

Energy Solutions Impregnating Resins

Voltatex[®] Product Overview
Styrene diluted/Vinyltoluene diluted



Energy Solutions Impregnating Resins

Voltatex® Product Overview

Product	Thermal Class	UL	Chemical Base	Flow Time DIN 53211	Viscosity DIN 53019	Shelf Life / Storage Time	Emissions DIN EN 60455-3-5	Thixotropic	Pigmented	VOC - Free
	acc.to IEC 60085 ⁽¹⁾	E101752		23°C [sec.]	25°C [mPas]	25°C [months]	[%]			

Styrene-diluted										
Voltatex® 4000	180 (H)	X	Unsat. Polyesterimide	75 - 95	340 - 400	8	10	-	-	-
Voltatex® 4001	200 (N)	X	Unsat. Polyesterimide	55 - 75	210 - 270	8	6.8	-	-	-
Voltatex® 4002	180 (H)	X	Unsat. Polyesterimide	55 - 75	210 - 270	8	6.6	-	-	-
Voltatex® 4005	200 (N)	X	Unsat. Polyesterimide ⁽²⁾	35 - 50	120 - 180	8	8,0	-	-	-
Voltatex® 4010	180 (H)	X	Unsat. Polyesterimide ⁽³⁾	38 - 48	150 - 190	8	9.7	-	-	-
Voltatex® 4012	200 (N)	X	Unsat. Polyesterimide ⁽³⁾	58 - 72	220 - 260	8	7.9	-	-	-
Voltatex® 4020	200 (N)	X	Unsat. Polyesterimide	45 - 75	210 - 270	4	11.7	-	X	-
Voltatex® 4021	200 (N)	-	Unsat. Polyesterimide	25 - 35	75 - 125	4	12.2	-	X	-
Voltatex® 4030	180 (H)	X	Unsat. Polyesterimide	81 - 99	350 - 500 ⁽⁷⁾	4	5.9	X	-	-
Voltatex® 4040	180 (H)	-	Unsat. Polyesterimide	-	1,500 - 1,900	4	⁻⁶	-	X	-
Voltatex® 4050	180 (H)	X	Unsat. Polyesterimide	55 - 75	-	8	13.7	-		-

Vinyltoluene (VT)-diluted										
Voltatex® 4100	180 (H)	X	Unsat. Polyesterimide	57 - 73	220 - 280	6	5.7	-	-	-
Voltatex® 4130	180 (H)	X	Unsat. Polyesterimide	65 - 85	235 - 295 ⁽⁷⁾	6	5.2	X	-	-
Voltatex® 4141	-	-	Unsat. Polyesterimide	-	4.000 - 6.000	4	1.6	-	X	-

(1) based on temperature index MW 35, Twisted Pair

(2) curing by peroxide

(3) highly reactive

(4) contains a small portion of reactive thinner to optimize the viscosity

(5) company standard Energy Solutions - Voltatex® 001 "measurement of gel time" in acc. with DIN 46448

(6) under consideration

(7) viscosity at 23°C

Voltatex®	Gel Time	Reaction Time	Dip & Bake (conventional)	VI Vacuum Impregnation	VPI Vacuum Pressure Impregnation	Hot-Dip / Gel Inside Resin	Trickle	Special Properties
	[min] ⁽⁵⁾	[min] ⁽⁵⁾						

4000	7.0 - 14.0	10.0 - 25.0	X	X	X			Low draining and evaporation losses, high bond strength, high resin retention, good resistance against solvent vapour, high thermal resistance; low tendency to crack
4001	8.0 - 14.5	13.5 - 27.5	X	X	X			High efficiency due to favorable curing conditions and low material consumption, good resistance against solvent vapour, high thermal resistance; low tendency to crack
4002	9.0 - 15.0	13.5 - 27.5	X	X	X		X	High efficiency due to favorable curing conditions and low material consumption, good resistance against solvent vapour, high thermal resistance
4005	20.0 - 35.0	25.0 - 45.0	X	X	X			High efficiency due to favorable curing conditions and low material consumption, good resistance against solvent vapour, high thermal resistance
4010	5.0 - 8.0	7.0 - 12.0					X	High efficiency due to favorable curing conditions and low material consumption, good resistance against solvent vapour, high thermal resistance
4012	5.0 - 7.5	7.5 - 11.5					X	High efficiency due to favorable curing conditions and low material consumption, good resistance against solvent vapour, high thermal resistance; applicable by trickle-roll-process
4020	11.0 - 19.0	22.0 - 40.0	X	X	X			Enables coverage of flash rust by use of coloured resin, protection against climate influences; high efficiency, good resistance against solvent vapour, good thermal resistance
4021	10.0 - 16.0	26.0 - 40.0	X	X	X			Enables coverage of flash rust by use of coloured resin, protection against climate influences; high efficiency, good resistance against solvent vapour
4030	10.0 - 15.0	15.0 - 23.0	X	X	X			Low draining and evaporation losses, high bond strength, high resin retention, good resistance against solvent vapour, high thermal resistance; low tendency to crack
4040	6.0 - 12.0	10.0 - 22.0					X	Gel-coat for protection of rotor windings exposed to high mechanical stress, high bond strength and protection against abrasion; good adhesion
4050	5.5 - 9.5	9.0 - 16.0	X	X	X			Applicable in the Electrical/UV-process, high resin retention, good resistance against solvent vapour

4100	6.0 - 12.0	14.0 - 24.0	X	X	X			High efficiency due to favorable curing conditions and low material consumption, very good retention; high thermal resistance, styrene free
4130	6.0 - 10.0	10.0 - 17.0	X	X	X			High efficiency due to favorable curing conditions and low material consumption, very good retention; high thermal resistance, styrene free
4141	13.0 - 21.0	16.0 - 28.0					X	Gel-coat for protection of rotor windings exposed to high mechanical stress, high bond strength and protection against abrasion; good adhesion, low tendency to crack

Voltatex®	Transformer <100 kVA	Transformer >100 kVA	Rotors	Rotors, high speed	Stators, trickle	Stators, dip & bake process	Stators / Rotors up to 3 kV, vpi process	Stators, dipping, combined curing electrically and oven	Stators, dipping, electrical/uv process	Stators, dipping, hot dip/gel process	Wind Generators, < 1000 V	High Voltage Applications < 6,6 kV UN
-----------	----------------------	----------------------	--------	--------------------	------------------	-----------------------------	--	---	---	---------------------------------------	---------------------------	---------------------------------------

4000	○	○	○	○	○	●	○	○	○	○	○	○
4001	●	○	○	○	○	○	○	○	○	○	○	○
4002	○	●	○	○	○	●	○	○	○	○	○	○
4005	●	○	○	○	○	○	○	○	○	○	○	○
4010	○	○	●	○	●	○	○	○	○	○	○	○
4012	○	○	●	●	○	○	○	○	○	○	○	○
4020	●	○	○	○	○	○	○	○	○	○	○	○
4021	●	○	○	○	○	○	○	○	○	○	○	○
4030	○	●	○	○	○	●	○	○	○	○	○	○
4040	○	○	●	●	○	○	○	○	○	○	○	○
4050	○	●	○	○	○	○	○	○	●	○	○	○

4100	●	○	○	○	○	○	○	○	○	○	○	○
4130	○	●	●	○	○	●	○	○	○	○	○	○
4141	●	○	●	●	○	○	○	○	○	○	○	○

Energy Solutions Impregnating Resins

Voltatex® Product Overview

Product	Thermal Class	Flow Time DIN 53211	Shelf Life / Storage Time	Special Properties
	acc. to IEC 60085 ⁽¹⁾	23 °C [sec.]	25 °C [months]	

Finishing Varnish				
Voltatex® 2010	-	30 - 40	24	Quick single component air drying clear finishing varnish with excellent adhesion on metals and plastics, suitable as additional protection against external influences and corrosion.
Voltatex® 2020 red	-	75 - 125	8	Quick single component air drying pigmented finishing varnish with excellent adhesion on metals and plastics, suitable as additional protection against external influences and corrosion, especially against humidity.
Voltatex® 2020 grey	-	55 - 75	12	Quick single component air drying pigmented finishing varnish with excellent adhesion on metals and plastics, suitable as additional protection against external influences and corrosion, especially against humidity.
Voltatex® 2040	180 (H)	45 - 65	12	Clear, rapid drying overcoat for protection against climate conditions and mold. Suitable as a protection varnish for electric motors and transformers and as impregnating material for small transformers with low requirements.

Impregnating Varnish				
Voltatex® 2100	180 (H)	65 - 95	12	Clear, fast curing ready-to-use varnish, thermosetting, delivers a hard and elastic compound with resistances against solvent gases, transformer oil, climate stresses, fungal investigation and acids, suds and ammonia.

Waterborne Impregnating Varnish				
Voltatex® 2240	180 (H)	10 - 30	12	Water based epoxy-emulsion, milky appearance in liquid form, non-flammable and not explosive. Suitable for electric motors (except high voltage applications), transformers and hermetic motors. Resistant to refrigerants.

Thinner	
Voltatex® T022	Voltatex® T022 can be added to Impregnating Varnish Voltatex® 2100 to adjust the required viscosity.
Voltatex® T023	Voltatex® T023 can be added to Finishing Varnishes Voltatex® 2020 & Voltatex® 2010 series) to adjust the required viscosity.

Reactive Thinner	
Voltatex® T031	Voltatex® T031 can be added to Impregnating Resins Voltatex® 4000 series to adjust the required viscosity.
Voltatex® T032	Voltatex® T032 can be added to Impregnating Resins Voltatex® 4100 series to adjust the required viscosity.

Cleaning Agent	
Voltatex® T050	Voltatex® T050 is a clear, transparent solvent mixture with excellent cleaning properties.

Service Products	
Voltatex® H140	1K Hardener Voltatex® H140 is mixed into Voltatex® - Impregnating Resins based on unsaturated polyester/polyester imide chemistry for adjusting the reactivity.
Voltatex® H151	Catalyst Voltatex® H151 is mixed into Voltatex® - Impregnating Resins based on unsaturated polyester/polyester imide chemistry for curing at low temperature.
Voltatex® A341	Voltatex® A341 is mixed into Voltatex® - Impregnating Resins based on unsaturated polyester/polyester imide chemistry to allow "cold curing" at room temperature together with an MEK-peroxide. For further information please contact our Technical Service team.

⁽¹⁾ based on Temperature Index MW 35, Twisted Pair

Official distributor of Axalta



Dirigo Coating S.A.
ul. Wielicka 29, 32-406 Czechówka
tel: +48 733 733 838
mail: biuro@dirigocoating.pl
www.dirigocoating.pl

