

Composite Resin Systems

Wet Lay-Up Process

Product Designation	Pot Life	Mix Viscosity	Glass Transition Temperature*	Flexural Strength*	Ultimate Flexural Elongation*	Key Features
Conditions	RT/100 ml	77°F	DSC, 10K/min	77°F	77°F	
Norm			IEC1006	ISO 178	ISO 178	
Unit	min	cps	°F	Kpsi	%	
Araldite® LY 3505 / XB 3403	600 - 720	300 - 400	173 - 181	16.0 - 18.8	10.5 - 13.0	Reactivity can be adjusted on demand
Araldite® LY 3505 / Aradur® 3405	26 - 36	1000 - 1200	189 - 197	19.6 - 22.5	7.0 - 9.0	
Araldite® LY 1556 / Aradur® 3405	40 - 50	1500 - 1800	197 - 208	18.8 - 21.0	9.0 - 11.0	Higher viscosity for vertical application

* Cure schedule 4 hrs @ 140°F + 6 hrs @ 176°F
Further systems are available upon request.

Infusion Process

Product Designation	Pot Life	Mix Viscosity	Glass Transition Temperature	Flexural Strength	Ultimate Flexural Elongation	Key Features
Conditions	RT/100 ml	77°F	DSC, 10K/min	77°F	77°F	
Norm			IEC1006	ISO 178	ISO 178	
Unit	min	cps	°F	Kpsi	%	
Araldite® LY 1564 / Aradur® 3486	560 - 620	200 - 300	176 - 183	17.1 - 18.8	10.5 - 12.5	
Araldite® LY 1564 / Aradur® 3416	290 - 340	200 - 320	176 - 185	17.1 - 18.8	10.0 - 12.0	
Araldite® LY 1564 / Aradur® 3487	130 - 160	220 - 320	178 - 187	17.1 - 18.8	10.0 - 12.0	
Araldite® LY 1568 / Aradur® 3489	850 - 950	200 - 300	170 - 176	17.4 - 18.8	9.0 - 10.0	
Araldite® LY 1568 / Aradur® 3491	750 - 850	200 - 300	165 - 176	17.4 - 18.8	9.0 - 10.0	New! Low exotherm
Araldite® LY 1568 / Aradur® 3492	300 - 350	250 - 350	176 - 185	18.1 - 19.6	7.0 - 7.5	

* Cure schedule 8 hrs @ 176°F

Filament Winding Process

Product Designation	Pot Life	Mix Viscosity	Glass Transition Temperature	Flexural Strength	Ultimate Flexural Elongation	Key Features
Conditions	RT / 100 ml	77°C	DSC, 10K/min	77°C	77°C	
Norm			IEC1006	ISO 178	ISO 178	
Unit	hrs	cps	°F	Kpsi	%	
Araldite® LY 556 / Aradur® 917 / Accelerator DY 070	95 - 115	600 - 900	289 - 302	18.8 - 21.8	7.0 - 8.5	High Tg for winded parts

* Cure schedule 4 hrs @ 176°F + 8 hrs @ 284°F

Prepreg Process

Product Designation	B-Staging	Shelf Life	Glass Transition Temperature	Flexural Strength	Ultimate Flexural Elongation	Description
Conditions		@ 73.4 °F	DSC, 10K/min	77°F	25°C	
Norm			IEC1006	ISO 178	ISO 178	
Unit			°F	Kpsi	%	
Araldite® LY 1556 / Aradur® 1571 / Accelerator 1573 / XB 3403	24 hrs at 23°C	> 6 weeks	221 - 239	18.1 - 20.3	7.0 - 10.0	Easy B-staging
XU 3508 / Aradur® 1571 / Accelerator 1573 / XB 3403	24 hrs at 23°C	> 1 month	240 - 257	16.0 - 17.4	5.5 - 8.0	Toughened prepreg with easy B-staging

* Cure schedule 2-4 hrs @ 284°F
All systems are Germanische Lloyd (GL) approved

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Blade Assembly

Product	Description	Mix Ratio (pbv)	Pot Life (500gr, 73.4°F) (min.)	Recommended Cure Schedule	LSS psi (MPa)*	Typical Cured Tg °F (°C)**	Key Features
Araldite® AW 4856 / Hardener HW 4856	EP system GL approved	100:50	240 - 280 (70°C)	5 hrs, 158°F	3190-3625 (22- 25)	163.4-174.2 (73 - 79)	Low exotherm, low shrinkage, high fracture toughness resistance
Araldite® AW 4856 / Hardener HW 4856 fast	EP system	100:50	40 - 60 (70°C)	5 hrs, 158°F	3190-3625 (22- 25)	163.4-174.2 (73 - 79)	Fast handling
Arathane® 3427 PO / Arathane® 3304 IS	PU system	100:45	100 - 120*** (60°C)	2 hrs, 140°F	1450-1740 (10 - 12)	104-122 (40-50)	

* on epoxy composite

** cured in standard blade cycle after initial fixing of shear webs at 25°C, IEC 1006, DSC, 10K/min

*** for 100 gr

Fast Assembly and Repair

Product	Description	Repair			Mix Ratio (pbv)	Pot Life (100gr, 23°C) (min.)	Recommended Cure Schedule	LSS psi (MPa)*	Typical Cured Tg °F (°C)**	Gap Filling in. (mm)	Key Features
		Plugs	Composite Molds	Blades							
Araldite® 2021	MMA system	•	•	•	1:1	3 - 7	1hr, ambient cure	2900 - 3190 (20 - 22)	149 - 176 (65 - 80)	.12" - 0.2" (3 - 5)	Fast-setting, tough adhesive for rapid fixing and filling of small voids
Araldite® 2022	MMA system	•	•	•	1:1	8 - 15	2hrs, ambient cure	2900 - 3190 (20 - 22)	149 - 176 (65 - 80)	.12" - 0.2" (3 - 5)	Medium open time and fast-curing tough adhesive for field/workshop operations
Arathane® 4497 PO / Arathane® 3304 IS	PU system	•	•	•	100:52	8 - 15	2 hrs, 60°C	2175 - 2610 (15 - 18)	104 - 122 (40 - 50)	.12" - 0.2" (3 - 5)	Fast-setting, ideal for filling holes
Araldite® LY 1564 / XB 3458	EP system			•	100:20	13 - 17	7 days, 23°C 15 min, 80°C	n/a	136 - 151 (58 - 66) 190 - 205 (88 - 96)	n/a	Wet lay-up repair process, good toughness resistance
Araldite® LY 3297 / Aradur® 3298	EP system			•	100:40	120 - 135	7 days, 23°C 1 day, 23°C + 4hrs, 90°C	n/a	129 - 138 (54 - 59) 198 - 208 (92 - 98)	n/a	Wet lay-up repair process, longer handling time
Araldite® LY 3297 / Aradur® 3299	EP system			•	100:40	40 - 50	7 days, 23°C 1 day, 23°C + 4hrs, 90°C	n/a	129 - 138 (54 - 59) 210 - 221 (99 - 105)	n/a	

* on aluminium

** cured in standard blade cycle after initial fixing of shear webs at 77°F, IEC 1006, DSC, 10K/min



Auxiliary Bonding

Product	Description	Mix Ratio (pbv)	Pot Life (100gr, 73.4°F) (min.)	Recommended Cure Schedule	LSS psi (MPa)*	Typical Cured Tg °F (°C)**	Gap Filling in. (mm)	Key Features
Araldite® 2014	EP system	2:1	50 - 65	Ambiant or 4hrs at 140°F	2175 - 2610 (15 - 18)	145.2 - 185 (79 - 85)	0.2 (5)	Bonding tip, control shaft components, high temperature and chemical resistance, ideal for metals
Araldite® 2015	EP system GL approved	1:1	45 - 60	Ambiant or 4hrs at 140°F	2175 - 2610 (15 - 18)	122.6 - 176 (67 - 80)	0.4 (10)	Bonding of lightning conductor, monitor sensors, ideal for dissimilar substrates
Araldite® 8579 Resin / Hardener 8579	EP system	100:40	40 - 55	Ambiant or 4hrs at 140°F	2175 - 2610 (15 - 18)	174.2 - 185 (79 - 85)	0.2 (5)	Tip control shaft and vibration damper bonding
Araldite® AV 4076-1 / Hardener HV 5309-1	EP system GL approved	1:1	50 - 65	Ambiant or 4hrs at 140°F	2900 - 3480 (20 - 24)	122.6 - 176 (67 - 80)	0.2 - 0.4 (5 - 10)	Steel insert bonding
Araldite® AW 4510 / Hardener HW 4511	EP system	2:1	85 - 100	2hrs at 140°F	2030 - 2320 (14 - 16)	230 - 257 (110 - 125)	0.4 (10)	High-temperature application

* on epoxy composite

** cured in standard blade cycle after initial fixing of shear webs at 25°C, IEC 1006, DSC, 10K/min

Tooling Systems

Master Model / Plug

Seamless Modeling Pastes:

Product designation	Color	Minimum Cure Schedule	Density lb/ft³ (g/cm³)	Shore Hardness D (ISO 868)	Coefficient of Thermal Expansion in./in.-°F (m/m-°C)	Tg, by DMA °F (°C)	Compressive Strength psi (MPa)	Flexural Strength psi (MPa)
RenPaste® SV 4503-1 / Ren® HV 4503-1	Brown	Machinable after 1 day (RT* curing)	47.3 (0.76)	60	54 x 10 ⁻⁶ (3 days @ RT*) (101 x 10 ⁻⁹)	159 (70.6)	2100 (14.5)	2200 (15.2)
RenPaste® 4618/ Ren® HV 4619	Grey	Machinable after 1 day (RT* curing)	56 (0.90)	76	30 x 10 ⁻⁶ (7 days @ RT*) (54 x 10 ⁻⁹)	230 (110)	9280 (67.7)	5220 (36)

*Room Temperature 77°F

Remark: Machine Applied

Mold Production with Infusion and Wet Lay-Up Processes (Heat resistant up to 248°F 120°C)

Surface Coat:

Product Designation	Color	Gel Time Thin Layer (77°F/min)	Shore Hardness D (ISO 868)	Flexural Strength psi (MPa)	Coefficient of Thermal Expansion in./in.-°F (m/m-°C)	Tg, by DMA °F (°C)
RenGel® 4026R / Ren® 1500H	Dark Grey	50 - 60	90	8500 (58.6)	37 x 10 ⁻⁶ (66.6 x 10 ⁻⁹)	310 (154.4)
RenGel® 4026R / Ren® 1501H	Dark Grey	30 - 40	90	8000 (55.2)	32 x 10 ⁻⁶ (57.6 x 10 ⁻⁹)	310 (154.4)
RenGel® 4026R / Ren® 1510H	Dark Grey	2 hrs	90	8700 (60)	38 x 10 ⁻⁶ (68.4 x 10 ⁻⁹)	335 (168.3)

Back Construction:

Product Designation	Color	Viscosity at 77°F (cP)	Gel Time (77°F/min)	Coefficient of Thermal Expansion in./in./°F (m/m-°C)	Tg °F (°C)	Flexural Strength psi (MPa)	Process
RenLam® 4005R/ Ren® 1500H	Clear to pale yellow	1900	50	8.5 x 10 ⁻⁶ (15.1 x 10 ⁻⁹)*	338 (170) by DMA	35000 (241.4)*	Wet lay-up / Infusion
RenLam® 4005R / Ren® 1510H	Clear to pale yellow	3300	160	8.5 x 10 ⁻⁶ (15.1 x 10 ⁻⁹)*	329 (165) by DMA	29000 (200)*	Wet lay-up / Infusion
Araldite® LY 1564 / Aradur® 22962	Clear liquid	400 - 600	110 - 150		230 (110) @ 4hrs / 176°F 302 (150) fully cured by DSC	17980 (124)**	Infusion
Araldite® LY 1564 / Aradur® 2954	Clear liquid	500 - 700	480 - 600	40 x 10 ⁻⁶ (72 x 10 ⁻⁹)**	212 (100) 4hrs / 176°F 311 (155) fully cured by DSC	17400 (120)**	Infusion

* 10 oz. Glass Cloth Laminate

** Neat Casting

Mold Production with Infusion and Wet Lay-Up Process (Heat resistance up to 356°F 180°C)

Surface Coat:

Product Designation	Color	Pot Life at 77°F (hr)	Shore Hardness D (ISO 868)	Demolding Time (hr)	Cure Cycle (time/°F)	Tg by DSC °F (°C)
RenGel® SW 5200 / Ren® HY 5212	Black	10 (500 ml)	90	14 hrs @ 40 - 50°C	12 hrs / 104 + 2 hrs / 176 + 2 hrs / 212 + 2 hrs / 248 + 2 hrs / 284 + 2 hrs / 320 + 2 hrs / 356 + 12 hrs / 392	392 (200)

*Room Temperature

Back Construction:

Product Designation	Color	Viscosity at 77°F (cP)	Pot Life at 77°F (500 ml) (hr)	Demolding Time (hr)	Cure Cycle (time/°F)	Tg °F (°C)	Flexural Strength (ISO 178) psi (MPa)	Process
RenLam® LY 5210 / Ren® HY 5212	Amber	2000	12	14 hrs @ 104 - 122°F	12hrs / 104 + 2 hrs / 176 + 2 hrs / 212 + 2 hrs / 248 + 2 hrs / 284 + 2 hrs / 320 + 2 hrs / 356 + 12 hrs / 392	446 - 460 (230 - 238) by DSC	12760 (88)	Wet lay-up
Araldite® LY 8615 / Aradur® 8615	Amber	550	18 (100 ml)	24 hrs @ 104°F	24 hrs / 104 + 2 hrs / 140 + 2 hrs / 176 + 2 hrs / 212 + 2 hrs / 248 + 2 hrs / 284 + 2 hrs / 320 + 3 hrs / 356	428 (220) by DMA	14500 (100)	Infusion

*Room Temperature