



Technical data

Epoxy resin L 20

Laminating resin for aircraft construction

Description

- **Low viscosity, free of solvents and fillers**
- **Approved for the construction of gliders and powered aircraft**
- **Highest static and dynamic strength**



Application

Applications include the fields of satellite design, aerospace, automobile manufacture and shipbuilding, and the extremely exacting field of high-performance sports equipment as well as model construction. One particular field is the production of gliders.

Processing

The resin is suitable for all processing methods, e.g. hand lay-up operations, winding, and press moulding (also in vacuum). Metal, wood, plastics, ceramics, etc., can be joined with high-strength bonds without the application of contact pressure. Curing takes place virtually free of shrinkage.

Single components: 500 g - 200 kg order no. 112 11X-X, sets of two components: (look at hardeners)

Hardeners

The resin systems L 20 / EPH 161 and L 20 / EPH 573 delivered by R&G have been **approved by the federal aviation authority LBA**.

Härter EPH 573	Härter EPH 161
<p>Low-viscosity, cold-curing, exhibits very good wetting properties with respect to glass, aramid, and carbon fibres as well as a superior adhesion to fibres.</p> <p>Curing temperatures starting from 18 °C</p>	<p>For heat resistant components up to 120 °C and groutings to approx. 10 mm thickness in one workstep.</p> <p>Cold curing, annealing is necessary for the application in aircraft construction.</p> <p>Curing temperatures starting from 18 °C</p>



Epoxy resin L 20	Unit	Value
Delivered state	-	liquid
Colour	-	yellowish
Density	g/cm ³ /20 °C	1,15
Viscosity	mPa*s/25 °C	900
Epoxy value	100/equivalent	0,56
Epoxy equivalent	g/equivalent	179
Chlorine content hydrolysable	ppm	< 0,3
Vapour pressure	mbar/ 25 °C	< 10 ⁴
Flash point (DIN 51584)	°C	>120
Storage (sealed, at 15 °C)	months	12

Hardener EPH 573

Description

- Hardener for epoxy resin L 20
- Approved for the construction of gliders and powered aircraft
- Processing time 15 minutes

Application

Low-viscosity, cold-curing.

EPH 573 exhibits very good wetting properties with respect to glass, aramid, and carbon fibres as well as a superior adhesion to fibres.

Repairs and smaller components in **aircraft** and **model construction**.



Single components: 920 g - 23 kg order no. 112 120-X, set of to components: 615 g package order no. 112 100-1, 1,23 kg package order no. 112 100-2

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Hardener EPH 161

Description

- Hardener for epoxy resin L 20
- Approved for the construction of gliders and powered aircraft
- Processing time 90 minutes

Application

The combination of L 20 and hardener EPH 161 yields a low-viscosity laminating resin that exhibits superior impregnating and wetting properties with respect to glass, aramid, and carbon fibres.



Before they can obtain the specified mechanical properties, the **laminates must be annealed for about fifteen hours at 60 °C after their initial cold-curing period.**

Single components: 1 kg - 10 kg order no. 112 125-X, sets of to components: 625 g package order no. 112 104-1, 1,25 kg package order no 112 104-2

General specifications of hardeners for epoxy resin L 20	Unit	Hardener EPH 573	Hardener EPH 161
Processing time for 100 g mixture	minutes /20 °C	15	90
Mixing ratio on 100 parts by weight of epoxy resin L 20	weight (g)	23	25
Density	g/cm ³ /20 °C	1,07	1,0
Storage (sealed, at 15 °C)	months	12	12

Specifications of unreinforced, cured resin L 20 (curing 6 days at RT)	Unit	Hardener EPH 573	Hardener EPH 161
Flexural strength	MPa	140	130
Compressive strength	MPa	125	125
Impact strength	kJ/m ²	40	40
Flexural modulus	MPa	3500	3600

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Supplementary specifications on L 20 + hardener EPH 161

Epoxy resin L20 + EPH 161, unreinforced	Unit	Value
Density	g/m ³	1,158
Tensile strength	MPa	70,2
Elongation at break	%	9,5
Tensile modulus	MPa	3400
Shear modulus at 54 °C	MPa	1019
Bend fatigue strength	load cycles	1.500.000

Specifications of reinforced, cured resin L 20 (GRP)	Unit	Hardener EPH 573	Hardener EPH 161
Flexural strength	MPa	400	488
Tensile strength	MPa	340	-
Compressive strength	MPa	305	360
Impact strength	kJ/m ²	225	205
Flexural modulus	MPa	25000	23500
Interlaminar shear strength at RT	MPa	38	36

The values were obtained on 4 mm panels (16-ply Interglas 91745/style 181, 286 g/m², atlas weave). Curing 7 days at room temperature. * Curing 24 hours at RT + 15 hr at 60 °C.

Specifications of reinforced, cured resin L 20 (CRP)	Unit	Hardener EPH 573	Hardener EPH 161
Flexural strength	MPa	520	730
Compressive strength	MPa	395	444
Flexural modulus	MPa	41000	46000
Interlaminar shear strength at RT	MPa	45	54

The values were obtained on test specimens of 8-ply carbon fabric, 200 g/cm². * Curing 24 hr at RT + 15 hr at 60 °C.

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