardener 165

PHYSICAL CHARACTERISTICS @ 23°C

Viscosities (mPa.s)

REFERENCES	HTG 160	HTG 165
Viscosity	1165	25
Viscosity mix	-	235

Evolution of viscosity in time



Measures realized at 23°C in test tubes of 180mm high and 18mm diameter (~40g)

Resin HTG-160

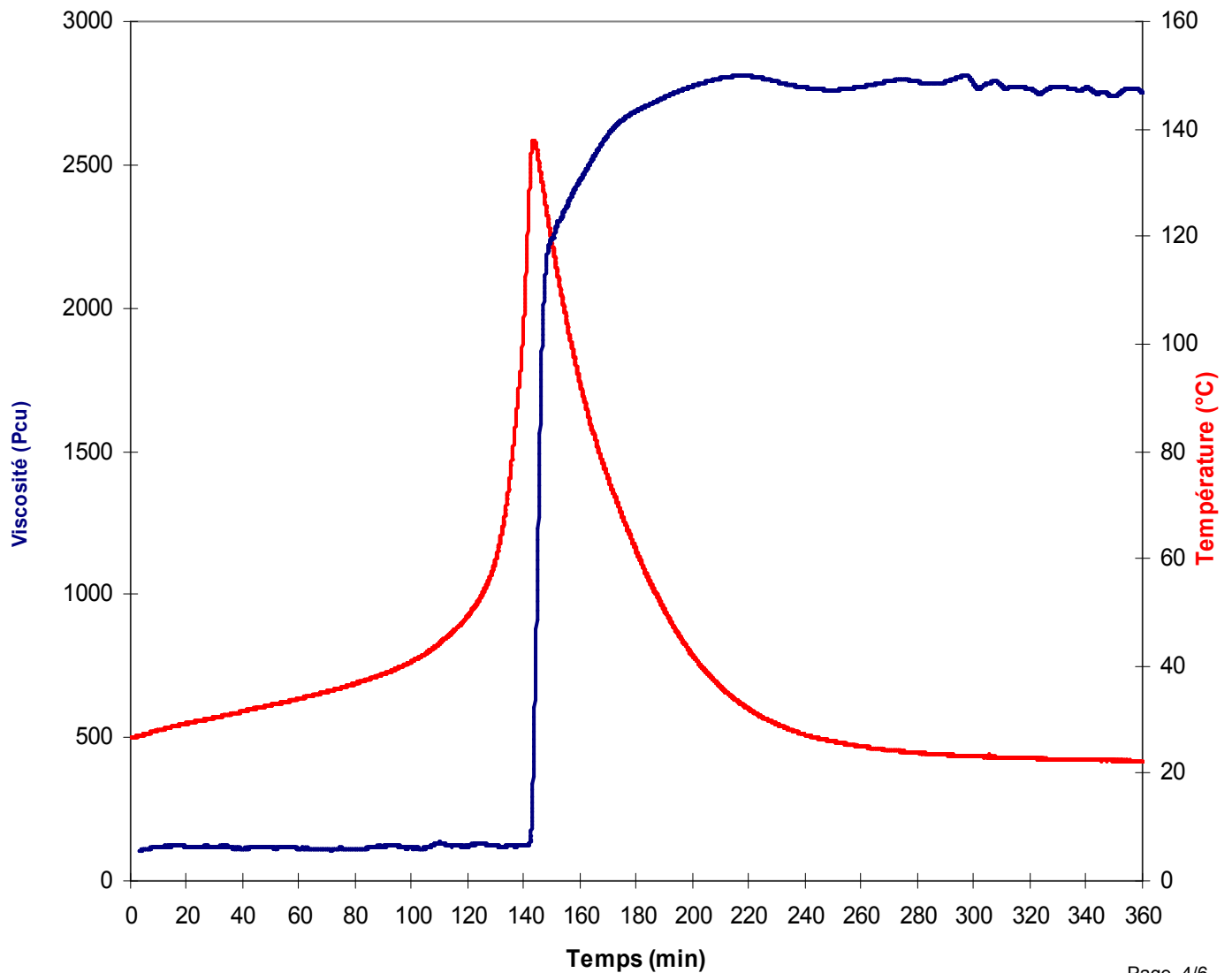
Hardener 165

REACTIVITY @ 25°C

Reactivity measures on Trombotech®

Gel time on 70g	2h20
Temperature at exothermic peak on 70g	140°C
Geltime on 2 layers of glass multiaxial 600 grams (~1,2mm)	N.A.

Suivi de la température et de la viscosité sur 70g de HTG 160 + HTG 165



Resin HTG-160

Hardener 165

CURE & POST CURING

The following data indicates the TG obtained with different post curing cycles. The first cycle is considered as « minimum » in order to release from the mould.

TG according to post-curing cycle

CYCLES	T _{Gm}	T _{GM}	T _{Gi}	T _{Gf}
7j @ 23°C	BRITTLE			
Minimum : 8h @ 50°C	82°C			
8h @ 50°C + 2h @ 150°C	147°C			
8h @ 50°C + 3h @ 90°C + 3h @ 120°C + 2h @ 150°C	151°C			
8h @ 50°C + 3h @ 90°C + 3h @ 120°C + 2h @ 150°C + 1h @ 200°C	160°C			

MECHANICAL CHARACTERISTICS

TRACTION

Max stress:	70 MPa
Elongation to break :	4 %
Module :	3000 MPa

FLEXION

Stress at Yield :	120 MPa
Deformation at break :	4 %
Module :	3805 MPa

COMPRESSION

All Mechanical characteristics are being validated

CHOC

All Mechanical characteristics are being validated

HARDNESS SHORE D

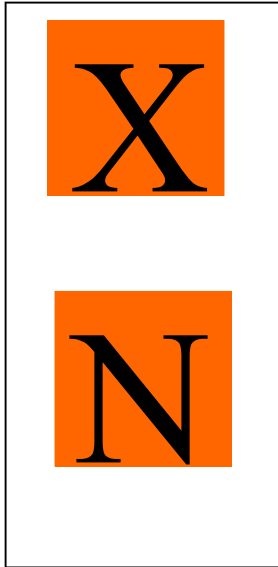
All Mechanical characteristics are being validated

Resin HTG-160

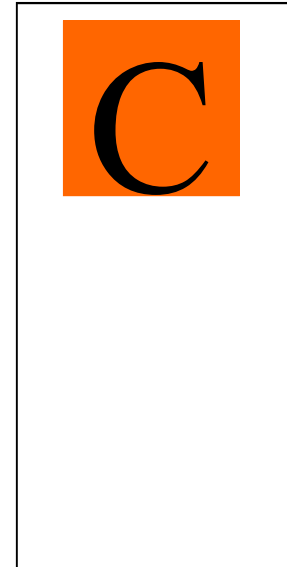
Hardener 165

LABELLING

HTG-160



HTG 165



PACKAGING

- 1 kg HTG 160	+ 0.185 kg HTG 165
- 5 kg HTG 160	+ 0.925 kg HTG 165
- 27 kg HTG 160	+ 5 kg HTG 165
- 200 kg HTG 160	+ 37 kg HTG 165

HEALTH & SAFETY

It is advised to follow basic rules such as avoiding skin contact, wear masks when producing dust. Please read our standard health and safety sheet for more information.

In case of eye contamination, wash with water and seek medical advice.

TRANSPORT & STORAGE

Shelf life is one year in sealed containers as provided. Keep containers sealed and away from heat and cold preferably between 10°C and 30°C in a well ventilated area.

Nota The data provided in this document is the result of tests and is believed to be accurate. We do not accept any responsibility over the mishandling of these products and our liability is limited strictly to the value of the products we manufacture and supply.



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