

Hardeners 1023 to 1029

Structural epoxy resin system for wood

- Adjustable pot life from 15mn to 9 hours
- Excellent wood wettability.
- High gloss aspect in all conditions
- Little sensitivity to humidity during application
- Available in thixotropic version (1020T)



RESOLTECH 1020 is an advanced epoxy laminating system for wood-epoxy constructions. It may be used for: all woods laminations, coating, scarfing, strip planking, as well as bonding in form of fillet joints applications when filled with wood flour and silica.

Thanks to its **low viscosity** and a wide range of **hardeners (15 min to 10hours)**, it allows applications in both traditional wet layup, vacuum bagging or under press. A thixotropic version, the **1020T** is available for vertical or overhanging applications prone to dripping.

The mixing ration for all hardeners of this system is 100:30 by weight or 3:1 in volume. All hardeners are compatible and can be mixed to obtain intermediate reactivities.

Once cured, manufactured pieces can be released from the moulds without post curing.

90% of thermomechanical properties of the resin will be obtained after 7 days at room temperature.

The highest quality of the RESOLTECH 1020 system is its exceptional wettability making hand lamination easier to the workers while guaranteeing a safer work place due to the low toxicity of this system.

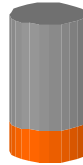
The 1020 resin system is also widely used in civil engineering applications on glass and carbon laminates where it's little sensitivity to humidity during it's application and good curing properties at ambient temperature are appreciated.

Resin 1020

Hardeners 1023, 1024, 1025, 1026, 1028, 1029

MIXING RATIO

	BY WEIGHT	BY VOLUME
Résin 1020	100	3
Hardener 1023~1029	30	1



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

APPLICATION

It is recommended to use products to a temperature close to 18-25 ° C in order to facilitate the mixing and the reinforcements impregnating.

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 and well as the pot life

PHYSICAL CHARACTERISTICS

Visual aspect

1020 : Opalescent neutral liquid

1023 ~ 1029 : Neutral to transparent yellow liquid.

Mixture aspect : Neutral to transparent yellow liquid.

Densities @ 23°C

	1020	1023	1024	1025	1026	1028	1029
Density	1.17	0.95	0.97	0.98	0.98	1.00	1.05
Mix density	-	1.10	1.10	1.11	1.11	1.11	1.12

Viscosities (mPa.s) according to ISO 12058-2 @ 23°C

	1020	1023	1024	1025	1026	1028	1029
Viscosity		29	37	55	59	79	429
Mix viscosity	-	308	363	437	546	612	873

Resin 1020

Hardeners 1023, 1024, 1025, 1026, 1028, 1029

GEL TIME

Gel times are measured according to ISO 2535

RESIN / HARDENER SYSTEM	70g @ 23 °C
1020 / 1023	9 h.
1020 / 1024	4h.
1020 / 1025	3h,
1020 / 1026	1h
1020 / 1028	22min
1020 / 1029	9min

RETICULATION & POST-CURING

90% of the thermo-mechanical properties are obtained after 7 days at room temperature (25°C). To obtain a material at its highest thermomechanical properties with aTG of up to 60°C, it is necessary to postcure the laminate.

It is important not to cure the system at a temperature above 50 ° C. Higher temperatures crosslinkings during initial cure may create tensions in the laminate. Higher post-curing temperatures than 50 °C are suitable once the initial crosslinkings are established.

Glass transition temperature (T_{Gm}) according to curing cycles:

RESIN / HARDENER SYSTEM	7j @ 23°C	7j @ 23°C + 15h @ 60°C
1020 / 1023	46	47
1020 / 1024	47	49
1020 / 1025	50	51
1020 / 1026	53	54
1020 / 1028	55	55
1020 / 1029	56	56

The following data is an indication of the curing time at room temperature (23 °C) in order to release from moulds and obtain a hard and sandable laminate:

1020+1023 : 40h
1020+1024 : 30h

1020+1025 : 20h
1020+1026 : 16h

1020+1028 : 8h
1020+1029 : 3h

Resin 1020

Hardeners 1023, 1024, 1025, 1026, 1028, 1029

MECHANICAL CHARACTERISTICS

Values on non reinforced resin after 7 days at 23°C

	1020/1023	1020/1024	1020/1025	1020/1026	1020/1028	1020/1029
TRACTION (ISO 527-2)						
Modulus (MPa)	1684		1955			2176
Max stress(MPa)	24,3		40,7			49,9
Failure stress (MPa)	14,4		29,5			36,4
Failure strain (%)	57		13,3			8,3
FLEXION (ISO 178)						
Modulus (MPa)	1480		1523			2100
Max stress(MPa)	45,5		50,4			77,1
Failure stress (MPa)	<40		<37			<63
Failure strain (%)	>8		>9,7			>8,4
COMPRESSION (ISO 604)						
Modulus (MPa)	949		1031			1230
Max stress (MPa)	35,8		47,9			55,2

Values on E-glass/epoxy laminate after 7 days at 23°C *

	1020/1023	1020/1024	1020/1025	1020/1026	1020/1028	1020/1029
FLEXION (ISO 178)						
Modulus (MPa)	21565		87116			11858
Max stress (MPa)	357		560			310,6
COMPRESSION (ISO 604)						
Modulus (MPa)	10509		8932			6980
Max stress (MPa)	73,7		52,7			75,8

* Composite manufacturing

Values for the test were obtained on laminates of 16 layers of glass twill 2-2 of 285 g/m².

Average rate of impregnation of the laminate: 74% +/-2% of fiber by weight.

The laminate was manufactured under press.

Resin 1020

Hardeners 1023, 1024, 1025, 1026, 1028, 1029

MECHANICAL CHARACTERISTICS (continued...)

Hardness according to NF T57-106

Barcol Hardness: —> 30 for 1020-1023 system
—> 31 for 1020-1025 system
—> 32 for 1020-1029 system

WATER ABSORPTION

Non reinforced resin:

Water absorption at 23°C during 24h according to ISO 62:

- 0,7% for 1020-1023 system
- 0,5% for 1020-1025 system
- 0,4% for 1020-1029 system

Reinforced resin:

Water absorption at 23°C during 24h according to ISO 62 :

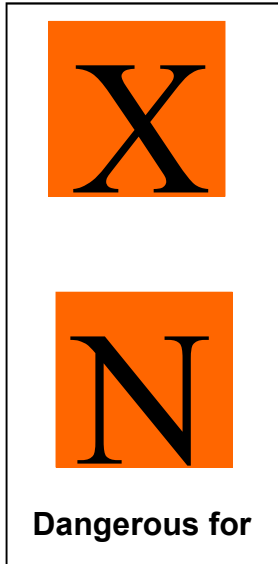
- 0,1% for 1020-1023 system
- 0,1% for 1020-1025 system
- 0,1% for 1020-1029 system

Resin 1020

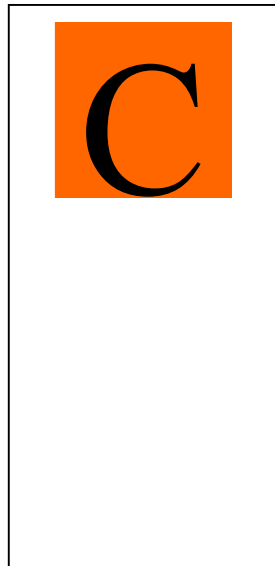
Hardeners 1023, 1024, 1025, 1026, 1028, 1029

LABELLING

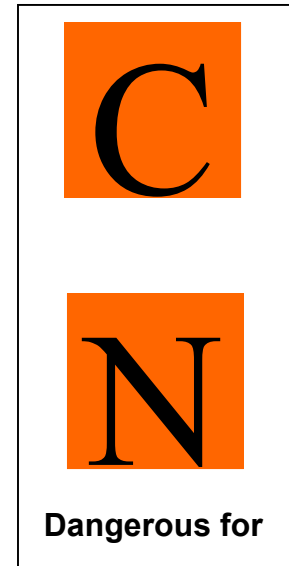
1020



1023



1024 to 1029



PACKAGING

- Plastic container kit of 1 kg + 0.30 kg
- Plastic container kit of 5 kg + 1.5 kg
- Plastic container kit of 25 kg + 7,5 kg
- Plastic container kit of 200 kg + 60 kg

TRANSPORT AND STORAGE

Keep containers sealed and away from heat and cold preferably between 10°C and 30°C in a well ventilated area. Shelf life is minimum one year in sealed containers as provided.

HEALTH AND SAFETY

The usual precautions for the use of epoxy resins must be respected. Our health and safety datasheets are available upon request. It is important to wear protective clothing and avoid skin contact with the products. In case of contact, wash thoroughly with soap and water. In case of eye contamination, wash thoroughly with warm water. Consult a specialist.

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.



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 : export@resoltech.com • www.resoltech.com

Page 6/6