

Huntsman Advanced Materials

We are a leading global supplier of synthetic and formulated polymer systems for customers requiring high-performance materials which outperform the properties, functionality and durability of traditional materials. Over 2300 associates at 13 locations worldwide work to fulfill this promise day by day.

More than 9000 companies around the world use Huntsman Advanced Materials technologies in key markets such as adhesives and inks, aerospace, automotive, coatings, construction, electronics, medical, marine, power transmission and distribution, sports equipment and wind power generation.

Composites Market

With recognized expertise in research, development and processes we offer a unique and wide range of innovative high-value thermosets, combined with strong technical support to the industries using fiber reinforcement technologies. Our solutions open new possibilities in design and systems integration with high strength-to-weight and stiffness-to-weight ratios as well as superior mechanical and thermal performance.

Global presence – 13 manufacturing sites



HUNTSMAN

Enriching lives through innovation

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Enriching lives through innovation

Advanced Materials

Light on weight – heavy on strength

Composite resin systems Selector guide



Composite resin systems for wet lay-up, RTM, infusion, filament winding and pultrusion processes

	Wet lay-up	RTM	Infusion	Filament winding	Pultrusion	Pot life	Gel time	Mix viscosity		Applied cure schedule	T _g	Flexural strength	Ultimate flexural elongation	Fracture toughness K _{IC}	Fracture energy G _{IC}
Conditions						RT, 100ml	80 °C	25 °C			DSC, 10 K/min				
Norm											IEC 1006	ISO 178			
Unit						min	min	mPa·s			°C	MPa	%	MPa√m	J/m ²
RenLam® CY 219/ Ren® HY 5160	●●●					80	N/A	900 – 1000		14 h at 40 °C	45 – 50 (ISO 75, deflection temperature)	90 – 95	N/A	N/A	N/A
RenLam® CY 219/ Ren® HY 5161	●●●					40	N/A	1000 – 1200		14 h at 40 °C	50 – 55 (ISO 75, deflection temperature)	95 – 100	N/A	N/A	N/A
RenLam® CY 219/ Ren® HY 5162	●●●					20	N/A	1000 – 1100		14 h at 40 °C	55 – 60 (ISO 75, deflection temperature)	95 – 100	N/A	N/A	N/A
Resin XU 3508/ Hardener XB 3403	●●●	●●				600 – 720	30 – 36	650 – 800		4 h at 60 °C + 6 h at 80 °C	70 – 75	100 – 125	9 – 11	2.1 – 2.3	1250 – 1400
Araldite® LY 3505/ Hardener XB 3404-1*	●●●					80 – 100	11 – 18	550 – 800		4 h at 60 °C + 6 h at 80 °C	76 – 81	125 – 145	6.5 – 9.5	0.8 – 0.95	160 – 200
Araldite® LY 3505/ Hardener XB 3403*	●●●					600 – 720	36 – 48	300 – 400		4 h at 60 °C + 6 h at 80 °C	78 – 83	110 – 130	10.5 – 13	0.95 – 1.05	250 – 280
Araldite® LY 3505/ Aradur® 3405*	●●●					26 – 36	5 – 11	1000 – 1200		4 h at 60 °C + 6 h at 80 °C	87 – 92	135 – 155	7 – 9	0.8 – 0.9	150 – 190
Araldite® LY 1564/ Aradur® 3486*	●●	●●	●●	●●	●●	560 – 620	33 – 43	200 – 300		8 h at 80 °C	80 – 84	118 – 130	10.5 – 12.5	0.95 – 1.05	260 – 310
Araldite® LY 1564/ Aradur® 3487*	●●	●●	●●●			130 – 160	18 – 25	220 – 320		8 h at 80 °C	81 – 86	118 – 130	10 – 12	0.95 – 1.05	255 – 305
Araldite® LY 3598/ Aradur® 3498	●●	●●●				40 – 70	7 – 10	400 – 900		30 min at 100 °C	87 – 93	100 – 110	7 – 8.5	1.7 – 1.9	900 – 1100
Araldite® LY 5085/ Aradur® 5046 U	●●●					150 – 180	9 – 13	1200 – 1500		10 min at 80 °C + 20 min at 100 °C	95	100 – 120	9 – 12	N/A	N/A
Araldite® LY 3297/ Aradur® 3298	●●●	●●●	●●			120 – 135	18 – 26	320 – 380		8 h at 80 °C	92 – 98	125 – 130	7 – 8	0.85 – 0.95	215 – 245
Araldite® LY 3297/ Aradur® 3299	●●	●●●	●●			40 – 50	10 – 16	350 – 400		8 h at 80 °C	94 – 100	123 – 128	9 – 12	0.8 – 0.9	195 – 225
Resin XU 3508/ Aradur® 3486	●●●	●●●	●●	●●	●●	380 – 480	9 – 14 at 100 °C	720 – 860		5 h at 100 °C	95 – 102	110 – 125	10 – 12.5	2.2 – 2.4	1500 – 1700
Araldite® LY 564/ Hardener XB 3458		●●●				13 – 17	2 – 4	220 – 320 at 40 °C		10 min at 80 °C + 20 min at 100 °C	92 – 102	125 – 140	6.5 – 9	1.2 – 1.5	420 – 520
Resin XU 3508/ Hardener XB 3458		●●●				14 – 18	2 – 4	700 – 850 at 40 °C		10 min at 80 °C + 20 min at 100 °C	100 – 110	115 – 125	4 – 7	1.20 – 1.35	380 – 500
Resin XB 3585/ Hardener XB 3458		●●●				14 – 18	2 – 4	450 – 550 at 40 °C		10 min at 80 °C + 20 min at 100 °C	100 – 110	120 – 140	5 – 7	1.05 – 1.2	280 – 325
Araldite® LY 564/ Aradur® 5003-1	●●	●●●				42 – 52	6 – 8	200 – 260 at 40 °C		30 min at 80 °C + 2 h at 120 °C	108 – 115	108 – 118	7 – 9	0.9 – 1	230 – 290
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* Germanische Lloyd (GL) test approved

- Highly recommended
- Recommended

Composite resin systems for wet lay-up, RTM, infusion, filament winding and pultrusion processes

Continued

	Wet lay-up	RTM	Infusion	Filament winding	Pultrusion	Pot life	Gel time	Mix viscosity		Applied cure schedule	T _g	Flexural strength	Ultimate flexural elongation	Fracture toughness K _{1c}	Fracture energy G _{1c}
Conditions						RT, 100ml	80 °C	25 °C			DSC, 10 K/min				
Norm											IEC 1006	ISO 178			
Unit						min	min	mPa·s			°C	MPa	%	MPa√m	J/m ²
Araldite® LY 5052/ Aradur® 5052	●●●	●●	●●			110 – 160	14 – 17	500 – 700		8h at 80 °C	114 – 122	116 – 122	8.5 – 13.4	0.77 – 0.83	192 – 212
Resin XB 3585/ Aradur® 5003-1	●●●	●●				40 – 48	6 – 8	440 – 500 at 40 °C		30min at 80 °C + 2h at 120 °C	120 – 130	115 – 125	6 – 9	0.8 – 0.9	180 – 230
Araldite® LY 564/ Aradur® 917/ Accelerator 960-1			●●	●●●	●●●	4800 – 5400	30 – 40	450 – 700		4h at 80 °C + 4h at 120 °C	122 – 130	140 – 150	6 – 7	0.59 – 0.7	100 – 125
Araldite® LY 564/ Aradur® 22962	●●	●●●	●●●			110 – 150	20 – 30	400 – 600		15min at 120 °C + 2h at 150 °C	130 – 140	124 – 132	9 – 11	0.8 – 0.95	200 – 260
Araldite® LY 564/ Aradur® 2954	●●	●●●	●●	●●	●●	480 – 600	35 – 45	500 – 700		1h at 80 °C + 8h at 140 °C	143 – 148	120 – 124	6.5 – 7.5	0.69 – 0.76	149 – 181
Resin XU 3508/ Aradur® 22962	●●	●●●				90 – 150	24 – 40	1800 – 2100		1h at 80 °C + 2h at 150 °C	144 – 154	120 – 135	8 – 10	0.95 – 1.15	340 – 380
Araldite® LY 556/ Aradur® 917/ Accelerator DY 070			●●	●●●	●●●	5700 – 6300	140 – 160	600 – 900		4h at 80 °C + 8h at 140 °C	148 – 153	125 – 135	6 – 8.5	0.56 – 0.6	88 – 96
Araldite® LY 556/ Aradur® 22962	●●●	●●				120 – 180	18 – 22	1800 – 2000		15min at 120 °C + 2h at 150 °C	148 – 158	130 – 136	7.5 – 10	0.68 – 0.78	140 – 175
Resin XU 3508/ Aradur® 2954	●●	●●●	●●			320 – 380	9 – 14 at 100 °C	2600 – 3300		1h at 80 °C + 8h at 160 °C	150 – 158	125 – 135	7 – 8	0.85 – 1.05	250 – 290
Araldite® MY 740/ Aradur® HY 906/ Accelerator DY 070			●●	●●●	●●●	> 600	100	ca. 1100		30min at 110 °C + 30min at 170 °C + 30min at 200 °C	165 – 175	140 – 150	5.5 – 6.5	0.5 – 0.7	70 – 100
Araldite® LY 556/ Hardener XB 3473		●●	●●	●●	●●	1920 – 2220	> 600	5200 – 6000		2h at 120 °C + 4h at 180 °C	185 – 194	110 – 120	5.5 – 6.5	0.7 – 0.85	190 – 220
Araldite® CY 179/ Aradur® 917/ Accelerator DY 070			●●	●●	●●	> 2880	60 – 80	100 – 200		1h at 100 °C + 6h at 180 °C	200 – 205	75 – 95	2 – 3.5	0.46 – 0.5	65 – 75
Resin XB 9721/ Aradur® 917/ Accelerator DY 070				●●	●●●	110 – 130	6 – 9 at 120 °C	550 – 750		2h at 120 °C + 2h at 160 °C + 2h at 200 °C + 4h at 220 °C	205 – 215	85 – 100	2.5 – 3	0.43 – 0.5	45 – 60
Araldite® LY 8615/ Aradur® 8615	●●	●●	●●●	●●	●●	1080	ca. 35	ca. 550		90min at 80 °C + 1h at 150 °C + 3h at 180 °C	ca. 220	ca. 100	ca. 4	ca. 0.65	ca. 140
Resin XB 9721/ Hardener XB 3473		●●		●●●	●●	4800 – 5700	80 – 100 at 120 °C	14000 – 17000		2h at 120 °C + 2h at 160 °C + 2h at 200 °C + 4h at 220 °C	232 – 238	105 – 125	3 – 4.2	0.61 – 0.67	95 – 100

●●● Highly recommended
●● Recommended

Composite resin systems for prepreg processes

	Mix viscosity	B-staging	Shelf life	Gel time**	Applied cure schedule		T _g	Flexural strength	Ultimate flexural elongation	Fracture toughness K _{1c}	Fracture energy G _{1c}	Comments	Markets
Conditions	25 °C		RT	120 °C			DSC, 10 K/min						
Norm							IEC 1006	ISO 178					
Unit	mPa·s			min			°C	MPa	%	MPa√m	J/m ²		
Araldite® LZ 5021 / Aradur® 1571 / Accelerator 1573	550 – 850	6 – 10 min at 90 °C (drying)	9 – 12 months	8 – 15	25 min at 125 °C		85 – 117	118 – 120	13 – 16			solvent	wind, sport and marine
Araldite® LY 1556 / Aradur® 1571 / Accelerator 1573 / Hardener XB 3403*	4 000 – 6 000	24 – 48 h at 23 °C	> 6 weeks	6 – 11	2 h at 120 °C		105 – 115	125 – 140	7 – 10	0.7 – 0.85	130 – 250	chemical B-stage	wind, sport and marine
Araldite® LY 1556 / Aradur® 1571 / Accelerator 1573 / Hardener XB 3471	5 000 – 5 900	2 – 3 min at 80 – 90 °C	> 6 weeks	5 – 12	2 h at 120 °C		118 – 126	125 – 145	5.5 – 8.5	0.7 – 0.9	210 – 390	chemical B-stage	wind, sport and marine
Araldite® LY 3593 / Aradur® 1571 / Accelerator 1573	3 000 – 8 000		> 5 weeks	7 – 11	30 min at 150 °C		115 – 120	120 – 130	6 – 8	1.8 – 2	1 000 – 1 200	hot-melt	general industry
Resin XU 3508 / Aradur® 1571 / Accelerator 1573 / Hardener XB 3403*	6 650 – 7 450	24 h at 23 °C	> 1 month	4 – 12	4 h at 120 °C		116 – 125	110 – 120	5.5 – 8	1.43 – 1.65	850 – 1 000	chemical B-stage	wind, sport and marine
Resin XU 3508 / Aradur® 1571 / Accelerator 1573 / Hardener XB 3471	5 900 – 6 200	3 – 6 min at 90 °C	> 1 month	4 – 8	4 h at 120 °C		122 – 137	110 – 133	6 – 10	1.15 – 1.48	500 – 800	chemical B-stage	wind, sport and marine
Resin XB 3515 / Aradur® 1571 / Accelerator 1573	30 – 40 at 75 °C		> 6 weeks	6 – 13	1 h at 120 °C + 2 h at 140 °C		130 – 150	110 – 140	5 – 8	1.1 – 1.3	350 – 480	hot-melt	wind, sport and marine
Araldite® LY 5150 / Aradur® 1571 / Accelerator 1573 / Hardener XB 3471	3 500 – 4 500 at 50 °C	1 – 3 min at 80 – 90 °C	> 8 weeks	10 – 28	1 h at 140 °C		140 – 155	130 – 160	4 – 8	0.6 – 0.75	100 – 140	chemical B-stage	wind, sport and marine

* Germanische Lloyd (GL) test approved

**Adjustable reactivity with accelerator level ratio (accelerator 1573)