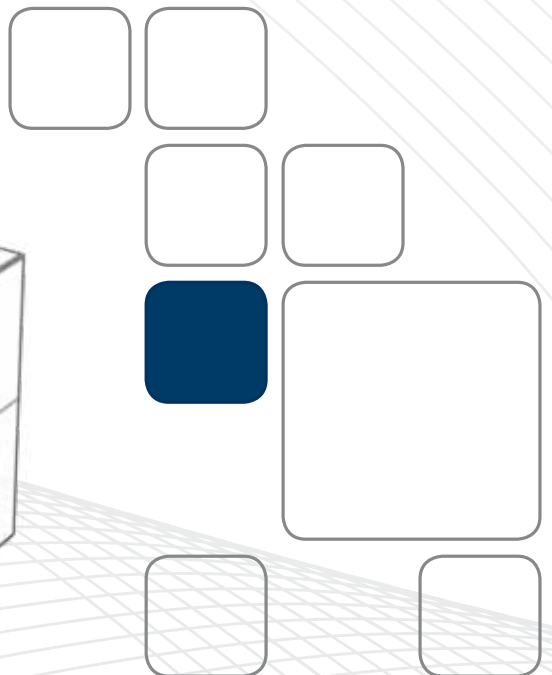


Advanced Materials

Araldite® adhesives core range

Selector guide
for industrial
bonding





Rely on
us with
confidence





Rely on us with confidence to bond virtually any substrate

Structural bonding techniques play a key role in today's industrial assembly. As designers strive to bring lightweight and durable products to market in the quickest time possible, they increasingly choose industrial adhesives as the best solution for complex design issues.

Building on our 60 years heritage as pioneers in high performance adhesive technology, Huntsman has developed a comprehensive range of adhesives to provide solutions to a wide variety of design issues engineers face on a daily basis. Based on the three chemistries – epoxy, polyurethane and methacrylate, this Araldite® adhesives core range provides superior joining and bonding solutions for plastics, metals, composite materials and other substrates.

We deliver more than just products

The know-how and expertise of our worldwide team of experts in bonding technologies enable us besides recommending the best suitable adhesive

- > to also provide application support to answer specific project requirements
- > to reduce manufacturing and production costs through process time reduction
- > to improve the quality and durability of your product through improved physical and mechanical properties such as impact or corrosion resistance
- > to quickly bring your product to market

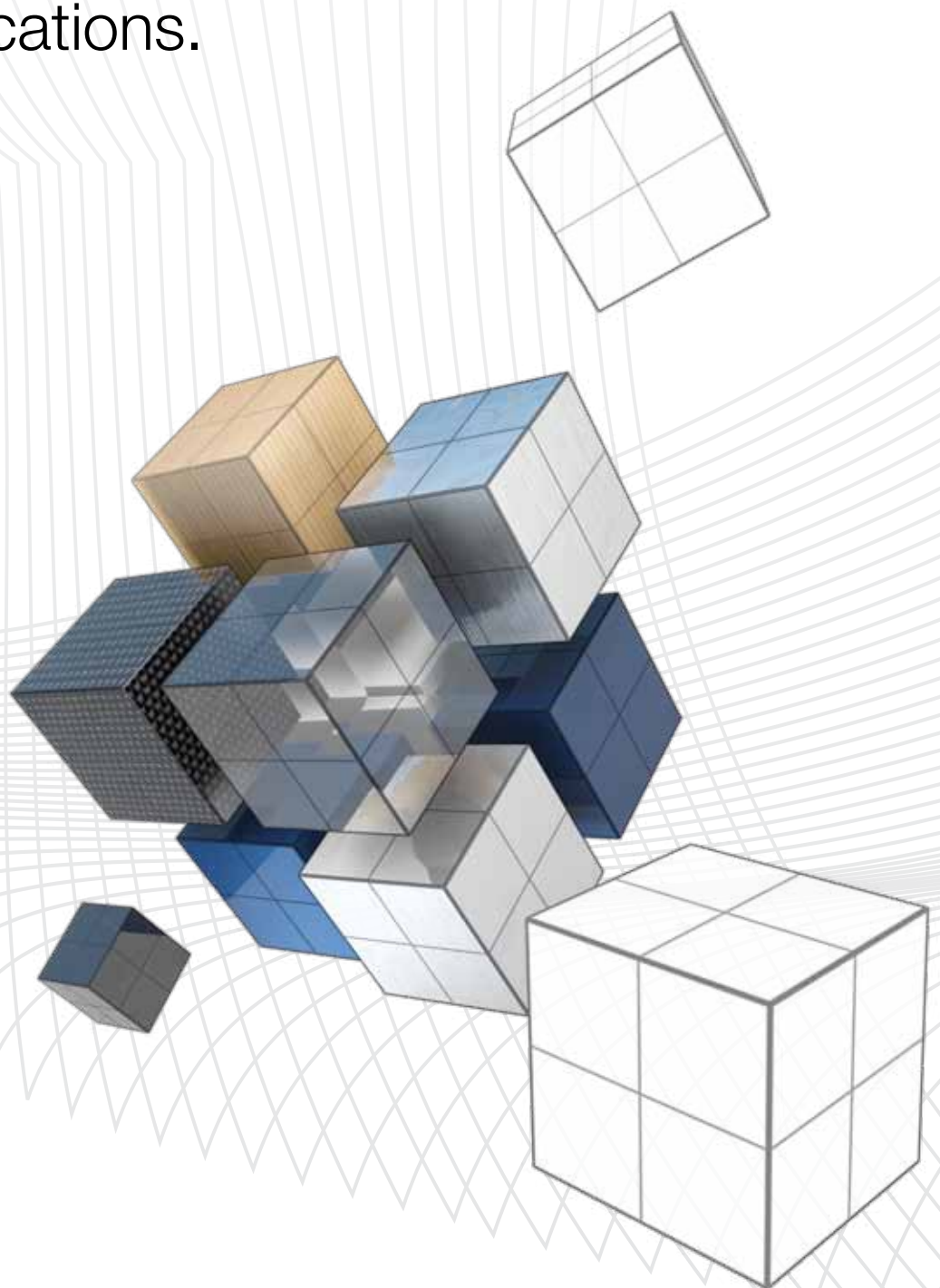
Araldite®

The adhesives
serving worldwide manufacturing
industry for more than
half a century.



Strength in bonding

The Araldite® adhesives core range contains a selection of adhesives from the latest epoxy, polyurethane and methacrylate technologies to meet the great majority of high-performance bonding applications.



Araldite® adhesives core range

From adhesives with long open times for large area applications to fast-curing adhesives for early removal from fixtures and rapid through-put, this range includes adhesives which are resistant to high temperature, water and chemicals. Liquid adhesives as well as thixotropic adhesives for gap-filling or vertical applications can be found in this range.

Adhesives with highest strength can be selected from this range as well as tough and impact-resistant adhesives with a well-balanced combination of strength and flexibility and also elastic adhesives to cope with different thermal expansions when bonding larger structures of dissimilar materials.

Products from the Araldite® adhesives core range are available in a variety of packaging including easy-to-use cartridges with static mixers and working packs for manual applications as well as hobbocks and drums for higher volume applications.

The Araldite® adhesives core range will continuously be updated to meet the newest demands of innovative design using the bonding technology.

Chemical types

Epoxy adhesives

- > excellent adhesion to metals and thermoset composites
- > high strength and high stiffness
- > high creep resistance
- > high fatigue resistance
- > high temperature resistance (adhesive specific up to 190°C)
- > excellent chemical resistance and long-term durability

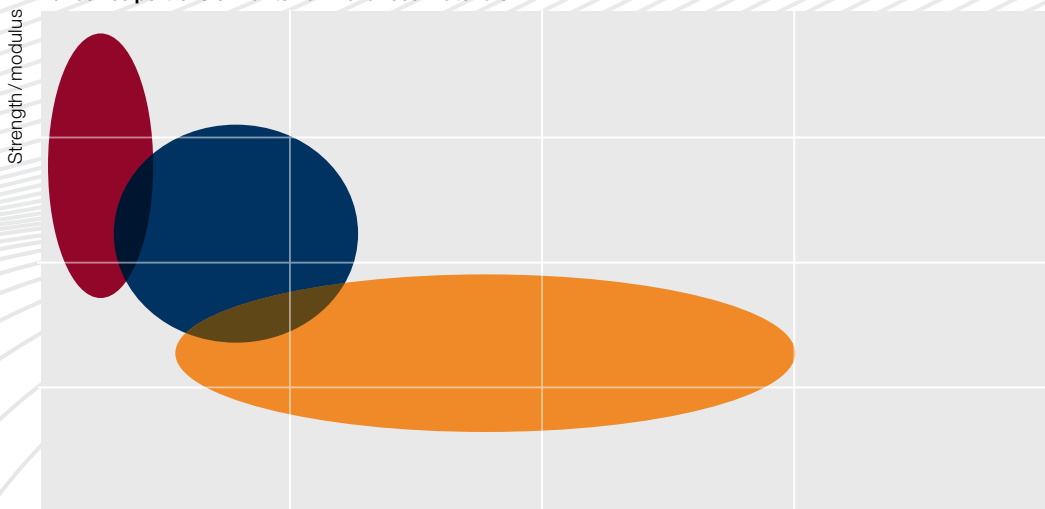
Methacrylate adhesives

- > excellent adhesion to metals, thermoset composites and most thermoplastics
- > surface contamination tolerant
- > high strength combined with high toughness
- > high fatigue resistance
- > good chemical resistance and long-term durability
- > very fast-curing adhesives available (adhesive specific)
- > possibility for hardener lacquer method (no mix)

Polyurethane adhesives

- > excellent adhesion to most composite materials and plastics
- > good adhesion to metals
- > mechanical properties from rigid to flexible
- > high fatigue resistance
- > good long-term durability

Adhesives portfolio of Huntsman Advanced Materials



Epoxy adhesives
Methacrylate adhesives

Polyurethane adhesives

Elongation at break

Epoxy adhesives

Properties and performance

Product designation	Key features	Metals							Thermosets composites				Thermo-plastics				Various substrates				
		Mild steel	Stainless steel	Galvanized steel	Aluminium	Copper	Brass	Ferrite	GRP (UP)	GRP (EP)	CFRP	SMC	PVC	PA	ABS, ASA, SAN	PC	PMMA	Ceramic	Glass	Rubber	Wood
Conditions																					
Unit																					
Araldite® AW 4428 / Hardener HW 4455	Rapid curing. Bonds a wide variety of materials. Excellent chemical and temperature resistance. Medium viscosity liquid.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Araldite® AW 2104 / Hardener HW 2934	Fast curing with relative long pot life. Low shrinkage. Good combination of high shear and peel strength. Bonds a wide variety of materials. Good moisture and excellent chemical resistance.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Araldite® AW 2101 / Hardener HW 2951	Fast curing. Sag resistant and gap filling. Excellent oil and petrol resistance with good thermal stability.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Araldite® AV 4738 / Hardener HV 4739	Holds KIWA approval for potable-water applications. Excellent for pipe bonding. Long pot life combined with relative fast cure. Sag resistant and gap filling. Excellent environmental and chemical resistance with excellent thermal stability.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Araldite® AW 139-1 / Hardener HW 5323	Long pot life combined with relative fast cure. Sag resistant and highly gap filling. Excellent environmental and chemical resistance with very high temperature stability. Low shrinkage.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Araldite® AV 5308 / Hardener HV 5309-1	Sag resistant and highly gap filling. Low shrinkage. Ideal for bonding GRP, SMC and dissimilar substrates. Toughened with excellent impact resistance. Excellent environmental and chemical resistance with high thermal stability.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Araldite® AV 4076-1 / Hardener HY 4076	Long pot life combined with relative fast cure. Sag resistant and gap filling. Excellent on metals, composites and selected plastics. Toughened with excellent impact resistance. Excellent combination of high peel and shear strength.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Araldite® AW 136 H / Hardener HV 997	Sag resistant and gap filling. Excellent rheology for honeycomb bonding. Long work life. Toughened with good combination of high shear and peel strength. Excellent environmental and chemical resistance with good thermal stability. Bonds a wide variety of materials in common use.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Araldite® AV 144-2 / Hardener HV 997	Metal-coloured paste. Long pot life combined with relative fast cure. Sag resistant and gap filling. Low shrinkage. Bonds a wide variety of materials. Good environmental and excellent chemical resistance.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Araldite® AV 138 M-1 / Hardener HV 998	Low outgassing/volatile loss. Sag resistant and gap filling. Excellent moisture and chemical resistance and very high temperature stability.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Araldite® 420 A/B	Excellent on metals, high-performance composites and selected thermoplastic substrates. Extremely tough and resilient with good combination of high shear and peel strength.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Araldite® AW 136 H / Hardener HW 5067	Long pot life combined with relative fast cure. Liquid. Excellent environmental and chemical resistance with high temperature stability. Excellent on metals.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Araldite® AY 105-1 / Hardener HY 991	Long work life. Liquid. Good for bonding most metals and composites. Excellent moisture and chemical resistance with high thermal stability.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Araldite® AV 4076-1 / Hardener HV 5309-1	Long pot life. Sag resistant and gap filling. Excellent on most metals and composites. Toughened with excellent impact resistance. Good combination of high shear and peel strength. Good environmental and chemical resistance with high thermal stability.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Suitability ● ● ● ●
 Excellent ● ● ●
 Good ●
 Moderate ●

Data below indicate the detailed properties and performance of each product. These data were obtained following recommended pretreatment of substrates.

Viscosity	Reactivity			Mechanical properties		Temperature resistance	Bond strength	Dura- bility in	Color (mixed)	Mix ratio		Packaging					
	Curing requirements	Work time	Cure speed	E-modulus at 23°C	Elongation at break at 23°C					Water/humidity	Chemicals	Heat	by weight	by volume	Cartridges ²⁾	Multipacks ³⁾	Cans/hobbocks ⁴⁾
		Pot life, 100 g at 23°C	Cure time at 23°C to LSS ¹⁾ = 1 N/mm ²	Cure time at 23°C to LSS ¹⁾ = 10 N/mm ²			Max. temp. giving 33% of LSS ¹⁾ at 23°C	LSS ¹⁾ aluminium at 23°C									
Pa·s		min	min	min	N/mm ²	%	°C	N/mm ²									
25	ambient temperature curing	1.5	5	60	1 130	5	60	22	● ● ●	yellow	1 : 1	1 : 1					○
30	ambient temperature curing	6	20	60	2 520	4	70	18	● ● ●	yellow	1 : 1	1 : 1			○	○	○
thixotropic	ambient temperature curing	6	60	150	6 020	1	80	20	● ● ●	grey	1 : 1	1 : 1	○	○	○		
thixotropic	ambient temperature curing	45	180	240	1 550	4	110	17	● ● ●	grey	100 : 25	100 : 22					○
thixotropic	ambient temperature curing	60	180	300	4 000	1	140	19	● ● ●	grey	2 : 1	2 : 1					○ ○
thixotropic	ambient temperature curing	35	240	360	2 000	4	100	16	● ● ●	beige	1 : 1	1 : 1					○ ○
thixotropic	ambient temperature curing	60	240	600	6 460	1	60	29	● ● ●	opaque	100 : 44	100 : 50					○
thixotropic	ambient temperature curing	60	240	2 400	2 320	2	80	18	● ● ●	grey	100 : 60	100 : 80			○	○	
thixotropic	ambient temperature curing	65	240	600	2 530	1	60	18	● ● ●	grey	100 : 60	1 : 1			○	○	
thixotropic	ambient temperature curing	40	270	480	4 700	1	140	14	● ● ●	grey	100 : 40	100 : 40			○	○	○
40	ambient temperature curing	60	300	600	1 500	5	50	24	● ● ●	dark green	100 : 40	2 : 1					○
10	ambient temperature curing	90	300	420	3 240	1	110	23	● ● ●	grey	100 : 29	100 : 38					○
15	ambient temperature curing	50	360	960	1 670	1	110	14	● ● ●	brown	2 : 1	100 : 60			○	○	
thixotropic	ambient temperature curing	60	360	840	1 000	5	100	24	● ● ●	beige	100 : 116	1 : 1					○ ○

¹⁾ LSS = Lap Shear Strength
²⁾ Sizes product specific between 50 ml and 480 ml
³⁾ Sizes product specific between 0, 22 and 1 kg
⁴⁾ Sizes product specific between 5 and 30 kg
⁵⁾ Sizes product specific between 180 and 250 kg

Epoxy adhesives

Properties and performance

Product designation	Key features	Metals							Thermosets composites				Thermoplastics				Various substrates				
		Mild steel	Stainless steel	Galvanized steel	Aluminium	Copper	Brass	Ferrite	GRP (UP)	GRP (EP)	CFRP	SMC	PVC	PA	ABS, ASA, SAN	PC	PMMA	Ceramic	Glass	Rubber	Wood
Conditions																					
Unit																					
Araldite® AW 4858 / Hardener HW 4858	Very high lap shear and peel strength. Bonds a wide variety of materials (metals, composites and thermoplastics). Good moisture resistance. Extremely tough and resilient adhesive. Long pot life, ideal for large composite part assemblies.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Araldite® AW 4752 / Hardener HW 4753	Long work life. Slightly gap filling. Well suited for filter bonding. Excellent moisture and chemical resistance with high temperature stability. Bonds a wide variety of materials in common use.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Araldite® AW 5047-1 / Hardener HW 5067	Long work life. Liquid. Outstanding moisture and chemical resistance with very high temperature stability. Excellent on selected metals and composites.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Araldite® AW 106 / Hardener HV 953 U	Long work life. Medium viscosity liquid. Low shrinkage. Excellent chemical resistance with excellent resistance to dynamic loads and impact. Bonds a wide variety of materials in common use.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Araldite® AW 136 H / Hardener HY 991	Long work life. Liquid. Excellent for bonding rubber. Excellent environmental and chemical resistance with high temperature stability.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Araldite® AY 103-1 / Hardener HY 991	Long work life. Low viscosity liquid. Bonds a wide variety of materials. Good environmental and chemical resistance with good temperature stability.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

Elevated temperature cure recommended

Araldite® AW 4859 / Hardener HW 4859	Very high lap shear. Bonds a wide variety of materials (metals, composites and thermoplastics). Temperature resistant up to 140 °C. Extremely tough and resilient adhesive. Elevated temperature cure or post-cure > 60 °C recommended for optimum properties.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Araldite® AW 4510 / Hardener HW 4511	Outstanding high temperature stability with excellent moisture and chemical resistance. Long work life. Sag resistant and highly gap filling. Excellent on composites. Elevated temperature cure or post-cure > 60 °C recommended for optimum properties.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

Heat cure required

Araldite® AW 4804 / Hardener HW 4804	Very long work life. Excellent moisture and chemical resistance with outstanding high temperature stability up to 210 °C after post-cure at elevated temperature.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Araldite® AV 170	1-component heat curing. Sag resistant and gap filling. Excellent moisture and chemical resistance with outstanding thermal stability. Toughened with good combination of high shear and peel strength.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Araldite® AV 171	1-component heat curing. Medium viscosity liquid. Excellent moisture and chemical resistance with outstanding thermal stability. Toughened with good combination of high shear and peel strength.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

Suitability Excellent Good Moderate

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Data below indicate the detailed properties and performance of each product. These data were obtained following recommended pretreatment of substrates.

Viscosity	Reactivity			Mechanical properties		Temperature resistance	Bond strength	Dura- bility in	Color (mixed)	Mix ratio		Packaging					
	Curing requirements	Work time	Cure speed							by weight	by volume	Cartridges	Multipacks	Cans/hobbocks	Drums		
Pa·s		Pot life, 100g at 23 °C	Cure time at 23 °C to LSS ¹⁾ = 1 N/mm ²	Cure time at 23 °C to LSS ¹⁾ = 10 N/mm ²	E-modulus at 23 °C	Elongation at break at 23 °C	Max. temp. giving 33% of LSS ¹⁾ at 23 °C	LSS ¹⁾ aluminium at 23 °C	Water/humidity	Chemicals	Heat			²⁾	³⁾	⁴⁾	⁵⁾
		min	min	min	N/mm ²	%	°C	N/mm ²									
thixotropic	ambient temperature curing	150	360	420	1 600	7	60	38	● ● ●	● ● ●	● ● ●	black	100 : 42	2 : 1	○	○	
25	ambient temperature curing	40	420	780	5 550	1	110	17	● ● ●	● ● ●	● ● ●	grey	100 : 48	100 : 50		○	
16	ambient temperature curing	70	420	1 440	2 990	1	120	22	● ● ●	● ● ●	● ● ●	white	100 : 30	100 : 45		○	
40	ambient temperature curing	100	420	600	1 900	9	90	26	● ● ●	● ● ●	● ● ●	brown	100 : 80	1 : 1	○	○	○
25	ambient temperature curing	60	480	960	3 100	2	110	13	● ● ●	● ● ●	● ● ●	grey	100 : 35	100 : 45	○	○	
5	ambient temperature curing	90	720	1 320	1 090	5	80	15	● ● ●	● ● ●	● ● ●	yellow	100 : 40	2 : 1	○	○	
thixotropic	elevated temp. cure or post-cure > 60 °C recommended	110	270	360	1 600	4	110	33	● ● ●	● ● ●	● ● ●	black	100 : 43	2 : 1	○	○	
thixotropic	elevated temp. cure or post-cure > 60 °C recommended	90	420	n.a.	5 240	1	190	16	● ● ●	● ● ●	● ● ●	grey	2 : 1	2 : 1		○	
17	heat cure required, minimum 2h at 120 °C	240	n.a.	n.a.	6 200	1	110	19	● ● ●	● ● ●	● ● ●	grey	100 : 15	100 : 28		○	
thixotropic	heat cure required, minimum 50 min at 140 °C	n.a.	n.a.	n.a.	1 640	1	160	29	● ● ●	● ● ●	● ● ●	beige	n.a.	n.a.		○	○
100	heat cure required, minimum 20 min at 140 °C	n.a.	n.a.	n.a.	2 880	6	150	20	● ● ●	● ● ●	● ● ●	beige	n.a.	n.a.		○	○

¹⁾ LSS = Lap Shear Strength
²⁾ Sizes product specific between 50ml and 480ml
³⁾ Sizes product specific between 0, 22 and 1 kg
⁴⁾ Sizes product specific between 5 and 30 kg
⁵⁾ Sizes product specific between 180 and 250 kg

n.a.: not applicable

Methacrylate adhesives

Properties and performance

Product designation	Key features	Metals							Thermosets composites				Thermoplastics				Various substrates					
		Mild steel	Stainless steel	Galvanized steel	Aluminium	Copper	Brass	Ferrite	GRP (UP)	GRP (EP)	CFRP	SMC	PVC	PA	ABS, ASA, SAN	PC	PMMA	Ceramic	Glass	Rubber	Wood	
Conditions																						
Unit																						
Araldite® F 305 / Hardener Lacquer	No-mix methacrylate adhesive. Very long open time and rapid cure after joining, 5 minutes to handling strength. Ideal for ferrite bonding. Low viscosity – ideal for production line application. Good thermal stability and moisture resistance.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
Araldite® F 300 / Hardener Lacquer	No-mix. Very long open time and rapid cure after joining. Excellent on most metals, composites and thermoplastics. Good combination of high shear and peel strength. Good temperature and moisture resistance.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
Araldite® F 361 / Hardener F 361	Rapid curing. Toughened. Outstanding combination of high peel and shear strength. Sag resistant and gap filling. Excellent to bond a wide range of plastics, composites and metals. Good environmental and chemical resistance with high temperature stability.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
Araldite® F 330 / Hardener K 100-1 Red	High temperature methacrylate adhesive. Systems suitable for hand or machine mixing. 10 minutes work life, 22 minutes to handling strength. Gap filling to 5 mm. Bonds well to a wide range of metals and plastic materials.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
Araldite® F 310 / Hardener Lacquer	No-mix. Very long open time and fast cure after joining. Excellent combination of high peel and shear strength with excellent impact resistance. Good temperature and excellent chemical resistance. Excellent bonding of selected metals, composites and thermoplastic substrates.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
Araldite® F 362 / Hardener F 362	Fast cure. Sag resistant and gap filling. Toughened with excellent impact resistance. Tolerant to "less than ideal" pretreatments. Excellent resistance to petrol and oils. Bonds well to most metals, composites and selected thermoplastic substrates without extensive pretreatments.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
Araldite® F 330 / Hardener Lacquer	High temperature resistant methacrylate adhesive. No-mix system. Very long open time and rapid cure after joining, 20 minutes to handling strength. High shear and peel strength. Bonds well to a wide range of metals and plastic materials.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
Araldite® F 349 / Hardener Lacquer	No-mix. Very long open time. Outstanding chemical and moisture resistance and high temperature stability. Bonds a wide variety of materials in common use.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	

Suitability Excellent Good Moderate

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Data below indicate the detailed properties and performance of each product. These data were obtained following recommended pretreatment of substrates.

Viscosity	Reactivity			Mechanical properties		Temperature resistance	Bond strength	Dura- bility in	Color (mixed)	Mix ratio		Packaging					
	Curing requirements	Work time	Cure speed							by weight	by volume	Cartridges	Multipacks	Cans/hobbocks	Drums		
Pa·s		Pot life, 100g at 23 °C	Cure time at 23 °C to LSS ¹⁾ = 1 N/mm ²	Cure time at 23 °C to LSS ¹⁾ = 10 N/mm ²	E-modulus at 23 °C	Elongation at break at 23 °C	Max. temp. giving 33% of LSS ¹⁾ at 23 °C	LSS ¹⁾ aluminium at 23 °C	Water/humidity	Chemicals	Heat			²⁾	³⁾	⁴⁾	⁵⁾
		min	min	min	N/mm ²	%	°C	N/mm ²									
4	ambient temperature curing	n.a.	3	5	1 000	23	70	24	● ● ●	● ● ●	yellow	n.a.	n.a.			○ ○	
25	ambient temperature curing	n.a.	3	6	2 260	7	80	24	● ● ●	● ● ●	brown	n.a.	n.a.			○ ○	
thixotropic	ambient temperature curing	2	8	18	2 300	5	100	23	● ● ●	● ● ●	yellow	100 : 90	1 : 1			○	
20	ambient temperature curing	10	22	25	1 500	5	85	36	● ● ●	● ● ●	brown	10 : 1	10 : 1			○	
thixotropic	ambient temperature curing	n.a.	18	20	2 040	2	80	24	● ● ●	● ● ●	brown	n.a.	n.a.			○ ○	
thixotropic	ambient temperature curing	10	18	30	2 050	3	80	25	● ● ●	● ● ●	yellow	100 : 94	1 : 1			○	
20	ambient temperature curing	n.a.	20	25	1 500	3	85	33	● ● ●	● ● ●	brown	n.a.	n.a.			○ ○	
15	ambient temperature curing	n.a.	70	100	2 380	2	110	15	● ● ●	● ● ●	brown	n.a.	n.a.			○	

¹⁾ LSS = Lap Shear Strength
²⁾ Sizes product specific between 50ml and 480ml
³⁾ Sizes product specific between 0, 22 and 1 kg
⁴⁾ Sizes product specific between 5 and 30kg
⁵⁾ Sizes product specific between 180 and 250kg

n.a.: not applicable

Polyurethane adhesives

Properties and performance

Product designation	Key features	Metals							Thermosets composites				Thermo-plastics				Various substrates				
		Mild steel	Stainless steel	Galvanized steel	Aluminium	Copper	Brass	Ferrite	GRP (UP)	GRP (EP)	CFRP	SMC	PVC	PA	ABS, ASA, SAN	PC	PMMA	Ceramic	Glass	Rubber	Wood
Conditions																					
Unit																					
Araldite® AY 8629-1 / Hardener HY 8628	Transparent. Flexible. Fast curing with relative long open time. Low viscosity liquid. Bonds a wide variety of materials in common use. Good for bonding dissimilar substrates. UV stable.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Araldite® AY 4853 / Hardener HY 4853	Transparent. Flexible. Fast curing with relative long open time. Low viscosity liquid. Good moisture and chemical resistance. Bonds a wide variety of materials in common use, especially thermoplastics. Good for bonding dissimilar substrates.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Araldite® AY 4446 / Hardener HY 4445	Long pot life. Slightly gap filling. Flexible. Suitable for bonding thermoplastics. UV resistance. Low shrinkage.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Suitability Excellent Good Moderate

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Data below indicate the detailed properties and performance of each product. These data were obtained following recommended pretreatment of substrates.

Viscosity	Reactivity			Mechanical properties		Temp. resistance	Bond strength	Dura- bility in	Color (mixed)	Mix ratio		Packaging						
	Curing requirements	Work time	Cure speed							by weight	by volume	Cartridges	Multipacks	Cans/hobbocks	Drums			
Pa·s		Pot life, 100g at 23 °C	Cure time at 23 °C to LSS ¹⁾ = 1 N/mm ²	Cure time at 23 °C to LSS ¹⁾ = 10 N/mm ²	E-modulus at 23 °C	Elongation at break at 23 °C	Max. temp. giving 33% of LSS ¹⁾ at 23 °C	LSS ¹⁾ aluminium at 23 °C	Water/humidity	Chemicals	Heat			²⁾	³⁾	⁴⁾	⁵⁾	
5	ambient temperature curing	6	15	300	16	60	55	15	●	●	●	trans- parent	1 : 1	1 : 1			○	
1	ambient temperature curing	20	75	n.a.	13	55	80	5	●	●	●	trans- parent	1 : 1	100 : 88			○	
8	ambient temperature curing	40	240	n.a.	16	45	40	7	●	●	●	opaque	1 : 1	1 : 1			○	

¹⁾LSS = Lap Shear Strength

²⁾Sizes product specific between 50ml and 480ml

³⁾Sizes product specific between 0, 22 and 1 kg

⁴⁾Sizes product specific between 5 and 30kg

⁵⁾Sizes product specific between 180 and 250kg

n.a.: not applicable



With innovation

Every day, all over the world, our Technical Competence centers engage in intensive research and development focusing on one goal : to deliver innovative solutions by working hand-in-hand with our business partners. Together through a continual exchange of ideas, supported by an experienced team of sales and technical specialists, we strive to deliver innovative and regulatory compliant (eg REACH compliant) solutions.

We track both new market expectations and changing regulations. Protection of the environment, as well as health and safety are paramount concerns, playing an integral part in our development projects.

By providing unique, certified or patented technologies, combined with high quality and reliability, our chemists and experts bring enhanced value to our customers, ensuring their success.

With customer intimacy

We market a unique product portfolio and a broad range of forward-looking solutions for our customers. Customers and partners benefit from an advanced level of service in:

- > product selection and quality
- > product trials in-house and with customers
- > customer seminars and trainings
- > technical service and solution-providing

Partnership with our customers is more than simply «putting them first». It requires long-term commitment to forging close relationships that create synergies of knowledge, security and adaptability to create a successful, shared future.

With care

Sustainability is a fundamental part of our corporate and business strategy. We see a better world in which our innovations help reduce consumption of natural resources and improve the quality of life for people everywhere. We are identifying the long - term trends that affect our markets and looking to see how products and applications can play a part in supporting and providing solutions to the challenges those markets face.





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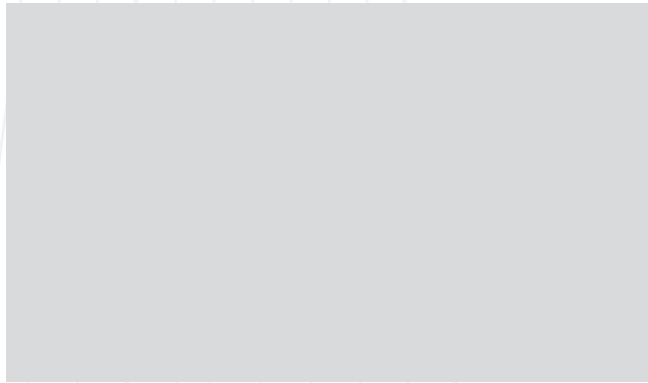
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