EPOXY LAMINATING SYSTEMS

POLYESTER RESINS

Polyester resins are hygroscopic (they draw moisture from the air). There are two types of resin, and one or both types may be required, depending on the application. Type "A" resin has a small amount of wax in it, which comes to the surface and forms a barrier against the moisture. This permits the resin to cure completely and the surface is hard and easily sanded. Bond Coat "B" resin does not have any wax content. As a result the surface stays a little tacky, as the surface cure is being inhibited by moisture. This tacky surface provides excellent adhesion between coats. Bond Coat resin is therefore recommended for the first coat of resin to fill the weave of the glass cloth, for bonding fiberglass cloth to plywood or other surfaces and for multi-layers of glass cloth.

TYPE "A" RESIN - #1520-5 is a general purpose ortho surfacing resin intended for the finishing coat applied over the Bond Coat #1063-5, or for single coat application. A second coat may be applied after full cure and thorough sanding but is not recommended.

Polyester Resin #692 Quart.....P/N 01-00346
5 Gal. #1520-5 with 4 oz. Catalyst .....P/N 01-00348
Additional catalyst may be required. 2 oz ...P/N 01-01119

SURFACE CURING AGENT is used in polyester resin to improve sanding properties. Added to #1063-5 Bond Coat or #6060-5 Isophthalic, it will provide same sanding properties as in Type "A" Surfacing Resin. Use in proportions of 2 oz. per Gallon of resin. Surface Curing Agent is used in addition to catalyst.

4 oz. in Polyethylene Dispenser Bottle .....P/N 01-07100
Pint (16 oz.) in Polyethylene Dispenser Bottle...P/N 01-07200
Gallon (128 oz.).....P/N 01-07300

TYPE "B" RESIN - #L253T-20 is a general purpose bond coat ortho resin for use in making multi laminates. It will not cure to a high gloss finish. Use 1520-5 for finish coat to obtain smooth, hard gloss finish. Replaces #1063-5.

1 Gal. #L253T-20 with 1 oz. Catalyst.....P/N 01-00349
5 Gal. #L253T-20 with 4 oz. Catalyst.....P/N 01-00350
Additional catalyst may be required.
Same catalyst used for #1520-5 and #L253T-20.

Note: Use #1520-5 finish coating over #L253T-20 but never use #L253T-20 over #1520-5.

Above resins are not for use in making fuel tanks. For fuel tanks (except those for gasohol) use #6060-5 Isophthalic Resin.*
Additional catalyst may be required.
Catalyst same as for resins listed above.
* Iso Resin is highly flexible. Has excellent adhesion to metal, wood, concrete, fiberglass and other "hard-to-adhere" surfaces. Compatible with most fuels. Iso is a wax-free resin and must be over-coated with Type "A" Surfacing Resin to obtain a surface cure.

MEKP NORAC CATALYST

MEKP Norac Catalyst is the catalyst added to polyester resins and vinyl ester resins. As the catalyst mixes with the resin, a chemical reaction occurs, creating heat which cures the resin. Use approx. 1/2 oz per quart of resin. We recommend the use of our MEKP Catalyst Dispenser for accurate measuring and pouring of catalyst.

2 oz .....P/N 01-01119

MGS EPOXY RESINS

MGS epoxy resins are approved for the production of certificated aircraft parts. The 335 and 285 systems are especially suited for homebuilders because of their long shelf lives, excellent workability, physiological friendliness, adjustable cure rates and excellent static and dynamic strength characteristics. The 285 system is available with fast and slow hardeners which can be blended with each other in any proportion to provide the desired working life and cure cycle. Pot lives and working times can be adjusted from fifteen minutes, using the fast hardeners, to six hours, when the slow hardeners are employed. Once the hardeners have been blended, the specified resin to hardener mixing ratio must be maintained. The 335 System is available only with fast hardener. Components of the 335 system should not be mixed with those of the 285 system. With both systems, if only the slowest hardener is used, the cure times should be extended to a few days, otherwise some brittleness may be noted. While room temperature curing results in good properties when the faster hardener combinations are used, some curing at elevated temperatures or post curing will result in the highest achievable strength and Tg, with the slower blends. Even unfavorable low temperature and high humidity conditions in the work environment will not affect the quality of the product and high gloss, uncontaminated, tack free surfaces are achievable every time. The resins do not contain any unreactive dilutants which with many systems result in de-gassing and bubbling of the painted finish. The MGS resins do NOT contain aromatic amines. While proper processing practices should be maintained, the physiological friendliness of these systems have been demonstrated by many years of production experience. The 285 system has slightly higher physicals than the 335 and will also achieve a higher maximum Tg after post curing. While the 335 is more viscous than the 285, after mixing with the appropriate hardeners, their viscosities are comparable. MGS systems are used in the construction of the Cozy, Diamond, Cirrus and other aircraft.

System 285 (Max. Tg 105 C - 110 C; 195 F - 230 F)		
Mixing ratio Resin:Hdnr	**Pot life**	**Mixed Viscosity@20C**
100:50 by volume	H285-F 40 min	300-500 cp
100:40 by weight	H287-S 4 hours	
	H285 : H287	
	40 : 60 2 hours	

System 285 Prices

L285 Resin (1 Gal.).....P/N 01-41000
H285F Hardener (.25 gal/1 qt.).....P/N 01-41005
H287S Hardener (.25 gal/1 qt.)*.....P/N 01-41006

***Important Shipping Information- H287S Hardener can be shipped UPS ground only. A $25 hazardous fee, and a $45 box fee applies (per quart). Can also be shipped truck collect.**

System 335 (Max. Tg 75 C - 80 C; 160 F - 180 F)		
Mixing ratio Resin:Hdnr	**Pot life**	**Mixed Viscosity@20C**
100:45 by volume	H335-F 15 min	800 cp
100:38 by weight	H340-S 6 hours	400 cp
	H335 : H340	
	50 : 50 1.5 hours	
	20 : 80 4 hours	

System 335 Prices

L335 Resin (Gal.).....P/N 01-41100
H335F Hardener (.225 gal/0.9 qt.).....P/N 01-41105
H340S Hardener (Slow).....P/N 01-41106

Two units of hardener are required for each Gallon of resin

VINYL ESTER RESIN

****Note: 3 month shelf life from date of manufacture. We suggest ordering when you are ready to use.****

Dow Chemical's Derakane 411-350 PA Vinyl Ester Resin is an epoxy-based Vinyl ester designed to provide superior toughness and high corrosion resistance. Many leading kit aircraft manufacturers use vinyl ester resins extensively due to its quality and ease of fabrication. We furnish medium "promoted" vinyl ester 411-350 PA resin which includes CONAP, DMA the resin is cured by adding the MEKP which is furnished with the kit. Gel times vary according to the amount of MEKP added and the ambient temperature. Shelf life of promoted vinyl ester resin is short at only a few months.

MEDIUM PROMOTED: Includes CONAP, DMA and other additives.
Add MEKP for complete cure: Quart .....P/N 01-01076
Gallon.....P/N 01-07350

CATALYST LARGE QUANTITY CHART

Catalyst Concentration	Resin Quantity		
	Quart	**Gallon**	**5 Gallon**
1/2%	1/16 oz.	2/3 oz.	1-1/3 oz.
3/4%	1/4 oz.	1 oz.	5 oz.
1%	1/3 oz.	1-1/3 oz.	6-2/3 oz.
1-1/2%	1/2 oz.	2 oz.	10 oz.

WARNING: Mekp Catalyst is very dangerous to the eyes. Always wear full goggle protection and have running water at hand when working with Mekp.

CATALYST SMALL QUANTITY CHART (20 -30 minute pot life at 2% mix ratio)

Catalyst Concentration	Resin Quantity - 30 drops = 1 cc				
	2 oz.	**4 oz.**	**8 oz.**	**12 oz.**	**16 oz.**
1/2%	9 drops	18 drops	36 drops	1.8 cc	2.5 cc
3/4%	14 drops	27 drops	2 cc	3 cc	4 cc
1%	18 drops	36 drops	2.5 cc	3.75 cc	5 cc
1-1/2%	27 drops	2 cc	4 cc	6 cc	8 cc
2%	36 drops	2.5 cc	5 cc	7.5 cc	10 cc

MEKP Clear Catalyst 1 oz.....P/N 01-01110
MEKP NORAC Catalyst Only (4 oz.) .....P/N 01-07325
Vinyl Ester Resin 411-350PA - Quart Kit ....P/N 01-01109
Vinyl Ester 1-Gal. Kit (Resin & Catalyst).....P/N 01-07355

Typical room-temperature properties of clear castings made with DERAKANE 411 resins

Property	**DERAKANE 411-350PA**
Tensile Strength, PSI	11-12,000
Tensile Modulus, units 105 PSI	4.9
Elongation, %	5-6
(DERAKANE 411-350)	(7-8)
Flexural Strength, PSI	16-18,000
Flexural Modulus, units 105 PSI	4.5
Compressive Strength, PSI	16-17,000
Compressive Modulus, units 105 PSI	3.5
Compressive Deformation at Yield, %	6.5-7.8
Specific Gravity	1.12
Heat Distortion Temp.,°F	210-220
Barcol Hardness	35