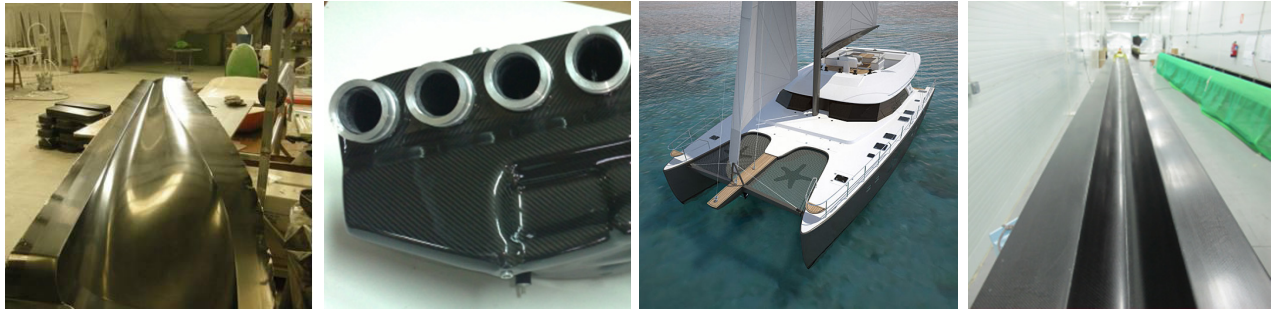


resoltech GC HT180 BLACK

Hardener GC HT186

High T_g epoxy gelcoat



- High T_g 180 °C
- Adapted rheology

INTRODUCTION

RESOLTECH GC HT180 BLACK / GC HT186 epoxy system is a very high TG epoxy gelcoat specially formulated for the production of tooling and large structural composites parts requiring high glass transition temperature and services temperatures up to **180°C**.

This system is suitable for the manufacture of large moulds structures and composite parts. Laminates or moulds can be released after a low temperature cure cycle (8h at 50°C). Final thermo-mechanical properties will be obtained after a post curing cycle defined according later in this technical data sheet.

MIXING RATIO

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.

Systems	GC HT180 BLACK / GC HT186
Mixing ratio by weight	100/13
Mixing ratio by volume	100/25

APPLICATION

- It is recommended to use products at a temperature close to 18–25 °C in order to facilitate the mixing and the reinforcements impregnation.
- Lower temperatures will increase the viscosity of the mixture and the gel time, but the resin will not crystallize at low temperatures.
- On the contrary, a higher temperature will reduce the viscosity of the mixture as well as the pot life.
- The **ALUMINIUM 250TV** may be used to **improve adhesion** of laminates onto epoxy gelcoats, by providing a mechanical bond rather than chemical bonding. Please refer to the **Aluminium 250 TV datasheet available on www.resoltech.com**.

PHYSICAL CHARACTERISTICS

1 Visual aspect

GC HT180 BLACK :

Black filled liquid

GC HT186 :

Transparent liquid

Mix :

Black viscous liquid

2 Density

References	GC HT180 BLACK	GC HT186
Density at 23 °C	1.75	0.92
Mix density at 23 °C	-	1.65

ISO 1675, ± 0.05 tolerance

3 Viscosity

References	GC HT180 BLACK	GC HT186
Viscosity at 23 °C (mPa.s)	47000	15*
Mix viscosity at 23 °C (mPa.s)	-	6000

Measured with rheometer, 20 s⁻¹, 2 min, gap 1 mm

*ISO 12058, ± 15% tolerance

REACTIVITIES

System	GC HT180 BLACK / GC HT186
Gel time on 70 mL at 23 °C* (4cm high)	8h30min
Gel time on 2 mm film at 23 °C*	9h
Tack time in film at 23°C	4h30 - 5h30
Vertical sag resistance at 23°C	400 µm

* Gel time measurements realized with Rheotech*

RETICULATION & POST-CURING

In order to obtain the maximum thermo-mechanical properties, it is necessary to respect the recommended curing cycle. The table below shows the glass transition temperatures (DMA) according to different curing cycles.

System	GC HT180 BLACK / GC HT186
T_g after 24h at 23 °C	Brittle
T_g after 16h at 60°C	89 °C
T_g after 3h at 50°C + 3h at 100°C + 3h at 150°C + 1h180°C	177 °C
Shore D hardness	92

T_g measured by DMA, 3 °C/min
Shore D hardness according to ISO 868

Post-curing cycles previously presented were chosen in order to reach the maximum potential of each systems. Depending on parts size, oven performance and hardener used, shorter post-curing cycles could lead to fully cured parts.

Please contact our laboratory service for any help on post-curing cycles.

PACKAGING

- Metal box kit of 1kg + 0.13kg
- Metal bucket kit of 6kg + 0.78kg
- Metal bucket kit of 30kg + 3.9kg

TRANSPORT & STORAGE

Keep containers sealed and away from heat and cold preferably between 10 °C and 30 °C in a well ventilated area. Our products are guaranteed in their original packaging (check expiry date on the label).

HEALTH & SAFETY

Skin contact must be avoided by wearing protective nitrile gloves & overalls or other protective clothing. Eye protection should be worn to avoid risk of resin, hardener, solvent or dust entering the eyes. If this occurs flush the eye with water for 15 minutes, holding the eyelid open, and seek medical attention.

Ensure adequate ventilation in work areas. Respiratory protection should be worn with ABEKP coded filters.

Resoltech issues full Material Safety Data Sheet for all hazardous products. Please ensure that you have the correct MSDS to hand for the materials you are using before commencing work.



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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