



PERFORMANCE GUIDE

Unsaturated Polyester Resin Vinalkyd

About

ORGACHIM RESINS AD was established in September 2013 and is part of Policolor Group.

Orgachim Resins AD-Ruse is part of Policolor - Orgachim Group - the leading producer of coatings in Romania and Bulgaria. The Group comprises Policolor Bucharest a Romanian company, and Orgachim AD-Ruse, its 100% - owned Bulgaria subsidiary.

The Group also includes, the leading supplier of resins in South East Europe and Ruse Chemicals AD, located also in Ruse, which is producer of phthalic and maleic anhydrides.

We want Orgachim Resins AD for our partners, clients, competitors and investors to be one of the most appreciated and a respected company that produces paints and lacquers in South-East Europe. Our vision establishes the outlines and frames to integrate the activities of the company to be able to realize a sustainable increase.

With an annual production capacity of 20,000 tons, Orgachim Resins AD provides feed stock for paint and coatings manufacturers, also for composite materials producers and processors in various areas such as construction materials, mechanical engineering, automotive components, furniture, equipment for wind energy, etc., across Europe, Africa and Asia.

Registered trade marks of Orgachim Resins AD are:

"Balkyd" - for alkyd resins

"Orgapol" - for saturated polyester resins

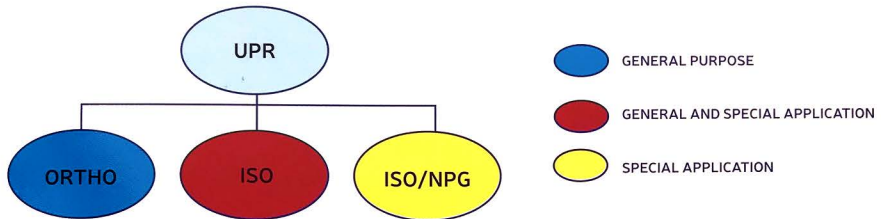
"Orgacryl" - for acrylate resins

"Vinalkyd" - for unsaturated polyesters resins



Step by step composite the World...

Right choice of resin is very important



Typical application

● PURE RESINS

★ THIXOTROPIC RESINS

PROCESS SYSTEMS	GRP	RTM/ Infusion	Casting	SMC/ BMC	PMMA	Filament Winding	Pultrusion	Process system
Application	FRP, Cars, Construction Boat, Playgrounds articles	Car parts Cabins	Solid surface Polymer marble Bath- room article	Shafts Panels	Bath- room equip- ment	Pipes Tanks	Industrial parts	Application
Pure resins								Thixotropic resin
Vinalkyd 450 P	●	★	●			★		Vinalkyd 520 PD-TA-BLE
Vinalkyd 451 P		★		●				Vinalkyd 550 PE-TALV-1
Vinalkyd 550 PE-R	●	★	●					Vinalkyd 550 PE-TALV-2
Vinalkyd 550 PE-R/61	●	★	●			●		Vinalkyd 550 PE-TALE-B/FC
Vinalkyd 550 PE-R/ALV	●	★	●			●		Vinalkyd 550 PE-TALE/LV
Vinalkyd 550 PE-R/68A	●	★	●					Vinalkyd 550 PE-TALE-B/LG
Vinalkyd 901 PE-A	●	★	●			★		Vinalkyd 550 PE-R-ATLV
Vinalkyd 901 PE-LV	●	★	●			●	★	Vinalkyd 550 PE-TALE-B/LV1
Vinalkyd 620 PE-A	●	★	●		●	★	●	Vinalkyd 550 PE-TALE-WB
Vinalkyd 801 PE-A	●		●		★			Vinalkyd 620 PE-TALV-1
Vinalkyd 520 PD		●			●	★	●	Vinalkyd 620 PE-TALV-2W
Vinalkyd 520 PD/59		★			●	●		Vinalkyd 901 PE-TAB/LSE
Vinalkyd 520 PD/60A		★				●		Vinalkyd 901 PE-BTA/LSE
Vinalkyd 25 PE		★				★		Vinalkyd 901 PE-TALE-B
Vinalkyd 25PE/58A		★	●			★	●	Vinalkyd 25 PE-TALE
Vinalkyd 350 NPP		★	●			★		Vinalkyd 25 PE-ATA
Vinalkyd 350 NPP/66		★	●					Vinalkyd 350 NPP-TA

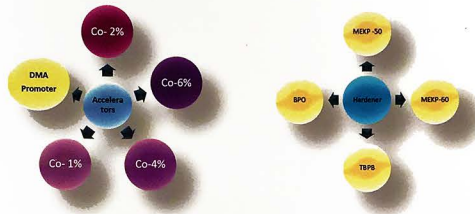
Keys for easy find...

A- ACCELERATED
T- THIXOTROPIC
LE/LSE- LOW STYRENE EMISSION
LV- LOW VISCOSITY
B- BLUE COLOR CURING INDICATOR
W- WHITE

S- SPRAY APPLICATION
H- HAND APPLICATION
UV- LIGHT RESISTANT
FC- FAST CURING
LG- LONG GEL TIME

Short guide for user...

Accelerators and Hardeners



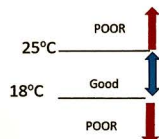
How cure unsaturated polyester resins?



Important:

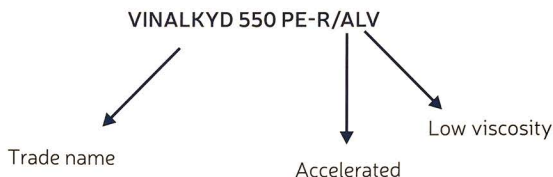
1. The level of hardener and accelerator and the work temperature are write in technical data sheets for any product
2. The clients have to comply these levels to right application of resin

Storage and work condition temperature



Pure unsaturated polyester resins

How to read our unsaturated polyester resins VINALKYD?

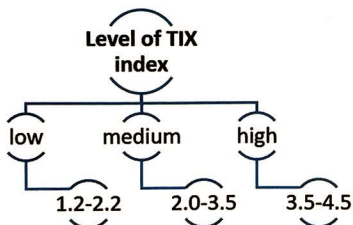


Names	Properties of liquid resin						
	Type	Non-volatile content %	Viscosity at Brookfield , mPa.s	Reactivity			Acid number, mgKOH/g
		BNS EN ISO 3251	ISO 2555	gel time, min	curing time, min	Tmax, oC	BNS EN ISO 3682
Vinalkyd 450 P	O	66±1	950-1250	8-16	*	*	max.27
Vinalkyd 451 P	O	64±2	1300-1800	10-16*	11-18	min.235	15-20
Vinalkyd 550 PE-R	O	65±1	550-850	7-12	5-10	min.160	max.30
Vinalkyd 550 PE-R/61	O	61±2	400-550	9-15*	3-6	min.220	max.30
Vinalkyd 550 PE-R/ALV	O	61-62	300-380	20-25	28-38	170-200	max.26
Vinalkyd 550 PE-R/68A	O	68±2	800-1000	6-8	5.5-7.0	max.195	max.30
Vinalkyd 901 PE-A	O	69±1	900-1250	7-13	6-10	min.170	max.32
Vinalkyd 901 PE-LV	O	64±2	300-450	30-40	8-18	min.155	max.30
Vinalkyd 620 PE-A	O	60±1,5	180-320	10-20	18-28	max.165	max.30
Vinalkyd 801 PE-A	O	66±2	350-650	4.5-5.5	13-16	155-175	max.26
Vinalkyd 520 PD	O	min. 55	175-300	10-20	*	160-215	max.30
Vinalkyd 520 PD/59	O	59±2	300-450	4-8	7-14	180-205	max.23
Vinalkyd 520 PD/60A	O	61±1,5	300-500	10-20	8-15	175-205	max.23
Vinalkyd 25 PE	ISO	65±1	600-900	6-12	5-13	min.170	max.30
Vinalkyd 350 NPP	ISO/NPG	60±1	450-650	6-9	max.25	min.170	max.14
Vinalkyd 350 NPP/66	ISO/NPG	66±2	900-1100	8-14	14-20	min.150	max.14

Names	Properties of cured resin			Application						
	Tensile strenght, Mpa	Flexural strenght, Mpa	HDT, °C	GRP	Pultrusion	Casting And Polymer marbel	Filament winding	SMC/ BMC	Solid surface	RTM/ Infusion
	BNS EN ISO 527-1,2	BNS EN ISO 178	BNS EN ISO 75-1,2							
Vinalkyd 450 P	min.60	min.128	min.78	*						
Vinalkyd 451 P	min.60	min.120	min.110					*		
Vinalkyd 550 PE-R	min.70	min.140	min.67	*		*				
Vinalkyd 550 PE-R/61	min.70	min.120	min.64	*			*			*
Vinalkyd 550 PE-R/ALV	min.60	min.120	min.79	*	*		*			*
Vinalkyd 550 PE-R/68A	min.70	min.140	min.67	*		*				
Vinalkyd 901 PE-A	min.60	min.120	min.60	*		*				
Vinalkyd 901 PE-LV	min.60	min.120	min.60	*		*	*			*
Vinalkyd 620 PE-A	min.70	min.120	min.79	*	*	*				*
Vinalkyd 801 PE-A	min.60	min.120	min.60	*		*				
Vinalkyd 520 PD	min.70	min.120	*		*		*			*
Vinalkyd 520 PD/59	min.70	min.120	mon.95		*		*			
Vinalkyd 520 PD/60A	min.70	min.120	*		*		*			
Vinalkyd 25 PE	min.77	min.130	min.90	*						
Vinalkyd 350 NPP	min.65	*	min.85			*			*	
Vinalkyd 350 NPP/66	min.65	*	min.65			*			*	

Thixotropic unsaturated polyester resins

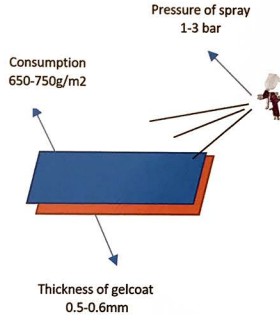
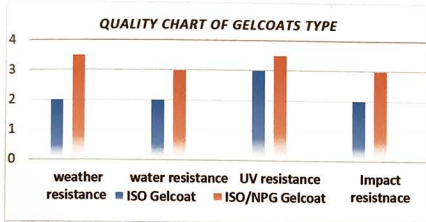
	Names	Properties of liquid resin						
		Type	Non-volatile content %	Viscosity at Brookfield, mPa.s	Reactivity			Thixotropic index
					gel time, min	Curing time min	Tmax °C	
Thixotropic unsaturated polyester resins	Vinalkyd 520 PD-TA-BLE	O	57±1.5	450-600	20-27	13-23	min. 175	min. 2.2
	Vinalkyd 550 PE-TALV-1	O	57±1	1100-1300	15-25	15-25	min. 170	min. 2.4
	Vinalkyd 550 PE-TALV-2	O	56±1	800-1000	5-10	6-10	min. 170	min. 2.4
	Vinalkyd 550 PE-TALE-B/FC	O	58±2	1200-1400	30-35	40-45	min. 160	min. 2.8
	Vinalkyd 550 PE-TALE/LV	O	58±2	800-1000	11-21	29-39	160 - 180	min. 2.4
	Vinalkyd 550 PE-TALE-B/LG	O	58±2	1200-1400	40-45	20-30	min 150	min. 2.8
	Vinalkyd 550 PE-R-ATLV	O	56-59	500-700	25-35	30-50	170 - 190	min. 3.0
	Vinalkyd 550 PE-TALE-B/LV1	O	56±2	500-730	25-35	20-30	min. 155	min. 3.0
	Vinalkyd 550 PE-TALE/WB	O	60±2	900-1100	15-25	15-25	min. 160	min. 2.4
	Vinalkyd 620 PE-TALV-1	O	60±1	300-500	7-14	12-16	min. 160	min. 1.0
	Vinalkyd 620 PE-TALV-2W	O	52±1	140-240	7-12	12-16	min. 160	min. 1.4
	Vinalkyd 901 PE-TAB/LSE	O	60±2	500-850	25-35	15-25	min. 140	min. 1.4
	Vinalkyd 901 PE-BTA/LSE	O	58±2	450-650	28-38	45-55	max. 150	min. 2.8
	Vinalkyd 901 PE-TALE-B	O	56±2	450-650	10-14	10-20	min. 160	min. 2.3
	Vinalkyd 25 PE-TALE	ISO	62±2	1100-1300	30-40	15-25	min. 150	min. 2.0
	Vinalkyd 25 PE-ATA	ISO	55±1	560-800	20-25	15-25	150 - 180	min. 2.4
	Vinalkyd 350 NPP-TA	ISO/NPG	57±2	800-1000	15-25	16-26	min. 170	2.3 - 2.9



- Advantages: It does not flow down, when applied on vertical surface

	Names	Properties of cured resin				Application						
		Tensile strenght, Mpa	Flexural strenght, Mpa	HDT, °C	Barcol Hardnes	FRP	Building and constructions	Pipes	Tanks	Sanitary	PMMA	Car part Cabines
		BNS EN ISO 527-1,2	BNS EN ISO 178	BNS EN ISO 75-1,2	ASTM D 2583							
Thixotropic unsaturated polyester resins	Vinalkyd 520 PD-TA-BLE	min.70	min.120	min.95	min.40	*	*	*	*			*
	Vinalkyd 550 PE-TALV-1	min.60	min.120	min.79	min.50	*	*					*
	Vinalkyd 550 PE-TALV-2	min.60	min.120	min.79	min.50	*	*					*
	Vinalkyd 550 PE-TALE-B/FC	min.69	min.117	min.63	min.47	*	*					*
	Vinalkyd 550 PE-TALE/LV	min.65	min.115	min.63	min.47	*	*					*
	Vinalkyd 550 PE-TALE-B/LG	69	117	min.63	min.48	*	*					*
	Vinalkyd 550 PE-R-ATLV	approx.60	approx.120	approx.79	min.45	*	*	*	*			*
	Vinalkyd 550 PE-TALE-B/LV1	min.65	min.115	approx.70	min.48	*	*		*			*
	Vinalkyd 550 PE-TALE/WB	min.70	min.117	min.65	min.47	*			*		*	
	Vinalkyd 620 PE-TALV-1	min.70	min.120	min.79	min.40					*	*	
	Vinalkyd 620 PE-TALV-2W	min.55	min.110	min.65	min.40					*	*	
	Vinalkyd 901 PE-TAB/LSE	min.68	min.110	min.70	min.48	*						
	Vinalkyd 901 PE-BTA/LSE	min.65	min.115	min.70	min.48	*	*					*
	Vinalkyd 901 PE-TALE-B	min.65	min.115	min.65	min.45	*	*					
	Vinalkyd 25 PE-TALE	min.77	min.130	min.90	min.50	*	*	*	*	*		*
	Vinalkyd 25 PE-ATA	min.65	*	min.80	min.45	*	*	*	*	*		*
	Vinalkyd 350 NPP-TA	approx.70	approx.110	approx.80	min.45		*	*	*	*		*

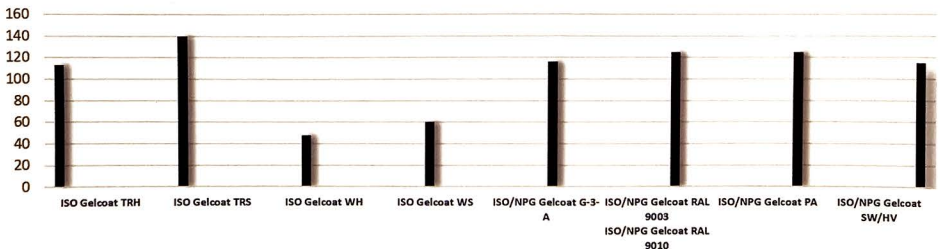
Gelcoats & Topcoats



	Names	Properties of gelcoats						
		Application	Type	Non-volatile content %	Viscosity at Brookfield, mPa.s	Gel time	Tixotropic index	Color
GELCOATS	Gelcoat G-2-A	H	ISO	65±2	6000-9000	10-15	min.5.0	transparent
	Gelcoat G-2-A-S	S	ISO	61±2	3500-7000	10-18	min.5.0	transparent
	ISO Gelcoat TRS	S	ISO	53±2	3600-4600	6-13	min.6.5	transparent
	ISO Gelcoat TRH	H	ISO	57±2	5000-8000	8-13	min.6.5	transparent
	ISO Gelcoat WH	H	ISO	70±2	9000-13000	7-11	min.4.5	RAL 9003
	ISO Gelcoat WS	S	ISO	65±2	3750-5250	7-11	min.6.0	RAL 9003
	ISO/NPG Gelcoat PA	H	ISO/NPG	60±2	5000-7000	10-15	min.5.5	RAL 9003
	ISO/NPG Gelcoat SW/HV	H/S	ISO/NPG	63±2	10000-15000	6-15	min.5.0	"snow white"
	Gelcoat G-3-A	H/S	ISO/NPG	57±2	6000-8000	6-13	min.5.5	transparent

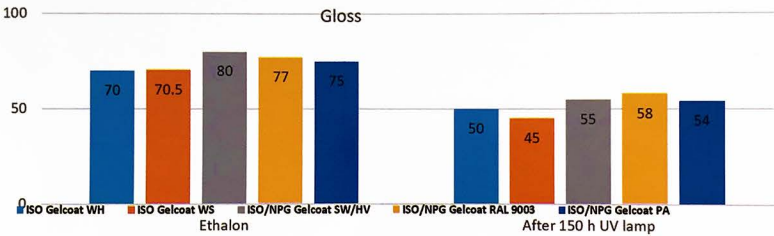
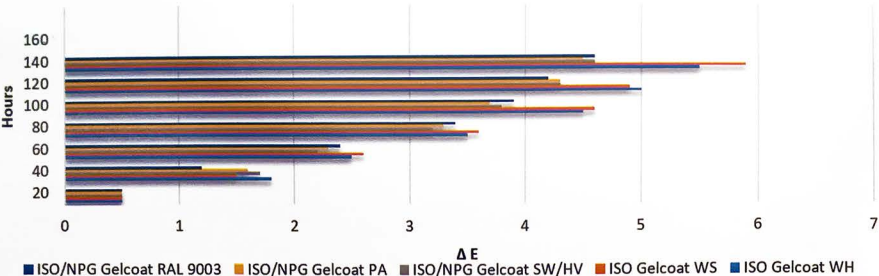
	Names	Properties of topcoats						
		Application	Type	Non-volatile content %	Viscosity at Brookfield, mPa.s	Gel time	Tixotropic index	Color
TOPCOATS	ISO Topcoat TRS	S	ISO	53±2	3600-4600	6-13	min.6.5	transparent
	ISO Topcoat TRH	H	ISO	57±2	5000-8000	8-13	min.6.5	transparent
	ISO Topcoat WH	H	ISO	70±2	9000-13000	7-11	min.4.5	RAL 9003
	ISO Topcoat WS	S	ISO	65±2	3750-5250	7-11	min.6.0	RAL 9003
	ISO/NPG Topcoat PA	S	ISO/NPG	60±2	5000-7000	10-15	min.5.5	RAL 9003

Styrene evaporation (g/m2)



Gelcoat Investigations

UV RESISTANCE



Problems and solving...

	Cause	Recommendations
Wrinkling	 - film thickness-inefficient, high humidity, low temperature, low hardener level, long gel time, too much pigments	Increase the amount of gelcoat; use de-humidities, increase level of hardener
Color Transfer	 - lamination is made before gelcoat cure - the resin contains too much styrene	Waite for gelcoat curing, check styrene levels
Fish eye	 Curing of gelcoat is not finished; the surface of gelcoat is contaminates with acetone, water or oil, unsuitable mold release agent	Check hardener; check spraying equipment; if necessary change mold release agent
Cracks	 Gelcoat is applied on thick layer, gelcoat is too reactive, the article broken during demolding	The thickness should be 0.5-0.6mm, be careful when demold the product. Use compressed air or water



Deutsche
Akkreditierungsstelle
D-M-12007-01-01

TÜV NORD

CERTIFICATE

Management system as per
BS CHSAS 18001 : 2007

In accordance with TÜV NORD CERT procedures, it is hereby certified that

Orgachim Resins®
Orgachim resins AD
21, Treit mart Blvd.
7000 Rousse
Bulgaria

applies a management system in line with the above standard for the following scope

Development, production, sales, import, export and distribution
of resins and adhesives.

Certificate Registration No. 44 118 13433
Audit Report No. 3596/0718

Valid from: 2016-12-06
Valid until: 2019-12-05
Initial certification: 2013

Signature
Certification Body
at TÜV NORD CERT GmbH

Plönze, 2016-12-02

This certification was conducted in accordance with the TÜV NORD CERT auditing and certification procedures and is subject to
regular surveillance audits.

TÜV NORD CERT GmbH

Langermarchstraße 20

45141 Essen

www.tuv-nord-cert.com



CERTIFICATE

Management system as per
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45141 Essen

www.tuv-nord-cert.com



CERTIFICATES



Orgachim Resins®

Address:

Treti Mart bul. 21
7000 Ruse
Bulgaria

VAT:

BG202723137

Sales Department:

Phone: +359 82 886 340
e-mail: sales.resins@orgachim.bg

Technical Department:

Phone: +359 82 886 340
e-mail: resins@orgachim.bg