



# EPOXY RESINS FOR COMPOSITE AND MARINE APPLICATIONS

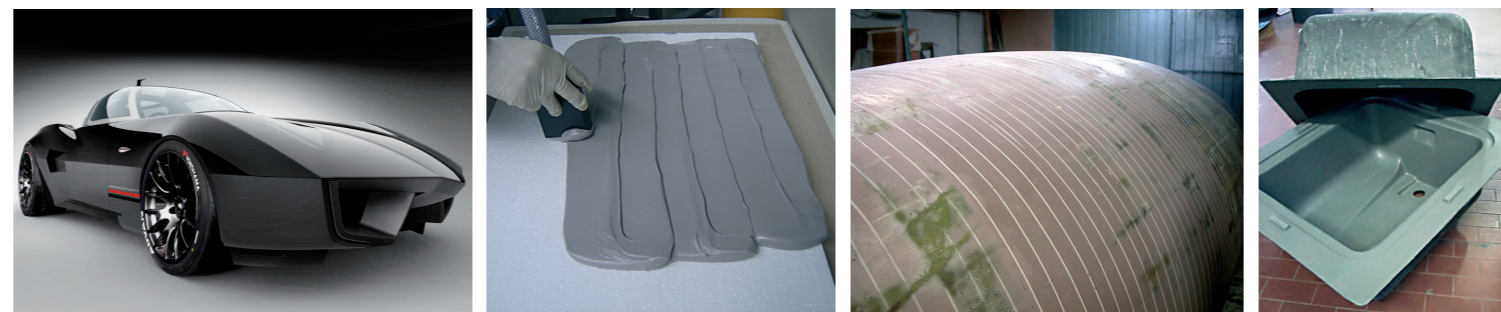
## RESINE EPOSSIDICHE PER MATERIALI COMPOSITI E APPLICAZIONI MARINE



RESIN RESINA	HARDENER INDURENTE	MIXING RATIO (% weight) RAPPORTO MIX (% in peso)	POT-LIFE MIN 25°C TEMPO DI UTILIZZO 25°C	CURING TEMP. TEMP. POLIMER.	POST CURING POST INDURIMENTO	Tg °C Max	APPLICATIONS/PROPERTIES APPLICAZIONI/PROPRIETÀ
<b>COLD TO HOT CURING</b>							
<b>WET-LAY UP</b>							
EC 130LV Light violet	W 341 fast react	100:30	8-15 min. (100ml)	Room temperature 70°C	(120°C)	125	Short, medium, long, extra long pot-life, thermal resistant, high performance system. W 342 UV resistant. W 132, W 131, W340 are recommended for medium and large surface vacuum bag laminating. <i>Resina ad alte prestazioni termoresistente, con indurenti a breve, medio, lungo, extra lungo pot-life. W 342 è resistente agli UV. W 132, W131, W 340 sono indicati per laminazione di medie e ampie superfici con sacco a vuoto.</i>
	W 342 medium react	100:30	22-27 min. (100ml)	Room temperature 70°C	(120°C)	118	
	W 340 Slow react	100:30	50-70 min. (100ml)	Room temperature 70°C	(120°C)	135	
	W 152 XLR Extra slow react	100:30	180-200 min. (100ml)	Room temperature 70°C	(80°C)	103	
	W 132 ultra slow react	100:38	240-280 min. (100ml)	Room temperature 70°C	(80°C)	100	
EC 152 Pale yellow	AW 91 medium react AW 92 extra slow react AW93 Ultra slow react	100:50	10-14 min 35-45 min 65-80 min	Room temperature 70°C	(70°C)	75 85 82	Coupling layer between cured and wet lay-up laminating (also on vinyl ester cured layer). <i>Strato di collegamento tra laminati induriti e laminazione a umido (anche su vinilestere).</i>
	W 152.1 HR Fast react	100:30	12-17 min. (200ml)	Room temperature 70°C	(70°C)	96	High performance resin with short, medium, long, extra long pot-life hardeners, for: small pieces wet-lay-up laminating at R.T medium and large surface vacuum bag laminating. <i>Resina ad alte prestazioni con indurenti a breve, medio, lungo, extra lungo pot-life indicati per laminazione: di piccoli manufatti in ambiente di medie e ampie superfici con sacco a vuoto.</i>
	W 152.1 MR Medium react	100:30	35-45 min. (200ml)	Room temperature 70°C	(70°C)	96	
	W152.1MLR Slow react	100:30	90-110 min. (200ml)	Room temperature 70°C	(70°C)	96	
	W 152 XLR extra slow react	100:30	100-120 min. (200ml)	Room temperature 70°C	(70°C)	96	
EC 255Tix Milky	W152.1HR Fast react	100:24	14-20 min	Room temperature	(70°C)	67	Thixotropic resin, fast or extra long gelification, for bonding PVC foam core in sandwich laminating structures. <i>Resina tixotropica, rapido o extra lunga gelificazione per incollaggio anime in schiuma di PVC nelle strutture sandwich.</i>
	W152XLR Extra slow react		125-160 min			77	
EC 170 Pale yellow	K 24 Medium react	100:14	15-20 min. (100ml)	Room temperature +50°C	(60°C)	87	Chemical resistant wet lay-up epoxy system, for chemical product tank laminating. <i>Sistema chimicoresistente per laminazione a umido di layer di serbatoi nell'industria chimica.</i>

<b>COLD TO HOT CURING</b>							
<b>PRESS MOULDING – RTM</b>							
EC 396 Pale yellow	W 153 Fast react	100: 32	6-8 min	Room temperature 15 min. 80°C	(80°C)	98	Fast or long pot-life systems with high reactivity, for hot press or RTM moulding (ex. helmets, fins, wakeboards, snowboards, bike and automotive parts, etc). <i>Sistemi a rapido o lungo pot-life per stampaggio a pressa o RTM, con elevata reattività a caldo (es. per caschi, pinne, wakeboards, snowboards, parti di moto e autovetture, ecc).</i>
EC 114 Pale yellow	W 152.1HR Fast react	100: 30	8-10 min	Room temperature 100°C	(80°C)	98	
	W 340 Medium react	100:27	80-100 min (8 min. 80°C)	~ / 100°C	100-130°C	150	
EC 157.1 Pale yellow	W 557 Fast react	100:18	20-30 min (100ml)	Room temperature 100°C	(120°C)	100	
EC 201	W 340 Medium react	100:32	320-360 min	- / 30 min 100°C	100-170°C	198	

<b>COLD CURING + POST CURING</b>							
<b>INFUSION</b>							
EC 157.1 Pale yellow Systems GL Approved	W152.1 HR accelerator Fast react	100:30	40-50 min. (200 ml)	Room temperature 50°C	(70°C)	85	Very low viscosity with several reactivity. Suitable for small and large infusion component (i.e. wind turbine blades and boats). <i>Sistema a bassissima viscosità e diverse reattività. Specifico per l'infusione di parti di piccole e grandi dimensioni (es. pale eoliche, barche).</i>
	W152.1MLR Slow react		80-100 min. (200ml)			85	
	W 152 XLR Extra slow react		120-150 min. (100ml)			85	



RESIN RESINA	HARDENER INDURENTE	MIXING RATIO (% weight) RAPPORTO MIX (% in peso)	POT-LIFE MIN 25°C TEMPO DI UTILIZZO 25°C	CURING TEMP. TEMP. POLIMER.	POST CURING POST INDURIMENTO	Tg °C Max	APPLICATIONS/PROPERTIES APPLICAZIONI/PROPRIETÀ
<b>COLD CURING</b>							
<b>MAINTENANCE AND CASTING</b>							
EC 147 Pale yellow	W 147 Fast react	100:45 For putty add: EF 36 EF18T EF 31	12-20 min. (100 ml)	Room temperature	(50°C)	65	Room temperature fast curing system. Easy mixing ratio 2:1 in volume. EC398Tix/W147 is a light thixotropic system. <i>Rapido indurimento a T. ambiente. Facile rapporto di impiego 2:1 in volume. EC398Tix/W147 è leggermente tixotropico.</i>
EC 398 Tix Pale yellow tix	W 160	100:30	70-85 min.	Room temperature	(50°C)	80	Fast, medium or Long pot-life System developed in order to receive a higher amount of charges. <i>Sistema a medio o lungo pot-life sviluppato per ricevere una più alta quantità di cariche.</i>
EC 360 Pale yellow	W 161HR Fast react	100: 25	10-20 min.			85	
EC 251 Flexible	W 222 Extra slow react	100:45	180-300 min.	Room temperature +50°C	(60°C)	63	U.V. protected low viscosity, transparent, flexible (EC 251) and low module (EC252) Systems. For glass slab coupling layer and agglomerated materials. <i>Sistema con protezione U.V., trasparente, flessibile (EC251) e basso modulo (EC252), per strati di collegamento su vetro e materiali agglomerati.</i>
	EC 252 Low module Transparent UV protecte	W 242NF Medium react	100:40			30-40 min. (100ml)	
EC 141 NF Transparent UV protected	W 242NF Medium react	100:45	35-45 min.	Room temperature	(50°C)	58	U.V. protected low viscosity, clear casting System. Different hardeners, for transparent and agglomerated piece and coating. <i>Sistema con protezione U.V., trasparente, a bassa viscosità, differenti indurenti per manufatti colati similvetro, agglomerati e finiture.</i>
	W 243 Slow react	100:40	40-60 min. (200ml)	Room temperature	(50°C)	70	
	W 241 Extra slow react	100:45	75-95 min.	Room temperature	(50°C)	65	
EC 254LB UV protected	W 254N Medium-fast react	100:50	15-25 min. (100ml)	Room temperature +50°C	(60°C)	87	U.V. protected low viscosity System, for carbon look composites coating and materials finishing. <i>Sistema per finitura trasparente di manufatti composti a vista di carbonio ed altri materiali.</i>
AS 15 milky + Y 28 foaming Agent	W 242NF Medium react	100: 0,5-1,5: 45	5-15	Room temperature	(50°C)	70	Thixotropic casting resin, foaming up to 2-5 times for small or large light elements <i>Sistema da colata tixotropico, espandente da 2 a 5 volte per piccoli o grandi elementi leggeri.</i>
	W 241 Slow react		15-30	Room temperature	(50°C)	70	
PC224 GLASS MR Transparent aliphatic System PU, UV resistant	G124 transparent	100:65	25-35 min. (500ml)	Room temperature	(50°C)	83	U.V. resistant aliphatic PU System for solid casting maximum thickness 40 mm. <i>Sistema poliuretano alifatico, resistente U.V. per colate a spessore massimo 40 mm.</i>

<b>COLD CURING + POST CURING</b>							
<b>MASTER MODELS AND TOOLS FOR COMPOSITES</b>							
EPIBLOCK EB 690	GREEN		EPOXY BOARD d=650 * standard size : 1500x500x100/75/50mm. TAVOLA EPOSSIDICA d=650 *dimensione standard 1500x500x100/75/50 mm.			135	Master models and thermoresistant tools for epoxy pre-pregs tools and parts. <i>Modelli master e stampi termoresistenti per pre-pregs epossidici.</i>
PURBLOCK RANGE	Many density and colours		Polyurethane boards for modeling and tools			80-90	Refer to "Tooling Resins Overview"
MS 655 A MS 657 A MS 658 A Grey or brown	MS 655 B MS 657 B MS 658 B White	100:100	35 - 45 min. (500ml)	Room temperature	(60°C)	68 68 63	Machine applied several epoxy pastes (d=0,6-0,7-0,75) for CNC large model and mould. <i>Diverse paste epossidiche (d=0,6-0,7-0,75) estrudibile a macchina mix-dos per modelli e stampi di media e grande dimensione.</i>
MC 338	W 61	Grey Aluminium Grigio Alluminio	100:7	120-180	40	240	High thermal and chemical resistant, aluminium filled, for solid casting of pilot thermoplastic injection moulds. <i>Elevata resistenza termica e chimica, caricato alluminio, per colate a spessore di stampi pilota per iniezione termoplastici.</i>
MC 1164 filled Alu	W 341 Fast react	100:9	25 - 35 min. (200ml)	Room temperature	100-130°C	133	Aluminium filled thermal conductive system for mould casting. <i>Sistemi caricati alluminio termoconduttivi per stampi colati.</i>
	W 340 Medium react	100:9	150 - 180 min. (200ml)	Room temperature	100-130°C	135	
MG 536 brown	W 503 Fast react	100: 19	15 - 25 min. (100 ml)	Room temperature /40°C	130°C	150	Polishable gelcoat, fast or long pot-life, room temp. curing, for thermal resistant. moulds and tools. <i>Gelcoat lucidabile a corto o lungo pot-life, per stampi e attrezzi ad alta resistenza termica.</i>
	W 506 Slow react	100:33	182 min	Room temperature /40°C	160°C	190	
EC 57 Pale yellow	W 61 Slow react	100:16	68- 82 min. (100ml)	Room temperature +50°C	120°C	140	Long pot-life System for thermoresistant tools, infusion processed. <i>Sistema a lungo pot-life per stampi termoresistenti realizzati per infusione.</i>
EC 257 Pale yellow	W 61 Slow react	100:16	220 - 240 min (200 ml)	Room temperature +35°C	160°C	190	Long pot-life System for thermoresistant tools, infusion processed. <i>Sistema a lungo pot-life per stampi termoresistenti realizzati per infusione.</i>
EC 180 Amber	W340 Medium-slow react	100:36	220 - 240 min (100 ml)	Room temperature + 35°C	160°C	185	Long pot-life, Room temp. curing System, for thermal resistant. moulds and tools. Wet lay-up processed. <i>Sistema a lungo pot-life per laminazione manuale, indurimento a T.A. per stampi e attrezzi alta resistenza termica.</i>



RESIN RESINA	HARDENER INDURENTE	ACCELERATOR CATALIZZATORE	MIXING RATIO (% weight) RAPPORTO MIX (% in peso)	POT LIFE at 25°C TEMPO UTILE a 25°C	HOT CURING INDURIMENTO A CALDO	Tg °C Max	APPLICATIONS/PROPERTIES APPLICAZIONI/PROPRIETÀ
<b>HOT CURING</b>							
<b>PULTRUSION/FILAMENT WINDING CASTING (*)</b>							
EC 114 Pale yellow	W 132 Amine slow react	n.a.	100:37	400-460 min	90°C	110	Long pot-life System curing at moderate temperature. Filament Winding for small-medium size composite parts. <i>Sistema a lungo pot-life con indurimento a moderata temperature. Avvolgimento filamentare di manufatti piccole e medie dimensioni.</i>
EC 01 Pale yellow	WH 850.1 Anidryde hardener	W 45 or W847 Pale yellow /brown	100:90:0,5+2	6-24 h	100-160°C	130	Long pot-life Systems. High temperature curing only, reactivity depending on % accelerator. F.W., press molding. <i>Sistemi a lungo pot-life con indurimento solo a caldo, con reattività dipendente dalla % di catalizzatore. Processi F.W., pressatura a caldo.</i>
EC 361 Pale yellow	WH 850.1 Anidryde hardener	W 45 Pale yellow	100:85:1,5+2	6-24 h	100-150°C	130	As above, specific for high curing filled Systems (abrasive tools for stone and ceramic slabs) <i>Come sopra ma specifico per Sistemi con indurimento a caldo, molto caricati (utensili abrasive per lapidei e ceramico).</i>
EC 14PT Milk, with release agent	WH 102 Anidryde hardener WH 113 Anidryde hardener accelerated	W 45 or W847 Pale yellow/brown	100:90:0,5+2	6-24 h	5-15 min 160-190°C + post-curing	150	Long pot life system. High temperature curing only. Containing wax releasing additive for high speed pultrusion composite parts. <i>Sistema a lungo pot-life con indurimento solo ad alta T, contenente cera distaccante per pultrusione ad alta velocità di parti in composito.</i>
MC 103 Light filled with release agent	WH113 Anidryde hardener accelerated	-	100:90				
EC 327 Pale yellow	WH 102 Pale yellow	W 45 or W847 Pale yellow/brown	100:115:1,5-3	6-24 h	80°C+140°C +180°C	200	Very low viscosity and long pot-life system. High temperature curing only. Filament Winding and press moulding for high thermal resistant composite part. <i>Sistemi a bassissima viscosità, Lungo pot-life con indurimento solo ad alta T. Filament winding e stampaggio sotto pressa di parti in composito ad alta resistenza termica.</i>

(\*) Other Systems available for specific needs (i.e. different reactivity) – Altri Sistemi sono disponibili per specifiche necessità (es. differente reattività)

**U.V. CURE RESIN WITH SPECIAL LAMP AND ANCILLARY PRODUCTS CLEAR FINISH RETOUCH**

**RESINA INDURENTE CON LAMPADA U.V. E ACCESSORI RITOCO DI FINITURE TRASPARENTI**

UV cure system complete with lamp, protected resin cartridge Dymax, ancillary products for fast retouch of transparent surfaces finish and carbon look composite.  
*Sistema completo composto da lampada U.V. e cartucce di resina protetta Dymax per il ritocco rapido di superficie finitura trasparente quali i manufatti in materiale composito con fibra di carbonio a vista.*

ADD-UP2	For gelcoat or polyester/vinylester resins	Transparent Trasparente	100:1,8-2,2	-	-	-	Special additive compatibilizer gelcoat or polyester/vinylester skin coat with epoxy resins. Please check TDS. <i>Speciale additivo compatibilizzante gelcoat e resine poliesteri/vinilesteri skin coat con resine epossidiche. Vedi procedura sul B.T.</i>
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