

HADES RESOLTECH 1090FR

Hardeners: 1094HTD, 1096HTD & 1098HTD

Self-extinguishing epoxy system complying to FAR 25.853

- **Approved self-extinguishing horizontal and vertical (FAR 25.853)**
- **Approved smoke & toxicity according to the directive AIRBUS ABD0031**
- **Filament winding, laminating, impregnation...**



HADES RESOLTECH 1090FR-109xHTD is a system of epoxy resin self-extinguishing approved by the aeronautical standards making it possible to carry out **structural composite parts** with all the existing reinforcements.

Thanks to its **low viscosity** and its **reactivity**, it as well allows applications in stratification by traditional wet process as in filament rolling up and hot forming. The hardeners 109xHTD of this system are proportioned with 11 shares for 100 resin shares in weight and give very good temperatures of vitreous transition (90°C).

Once hardened, the parts can be **released from the mould without post curing**.

The optimal thermomechanical properties are obtained after an adapted cycle of curing. However, **post-curing is not essential** depending on the final use of the parts

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MIXING RATIO

Resin 1090FR **BY WEIGHT** **100**
Hardener 109xHTD **11**



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.

APPLICATION

It is recommended these products are used at a temperature close to 25°C in order to facilitate mixing and the impregnation of reinforcements.

Lower temperatures increase the viscosity of the mixture. On the contrary, a higher temperature decreases the viscosity of the mixture. Thanks to its low viscosity and to its good absorptivity, system 1090FR -109xHTD is adapted to numerous applications including: structural laminating system suitable for injection, infusion, wet lay up and pre-impregnated applications and filament winding

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PHYSICAL PROPERTIES

Visual Appearance

1090FR :	White Liquid
109xHTD :	Colourless transparent liquid with yellow tints
Mixed :	White Liquid

Densities

Reference	1090FR	109xHTD	Mixed
Density	1.47	0.98	1.4

Viscosity

Viscosity is measured using Viscositech®

Reference	1090FR	1094HTD	1096HTD	1098HTD
Viscosity (mPas)	6500 +/- 500	65 +/- 5	45 +/- 5	65 +/- 5
Viscosity mixed (mPas)	—	2750 +/- 250	2740 +/- 250	2750 +/- 250

CURING @ 23°C

Curing

Curing times and temperatures are measured using Trombotech®

Curing @ 23°C	1090FR-1094HTD	109xHTD	Mixed
Time to cure (70g)	120 to 150 mins	90 mins	20 to 40 mins
Peak exothermic reaction (70g)	120 to 150 mins	90 mins	20 to 40 mins
Temperature at peak exothermic reaction (70g)	80 to 100°C	100°C	>150°C

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CURING & POST-CURING

While a post-cure is not mandatory, In order to obtain a material at the maximum of its mechanical properties with a TG of 90°C, it is necessary to post-cure with a cycle of : **24h at ambient temperature (20-25°C) + 15h at 60°C**

MECHANICAL CHARACTERISTICS

TENSILE STRENGTH

Modulus:	3000	MPa
Maximum resistance:	60	MPa
Resistance until breaking :	61	MPa
% Elongation :	6	%

FLEXION STRENGTH

Modulus :	2800	MPa
Resistance :	125	MPa
% Elongation :	10	%

COMPRESSIVE STRENGTH

Resistance to compression DIN 53454	130	MPa
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SHOCK RESISTANCE

Resistance to shock DIN 53453	19	N//mm ²
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FIRE AND SMOKE CHARACTERISTICS

HOMOLOGATIONS

- Autoextinguishable complies with FAR 25.853 horizontal
- Autoextinguishable complies with FAR 25.853 vertical
- Autoextinguishable complies with FAR 25.853 UL94 : V0
- Fire/Smoke complies with AIRBUS ABD0031 directive

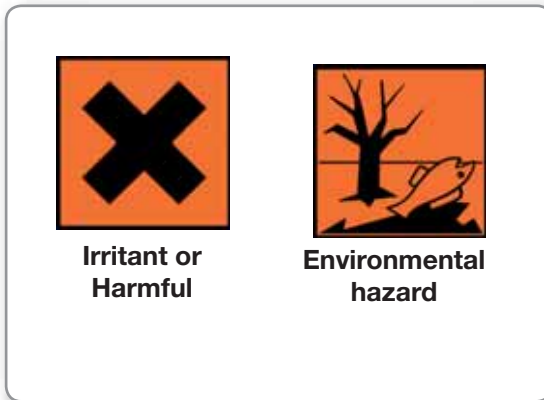
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LABELLING

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1090HR



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PACKAGING

- 1.11kg kit (1kg + 0.11kg)
- 5.55kg kit (5kg + 0.55kg)
- 27.75kg kit (25kg + 2.75kg)
- 222kg kit (200kg + 22kg)

STOCKAGE

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.

HEALTH AND 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..

PLEASE NOTE. The data provided in this document is the result of our laboratory 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.

Resoltech data sheets are being continuously reviewed and updated. Please ensure that you have the current version before using the product, by contacting Resoltech. Alternatively, the latest version can be downloaded from our web site: www.resoltech.com



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