SOLVENT-BASED GLASS FIBRE

LAY UP RESINS

Also see laminating rollers [page 124]

Lay Up Resin – Resin 'A' A pre-accelerated low viscosity polyester resin with rapid hardening characteristics. It combines fast impregnation of reinforcements and fillers with a very short mould release time. Suitable for hand lay or spray applications. It is filled and has a matt finish. Also suitable for hand props and scenic work but it is not flame retardant. Add 2 ml of catalyst to 100 g of resin. Previously Crystic 471PALV.

SPECIFICATION: UN 1866. Pot life at 20°C/12 min. Pot life at 25°C/8 min. Max pigment paste: 10%. Appearance: cloudy mauvish. Barcol hardness: 47. Water absorption: 24 hours at 23°C/18 mg. Tensile strength of resin: 68 MPa. Tensile modulus of resin: MPa 3700. Elongation at break; 2.5%. Specific gravity at 25°C: 1.22. Catalyst: UN 3105.

Lay Up Resin Crystic 471PALV	code			5 kg
	PRO401			£44.10
Catalyst M	code	100 g	code	1 kg
	PRO422	£5.98	PRO425	£14.05

Firestop Flame Retardant Resin S 810 & VNature Gelcoat A pre-accelerated low viscosity polyester resin recommended for the production of opaque flame retardant laminates. Michael Whiteley kindly tested this for us and was very happy - he found the slightly thicker than normal gelcoat combined with the slightly thinner resin make the combo particularly suitable for building larger pieces of scenery and mouldings. UN1866

SPECIFICATION Resin: UN1866 Gel time: 20-30 min. Pot life at 20°C/20-30 min. Barcol hardness: 25. Tensile strength: 26.96 MPa. Elongation at break: 2.67%. Specific gravity at 25°C: 1.58 g/ml. Catalyst: UN 3105 [max. 1 ml per 100 g of resin].
SPECIFICATION Gelcoat: UN1866 Gel time: 10-15 min. Pot life at 20°C/14-21 min. Max pigment paste: 10%. Barcol hardness: soft gelcoat. Tensile strength: 52 MPa. Elongation at break: 8.2%. Specific gravity at 25°C: 1.3 g/ml. Catalyst: UN 3105 [max. 2 ml per 100 g of resin].

FireStop	size	code			price
Resin	22 kg	PROS810			£231.50
Gelcoat	22 kg	PROF5000			£239.00
Catalyst M		code	100 g	code	1 kg
		PRO422	£5.98	PRO425	£14.05

Marine Grade Resin – Crystic 2.406PA This is a low styrene resin with good wet out properties. The gel time is approximately 16 minutes. A colour change mechanism is incorporated when the catalyst is added. The colour changes from pale blue to green eventually clearing as the resin cures. Lloyds approved. Catalyst should be added at 1 or 2%.

SPECIFICATION: UN 1866. Pot life at 20°C: 22 min at 1% or 16 min at 2%. Pot life at 25°C: 16 min at 1% or 11 min at 2%. Max pigment paste – certain pigments affect this resin please seek advice. Appearance: pale blue. Barcol hardness: 45. Water absorption 24 hours at 23°C/14 mg. Tensile strength of resin: 54 MPa. Tensile modulus of resin: MPa 3,700. Elongation at break: 1.7%. Specific gravity at 25°C: 1.20. Catalyst: UN 3105.

Crystic 2.8500PA	code			25 kg
	PRO2406PA			£158.37
Catalyst M	code	100 g	code	1 kg
	PRO422	£5.98	PRO425	£14.05

GELCOATS

Gelcoat – Crystic 65PA This brush-applied gelcoat has excellent weather- and water-resistance with low taint. Moulders choose it over competitively priced products because of its exceptional handling properties in production, good flexibility, good gloss and ease of repair. This gelcoat is also widely used in the marine industry. Add 2 ml of catalyst per 100 g of resin. Lloyds approved.

SPECIFICATION: UN 1866. Pot life at 20°C: 15 min. Pot life at 25°C: 9 min. Available to order in various colours. Adding pigment paste may effect the water- and weather-resistance. Appearance: cloudy mauvish. Barcol hardness: 42. Water absorption 24 hours at 23°C/18 mg. Tensile strength of resin: 75 MPa. Tensile modulus of resin: MPa 3,500. Elongation at break: 3%. Specific gravity at 25°C: 1.11. Catalyst: UN 3105.

Crystic 65PA	code	5 kg	code	25 kg
	PRO403	£56.86	PRO412	£212.60
Catalyst M	code	100 g	code	1 kg
	PRO422	£5.98	PRO425	£14.05

CASTING RESIN

Smooth Cast [Bright White] Virtually bubble-free and ultra-low viscosity resin, ideal for capturing detail. When cured Smooth-Cast castings are bright white, tough and durable. They can be painted and resist moisture, mild solvents, moderate heat and dilute acids. Likewise, they can withstand being machined, primed and bonded to other surfaces. Comes in a two part kit to be mixed in a 1:1 volume ratio to activate. We stock two types of Smooth-Cast; Smooth-Cast 300 is fast setting whilst Smooth-Cast 305 is medium setting.

SPECIFICATION: Colour: White, Mix 1A:1B by volume or 100A : 90B by weight. Tensile strength: 3,000 psi, Mixed Viscosity: 80 cps, Specific Gravity: 105 g/cc, Specific Volume: 26.4 in^3/lb, Heat Deflection Temp: 50°C, Shore D hardness: 70. Smooth Cast 300: 3 min pot life at 23°C, 7- 10 min cure time at 23°C, Elongation at break: 5%, Flexural Strength: 4,510 psi, Compressive Strength: 4,000 psi, Shrinkage: 0.01 inch/inch. Smooth Cast 305: 7 min pot life at 23°C 30-40 mins cure time at 23°C, Elongation at break: 7.5%, Flexural Strength: 4,000 psi, Compressive Strength: 3,800 psi, Shrinkage: 0.0065 inch/inch.

Smooth Cast	cure time	kit size	code	price
300 (fast)	7-10 min	0.86 kg	PR047641	£25.30
300 (fast)	7-10 min	6.98 kg	PR047661	£155.75
305 (medium)	30-40 mins	0.86 kg	PR047441	£27.73
305 (medium)	30-40 mins	6.98 kg	PR047461	£155.98

Embedding Resin [Clear Casting] This embedding resin can be used for making small props and costume jewellery. Items can be embedded in the resin. Moulds can be made from glass [with a release agent] or polythene-lined containers but flexible rubber is not suitable. Add 2 ml of Catalyst M to 100 g of resin.

Embedding Resin [clear casting]	code	1 kg	code	5 kg
	PRO404	£24.25	PRO405	£71.55
Catalyst M	code	100g	code	1 kg
	PRO422	£5.98	PRO425	£14.05

REINFORCING RESIN FOR POLYSTYRENE

Resin 999 Coating & Adhesive for Polystyrene This new addition to the catalogue was requested by many customers. Designed specifically for adhesion to expanded polystyrene foam, we were really impressed with both its adhesion, and finished coating effect. We tested it on our expanded polystyrene balls [page 101]. Tests showed a good clear coat was achieved when applied with a reinforced surfacing tissue, and alone. The resin didn't melt the polystyrene at all, and gave a really good clarity. Perfect for sealing and glueing larger scale projects, or where durability is key. Catalyst should be added at 1 - 2% subject to conditions and requirements.

SPECIFICATION: UN 1866. Pot life at 20°C: 40-45 mins Pot life at 25°C:. 30 mins Appearance: pinkish opaque.. Water absorption: 0.63% in 72 hours at 25°C. Specific gravity at 25°C:.1.13 g/ml Catalyst: UN 3105.

Resin R999	code	5 kg	code	25 kg
	PR0R99905	£49.95	PR0R99925	£237.15
Catalyst M	**code**	**100 g**	**code**	**1 kg**
	PR0422	£5.98	PR0425	£14.05

EPOXY RESINS

Ampro Multi-Purpose Epoxy System This is a simple to use, all-purpose epoxy which can be used for:

✔ Gluing ✔ Laminating ✔ Filling

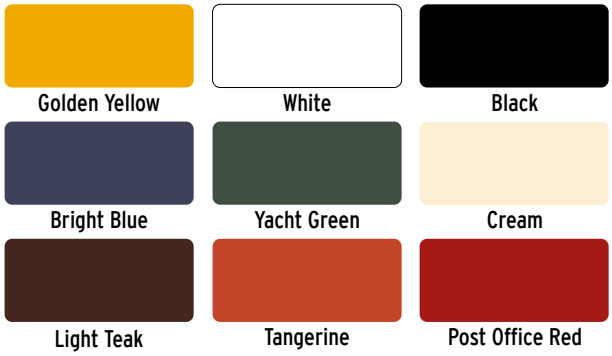
With its range of hardeners and easy 3:1 mix ratio by volume, Ampro provides a quick and convenient way of using one epoxy system for a very wide range of tasks – a re-engineered version of the popular SP 106. Widely used in many woodworking applications from cabinet making, to wooden boat repair, to the manufacture of large wooden moulds. By using Glass Bubbles or Micro Fibres [see next page], an Ampro resin and hardener mix can be turned into a very effective filling compound or gap filling adhesive. We can supply larger sizes to order. For user instructions visit flints.co.uk/downloads.

Ampro Multi-Purpose Epoxy	resin/hardener	code	price
1.33 kg pack + fast hardener	1 kg / 333 g	ADHF530025	£43.15
1.33 kg pack + slow hardener	1 kg / 333 g	ADHF530027	£43.15
4.2 kg pack + fast hardener	3 kg / 1.2 kg	ADHF530026	£109.09
4.2 kg pack + slow hardener	3 kg / 1.2 kg	ADHF530028	£109.09
10 kg resin only		ADHF530080	£165.53
3 kg fast hardener [for 10kg]		ADHF530013	£115.90
3 kg slow hardener [for 10kg]		ADHF530017	£115.90

Ampro Handipack This convenient little pack is perfect for small props and general repairs. It consists of resin, hardener and dispensing pumps. simply pump 3 pumps of resin to 1 pump of hardener for the perfect ratio to mix. Complete with instructions, this high clarity, and low-temperature curing pack will prove invaluable in any props workshop.

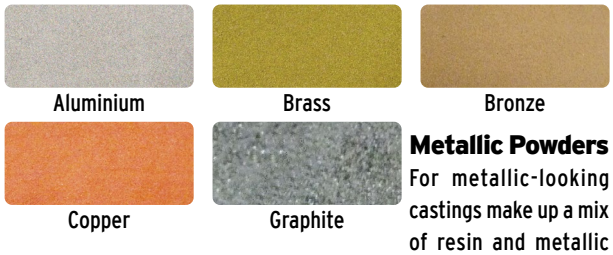
Ampro Handipack	resin/hardener	code	price
	290 g / 85 g	ADHF530071S	£31.58

RESIN ADDITIVES



Crystic Pigment Pastes The above resins can be tinted using these pigments. Do not add more than the recommended amount [see the Technical Data of each product]. A huge range of colours are available to order, but these are also intermixable which is a big plus!

Crystic Pigment Pastes	code	500 g	colour	code	500 g
Golden Yellow	PROPIG20	£20.92	Yacht Green	PROPIG21	£14.77
Light Teak	PROPIG22	£12.41	Tangerine	PROPIG23	£23.19
Post Office Red	PROPIG24	£18.60	White	PROPIG25	£12.40
Black	PROPIG26	£12.40	Bight Blue	PROPIG27	£15.48
Cream	PROPIG28	£14.69	Aircraft Grey	PROPIG29	£14.78



Metallic Powders For metallic-looking castings make up a mix of resin and metallic powder allowing 2 ml of catalyst M per 100 g of resin. The dull casting will need buffing with wire wool and metal polish to bring out the realistic effect [check out the polisher on page 281]. An aged effect can be obtained by adding one part of graphite powder per ten parts of metallic powder. Flints also sell metallic "powders" for making paint but they are not suitable for this application [page 35].

Metallic Powders	max powder resin ratio	size	code	price
Aluminium	1:1	500 g	PR0453	£19.87
Aluminium	1:1	5 kg	PR0452	£112.24
Brass	5:1	500 g	PR0455	£24.00
Brass	5:1	5 kg	PR0454	£194.62
Bronze	7:1	500 g	PR0451	£26.84
Bronze	7:1	5 kg	PR0450	£273.55
Copper	3:1	500 g	PR0457	£25.70
Copper	3:1	5 kg	PR0456	£215.95
Graphite	see text	200 g	PATGP0200	£5.95
Graphite	see text	2 kg	PATGP2400	£57.14

REINFORCEMENTS

Chopped Strand Mat 450 g/m² [type CTG] This is the most popular weight of chopped strand mat [CSM] suitable for most laminating. Using a fin roller or paddle roller [page 124] will greatly aid effective wetting out, essential for strong long-lasting laminates. The mat is 965 mm wide and is available by the metre. Also available as a box containing a roll of approx 56 metres which weighs 33 kg. Not suitable for use with Jesmonite because the mat requires solvents to make it pliable.

Chopped Strand Mat	width	code	per m	56 m+
	965 mm	PR0430	£3.55	£2.61

Also see Chopped Strands [page 118].

Surfacing Tissue [ACM1] The application of surfacing tissue will provide a smoother finish to laminating work.

Surfacing Tissue [ACM1]	width	code	per m	250 m+
	1 m	PR0433	£2.65	£2.13

Woven Roving 600 g/m² Woven roving is used to obtain a higher strength weight ratio than is possible with chopped strand mat [CSM]. Available by the metre or in a roll of approximately 60 metres. Weight of 60 m is 40 kg.

Woven Roving 600 g/m²	width	code	per m	60 m+
	1 m	PR0436	£3.70	£3.00

Glass Tape Reinforces plywood joints when used with Ampro Epoxy Resin [see previous page ⇦].

Glass Tape [50 m]	width	code	per 50 m
	50 mm	PROME0020C	£12.90

Paper Rope To stiffen large areas of glass reinforced fibre. Paper rope can also be used to act as formers for laminated ribs on the rear of the structure. 1" diameter though other sizes of paper rope are available [page 95].

Paper Rope	code	per m	code	100 m coil
25.5 mm diameter	PR0123	£1.54	PR0123D	£117.25

FILLER POWDERS

Glass Bubbles These hollow spheres serve to increase the volume and decrease the density of any resin system. They are used in adhesives and to make easily sanded filling and fairing compounds. In the theatre industry, they are often added to textures such as Idenden to reduce the weight. Suitable for use below the waterline.

Glass Bubbles	approx volume	code	price
0.3 kg	3 L	FILA230001	£17.34
5 kg	50 L	FILA230003	£163.93

Fillite Fillite is a glass hard, inert, hollow silicate sphere. Fillite is primarily used to reduce the weight of resins and moulding materials. The spherical nature of the material ensures the lowest quantity of binder is needed to wet out the material.

SPECIFICATION: Average particle density: 600 - 850 g/L. Average bulk density: 350 - 450 g/L. Packing factor: 60% - 65%. Appearance: Grey powder. Hardness: Mohs scale 5. Average wall thickness: 5% - 10%. Melting temperature: 1200° - 1350°C. Thermal conductivity: 0.11 Wm-1K-1. Loss on ignition: 2% maximum. Surface moisture: 0.3% maximum. Crush strength: 105 - 210 kg/cm² [1,500 - 3,000 psi].

✔ Lightweight – reduces the weight of your material
✔ Spherical – free-flowing
✔ Inert

Fillite	approx volume	code	price
20 kg	50 L	PR0500SG	£69.49

SP Micro Fibres These are very fine wood cellulose fibres commonly used to create structural adhesives for bonding both wood and GRP. Because any low viscosity resin system is readily absorbed into a porous surface such as wood, an unfilled adhesive may tend to give a "dry joint". With their absorbent properties, micro fibres can retain a significant quantity of adhesive within a joint and limit resin absorption into the surrounding surface, thus ensuring an adequate resin supply for adhesion. Where the strongest bond is required e.g. timber scarf joints, microfibres should always be used in preference to hollow sphere types of filler. For bonding parallel to the grain with lower density, lower strength timbers, such as cedar or obeche, a micro-balloon mix is often adequate, and is of lower density.

Product Details

Composition:	Milled bleached cellulose wood pulp
Appearance:	White 'fluffy' fibrous consistency
Particle Size:	200 - 300 microns
Particle Density:	Particles absorb resin
Bulk Density:	100 g/litre approx

SP Micro Fibres	size	code	price
Tub	500 g	ADHA215003	£10.58

FLOW MODIFIER

Flow Modifier – Colloidal Silica When added to resin with other filler powders, the colloidal silica will act as a thickening agent to prevent sagging on vertical surfaces. A typical mix would be 445 ml of resin, 145 ml of glass bubbles and 11 ml of colloidal silica.

Colloidal Silica	approx volume	code	price
250 g	5 L	FILA220003	£13.29