POLIMAL®

unsaturated polyester resins

SARZYNA
CHEMICAL

ABOUT US

Sarzyna Chemical sp. z o.o. core business is the manufacture of synthetic resins, including epoxy resins as the only manufacturer in Poland. With a successful fusion of tradition, experience and innovation & technological advancement for over 80 years, the company offers high-quality products designed for use in key industries such as marine, construction, automotive, paints and mining.

The broad portfolio of over 1,000 baseline products, extended with customized solutions, covers:

- EPIDIAN® epoxy resins;
- POLIMAL® unsaturated polyester resins;
- saturated polyester resins for powder paints;
- gelcoats and topcoats;
- hardeners;
- NOWOLAK and MODOFEN® phenolic-formaldehyde resins

LEGEND

RESEARCH METHOD:

1 – Brookfield, sp.21; rpm.50
2 – Brookfield, sp.21; rpm.100
3 – Physica, sp. Z-2; rpm.20
4 – Brookfield, sp.21; rpm.10
5 – Brookfield, sp.21; rpm.20
6 – Höppler, 25°C
7 – Brookfield, sp.21; rpm.1
n.m. – not marked

SYMBOLS / RESINS

NUMERIC DESIGNATIONS		LETTER DESIGNATIONS	
10...	orthophthalic	A	low styrene emission (LSE)
106...	orthophthalic neopentyl	B	contains amine accelerator
105...	DCPD modified	L	contains optical whitener
12...	isophthalic, isophthalic neopentyl	S	contains fillers
14...	terephthalic	P/Py	accelerated
15...	elastic	R	with promoter
16...	non-flammable	T	thixotropic
18...	orthophthalic, haberdashery	W	colour curing indicator
19...	THPA based	U	increased UV resistance
		VE	vinylester

SYMBOLS / HARDENERS

Symbol	Cobalt Accelerator 1%	DMA accelerator	Hardener	Resin Type
A	0,4	-	2,0 Luperox® K-1 S	neutral
A1	1,5	-	2,0 Luperox® K-1 S	neutral
C	-	-	2,0 Luperox® K-1 S	accelerated
VE	0,6	1,2	2,0 Luperox® K-1 S	vinylester
R	-	-	2,0 Luperox® ANS 50 G	amine
N	1	-	1,1 Luperox® K-1 S	neutral
S-1	1	-	2,0 Luperox® K-12 G	vinylester
PTV	-	-	1,0 Luperox® K-1 S	accelerated
B	1	-	2,0 Luperox® K-1 S	neutral
1	-	-	3,0 Luperox® ANS 50 G	amine

LOW STYRENE EMISSION (LSE) RESINS FOR HAND LAY-UP AND SPRAY-UP APPLICATION

Widely used in production of kayaks, boats, tanks, lids, swimming pools, and other goods exposed to constant contact with water.

Suitable for both hand lay-up and spray-up application.
Manual method allows for production of various shapes without size restrictions. Spray-up application enables mass production.

We also recommend gelcoat NG Hydro in various shades of white, black (RAL 9005), navy blue (RAL 5004), and grey (RAL 7021).

PRODUCT	PROPERTIES	APPLICATIONS	TYPE	CURING SYSTEM	VISCOSITY [mPa·s]	GEL TIME [min]	FLEXURAL STRENGTH [MPa]	TENSILE STRENGTH [MPa]	TENSILE MODULUS [MPa]	ELONGATION AT BREAK [%]	HDT [°C]
POLIMAL® 104 AWTP	• ACCELERATED • THIXOTROPIC • CERTIFIED FOR CONTACT WITH DRINKING WATER	PRODUCTION OF UP TO 5 mm THICK POLYESTER GLASS LAMINATES	ORTHO	C	250–350[2]	10–20	120	80	3600	3	90
POLIMAL® 104 AWTP-2		PRODUCTION OF UP TO 5 mm THICK POLYESTER GLASS LAMINATES				27–35					
POLIMAL® 1059 AWTP-1	• MEDIUM ELASTICITY • THIXOTROPIC • LOW STYRENE CONTENT	PRODUCTION OF UP TO 5 mm THICK POLYESTER GLASS LAMINATES	DCPD	C	230–290[2]	22–26	120	70	3700	2	85
POLIMAL® 1059 AWTP-2 **POLIMAL® 1059 AWTP-3**		PRODUCTION OF OVER 5 mm THICK POLYESTER GLASS LAMINATES			230–290[2] 230–290[2]	32–36 40–50					
POLIMAL® 1094 AWTP-1	• ACCELERATED • THIXOTROPIC	PRODUCTION OF UP TO 5 mm THICK POLYESTER GLASS LAMINATES	ORTHO	PTV	300–450[3]	19–26	110	70	4300	2	63
POLIMAL® 1094 AWTP-2 **POLIMAL® 1094 AWTP-3**		PRODUCTION OF OVER 5 mm THICK POLYESTER GLASS LAMINATES				25–33 35–45					
POLIMAL® 122-2 AWTP	• THIXOTROPIC • INCREASED THERMAL RESISTANCE • LLOYD'S REGISTER CERTIFICATE	PRODUCTION OF LAMINATES WITH INCREASED RESISTANCE PARAMETERS	ISO	C	240–350[2]	15–25	120	80	3800	3	90
POLIMAL® 143 AWTP-1	• THIXOTROPIC • ACCELERATED	PRODUCTION OF UP TO 5 mm THICK POLYESTER GLASS LAMINATES	TERE	1 - C	200–350[2]	10–20	100	60	3200	2	65
POLIMAL® 143 AWTP-2 **POLIMAL® 143 AWTP-3**		PRODUCTION OF OVER 5 mm THICK POLYESTER GLASS LAMINATES		2,3 - PTV	180–230[2] 300–450[3]	20–30 35–45					

[2] Brookfield, sp.21; rpm.100 [3] Physica, sp.Z-2; rpm.20

RESINS FOR ABS/PMMA LAMINATES

A range of modified resins created for the sanitary industry. Characterized by great adhesion to ABS/PMMA boards and the possibility of adding over 50% of mineral fillers.

PRODUCT	PROPERTIES	APPLICATIONS	TYPE	CURING SYSTEM	VISCOSITY [mPa·s]	GEL TIME [min]	FLEXURAL STRENGTH [MPa]	TENSILE STRENGTH [MPa]	TENSILE MODULUS [MPa]	ELONGATION AT BREAK [%]	HDT [°C]
POLIMAL® 1090 AWTP	• ABS • ACCELERATED • THIXOTROPIC • LOW VISCOSITY	PRODUCTION OF POLYESTER GLASS LAMINATES	ORTHO	C	150–200[2]	6–15	110	70	4300	2	63
POLIMAL® 1091 P	• PMMA • LOW VISCOSITY • SHORT GEL TIME	PRODUCTION OF COMPOSITIONS REINFORCED WITH GLASS FIBER AND/OR MINERAL FILLERS	ORTHO	C	130–160[2]	3–8	110	70	4300	2	63
POLIMAL® 1091 PS		WHITENED VERSION									

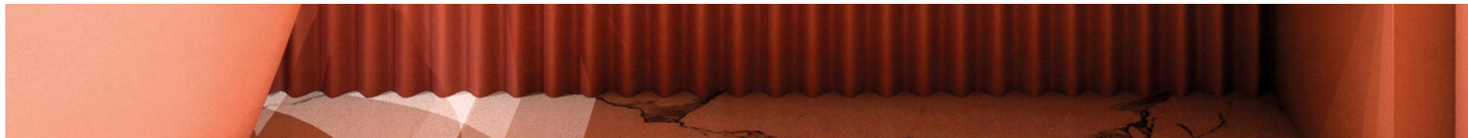
[2] Brookfield, sp.21; rpm.100

CASTING RESINS FOR SANITARY WARE

Products characterized primarily by good resistance to thermal shocks, low shrinkage, and the possibility of adding mineral fillers. Used in production of bathtubs, washbasins, and shower trays. These work perfectly with SaniGel – our signature sanitary gelcoat available in various shades of white.

PRODUCT	PROPERTIES	APPLICATIONS	TYPE	CURING SYSTEM	VISCOSITY [mPa·s]	GEL TIME [min]	FLEXURAL STRENGTH [MPa]	TENSILE STRENGTH [MPa]	TENSILE MODULUS [MPa]	ELONGATION AT BREAK [%]	HDT [°C]
POLIMAL® 1051 P	• ACCELERATED • LOW VISCOSITY	PRODUCTION OF MINERAL CASTS	DCPD	PTV	150–200[2]	8–10	90	60	3500	1,5	90
POLIMAL® SAN 1051 P		INCREASED GEL TIME RECOMMENDED TO USE WITH **SaniGel** SANITARY GELCOAT									
POLIMAL® 1057 P-2	• ACCELERATED • LOW VISCOSITY • MEDIUM ELASTICITY	PRODUCTION OF MINERAL CASTS. RECOMMENDED TO USE WITH **SaniGel** SANITARY GELCOAT	DCPD	C	150–220[2]	21–23	90	60	3700	2	70

[2] Brookfield, sp.21; rpm.100

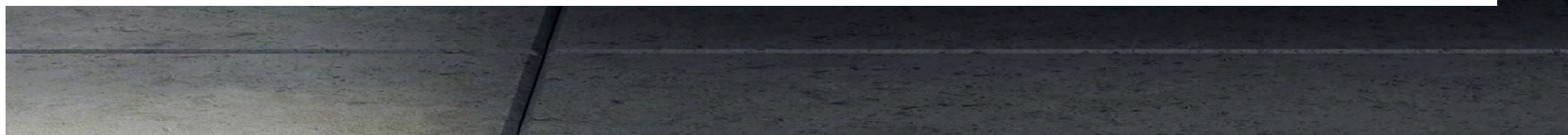


CASTING RESINS FOR *SOLID SURFACE* APPLICATIONS

These resins offer excellent resistance to aging factors. Characterized by hardness, high resistance to thermal shocks, and UV radiation.
Used in production of sinks and washbasins.

PRODUCT	PROPERTIES	APPLICATIONS	TYPE	CURING SYSTEM	VISCOSITY [mPa·s]	GEL TIME [min]	FLEXURAL STRENGTH [MPa]	TENSILE STRENGTH [MPa]	TENSILE MODULUS [MPa]	ELONGATION AT BREAK [%]	HDT [°C]
POLIMAL® 125 MP	• ACCELERATED • CONTAINS METHYL METHACRYLATE	PRODUCTION OF *SOLID SURFACE* GOODS	ISO/NPG	C	500–600[1]	10–20	120	70	3600	2,5	85
POLIMAL® 125 MTP	• THIXOTROPIC • ACCELERATED • CONTAINS METHYL METHACRYLATE	PRODUCTION OF *SOLID SURFACE* GOODS	ISO/NPG	–	750–950[1]	13–18	120	70	3600	2,5	85
POLIMAL® 125 MTP-0		DECREASED GEL TIME									
POLIMAL® 127	• NEUTRAL • INCREASED UV RESISTANCE	PRODUCTION OF *SOLID SURFACE* GOODS	ISO/NPG	B	450–650[4]	8–16	120	70	3600	2,5	85
POLIMAL® 1061 P	• ACCELERATED • HIGH VISCOSITY	PRODUCTION OF *SOLID SURFACE* GOODS AND ATRIFICIAL MARBLE	ORTHO/NPG	C	720–850[1]	14–16	110	60	3900	2	75

[1] Brookfield, sp.21; rpm.50 [4] Brookfield, sp.21; rpm.10



RESINS FOR MINERAL CASTS AND POLYMER CONCRETE

Highly reactive resins designed for production of polymer concrete, pipes, bridge cornices, and linear drainage systems. Characterized by good mechanical parameters including compressive strength. These resins can absorb large amounts of mineral fillers, allow for good deaeration and post-curing.

PRODUCT	PROPERTIES	APPLICATIONS	TYPE	CURING SYSTEM	VISCOSITY [mPa·s]	GEL TIME [min]	FLEXURAL STRENGTH [MPa]	TENSILE STRENGTH [MPa]	TENSILE MODULUS [MPa]	ELONGATION AT BREAK [%]	HDT [°C]
POLIMAL® 109-32 K	• NEUTRAL • LOW VISCOSITY	PRODUCTION OF MINERAL CASTS AND POLYMER CONCRETE	ORTHO	A	230–290[2]	13–20	100	50	3900	2,5	60
POLIMAL® 109-32 PyK	• ACCELERATED • LOW VISCOSITY	PRODUCTION OF MINERAL CASTS AND POLYMER CONCRETE	ORTHO	C	200–300[2]	7–15	100	50	3900	2,5	60
POLIMAL® 143 RP	• ACCELERATED • LOW VISCOSITY • REACTIVE	PRODUCTION OF MINERAL CASTS, POLYMER CONCRETE, AND ARTIFICIAL MARBLE	TERE	C	200–230[2]	13–20	100	60	3200	2	65
POLIMAL® 144-01	• NEUTRAL	PRODUCTION OF MINERAL CASTS, ESPECIALLY GARDEN FIGURES	TERE	A	250–350[2]	8–25	120	60	3500	3,5	65
POLIMAL® 106 R	• NEUTRAL • REACTIVE • LOW VISCOSITY	PRODUCTION OF POLYMER CONCRETE	ORTHO	B	190–240[2]	3–8	110	75	3700	3,5	85
POLIMAL® 145-1	• LOW VISCOSITY • MEETS DIN 16946/2 TYPE 1130 NORM	PRODUCTION OF POLYMER CONCRETE	TERE	A	250–350[2]	5–12	110	60	3300	2	85
POLIMAL® 148 RP	• ACCELERATED • LOW VISCOSITY • MEDIUM ELASTICITY	PRODUCTION OF POLYMER CONCRETE	TERE	C	200–300[2]	4–8	105	60	3500	2	60

[2] Brookfield, sp.21; rpm.100

RTM/INFUSION RESINS

Resins designed to laminate elements in closed forms. Characterized by low viscosity, low polymerization peak, and perfect flow, due to which these resins perfectly moisten glass fiber.

PRODUCT	PROPERTIES	APPLICATIONS	TYPE	CURING SYSTEM	VISCOSITY [mPa·s]	GEL TIME [min]	FLEXURAL STRENGTH [MPa]	TENSILE STRENGTH [MPa]	TENSILE MODULUS [MPa]	ELONGATION AT BREAK [%]	HDT [°C]
POLIMAL® 104 N-1 INF	• NEUTRAL • INCREASED THERMAL RESISTANCE	PRODUCTION OF POLYESTER GLASS LAMINATES WITH INFUSION AND RTM METHODS	ORTHO	C	200–250[2]	14–24	120	80	3700	3,5	100
POLIMAL® 1051 INF P-2	• ACCELERATED • LONG GEL TIME	PRODUCTION OF POLYESTER GLASS LAMINATES IN CLOSED FORMS WITH INFUSION AND RTM METHODS	DCPD	C	160–180[2]	40–50	110	60	3060	2,2	65
POLIMAL® 1058 (P-1)	• NEUTRAL • MEDIUM REACTIVITY	PRODUCTION OF POLYESTER GLASS LAMINATES WITH INFUSION AND RTM METHODS	DCPD	A1	150–200[2]	8–13	80	55	3600	1,5	70
POLIMAL® VE-11 M	• MEETS DIN 53438 CLASS K1 AND F1 NORM • CHEMICALLY RESISTANT	PRODUCTION OF HIGH CHEMICAL RESISTANT LAMINATES AND RESIN-MINERAL CASTINGS	VE	S -1	300–400[6]	15–30	130	80	3600	3,5	90
POLIMAL® VE-3MM P INF	• ACCELERATED • CHEMICALLY RESISTANT • LLOYD'S REGISTER CERTIFICATE	PRODUCTION OF POLYESTER GLASS LAMINATES WITH INFUSION AND RTM METHODS	VE	C	200–250[2]	30–40	134	85,5	3720	6,1	105

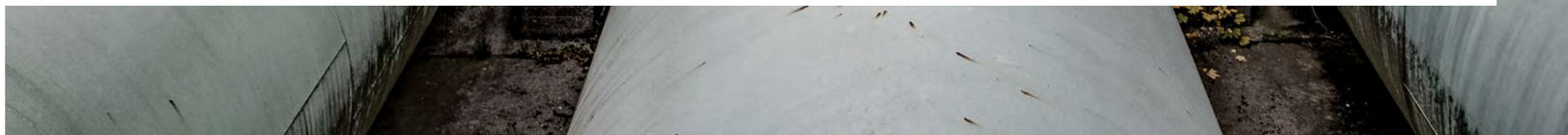
[2] Brookfield, sp.21; rpm.100 [6] Höppler, 25°C

RESINS FOR FILAMENT WINDING AND CENTRIFUGAL CASTING

Resins with great mechanical parameters used mainly in production of pipes by filament winding or centrifugal casting. Hardened products are characterized by high resistance to static mechanical loads.

PRODUCT	PROPERTIES	APPLICATIONS	TYPE	CURING SYSTEM	VISCOSITY [mPa·s]	GEL TIME [min]	FLEXURAL STRENGTH [MPa]	TENSILE STRENGTH [MPa]	TENSILE MODULUS [MPa]	ELONGATION AT BREAK [%]	HDT [°C]
POLIMAL® 104	• NEUTRAL • CERTIFIED FOR CONTACT WITH DRINKING WATER	PRODUCTION OF GLASS FIBER REINFORCED GOODS	ORTHO	N	300–400[2]	14–24	120	80	3600	3	90
POLIMAL® 104 T		THIXTOTROPIC									
POLIMAL® 104 N-1	• NEUTRAL • CERTIFIED FOR CONTACT WITH DRINKING WATER • MEETS DIN 16946 TYPE 1140 NORM	PRODUCTION OF GOODS REINFORCED WITH GLASS FIBER AND/OR MINERAL FILLERS	ORTHO	N	200–250[2]	14–24	120	80	3600	3,5	100
POLIMAL® 122-2 T	• NEUTRAL • THIXOTROPIC • LLOYD'S REGISTER CERTIFICATE	PRODUCTION OF GLASS FIBER REINFORCED GOODS RECOMMENDED FOR FILAMENT WINDING	ISO	A	240–350[2]	10–20	120	80	3700	3	90

[2] Brookfield, sp.21; rpm.100



RESINS FOR RELINING

Resins designed for wetting of glass fiber and felt elements e.g. sleeves used in pipe repairs. Cured materials are characterized by very good chemical, thermal, and water resistance.

PRODUCT	PROPERTIES	APPLICATIONS	TYPE	CURING SYSTEM	VISCOSITY [mPa·s]	GEL TIME [min]	FLEXURAL STRENGTH [MPa]	TENSILE STRENGTH [MPa]	TENSILE MODULUS [MPa]	ELONGATION AT BREAK [%]	HDT [°C]
POLIMAL® 129-1	• THIXOTROPIC • NEUTRAL	RENOVATION OF PIPES WITH RELINING METHOD	ISO/NPG	B	850–950[7]	8–12	120	60	3500	2	80

[7] Brookfield, sp.21; rpm.1

FLAME RETARDANT RESINS

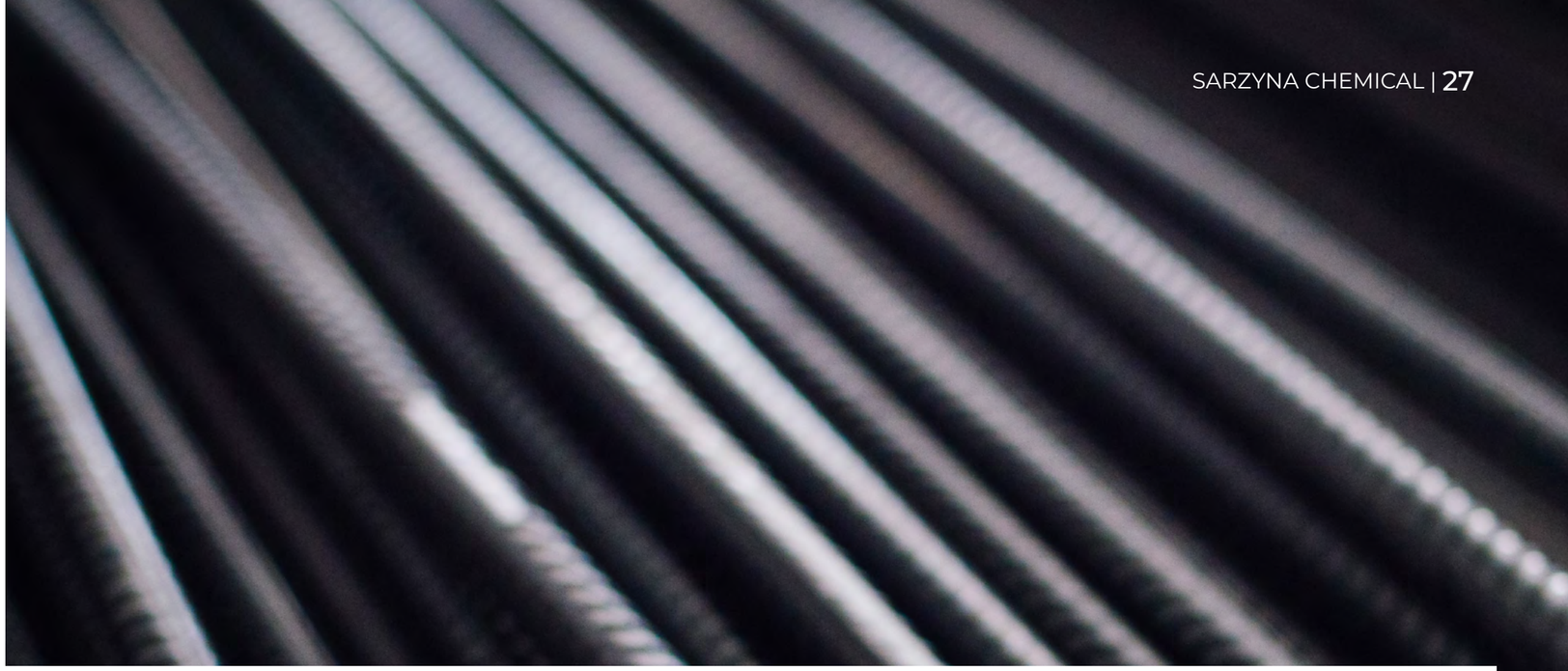
Designed for production of structural and decorative elements, casings, and covers, mainly in automotive industry.
Together with non-flammable specialized gelcoats, these products meet international fire safety and electrical equipment norms.

PRODUCT	PROPERTIES	APPLICATIONS	TYPE	CURING SYSTEM	VISCOSITY [mPa·s]	GEL TIME [min]	FLEXURAL STRENGTH [MPa]	TENSILE STRENGTH [MPa]	TENSILE MODULUS [MPa]	ELONGATION AT BREAK [%]	HDT [°C]
POLIMAL® 104 TS-2	• NEUTRAL • HALOGENATED • CONTAINS FILLERS	PRODUCTION OF FIRE RESISTANT POLYESTER GLASS LAMINATES. THIXTOTROPIC	F.R.	A	400–600[1]	10–20	120	80	3600	2,3	95
POLIMAL® 1601 P	• ACCELERATED • THIXOTROPIC • LAMINATE BASED ON POLIMAL® 1601 P AND GELCOAT 1600P MEETS EN 45545 NORM: R1 PRODUCT REQUIREMENT, HL2 FIRE HAZARD LEVEL	PRODUCTION OF FIRE RESISTANT POLYESTER GLASS LAMINATES BY HAND LAY-UP OR SPRAY-UP APPLICATION METHOD. RECOMMENDED TO USE WITH GELCOAT 1600 P	F.R.	C	600–900[5]	20–35	50	35	n.m.	0,7	90
POLIMAL® 1602 APyS	• ACCELERATED • HALOGENATED • LOW STYRENE EMISSION	PRODUCTION OF FIRE RESISTANT POLYESTER GLASS LAMINATES	F.R.	C	220–280[2]	10–20	70	40	3600	1,5	100
POLIMAL® 1604 TPS	• NEUTRAL • THIXOTROPIC	PRODUCTION OF FIRE RESISTANT POLYESTER GLASS LAMINATES	F.R.	A	550–650[4]	30–40	120	67	4100	2,3	94
POLIMAL® 1608 PS	• ACCELERATED • HALOGEN-FREE • LAMINATE BASED ON POLIMAL® 1608 PS AND GELCOAT 1608 P/P sp/FP MEETS DIN 5510 - S4/R2/ST2 AND NF P 92-501-M2 NORMS	PRODUCTION OF FIRE RESISTANT POLYESTER GLASS LAMINATES. RECOMMENDED TO USE WITH GELCOAT 1608 P/P sp/FP	F.R.	C	500–800[5]	10–20	60	40	6000	0,8	100
POLIMAL® VE 1606 P INF	• ACCELERATED • LAMINATE MADE ON THE BASIS OF A SPECIFIED RESIN AND GELCOAT 1606 P COMPLIES WITH EN 45545 STANDARD AT HL2 LEVEL FOR R1 REQUIREMENTS	PRODUCTION OF FIRE RESISTANT POLYESTER GLASS LAMINATES USE WITH GELCOAT 1606 P (ONLY)	F.R.	C	500–800[5]	10–20	60	40	6000	0,8	100

[1] Brookfield, sp.21; rpm.50 [2] Brookfield, sp.21; rpm.100 [4] Brookfield, sp.21; rpm.10 [5] Brookfield, sp.21; rpm.20 n.m. – not marked

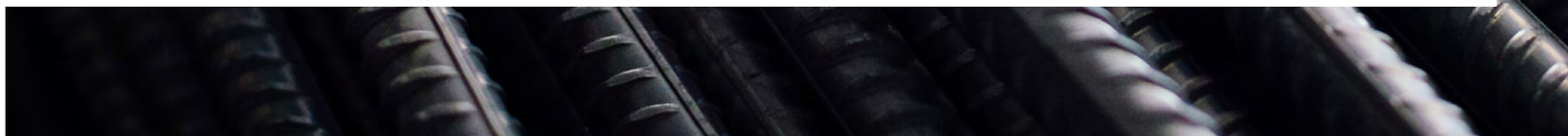
RESINS FOR PULTRUSION

Low viscosity resins with excellent mechanical parameters. Characterized by very good glass fiber wetting. Due to their durability and flexibility these resins are recommended for production of FRP composite rods. Thermal cure only.



PRODUCT	PROPERTIES	APPLICATIONS	TYPE	CURING SYSTEM	VISCOSITY [mPa·s]	GEL TIME [min]	FLEXURAL STRENGTH [MPa]	TENSILE STRENGTH [MPa]	TENSILE MODULUS [MPa]	ELONGATION AT BREAK [%]	HDT [°C]
POLIMAL® 1059-00	• NEUTRAL • LOW STYRENE CONTENT	PRODUCTION OF PULTRUDED POLYESTER GLASS COMPOSITES	DCPD	B	500–1000[5]	15–25	100	70	3400	2,5	70
POLIMAL® 122-2	• NEUTRAL • MEETS DIN 16946 TYPE 1140 NORM • LLOYD'S REGISTER CERTIFICATE	PRODUCTION OF PULTRUDED POLYESTER GLASS COMPOSITES	ISO	B	550–700[1]	10–20	120	80	3700	3	90
POLIMAL® 122-2 LP	• NEUTRAL • CONTAINS AN ANTI-SHRINK COMPONENT • LLOYD'S REGISTER CERTIFICATE	PRODUCTION OF PULTRUDED POLYESTER GLASS COMPOSITES	ISO	B	600–800[1]	10–20	120	80	3700	3	90

[1] Brookfield, sp.21; rpm. 50 [5] Brookfield, sp.21; rpm.20



GELCOAT RESINS

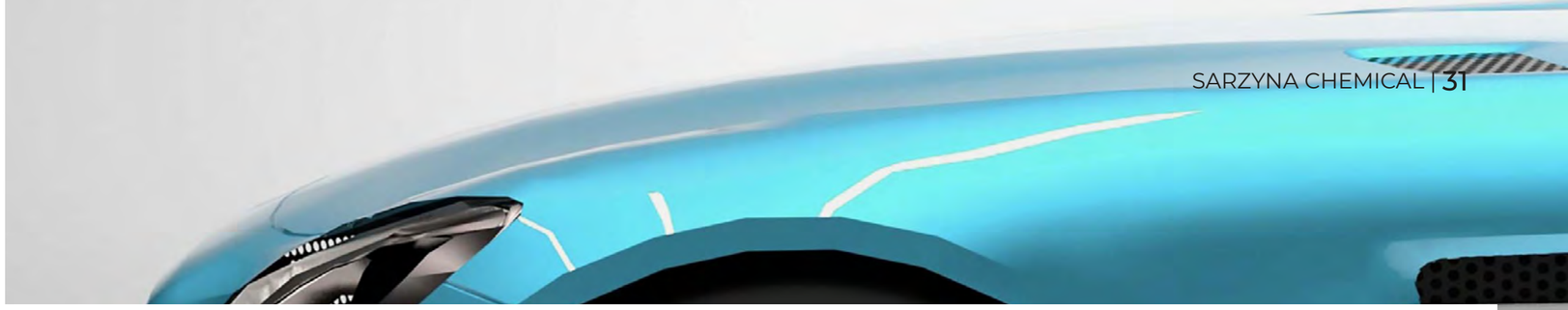
Designed for further production of gelcoats. Characterized by very good elasticity, high resistance to UV, and great impact strength.

PRODUCT	PROPERTIES	APPLICATIONS	TYPE	CURING SYSTEM	VISCOSITY [mPa·s]	GEL TIME [min]	FLEXURAL STRENGTH [MPa]	TENSILE STRENGTH [MPa]	TENSILE MODULUS [MPa]	ELONGATION AT BREAK [%]	HDT [°C]
POLIMAL® 1076	• NEUTRAL • MEDIUM REACTIVITY	PRODUCTION OF GELCOATS	ORTHO	A	450–700[1]	10–20	123	68	3400	3	75
POLIMAL® 122-1	• NEUTRAL • ELASTIC • INCREASED THERMAL AND WATER RESISTANCE • LLOYD'S REGISTER CERTIFICATE	PRODUCTION OF GELCOATS, TOP-COATS, AND LAMINATES	ISO	B	800–1100[5]	10–20	130	75	3500	4,5	80
POLIMAL® 125	• MEDIUM ELASTICITY • INCREASED THERMAL AND WATER RESISTANCE • LLOYD'S REGISTER CERTIFICATE	PRODUCTION OF GELCOATS	ISO/NPG	A	600–1000[5]	10–20	110	75	3600	3	85

[1] Brookfield, sp.21; rpm.50 [5] Brookfield, sp.21; rpm.20

RESINS FOR PUTTIES

Fast curing resins designed for excellent wetting of mineral fillers. Cured putties are durable and easy to process.

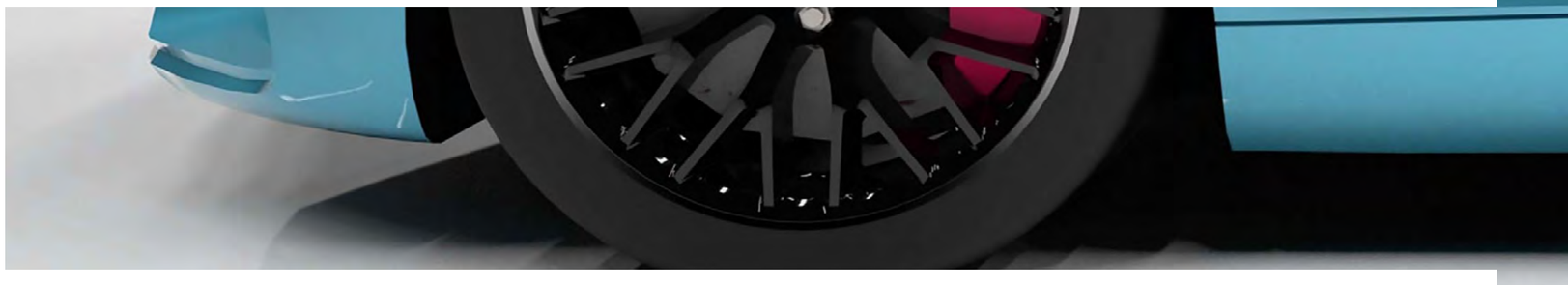


PRODUCT	PROPERTIES	APPLICATIONS	TYPE	CURING SYSTEM	VISCOSITY [mPa·s]	GEL TIME [min]	FLEXURAL STRENGTH [MPa]	TENSILE STRENGTH [MPa]	TENSILE MODULUS [MPa]	ELONGATION AT BREAK [%]	HDT [°C]
POLIMAL® 101-37 B	• ACCELERATED • MEDIUM ELASTICITY	PRODUCTION OF SURFACE FILLERS AND PUTTIES	ORTHO	R	320–480[1]	4–8	87	40	2500	10	45
POLIMAL® 1055-5B	• ACCELERATED • ELASTIC	PRODUCTION OF SURFACE FILLERS AND PUTTIES	DCPD	R	350–500[1]	5–10	70	n.m.	n.m.	15	45

[1]Brookfield, sp.21; rpm.50 n.m. – not marked

RESINS FOR ADHESIVE CARTRIDGES

Resins designed for production of fast-setting adhesive cartridges for mining and construction industries. High stability in contact with accelerators and fillers ensures durability of the final product.



PRODUCT	PROPERTIES	APPLICATIONS	TYPE	CURING SYSTEM	VISCOSITY [mPa·s]	GEL TIME [min]	FLEXURAL STRENGTH [MPa]	TENSILE STRENGTH [MPa]	TENSILE MODULUS [MPa]	ELONGATION AT BREAK [%]	HDT [°C]
POLIMAL® 144-5B	• ACCELERATED • MEDIUM ELASTICITY	PRODUCTION OF FAST-SETTING ADHESIVE CARTRIDGES	TERE	R	300–400[1]	2,5–5	100	60	3500	2	75

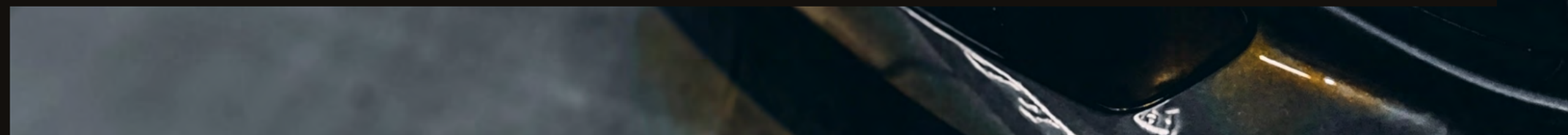
[1] Brookfield, sp.21; rpm.50

ELASTIFYING RESINS

Used as a component to improve elasticity
of rather rigid composite materials,
such as polymer concrete, putties,
as well as laminates and forms.

PRODUCT	PROPERTIES	APPLICATIONS	TYPE	CURING SYSTEM	VISCOSITY [mPa·s]	GEL TIME [min]	FLEXURAL STRENGTH [MPa]	TENSILE STRENGTH [MPa]	TENSILE MODULUS [MPa]	ELONGATION AT BREAK [%]	HDT [°C]
POLIMAL® 150	• NEUTRAL • ELASTIC	IMPROVES ELASTICITY OF RIGID RESINS	ORTHO	A	300–400[6]	30–40	n.o.	12	40	82	n.m.
POLIMAL® 153	• NEUTRAL • ELASTIC • MEDIUM REACTIVITY	IMPROVES ELASTICITY OF RIGID RESINS	ADYPIN	B	300–350[1]	17–25	n.o.	10	45	67	n.m.
POLIMAL® 193	• NEUTRAL • ELASTIC • TETRAHYDROPHTHALIC	IMPROVES ELASTICITY OF RIGID RESINS	THPA	B	550–650[1]	10–15	n.o.	20	n.o.	60	n.m.

[1] Brookfield, sp.21; rpm.50 [6] Höppler, 25°C n.m. – not marked



CHEMICALLY RESISTANT RESINS

Resins designed for production of elements requiring high corrosion and aging resistance. Laminates made of those resins protect the surface against a wide spectrum of aggressive media, weather conditions, temperature, and UV radiation. Recommended for production of cisterns, tanks, boats, and other goods exposed to constant contact with salt water.

PRODUCT	PROPERTIES	APPLICATIONS	TYPE	CURING SYSTEM	VISCOSITY [mPa·s]	GEL TIME [min]	FLEXURAL STRENGTH [MPa]	TENSILE STRENGTH [MPa]	TENSILE MODULUS [MPa]	ELONGATION AT BREAK [%]	HDT [°C]
POLIMAL® VE-2MM	• MEDIUM REACTIVITY • EPOXY BASED • INCREASED THERMAL RESISTANCE • LLOYD'S REGISTER CERTIFICATE	PRODUCTION OF CHEMICALLY RESISTANT COMPOSITIONS REINFORCED WITH GLASS FIBER AND/OR MINERAL FILLERS	VE	VE	300–400[2]	15–35	130	75	3500	3,5	95
POLIMAL® VE-2MM T	• THIXOTROPIC • EPOXY BASED • INCREASED THERMAL RESISTANCE • LLOYD'S REGISTER CERTIFICATE	PRODUCTION OF CHEMICALLY RESISTANT COMPOSITIONS REINFORCED WITH GLASS FIBER AND/OR MINERAL FILLERS	VE	VE	700–1300[4]	15–35	130	75	3500	3,5	95
POLIMAL® VE-2MM TP	• MEDIUM REACTIVITY • THIXOTROPIC • ACCELERATED • LLOYD'S REGISTER CERTIFICATE	PRODUCTION OF CHEMICALLY RESISTANT COMPOSITIONS REINFORCED WITH GLASS FIBER AND/OR MINERAL FILLERS	VE	VE	250–350[2]	20–30	130	75	3500	3,5	95

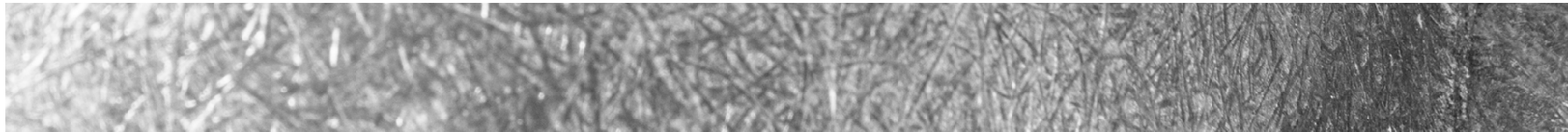
[2]Brookfield, sp.21; rpm.100 [4]Brookfield, sp.21; rpm.10

SHRINK-FREE TOOLING RESINS

Resins designed for production of polyester glass molds, glass fiber reinforced laminates, and vinyl ester barrier layers. Characterized by high mechanical parameters, durability, good chemical and thermal resistance as well as low polymerization shrinkage.

PRODUCT	PROPERTIES	APPLICATIONS	TYPE	CURING SYSTEM	VISCOSITY [mPa·s]	GEL TIME [min]	FLEXURAL STRENGTH [MPa]	TENSILE STRENGTH [MPa]	TENSILE MODULUS [MPa]	ELONGATION AT BREAK [%]	HDT [°C]
POLIMAL® T104 WTP LP **POLIMAL® T104 WTP LP-1**	• CONTAINS FILLERS • ACCELERATED • THIXOTROPIC	BASIC RESIN. PRODUCTION OF POLYESTER GLASS LAMINATES AND FORMS. MINIMAL POLYMERIZATION SHRINKAGE (>1%)	ORTHO	C	750–1200[5]	15–30	55	36	4500	52	85
POLIMAL® TVE-2 WTP	• DOES NOT CONTAIN FILLERS • ACCELERATED • THIXOTROPIC	PRODUCTION OF POLYESTER GLASS LAMINATES AND FORMS. BARRIER LAYERS. SHRINK-FREE RESIN	VE	C	500–600[1]	15–40	135	80	3500	40	100

[1] Brookfield, sp.21; rpm.50 [5] Brookfield, sp.21; rpm.20



RESIN INDEX

PRODUCT	TYPE	CURING SYSTEM	VISCOSITY [mPa·s]	GEL TIME [min]	FLEXURAL STRENGTH [MPa]	TENSILE STRENGTH [MPa]	TENSILE MODULUS [MPa]	ELONGATION AT BREAK [%]	HDT [°C]
POLIMAL® 104 AWTP	ORTHO	C	250–350[2]	10–20	120	80	3600	3	90
POLIMAL® 104 AWTP-2				27–35					
POLIMAL® 1059 AWTP-1	DCPD	C	230–290[2]	22–26	120	70	3700	2	85
POLIMAL® 1059 AWTP-2 **POLIMAL® 1059 AWTP-3**			230–290[2] 230–290[2]	32–36 40–50					
POLIMAL® 1094 AWTP-1	ORTHO	PTV	300–450[3]	19–26	110	70	4300	2	63
POLIMAL® 1094 AWTP-2 **POLIMAL® 1094 AWTP-3**				25–33 35–45					
POLIMAL® 122-2 AWTP	ISO	C	240–350[2]	15–25	120	80	3800	3	90
POLIMAL® 143 AWTP-1	TERE	1 - C	200–350[2]	10–20	100	60	3200	2	65
POLIMAL® 143 AWTP-2 **POLIMAL® 143 AWTP-3**		2,3 - PTV	180–230[2] 300–450[3]	20–30 35–45					
POLIMAL® 1090 AWTP	ORTHO	C	150–200[2]	6–15	110	70	4300	2	63
POLIMAL® 1091 P	ORTHO	C	130–160[2]	3–8	110	70	4300	2	63
POLIMAL® 1091 PS									
POLIMAL® 1051 P	DCPD	PTV	150–200[2]	8-10	90	60	3500	1,5	90
POLIMAL® SAN 1051 P									
POLIMAL® 1057 P-2	DCPD	C	150–220[2]	21-23	90	60	3700	2	70
POLIMAL® 125 MP	ISO/ NPG	C	500–600[1]	10–20	120	70	3600	2,5	85
POLIMAL® 125 MTP	ISO/ NPG	–	750–950[1]	13–18	120	70	3600	2,5	85
POLIMAL® 125 MTP-0									
POLIMAL® 127	ISO/ NPG	B	450–650[4]	8–16	120	70	3600	2,5	85
POLIMAL® 1061 P	ORTHO/ NPG	C	720–850[1]	14–16	110	60	3900	2	75
POLIMAL® 109-32 K	ORTHO	A	230–290[2]	13-20	100	50	3900	2,5	60
POLIMAL® 109-32 PyK	ORTHO	C	200–300[2]	7–15	100	50	3900	2,5	60
POLIMAL® 143 RP	TERE	C	200–230[2]	13–20	100	60	3200	2	65
POLIMAL® 144-01	TERE	A	250–350[2]	8–25	120	60	3500	3,5	65
POLIMAL® 106 R	ORTHO	B	190–240[2]	3–8	110	75	3700	3,5	85
POLIMAL® 145-1	TERE	A	250–350[2]	5–12	110	60	3300	2	85
POLIMAL® 148 RP	TERE	C	200–300[2]	4–8	105	60	3500	2	60
POLIMAL® 104 N-1 INF	ORTHO	C	200–250[2]	14–24	120	80	3700	3,5	100
POLIMAL® 1051 INF P-2	DCPD	C	160–180[2]	40–50	110	60	3060	2,2	65
POLIMAL® 1058 (P-1)	DCPD	A1	150–200[2]	8–13	80	55	3600	1,5	70

PRODUCT	TYPE	CURING SYSTEM	VISCOSITY [mPa·s]	GEL TIME [min]	FLEXURAL STRENGTH [MPa]	TENSILE STRENGTH [MPa]	TENSILE MODULUS [MPa]	ELONGATION AT BREAK [%]	HDT [°C]
POLIMAL® VE-11 M	VE	S-1	300–400[6]	15–30	130	80	3600	3,5	90
POLIMAL® VE-3MM P INF	VE	C	200–250[2]	30–40	134	85,5	3720	6,1	105
POLIMAL® 104	ORTHO	N	300–400[2]	14–24	120	80	3600	3	90
POLIMAL® 104 T									
POLIMAL® 104 N-1	ORTHO	N	200–250[2]	14–24	120	80	3600	3,5	100
POLIMAL® 122-2 T	ISO	A	240–350[2]	10–20	120	80	3700	3	90
POLIMAL® 129-1	ISO/NPG	B	850–950[7]	8–12	120	60	3500	2	80
POLIMAL® 104 TS-2	F.R.	A	400–600[1]	10–20	120	80	3600	2,3	95
POLIMAL® 1601 P	F.R.	C	600–900[5]	20–35	50	35	n.m.	0,7	90
POLIMAL® 1602 APyS	F.R.	C	220–280[2]	10–20	70	40	3600	1,5	100
POLIMAL® 1604 TPS	F.R.	A	550–650[4]	30–40	120	67	4100	2,3	94
POLIMAL® 1608 PS	F.R.	C	500–800[5]	10–20	60	40	6000	0,8	100
POLIMAL® VE 1606 P INF	F.R.	C	500–800[5]	10–20	60	40	6000	0,8	100
POLIMAL® 1059-00	DCPD	B	500–1000[5]	15–25	100	70	3400	2,5	70
POLIMAL® 122-2	ISO	B	550–700[1]	10–20	120	80	3700	3	90
POLIMAL® 122-2 LP	ISO	B	600–800[1]	10–20	120	80	3700	3	90
POLIMAL® 1076	ORTHO	A	450–700[1]	10–20	123	68	3400	3	75
POLIMAL® 122-1	ISO	B	800–1100[5]	10–20	130	75	3500	4,5	80
POLIMAL® 125	ISO/NPG	A	600–1000[5]	10–20	110	75	3600	3	85
POLIMAL® 101-37 B	ORTHO	R	320–480[1]	4–8	87	40	2500	10	45
POLIMAL® 1055-5B	DCPD	R	350–500[1]	5–10	70	n.m.	n.m.	15	45
POLIMAL® 144-5B	TERE	R	300–400[1]	2,5–5	100	60	3500	2	75
POLIMAL® 150	ORTHO	A	300–400[6]	30–40	n.m.	12	40	82	n.m.
POLIMAL® 153	ADYPIN	B	300–350[1]	17–25	n.m.	10	45	67	n.m.
POLIMAL® 193	THPA	B	550–650[1]	10–15	n.m.	20	n.m.	60	n.m.
POLIMAL® VE-2MM	VE	VE	300–400[2]	15–35	130	75	3500	3,5	95
POLIMAL® VE-2MM T	VE	VE	700–1300[4]	15–35	130	75	3500	3,5	95
POLIMAL® VE-2MM TP	VE	VE	250–350[2]	20–30	130	75	3500	3,5	95
POLIMAL® T104 WTP LP **POLIMAL® T104 WTP LP-1**	ORTHO	C	750–1200[5]	15–30	55	36	4500	52	85
POLIMAL® TVE-2 WTP	VE	C	500–600[1]	15–40	135	80	3500	40	100

[1] Brookfield, sp.21; rpm.50 [2] Brookfield, sp.21; rpm.100 [3] Physica, sp. Z-2; rpm.20 [4] Brookfield, sp.21; rpm.10 [5] Brookfield, sp.21; rpm.20 [6] Höppler, 25°C [7] Brookfield, sp.21; rpm.1, n.m. – not marked

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