

RESOLTECH 2080 M25

Hardeners 2084M & 2085M

Structural Epoxy Foaming system

- Density 250 kg/m³
- Optional post-curing
- Excellent mechanical properties



RESOLTECH 2080 M25 / 2084M - 2085M is a liquid foaming epoxy casting system formulated to produce low density, closed cell, structural cores.

This system has a (free) expansion coefficient of 4, enabling the production of **250 kg/m³** epoxy foam. The slow, controlled foaming reaction makes unnecessary the use of mixing machines like with PU foams. The low pressure of the foaming will enable direct casting in the final parts with no conforming moulds without alteration of the dimensions of the composite.

This system is available in black or neutral colour (to be pigmented with any RAL pigment paste available on request).

The main advantages of this epoxy foaming system over existing systems are:

- No brittle stage after the foaming making it **un-necessary to cure before releasing from mould** or to post cure depending on the mechanical characteristics needed
- Perfect compatibility with prepregs and epoxy resins even during their polymerization
- Excellent resistance to water
- Major improvement of thermal and mechanical resistances compared to existing epoxy foams
- Homogeneous structure of the foam
- No VOC emission

Resin 2080 M25

Hardeners 2084M & 2085M

MIXING RATIO

Systems	2080 M25 / 2084M	2080 M25 / 2085M
Mixing ratio by weight	100 / 35	100 / 30

The mixing ratio must be respected neither excess nor default. The mixture should be homogeneous and intimate before the use.

APPLICATION

It is recommended to **cast the mix at a temperature around 18°C to 25°C** in order to **ease the mixing and casting process**. The **foaming starts 2 minutes after mixing**, allow 10% margin for losses during casting.

Lower temperature will increase the viscosity of the mix while higher temperature will reduce the viscosity and the pot life. In both cases, this could have a negative impact on the quality of the foam obtained and the final density after foaming.

Warning: During cold periods, the 2085M may have tendency to crystallize (appearance of a cloudy effect with some crystals). Once crystallized the hardener should not be used. The phenomenon is reversible, and heating the hardener at temperatures between 50°C and 60°C is sufficient to recover a clear liquid. This will not affect the properties of the final product.

Advice: in the case of deep cavities to be filled, it is wise to wet the walls with a liquid resin before foaming to promote foam expansion.

PHYSICAL CHARACTERISTICS

Visual aspect

2080 M25 :	Opalescent colourless gel
2084M & 2085M :	Transparent to yellow liquid (exists in black)
Mix :	Flowable neutral liquid (exists in black)

Density

Free expansion ratio: 4 to 4.5

References	2080 M25	2084M	2085M	Mix prior to foaming	Mix after foaming
Density at 23°C	1.17	0.96		1.12	0.25

according to ISO 1675 (± 0.05 tolerance)

Viscosity

References	2080 M25	2084M	2085M
Viscosity (mPa.s)	9600	90	29

according to ISO 2555 ($\pm 15\%$ tolerance)

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HARDENING & POST-CURING

The foam obtained at room temperature is hard & could be released after 24h at 23°C with 2085M hardener and 72h with 2084M hardener. The foam can be put into service after 7 days. Nevertheless, in order to obtain a material with optimum thermomechanical properties, it is necessary to respect the following cycle: 16 h at 50°C after foaming and hardening at room temperature.

The polymerization process of the foaming system is exothermic. It is recommended to proceed to preliminary tests if **the volume to cast is important**. The slow hardener 2084M is suitable for this type of casting after verification with our technical service.

It is recommended to cast the 2080 M25 at temperatures inferior to 40°C in order to minimize risks of stress happening during the cross-linking, shrinkage, coarser foaming or a foam collapse.

Systems	2080 M25 / 2084M	2080 M25 / 2085M
T _G after 14d at 23°C	53°C	57°C
T _G after 16h at 50°C	73°C	63°C
T _G max	80°C	122°C

T_G realized on Kinetech®

MECHANICAL PROPERTIES

Compression

Systems	2080 M25 / 2084M		2080 M25 / 2085M	
	14d at 23°C	16h at 50°C	14d at 23°C	16d at 50°C
Compressive modulus	179 MPa	107 MPa	138 MPa	116 MPa
Compressive yield strength	3.3 MPa	2.8 MPa	2.9 MPa	2.7 MPa

Compression according to ISO 844

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PACKAGING

Kits 2080 M25 / 2084M available :

- 1.35 kg : (1+0.35) kg
- 6.75 kg : (5+1.75) kg
- 33.75 kg : (25+8.75) kg
- 270 kg : (200+3x23.33) kg
- 1350 kg : (1000+2x175) kg

Kits 2080 M25 / 2085M or 2085M NOIR available :

- 1.3 kg : (1+0.3) kg
- 6.5 kg : (5+1.5) kg
- 32.5 kg : (25+7.5) kg
- 260 kg : (200+2x30) kg

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 stated 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 or hardener 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.

Nota : The data provided in this document are provided good-faith and are based on the test in laboratory and our practical experience and is believed to be accurate. Considering the application of our products gets away from our control, 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.