

Technical Data Sheet

The epoxy resin "Epox200G + Hardener 15L or/and Hardener 120L" is a system for hand lamination for vacuum infusion, fiber winding and other processes, which can be individually adjusted for the respective application with 2 different hardeners.

This combination of systems was approved by DNV-GL for the construction of boats and wind turbines. (**Approval No.: WP 1620003 HH**)

For technological reasons, the DNV-GL approval for the construction of boats and wind turbines will not be extended. However, the article remains unchanged in our range.

Features:

- Very low viscosity
- free of alkylphenols and benzyl alcohol
- Resistant to crystallization - the resin component is based on bisphenol A/F and is therefore absolutely resistant to crystallization
- Solvent and filler-free
- High static and dynamic strength
- Pot life from 15 minutes (hardener 15GL) to 120 minutes (hardener 120GL) freely adjustable
- Hardening possible from 10°C, but we recommend hot curing at 40°C for at least 12 hours
- best values are obtained if the system / component is annealed for 1h at 23°C and then 5h at 70°C and 5h at 80°C

Usage:

Vacuum infusion (RI), vacuum pressing, wet pressing, RTM (resin transfer moulding), fibre winding, hand lamination

Specification

Article description		Epox 200G	Hardener 15L	Hardener 120L	Measurement
Viscosity resin at 25°C	[mPas]	640 - 780	50 - 150	12- 16	ISO 3219
Density at 23°C	[g/cm³]	1,14 - 1,16	0,99 - 1,01	0,93 - 0,95	ISO 2811-2
Gardner Color Number		< 2	< 5	< 1	ISO 4630-2
Colour scheme		colorless	bluish or yellowish depending on the	clear colorless	
Colour scheme in the Mixture resin + hardener			slightly bluish or slightly yellowish	clear colorless	

Characteristics

		Epox 200G	Hardener 15L	Hardener 120L	Measurement
EP equivalent weight	[e/Eq.]	178			calculated
H* equivalent weight	[e/Eq.]		54	50	calculated
Solid content	[%]	100	100	100	

Processing Data

		Epox 200G + Hardener 15L	Epox 200G + Hardener 120L
Mixing ratio (weight)	[Parts]	100 parts resin / 30 parts hardener	100 parts resin / 30 parts hardener (according to
Pot life	[minutes]	appro	approx
Optimum processing temperature	[°C]	15-25°C	20-30°C

Epoxy resin 200G + hardener 15L / hardener 120L

DD Composite

Minimum processing temperature	[°C]	8	15
Annealing	[h/°C]	1h/23°C + 5h/70°C + 5h/80°C	1h/23°C + 5h/70°C + 5h/80°C

Properties without reinforcing fibers

		Epox 200G + Hardener	Epox 200G + Hardener	Standard	
Density	[g/cm³]	1,171	1,15	DIN EN ISO 1183-1	none
Tensile strength	[MPa]	74	75	DIN EN ISO 527-2	≥55
Compressive	[MPa]	112	86		none
Flexural strength	[MPa]	135	119	DIN EN ISO 178	≥100
Modulus of elasticity from	[MPa]	3490	3060	DIN EN ISO 527-2	≥2700
Modulus of elasticity from	[MPa]	3240	2970	DIN EN ISO 178	none
Elongation at break		3,5	4,0	DIN EN ISO 527-2	≥2,5
Elongation at break at	[%]	6,2	> 7		none
Hardener (7 days for	[Shore D]	82	83		none
Heat deflection resistance	[°C]	74	73	DIN EN ISO 75-2	≤70
Water absorption 168h at 23°C	[mg]	31	43	in Appe	≤50
Glass transition temperature	[°C]	74	75		none

*1h at 23°C and then 5h at 70°C and 5h at 80°C

Approximate processing times depending on the hardener proportions 15L / 120L for thin layers (mixed was 100g epox 200G + 30% hardener as indicated)

% Proportion Hardener	% Proportion Hardener	Pot life in minutes approx.
0	100	215
10	90	155
20	80	130
30	70	105
40	60	88
50	50	63
60	40	52
70	30	44
80	20	40
90	10	35
100	0	30

Pot times in this table are approximate, they are for information.

Epoxy resin 200G + 50% hardener 15L + 50% hardener 120L

The hardeners 15L and 120L can be mixed with each other in any mixing ratio, so you can adjust the pot life variably in the specified processing times.

The mixing ratio remains at 100:30 weight parts.

Epoxy resin 200G + hardener 15L / hardener 120L

DD Composite

Specification

Article description		Epox 200G	50% Härter 15L + 50% Härter 120L	Measurement
Viscosity resin at 25°C	[mPas]	640 - 780	32	ISO 3219
Density at 23°C	[g/cm³]	1,14 - 1,16	0,97	ISO 2811-2
Gardner Color Number		< 2	< 3.2	ISO 4630-2
Colour scheme		colorless	yellowi	Visual
Colour scheme in the Mixture resin + hardener			slightly yellowish	

Characteristics

		Epox 200G	50% Härter 15L + 50% Härter 120L	Measurement
EP equivalent weight	[e/Eq.]	178		calculated
H* equivalent weight	[e/Eq.]		54	calculated
Solid content	[%]	100	100	

Processing Data

		Epox 200G + 50% Hardener 15L + 50% Hardener 120L
Mixing ratio (weight)	[Parts]	100 parts resin / 15 parts hardener 15L (by weight) 15 parts hardener 120L (by weight)
Pot life (23°C -> 40°C)	[minutes]	21
Time to T max	[minutes]	42
Optimum processing temperature	[°C]	15-25°C
Minimum processing temperature	[°C]	12
Annealing	[h/°C]	1h/23°C + 5h/70°C + 5h/80°C

Properties without reinforcing fibers

		Epox 200G + 50% Hardener 15L + 50% Hardener	Stand ard	
Tensile strength	[MPa]	79,1	DIN EN ISO 527-2	≥55
Modulus of elasticity from tensile test	[MPa]	3450	DIN EN ISO 527-2	≥2700
Elongation at break		4,8	DIN EN ISO 527-2	≥2.5
Heat deflection temperature (HDT)*	[°C]	84	DIN EN ISO 75-2	≤70
Glass transition temperature	[°C]	80		none

Pot life

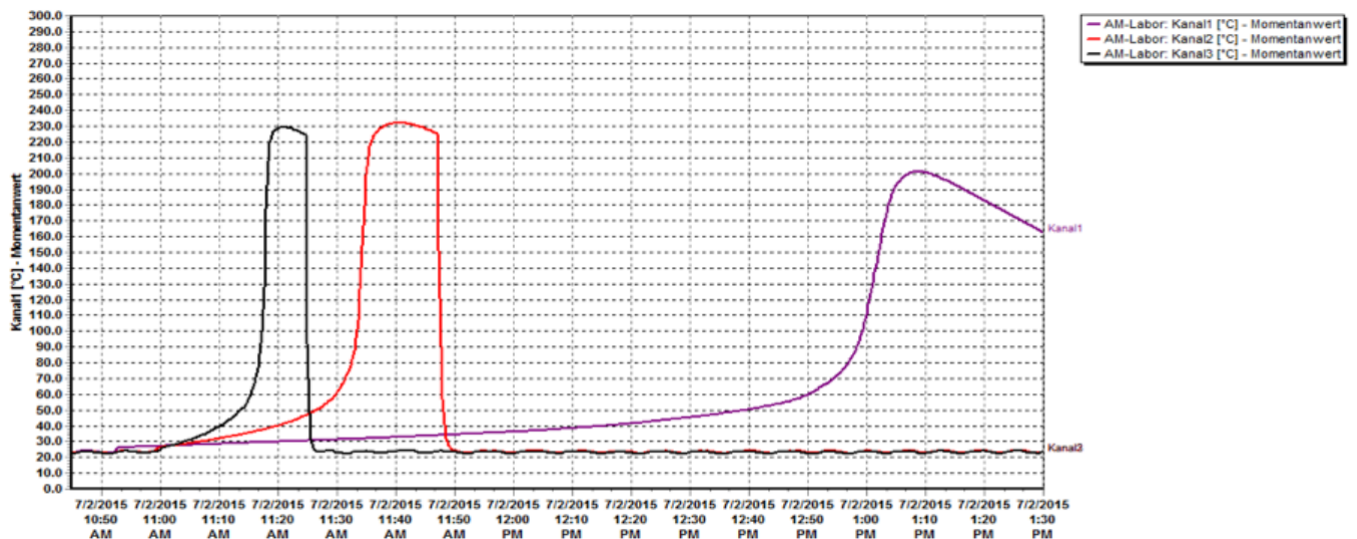
The pot times are determined according to the in-house internal method (DD-EM-01).

Resin/hardener batch has exactly 23°C, 100g resin + 30g hardener are mixed, then 110g are placed in an insulated tin can (volume 1 litre), the values are determined with a time-temperature measuring device (temperature measuring unit is stored centrally in the batch).

Epoxy resin 200G + hardener 15L / hardener 120L

DD Composite

Table:



Temperature/time course DD Composite System

Black: EPOX 200G / Hardener 15L

Red: EPOX 200G / (Hardener 15L / Hardener 120L; 1/1 Compound)

Violet: EPOX 200G / Härter 120L

System combination	Pot life 23 → 40 °C [min]	Tmax [°C]	T 23 °C → Tmax [min]
Epox 200G / Hardener 15L	12	230	22
Epox 200G / (Hardener 15L/120L; 1:1)	21	232	42
Epox 200G / Hardener 120L	85	201	138

Storage

Only close opened containers tightly with the original lid. Store in a cool, dry place. With optimal storage, shelf life of at least 12 months.

Work Equipment Cleaning

Hardened resins can only be cleaned mechanically, such as by grinding! Acetone can be used to remove non-hardened resin residues from the tool, which must then air out sufficiently to prevent the cleaner from entering new containers!

Precautions

When processing epoxy resins, the information in the safety data sheet must be observed!

Disposal

Uncured product residues are hazardous waste, hardened systems are construction site waste/household waste.

More information

If you have any further questions, for example about the processing or the product, please do not hesitate to contact us by phone.

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