

Encapsulating systems Araldite®

HUNTSMAN

Enriching lives through innovation

Epoxidharz Gießharz gefüllt
Raumtemperatur härtend

Encapsulating systems

Araldite®: filled epoxy curing at room temperature or slightly higher temperatures

System	resin		CW 1312	CW 1302	CW 2243-2L	CW 2243-2L	CW 2243-2L	CW 2245	CW 2245	CW 2248	CW 2249	XB 2252	CW 2250-1	CW 5730 N	
	hardener		HY 1300	HY 1300	HY 1872	HY 842	HY 2966	HY 2966	HY 956 EN	HY 956 EN	HY 2851	XB 2253	HY 2251	HY 2966	
Type of System			EP/filled	EP/filled	EP/filled	EP/filled	EP/filled	EP/filled	EP/filled	EP/filled	EP/filled	EP/filled	EP/filled	EP/filled	
Color			beige	beige	grey/blue	grey/blue	grey/blue	beige/black	beige/black	beige	beige	green/black	green/beige	black	
Density of casting	g/cm ³		1.75	1.65	1.42	1.5	1.58	1.6	1.61	1.58	1.41	1.54	1.57	1.73	
Filler content	resin	%	75	66	59	59	59	58	58	55	43	56	57	71	
Mixing ratio	resin/hardener parts by weight resin/hardener parts by volume		Gewichtsmischung Volumenmischung	100/9	100/11	100/22	100/20	100/11	100/9	100/10	100/11	100/30	100/13 100/20	100/13 100/20	100/8 100/15
Viscosity	resin	mPas/°C	32 500 / 25	40 000 / 25	10 000 / 25	10 000 / 25	10 000 / 25	18 000 / 25	18 000 / 25	16 000 / 25	6000-8000/2	5000-10000	8000 / 25	80000/25	
	hardener	mPas/°C	190 / 25	190 / 25	150 / 25	750 / 25	500 / 25	500 / 25	450 / 25	450 / 25	1300-2100/2	100-500/25	100 / 25	500/25	
	mixture	mPas/25°C	11000	10000	4400	2740	4200	10000	7500	6500	1700		1700	50000/25	
		mPas/°C	3700/40	3400/40	560/60	910/40	1630/40	3000/40	2500/40	4200/40	150/60	2300/40	400/50		
Pot life	min / °C / mPas		min / °C / mPas	40/25/15000	35/25/15000	28/40/15000	46/60/15000	93/40/15000	25/40/15000		48/25/15000	27/25/15000	200/25	65/25/10000	
				17/40/15000							38/40/15000	20/40/15000	104/40	37/40/15000	33/50/10000
Gel time	min/°C		min/°C		120 / 25	75 / 40	110 / 60				111 / 25			100 / 25	135 / 25
					30 / 60	35 / 80					54 / 40			69 / 40	95 / 40
											22 / 60			30 / 60	42 / 60
Minimum curing time	h/°C		h/°C	48 / 25 or 8 / 40 or 4 / 60	48/25 or 8/40 or 2/60	2 / 80	48/25 or 16/40 or 8/60	24/25 or 12/40 or 6/60	24/25 or 8/40 or 2/60	24/25 or 12/40 or 6/60	24/25 or 12/40 or 6/60	≥72/25; ≥15/40; 6-10/60	24/25 + 6/60	24/25 or 12/40 + 2/60	24/25 or 2/40 or 1/60
Glass transition temperature (DSC)	°C		°C	30	76	8	5	37	55	63	86	68	65	50	39
Martens deflection temperature	°C		°C	<23	58			<25	49	54	65	50			
Thermal conductivity	25°C	W/mK	W/mK	1.1	0.83	0.53	0.58	0.8	0.65	0.67	0.69	0.38	0.66	0.67	1.1
Coefficient of linear thermal expansion	ppm/K		ppm/K	103 @ 23-82°C	48@24-46°C 80@46-56°C	44@Alpha1 143@Alpha2	167@24-105°C	111@22-71°C 117@22-140°C	75 @ 20-40°C	69 @ 20-40°C	44 @	70	60@Alpha1 100@Alpha2	65@Alpha1	30 @ Alpha1 90 @ Alpha2
Thermal class					H (180 °C)			B (130 °C)		E (120 °C)			F (155 °C)	B (130 °C)	
Shore hardness	23 °C	Shore D	Shore D	57	80	20	47	70	74	80	81	77	86	88	82
Flammability	UL 94	grade	grade	V-0(3,2mm)	V-0(3,2mm)		V-0 (6mm)	V-0 (6mm)	V-0 (4mm)	V-0 (4mm)	V-0 (6mm)	-	V-0 (6mm)	V0(4mm), NF 16-10	V-0 (6mm)
Glow-wire test (850°C)															
Flexural strenght	max bending stress 25°C	MPa	MPa	5-7	63			24			90	85	70	77	
	surface strain failure 25°C	%	%	>15	1			15			1.5	2.5		1.34	
Modulus of elasticity	25°C	MPa	MPa	70-80	8450	18	26	960		5500	6500	3500	5000	3200	
Tensile strenght	max bending stress 25°C	MPa	MPa	4-5	30	3.5	6	16	38	36	45	45	41	45	35
	surface strain failure 25°C	%	%	7-16	0.5	26	22	15	1.1	0.8	1	1.5	1.5	1.45	1.65
	Modulus of elasticity 25°C	MPa	MPa												
Compressive strenght max.	25°C	MPa	MPa	33-36	103			31			112	50			
Impact strength	kJ/m ²		kJ/m ²	10-16	4.5			12			07. Jan	08. Jan			
Water absorption	23 °C	days / %	days / %	1 / 0.34	1 / 0.04	1 / 0.67	1 / 0.58	10 / 0.25	1 / 0.06	1 / 0.17	1 / 0.09	10/0.2	1 / 0.2	1 / 0.15	10 / 0.31
	100 °C	min / %	min / %	30 / 0.39	30 / 0.22	30 / 0.63	30 / 0.78	30 / 0.5	30 / 0.22	30 / 0.23	30 / 0.22	30/0.27	30 / 0.4	30 / 0.47	30 / 0.29
Dielectric strenght	kV/mm		kV/mm	13.5-15.5	15	22.2	16	15	18	16	15	16	29	28	22
Dielectric dissipation factor tan δ (50 Hz)	23 °C	%	%	30	9.3	14.2	7	5	6	5	7.9		4.4	3.4	4
	60 °C	%	%		17.9		30	10.5	16	13					10
Relative permittivity ε_r (50 Hz)	23 °C			9	5.5	7.7	5.3	5.3	6.4	5.2	5.3		4.7	4.6	5.1
	60 °C				6.5		7.5	8.2	9	7.7					7.3
Volume resistivity ρ	25 °C	Ohm cm	Ohm cm	5 x 10 ¹⁰	5 x 10¹⁴	1.3 x 10 ¹¹	1 x 10 ¹¹	3 x 10 ¹⁴	9 x 10 ¹³	2 x 10 ¹⁴	5 x 10 ¹⁴		1 x 10 ¹⁴	5 x 10 ¹⁴	7 x 10 ¹⁴
	60 °C	Ohm cm	Ohm cm		4 x 10¹³		1 x 10 ⁹	8 x 10 ¹⁰	3 x 10 ¹¹	5 x 10 ¹³	5 x 10 ¹³ / 50 °C				1 x 10 ¹²
Tracking resistance CTI	CTI		CTI					>600			>600	>600	>600		>600-0.1
Electrolytic corrosion	grade		Stufe					AN/1.2			A-1	A-1	A-1		A-1

with kind regards ...

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