

# 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, infusion...**



HADES RESOLTECH 1090FR-109xHTD is a self-extinguishing epoxy resin system, approved by aeronautical standards, it is possible to produce **structural composite parts** with all current reinforcement and core materials.

Thanks to its **low viscosity** and its **reactivity**, **1090FR** can be laminated by traditional wet processes such as in filament winding and hot forming. The hardeners 109xHTD are proportioned in the ratio of 11 parts hardener to 100 parts resin (by 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

# Resin: 1090FR

Hardeners: 1094HTD, 1096HTD & 1098HTD

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

## MIXING RATIO

	BY WEIGHT
Resin 1090FR	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, infusion, wet lay up, pre-impregnated applications and filament winding

# Resin: 1090FR

Hardeners: 1094HTD, 1096HTD & 1098HTD

## PHYSICAL PROPERTIES @ 23°C

### 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

## REACTIVITY @ 23°C

Reactivity measured on Trombotech®

Reactivity @ 23°C	1090FR-1094HTD	1090FR-1096HTD	1090FR-1098HTD
Pot life (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

# Resin: 1090FR

Hardeners: 1094HTD, 1096HTD & 1098HTD

---

## CURING & POST-CURING

While a post-cure is not mandatory, In order to obtain a material with maximum mechanical properties and 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
-------------------------------------	-----	-----

### SHOCK RESISTANCE

Resistance to shock DIN 53453	19	N//mm <sup>2</sup>
-------------------------------	----	--------------------

## 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

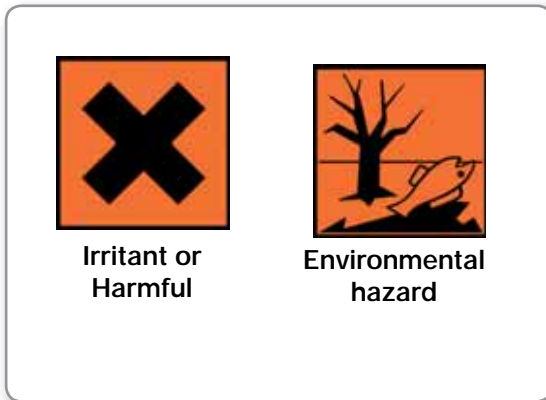
# Resin: 1090FR

Hardeners: 1094HTD, 1096HTD & 1098HTD

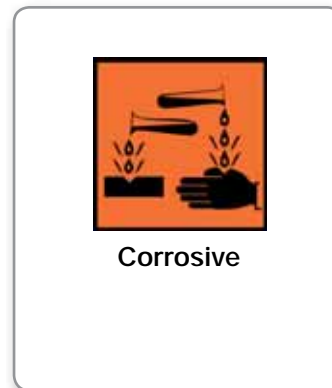
## LABELLING

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**

### 1090HR



### 1094HTD, 1094HTD & 1094HTD



## 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](http://www.resoltech.com)



**résoltech**  
ADVANCED TECHNOLOGY RESINS

35, impasse Emeri, Pôle d'activités  
13510 EGUILLES. France  
Tél: +33 4 42 95 01 95  
Fax: +33 4 42 95 01 98  
e-mail: [info@resoltech.com](mailto:info@resoltech.com)  
website: [www.resoltech.com](http://www.resoltech.com)

Distributed by:



HADES SAS  
35 Impasse Emeri  
13510 EGUILLES - France  
Tél : + 33 442 297 918  
GSM : + 33 680 417 097  
Fax : + 33 442 297 603  
E-mail : [fvuil@wanadoo.fr](mailto:fvuil@wanadoo.fr)

Page 5 of 5