

resoltech 1070(s) CLEAR

Hardeners 1074 to 1077

Clear epoxy laminating system



- **New UV resistant formula** (January 2019)
- For structural laminates and topcoats
- Ease of use, room temperature curing, self-leveling
- Excellent degassing and wetting properties
- Polyester topcoat application without inhibition
- Three choices of reactivity

INTRODUCTION

RESOLTECH 1070(S) CLEAR is a high end crystal clear epoxy laminating system formulated to produce **clear laminates** and **high gloss** clear coatings with good UV stability and **high mechanical properties**.

Thanks to its **new formulation**(January 2019), 1070(S) CLEAR is now the best available UV resistance resin on the market.

The 1070(S) CLEAR system is formulated for professionals who manufacture **surf, wind-surfs, kite-boards**, or any composites parts with high-end finish aspects requirements.

On white foams (polystyrene and PU) the additive **Optical brightener** (sold separately) greatly improves the white color of the board. Simply pour 1 to 3 drops of additive in 100g of resin in the topcoat (see details in datasheet).

The wetting out properties of this system and air release are acclaimed for and it has **no sensitivity to blush**. The resulting laminates will be absolutely clear on carbon fibre and even transparent if applied on special glass fabrics such as Hexcel TF970 treatment.

The viscosity is adapted for **squeegee, or brush application**, and provides a perfect bubble free surface due to its surface tension properties.

The system has been formulated in order to leave virtually no free amines on the laminate. This enables the use of any quality polyester topcoat for quick sanding on top of the laminate **without inhibition of the polyester**. RESOLTECH 1070(S) CLEAR will cure at room temperature , post curing will elevate the final T_g like any other epoxy system.

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	1070 CLEAR/1074	1070 CLEAR/1076	1070S CLEAR/1074	1070S CLEAR/1076	1070 CLEAR/1077
Mixing ratio by weight	100/40				100/45
Mixing ratio by volume	2/1				

APPLICATION

- 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.
- The standard procedure of working with epoxy systems applies to this system. The 1070(S) CLEAR can be applied by **squeegee or brush**.
- In case of **laminating over a cured surface without peel ply**, it is required to deglaze, clean and degrease the support prior to laminating.

PHYSICAL CHARACTERISTICS

1 Visual aspect

1070 CLEAR & 1070(S) CLEAR :

Clear purple liquid

1074 to 1077:

Clear liquid

Mix :

Clear purple liquid

2 Density

References	1070(S) CLEAR	1074	1076	1077
Density at 23°C	1.15	0.99	1.01	1.02
Mixed density at 23°C	-	1.10	1.10	1.11

ISO 1675, ± 0.05 tolerance

3 Viscosity

References	1070 CLEAR /1070S CLEAR	1074	1076	1077
Viscosity at 23°C (mPa.s)	2600/2200	70	40	400
Mixed viscosity at 23°C (mPa.s)	-	685/560	362/315	940

ISO 12058.2, ± 30% tolerance

REACTIVITIES

Systems	1070 CLEAR 1074	1070 CLEAR 1076	1070S CLEAR 1076	1070S CLEAR 1074	1070 CLEAR 1077
Gel time on 70mL at 23°C (4cm high mix)	3h	1h40min	34min	30min	15min
Time at exothermic peak on 70 mL at 23°C	1h44min	1h45min	30min	31min	18min
Temperature at exothermic peak on 70mL at 23°C	50°C	108°C	169°C	139°C	183°C
Gel time on 2mm thick film at 23°C	5h15min	5h	3h	2h55min	50min
Touch dry on 2mm film at 23°C	8h to 12h	-	-	8h	4h
Hard and sandable on 2mm film at 23°C	24h	-	-	12h	8h

Reactivity measurements realized on Trombotech*

CURING AND 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 (DSC) according to different curing cycles.

Systems		1070 CLEAR 1074	1070 CLEAR 1076	1070S CLEAR 1074	1070S CLEAR 1076	1070 CLEAR 1077
14 days at 23°C	T _g	50.9 °C	48.2 °C	49.6 °C	51.0 °C	45.0 °C
	Shore D Hardness	88	88	88	-	-
16h at 60°C	T _g	70.9°C	56.7 °C	71.9 °C	58.0 °C	50.0 °C
	Shore D Hardness	88	88	88	-	-
T _g max		79.2 °C	69.1 °C	79.6 °C	73.6 °C	77.8 °C

T_g measured by DSC, 10°C/min, inflexion point
Hardness : ISO 868

MECHANICAL PROPERTIES

Systems		1070 CLEAR 1074	1070 CLEAR 1076	1070S CLEAR 1074	1070S CLEAR 1076	1070 CLEAR 1077
14 days at 23°C	FLEXION Modulus	3.00 GPa	3.07 GPa	3.00 GPa	2.88 GPa	2.00 GPa
	Maximum strength	64.0 MPa	77 MPa	64.0 MPa	57.2 MPa	61.4 MPa
	Elongation at break	3.1%	3%	3.1%	2.1%	4.7%
16h at 60°C	FLEXION Modulus	2.30 GPa	2.98 GPa	2.30 GPa	2.92 GPa	2.30 GPa
	Maximum strength	85.8 MPa	93.7MPa	85.8 MPa	90.5 MPa	70.0 MPa
	Elongation at break	4.7%	4.9%	4.7%	4.5%	4.5%

Measurements on pure resin according to the following standard : ISO 178

PACKAGING

1070(S) CLEAR/1074 and 1076 :

- Jerrycan plastic kit of 1kg + 0.4kg
- Jerrycan plastic kit of 2kg + 0.8kg
- Jerrycan plastic kit of 5kg + 2kg
- Jerrycan plastic kit of 10kg + 4kg
- Drum plastic kit of 25kg + 10kg
- Drum kit of 200kg + 8 x 10kg
- IBC kit of 1t + 2 drums of 200kg

1070 CLEAR/1077 :

- Jerrycan plastic kit of 1kg + 0.45kg
- Jerrycan plastic kit of 4.3kg + 1.93kg
- Drum plastic kit 20kg + 9kg
- Drum kit of 200kg + 3 x 30kg

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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