Advanced Materials

T-E-Klebetechnik
Anwendungs-, Verfahrens- und Dosiertechnik
40 Jahre Klebstofferfahrung

HUNTSMAN
Enriching lives through innovation

Araldite®

Reliable bonding and void-filling solutions

Our mission: provide unique technologies that create value for our customers

Araldite®
Epocast®
Epibond®
Uralane®

The adhesives and syntactics serving worldwide aerospace industry for more than 70 years

Driven by increasing demand for mobility, energy consumption efficiency, and concerns over climate change, a high priority is placed on developing aerospace as a key transport mode by promoting step-change innovations for aircraft manufacturers who serve commercial airlines and general aviation throughout the world.

Whilst the level of global business competition is high, aircraft manufacturers need solutions to help sustain their competitive edge and secure long-term growth. Production process improvement, innovation in design, weight savings, compliance to stringent aerospace safety standards, and low maintenance costs have become vital to success.

In this context, adhesives and syntactics can play an even greater role, providing well established solutions as well as more advanced and innovative developments for all kinds of bonding and void-filling applications.

Rely on us with confidence

For more than 70 years, as a global provider, Huntsman Advanced Materials has developed innovative solutions and high performance materials for the fabrication, assembly and repair of interior and exterior aircraft components.

Huntsman's versatile adhesives and syntactics are used by aircraft manufacturers who serve commercial airlines and general aviation throughout the world. Many of the epoxies and polyurethanes are flame retardant and exhibit the low flame, smoke and toxicity characteristics required to comply with regulations such as FAR 25.853 that govern materials used in large civil aircraft.

In our efforts to develop innovative solutions for the aerospace market, we strive to meet the high product standards set forth by the industry and federal regulations that govern the performance properties of materials used in aircraft, such as: strength, weight, toughness, flexibility, low coefficient of thermal expansion, high resistance to corrosion and fatigue, flame retardancy, halogen-free formulations, noise and vibrational damping.

We deliver more than just products

Our Research & Development team continuously experiment with new chemistries and technologies to fulfill today's requirements, anticipate tomorrow's needs and comply with ever more stringent health, safety and environmental regulations.

Our process control from raw material qualification to the delivery of finished products enables us to produce advanced materials known for their quality and reliability.

Aircraft manufacturers' specifications

Our products are extensively qualified to meet aircraft manufacturers' specifications and are used in every new airborne design in the airplane life cycle, from designers, formulators and prepreggers to part manufacturers in large civil aircrafts, helicopters, regional jets, aerospace engines, general aviation.

Syntactics for edge and void-filling

Araldite® and Epocast® epoxy syntactics, together with pre-cured Eposert® syntactics provide solutions for edge sealing, forming of honeycomb, metallic and plastic insert potting applications and for honeycomb reinforcement and repairs.

Honeycomb reinforcement

Reinforcement of sandwich composites where high loading is required can be made by two means. Epocast® products can be applied directly into the honeycomb or pre-cured and molded to the desired insert dimension. Huntsman also offers a unique range of pre-formed and cured inserts available under the Eposert® brand that can be installed rapidly in a honeycomb core before fasteners are added.

These low-density inserts are well suited to aircraft manufacturing techniques and repair applications for reinforcing composite floor panels, galley walls, bulkheads and lavatory cabinets. Epocast® solutions meet stringent requirements of numerous aircraft specifications.

Honeycomb edge sealing

Aircraft manufacturers and repair stations use these materials to build and refurbish cabin components such as overhead baggage bins, floor panels and lavatory cabinets as well as flight control surfaces, nacelles and landing gear doors. Huntsman edge sealing syntactics are produced in a range of densities to meet the handling and performance requirements of customers.

Suitable products for edge sealing include: Araldite® 1644-A/B ultra-low density syntactic, Epocast®1617-A/B and 1618-B/D low-density syntactics and Epocast® 89537-A/B and 1652-A/B medium density syntactics. Huntsman also supplies a one-component epoxy designated Epocast® 1610-A2 ultra-low density syntactic. The majority of Huntsman edge sealing materials are self-extinguishing and feature easy to apply viscosities, sag-resistance for use on vertical surfaces and high strength.

Insert potting or bonding

Medium and low-density grades of Epocast® epoxy syntactic and Uralane® polyurethane adhesive comprise the range of products for insert potting, providing a dependable reinforcement for honeycomb composite panels before inserting fasteners. Typical applications include composite floor panels, galley walls, bulkheads or lavatory cabinets.

The Epocast® syntactics range, particularly the fast curing and self-extinguishing Epocast® 1618- B/D, is relevant in the most conventional metal inserts applications.
Uralane® 5774-A/C, a two-component polyurethane adhesive, has been specifically developed to meet the new designs with thermoplastic inserts (e.g. polyamide-imide based inserts), where standard epoxy syntactics are inappropriate.

Adhesives for joining and bonding

Our extensively qualified Araldite®, Epibond® and Uralane® adhesives provide superior joining and bonding solutions for plastics, metals, composite materials and other substrates.

Epoxy adhesives

> Excellent adhesion to metals and thermoset composites
> High strength and high stiffness
> High creep resistance
> High fatigue resistance
> High temperature resistance
> Excellent chemical resistance and long-term durability

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

We value your challenge

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 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.

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.

Aerospace products by specifications

Araldite®

Aero Vodochody	
MS 026 001 Copy 126	Araldite® 420 A/B
Aerospace Composite Technologies	
M1368 - 001 Issue 1	Araldite® 2011
Airbus	
ABP 5-1158 Issue 4	Araldite® 2011
	Araldite® 2012
	Araldite® 2013
	Araldite® 2015
	Araldite® AV 121N-1 / HY 951
	Araldite® AY 103-1 / HY 951
	Araldite® AY 103-1/ HY 991
ABR 2-0179 Issue 4	Araldite® 2011
ABR 2-0181 Issue 2	Araldite® 2015
ABR 2-0183 Issue 2	Araldite® AV 121N-1 / HY 951
ABR 2-0184 Issue 2	Araldite® AY 103-1 / HY 951
ABR 2-0185 Issue 2	Araldite® AY 103-1/ HY 991
ABR 2-0186 Issue 2	Araldite® 2012
AIMS 10-03-001 Issue 2	Araldite® 1644 A/B
AIMS 10-04-001 Issue 2	Uralane® 5774 A/C
AIMS 10-04-006 Issue 5	Araldite® 1570 FST A/B
AIMS 10-04-020 Issue 3	Araldite® 2011
AIMS 10-04-024 Issue 2	Araldite® 501 A/B
ASNA 4049 Indice B	Araldite® 2011
ASNA 4072 Indice A	Araldite® 252
ASNA 4125 Indice B	Araldite® 420 A/B
DAN 1187-01 Issue 4	Araldite® AW 134 / HY 994
DAN 1199-01 Issue 4	Araldite® AW 134 / HY 994
DAN 1284-01 Issue 4	Araldite® 2011
I+D-N-200 - Z15.213/1 Rev 2	Araldite® 420 A/B
I+D-N-200 - Z18.115/2 Rev 3	Epocast® 89537 A/B
Airbus / Coasa	
RP1021209, Issue 2	Epocast® 1627-2
Alenia Aermacchi	
MDL08055, Rev 1	Epocast® 1617 A/B
MDL8027, Type 7, Rev 1	Epocast® 89537 A/B
Allied Signal	
PCS 5606	Epocast® 1652 A/B
Astrium	
MPS0059 Issue 1	Araldite® 403 A/B
B/E Aerospace	
LCMS 202, Type 1, Rev F	Uralane® 5774 A/C
Bell Helicopter	
299-947-097, Type 5, Rev AA	Epocast® 1626 A/B
Boeing	
901-330-140-107 Rev C	Epocast® 1614-A1-11/CSI
BMS 5-25, Type 2, Gr 1 Rev D	Epibond® 1539 A/B-10
BMS 5-28, Type 1, Rev AN	Epocast® 167 A/B
BMS 5-28, Type 3, Rev AN	Epocast® 1511 A/B
BMS 5-28, Type 4, Rev AN	Epocast® 1488 A/B
BMS 5-28, Type 6, Rev AN	Epocast® 1636 A/B
BMS 5-28, Type 7, Class 1, Rev AN	CG 1305 A/B
BMS 5-28, Type 7, Class 2, Rev AN	Epocast® 89537 A/B
BMS 5-28, Type 9, Rev AN	Epocast® 1629 A/B
BMS 5-28, Type 10, Rev AN	Epocast® 1610-A1
BMS 5-28, Type 12, Class 1, Rev AN	Epocast® 938-A2
BMS 5-28, Type 12, Class 2, Rev AN	Epocast® 938-A2
BMS 5-28, Type 13, Rev AN	Epocast® 938-A2
BMS 5-28, Type 14, Class 1, Rev AN	Epocast® 1614-A1
BMS 5-28, Type 14, Class 2, Rev AN	Epocast® 1614-A1
BMS 5-28, Type 15, Rev AN	Epocast® 1615 A/B
BMS 5-28, Type 17, Rev AN	Epocast® 1617 A/B
BMS 5-28, Type 18, Class 1, Rev AN	Epocast® 1618 D/B
	Epocast® 1633 A/B
	Epocast® 1633-A40/B
	Epocast® 1633-A41/B
	Epocast® 1633-A50/B
BMS 5-28, Type 19, Rev AN	Epocast 1619 A/B
BMS 5-28, Type 25, Rev AN	Epocast 1625 A1/B1
BMS 5-28, Type 26, Class 1, Rev AN	Epocast 1626 A/B
BMS 5-28, Type 27, Rev AN	Epocast 1627-2
BMS 5-28, Type 28, Rev AN	Epocast® 1628 A/B
BMS 5-28, Type 31, Rev AN	Epocast® 1635 A/B
BMS 5-105, Type 3, Rev M	Uralane® 5759 G/D
BMS 5-105, Type 5, Rev M	Uralane® 5774 A/C
BMS 5-105, Type 6, Rev M	Uralane® 5779 A/B
	Uralane® 5779 A-80/B
BMS 5-107, Class 1, Rev B	Epibond® 420 A/B
	Araldite® 420 A/B
BMS 5-123, Type 1, Class 3, Rev F	Epibond® 8543 C/B
BMS 5-126, Type 2, Class 1, Gr B Rev H	Epibond® 1534 A/B
BMS 5-126, Type 3, Class 1, Gr B Rev H	Epibond® 1536 A/B
BMS 5-126, Type 4, Class 4, Gr B Rev H	Epibond® 1544-1 A-82/D
BMS 5-126, Type 6, Class 1, Gr B Rev H	Epibond® 1539 A/B
BMS 5-164, Type 1	Agomet® F307
Boeing / MESA HS5933 (A) 100-25 Rev E	Epocast® 1614-A1-67/CSI
Boeing / MESA HS5933 (A) 150-25 Rev E	Epocast® 1614-A1-66/CSI
Boeing / MESA HS5933 (A) 150-35 Rev E	Epocast® 1614-A1-65/CSI
Boeing / MESA HS5933 (A) 150-50 Rev E	Epocast® 1614-A1-68
Boeing / MESA HS5933 (A) 150-100 Rev E	Epocast® 1614-A1-64/CSI
D800-10411-1, PDD 6-1	Epibond® 1565 A/B
HMS 16-1068, Class 8B, Rev P	Epibond® 1217 A/B
MMS 347, Type 2, Rev G, ADD 1 Rev L	Epocast® 1614-A1
Bombardier	
SMS 41, Type 3, Issue 7	Epocast® 1617 A/B
Cessna	
CMNP085, Rev M	Epocast® 1652 A/B
Cirrus	
E00000061, Type 1, Form B, Rev A	Epibond® 100 A/C
Dassault Aviation	
DGQT 1.7.0.22 Indice I	Araldite® 2011
DGQT 1.7.0.35 Indice C	Araldite® 203 A/B
	Araldite® 204
Embraer	
Embraer/Kawasaki 190-38790-903 Rev D	Epocast® 1614-A1-61/CSI
MEP 09-022	Araldite® AV 138M-1 / HV 998
MEP 10-051, Type 2, Class 1, Rev P	Epocast® 1652 A/B
FACC	
FMS 4140	Araldite® 2013
Fairchild Dornier	
DON 816	Araldite® 2026
Fokker	
TH5.558/1 Issue 21	Araldite® 2011
	Araldite® AW 2101 / HW 2951
TH5.558/6 Issue 21	Araldite® 2011
TH5.912/4 Issue 013	Araldite® 204
TH5.937 Issue 004	Araldite® 2013
Gamesa Aeronautica	
GMS 124047, Issue 3	Epocast® 1617 A/B
Goodrich	
RMS 027, type XV, SCO 036	Epocast® 927-1 GB
Gulfstream	
GAA 100BN1, Rev C	Uralane® 5774 A/C
GMS 4005, Type 1, Class B, FM 1, Rev C	Epocast® 1652 A/B
GMS 4005, Type 1, Class C, FM 2, Rev C	Epocast® 1636 A/B
Hawker de Havilland	
EN-106G309, Issue 3	Epocast® 1614-A1
Heath Tecna	
HMS A4-001, Type 1, Class 2, Rev L	Uralane® 5774 A/C
HMS A4-001, Type 1, Class 3, Rev L	Uralane® 5779 A/B
HMS A5-001, Type 1, Class 1, Rev K	Epibond® 1544 A-71/D
HMS A5-001, Type 2, Class 3, Rev K	Epibond® 1559-1 A/B
Hexcel	
RMS 8950, B	Araldite® 203 A/B
RMS 8951, D	Araldite® 204
RMS 8952, B	Araldite® 255 A/B
RMS 8954, C	Araldite® 252
RMS 8955, C	Araldite® 403 A/B
RMS 8957, E	Araldite® 420 A/B
Hurel-Hispano	
HS/DFO-010, Rev D	Epocast® 1652 A/B US
Kaman Composite	
CMS-007-3, Rev B	Epocast® 1636 A/B
CMS-007-4, Rev B	Epocast® 1617 A/B
Kearfott	
Y105A053-101, Rev B	Epibond® 1217 A/B
Lockheed Martin	
LAC 30-4639-0100, Rev J	Epibond® 1210 A/9615 A
LAC 30-4639-0200, Rev J	Epibond® 1210 A/9861
LAC 30-4639-0300, Rev J	Epibond® 1210 A/9615-10
STM M1067, Type 1, Rev 1	Epocast® 1614-A1
STM M1067, Type 2, Rev 1	Epocast® 1614-A1
STM M1069	Epocast® 89537 A/B
Loral	
23-P12027-0003, Rev 7	Epibond® 1210 A/9861
MBDA	
PS 1690	Araldite® AY 105-1
PS 1691	Hardener HY 953 F
PS 1727	Hardener HV 953 U
PS 1728	Araldite® 2011
PS 1729	Araldite® AW 106
Mc Donnel Douglas Helicopter	
HMS 16-1115 Rev C	Araldite® 501 A/B
MD Helicopters	
MDM 16-1068, Class 8B, Rev C	Epibond® 1217 A/B
Meggitt Composites	
MS 0013 Issue 3	Araldite® 420 A/B
Mitsubishi	
M1074, Type 1, Rev C	Epocast® 167 A/B
M1074, Type 2, Rev C	Epocast® 1629 A/B
M1129, Class A, Rev F	Epocast® 169 A-1/9615
Nordam	
NTR-MS 1301, Type 2, Class 4, Gr F, Rev A	Epocast® 1614-A1
Northrop Grumman	
ACS-MRS-5601, Rev C	Epocast® 1614-A
GA 100BN, Rev M	Uralane® 5774 A/C
GM 4006, Type 1, Class B, FM1, Rev B	Epocast® 1652 A/B
	Epocast® 1656 A/B
GM 4006, Type 3, Class B, FM1, Rev B	Epocast® 938-A2
GR 110PF1, Rev E	Epocast® 1670 A/B
Piaggio Aerospace	
NP190112, Type 17, Rev C	Epocast® 1617 A/B
Pratt & Whitney	
CPW 505, Rev D	Epocast® 1656 A/B
PWA 452, Rev L	Epocast® 1614-A1
PWA 36757, Rev C	Epocast® 1661
TS10430, Rev D	Epibond® 1534 A/B
Raytheon	
BS 23818, Class 1, Type 1, Rev 5	Epocast® 1629 A/B
ROHR	
RMS 027, Type 12, Rev AR, SCO 039	Epocast® 1614-A1
RMS 027, Type 13, Rev AR, SCO 039	Epocast® 938-A2
RMS 027, Type 5, Class 3, Rev AR, SCO 039	Epocast 1617 A/B
Rolls Royce	
MSRR 1076	Araldite® 1641 A/B
MSRR 9125	Araldite® 203 A/B
MSRR 9332	Araldite® AV 138M-1 / HV 998
Roxel	
204 251-PS/1/E000 Issue N°4	XD 4236-2
MTA 00137 issue 1	Araldite® 2011
Sikorsky	
SS-9440, (-001A) Rev 0 Amend 0-04	Epocast 169 A-1/946
SS-9587, (-002A & -005A) Type 1, Class 1, Rev 9	Epocast® 169 A-1/9615
SS-9587, (-003A) Type 2, Class 1, Rev 9	Epocast® 1652 A/B
SS-9587, (-008A) Type 3, Class 1, Rev 9	Epocast® 1614-A1
SNECMA	
DMR 94-038 Issue A	Araldite® 203 A/B
Spectrolab	
044418 Rev A1	Epibond® 1210 A/9861
Spirit Aero System	
SMS-116201, Type 1, Rev H	CG 1305 A/B
SMS-116201, Type 2, Rev H	Epocast® 938-A2
SMS-116201, Type 3, Rev H	Epocast® 1626 C1/D2
Sundstrand	
CM 34.40-38-01, Rev 3	Epibond® 1210 A/B
Triumph Composite	
TCE-M-20710-4, Type 1, Rev C	Epibond® 420 A/B
TCE-M-20710-6, Type 1, Rev B	Epocast® 1628 A/B
United Launch Alliance (ULA)	
STM M1067, Type 1 & type 2, Rev B	Epocast® 1614-A1
Vought	
207-8-417, Rev D	Epocast® 1614-A1
901-031-442-101U, Rev C	Epocast® 1614-A1-7/CSI
901-031-442-103U, Rev C	Epocast® 1614-A1-8/CSI
901-031-442-105U, Rev C	Epocast® 1614-A1-9/CSI
901-031-442-111U, Rev C	Epocast® 1614-A1-59/CSI
901-031-442-113U, Rev C	Epocast® 1614-A1-62/CSI
901-031-442-115U, Rev C	Epocast® 1614-A1-63
VM 4006, Type 1, Class D, FM1, AM 2	Epocast® 1656 A/B
VM 4006, Type 3, Class B, FM 1, AM 2	Epocast® 938-A2
Westland Helicopters	
WHPS 012 issue 9	Araldite® AY 103-1 / HY 951
WHPS 418	Araldite® AY 105-1 / HY 953F

Araldite®
Syntactics for void-filling

1 Edge fill and close-out

Your needs
> Good impact & vibration resistance
> High protection against chemicals and moisture
> Low density
> Paintable

Our solutions
Araldite® 252 A/B
Araldite® 1644 A/B
Araldite® 1641 A/B
Epocast® 1614-A1
Epocast® 1614-A2
Epocast® 1633 A/B

2 Panel forming

Your needs
> Core splicing and strengthening of radii and corners
> Good environmental resistance
> Low density

Our solutions
CG 1305 A/B
Epocast® 1652 A/B
Epocast® 1656 A/B
Epocast® 89537 A/B

3 Panel and core reinforcement

Your needs
> Reinforce high stress areas in honeycomb structures
> Improve mechanical performance including compression resistance
> Fill voids
> Secure long shelf life of the composite parts

Our low density solutions
Araldite® 252 A/B
Araldite® 1644 A/B
Epocast® 1610-A2

Our high density solutions
Epocast® 1635 A/B
Epocast® 1636 A/B
Epocast® 927-1
Epocast® 1627-2

4 Insert potting

Your needs
> Easy to apply
> Fill voids
> Provide good vibration and shock resistance
> Good multimaterial compatibility

Our solutions
Epocast® 1618 D/B
Epocast® 1619 A/B
Epocast® 1626 A/B
CG 1305 A/B

Non exclusive selection
Ask our experts for other solutions.

Araldite®
Adhesives for bonding

5 Panel bonding

Your needs
> Enhance the fatigue resistance of the assemblies
> Good weathering resistance
> Allow assembly of dissimilar materials
> Non sagging
> Easy to mix

Our solutions
Araldite® 1570 FST A/B
Araldite® AW 4859 / HW 4859
Araldite® 2015
Araldite® AV 138M-1 / HV 998
Epibond® 100 A/C
Epibond® 8000 FR A/B

6 Component bonding

Your needs
> Assemble dissimilar substrates
> Sustainable and high performance assemblies
> Aesthetical design
> Ease of application

Our solutions
Araldite® 1570 FST A/B
Araldite® AW 4859 / HW 4859
Araldite® 2011
Araldite® 501 A/B
Uralane® 5774 A/C
Epibond® 1217 A/B

Non exclusive selection
Ask our experts for other solutions.

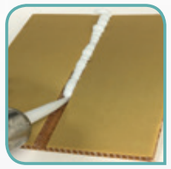
7 Repair

Your needs
> High strength and durable assemblies
> Room temperature curing
> Good weathering and chemical resistance
> Ease of use

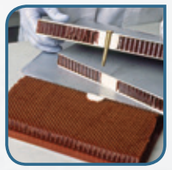
Our solutions
Epocast® 1635 A/B
Epocast® 1511 A/B
Araldite® 501 A/B
Araldite® 2011

1 Edge fill and close-out

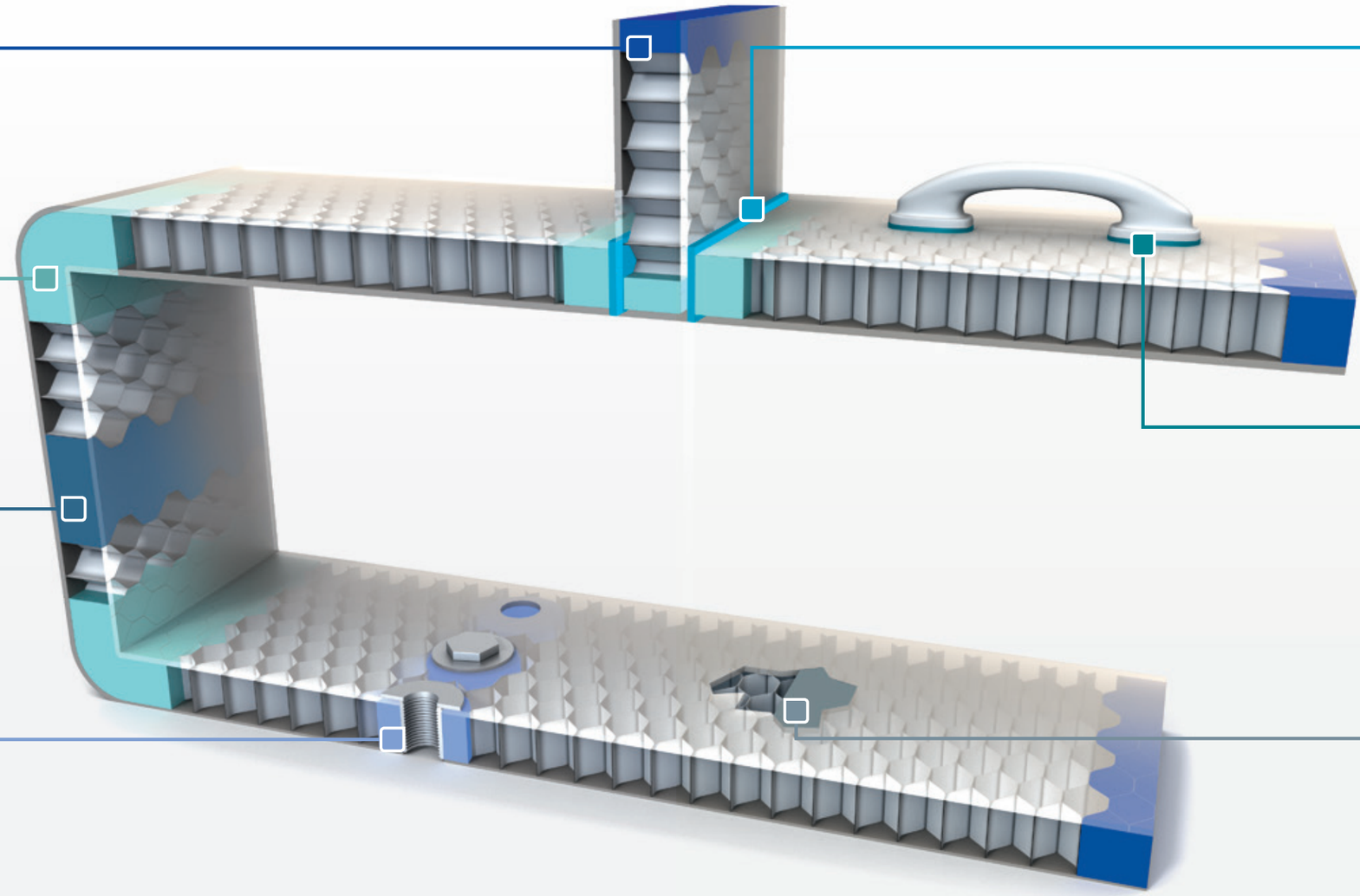
2 Panel forming



3 Panel / core reinforcement



4 Insert potting



Panel bonding 5

Component bonding 6

Repair 7

Syntactics for aerospace industry

Araldite®

Ultra low density

Product designation	Work life	Curing class [1]	Typical service temperature	Typical compressive strength	Density		Key characteristics / applications	Flame retardant properties	Packaging / Supply form					Available in	
Conditions	RT			RT					Bulk	Cartridge	Semkit	Patty	Eposert®**	EU	US
Norms				ASTM D-695											
Unit	min	°C	°C	MPa	g/cm3										
One-component pre-mix frozen syntactic															
Epocast® 1610-A2	30 days	120	90	15	0.50		Can be co-cured with composites, for insert potting, no mark-off.	●	●					●	●
Two-component syntactics															
Araldite® 1641 A/B	180	100	90	15	0.50		Vibration damping, non-sagging.		●		●			●	●
Araldite® 1644 A/B	30	RT	80	30*	0.55		No slump, quick setting.		●					●	●

Low density

Product designation	Work life	Curing class [1]	Typical service temperature	Typical compressive strength	Density		Key characteristics / applications	Flame retardant properties	Packaging / Supply form					Available in	
Conditions	RT			RT					Bulk	Cartridge	Semkit	Patty	Eposert®**	EU	US
Norms				ASTM D-695											
Unit	min	°C	°C	MPa	g/cm3										
One-component pre-mix frozen syntactics															
Epocast® 1614-A1	8 h	120 - 180	180	100	0.75		Structural syntactic, high compression strength.	●		●		●	●	●	●
Epocast® 1614-A2	24 h***	120 - 180	180	110	0.75		Long shelf life, high compression strength.	●		●		●			●
Two-component syntactics															
Araldite® 252 A/B	60	RT	70	35	0.65		Easily sandable, gap filling.	●	●					●	●
Epocast® 1626 A/B	60	RT	70	-	0.65		Toughened, impact and vibration resistant.		●		●			●	●
Epocast® 1617 A/B	60 - 90	RT	70	40	0.70		Easy to handle, sealing for honeycomb structures, insert bonding, floor panel applications.		●					●	●
Epocast® 1618 D/B	15	RT	90	35	0.70		Pumpable, quick-setting.	●	●		●			●	●
Epocast® 1619 A/B	20 - 50	RT	70	40	0.70		Pourable, resistance to water, fungus and most aircraft fluids.	●	●					●	●
Epocast® 1633 A/B	2 - 5	RT	70	45	0.73		Easily extruded, non-flowing after application.	●		●				●	●

* ISO 604 | ** Eposert® = Preformed, cured syntactics. Other Eposert® types can be made available on request | *** Depending on thawing method | RT: Room Temperature = (23 ± 2)°C

CTE: Coefficient of Thermal Expansion | [1] for RT curing class post-cure will improve performance

Syntactics for aerospace industry

Araldite®

Medium density

Product designation	Work life	Curing class [1]	Typical service temperature	Typical compressive strength	Density		Key characteristics / applications	Flame retardant properties	Packaging / Supply form					Available in	
Conditions	RT			RT					Bulk	Cartridge	Semkit	Patty	Eposert®**	EU	US
Norms				ASTM D-695											
Unit	min	°C	°C	MPa	g/cm3										
Two-component syntactics															
Epocast® 1656 A/B	50 - 90	RT	120	55	0.80		Thick paste consistency.		●					●	●
Epocast® 1652 A/B	30 - 60	RT	180	55	0.80		Low exotherm, core splicing, used in helicopter blades.		●		●			●	●
Epocast® 89537 A/B	70	RT	180	60	0.90		With glass fiber reinforcement, non sagging up to 12.5 mm.	●	●					●	●
CG 1305 A/B	> 60	RT	180	60	0.90		Pourable, good handling.	●	●		●		●	●	●

High density

Product designation	Work life	Curing class [1]	Typical service temperature	Typical compressive strength	Density		Key characteristics / applications	Flame retardant properties	Packaging / Supply form					Available in	
Conditions	RT			RT					Bulk	Cartridge	Semkit	Patty	Eposert®**	EU	US
Norms				ASTM D-695											
Unit	min	°C	°C	MPa	g/cm3										
One-component pre-mix frozen syntactics															
Epocast® 938-A2	18 h	120 - 180	180	150	< 1.4		Structural syntactic designed for reinforcing honeycomb structures.	●		●				●	●
Epocast® 927-1	> 24 h	120 - 180	180	125	1.15		Structural syntactic designed for reinforcing honeycomb structures.			●				●	●
Epocast® 1627-2	24 h	120 - 180	180	200	1.80		Low CTE.			●		●		●	●
Two-component syntactics															
Epocast® 1511 A/B	40 - 60	RT	70	70	1.25		Non-flow, repair of wing sections, edge filling.		●					●	●
Epocast® 1636 A/B	120	RT	180	100	1.72		Aluminum-filled, easy to handle, machinable.	●	●					●	●
Epocast® 1635 A/B	> 60	RT	180	100	1.80		Miss-drilled hole refiller, fatigue resistant.		●					●	●

* ISO 604 I ** Eposert® = Preformed, cured syntactics. Other Eposert® types can be made available on request I *** Depending on thawing method I RT: Room Temperature = (23 ± 2)°C

CTE: Coefficient of Thermal Expansion I [1] for RT curing class post-cure will improve performance

Adhesives for aerospace industry

Araldite®

Product designation	Mixed viscosity	Work life	Curing class [1]	Typical service temperature	Typical lap shear strength (Al/Al)			Key characteristics / applications	Packaging		Available in	
Conditions	RT	RT			RT	80°C			Bulk	Cartridge	EU	US
Norms					ASTM D - 1002 or ISO 4587							
Unit	Pa.s	min	°C	°C	MPa							
One-component epoxy adhesives												
Araldite® 204	200		120	90	15	10		Foaming.	●	●	●	●
Two-component epoxy adhesives												
Araldite® 1570 FST A/B	300	60	RT	60	15	5		Self extinguishing adhesive : far/jar/cs 25, app. F, part 1 and 5.	●	●	●	●
Araldite® 2011	viscous liquid	100	RT	60	25	10		Tough.		●	●	●
Araldite® 2013	paste	65	RT	60	20	5		Non sagging up to 5 mm.		●	●	●
Araldite® 2015	non-sag paste	35	RT	80	20	10		Non sagging up to 10 mm, tough.		●	●	●
Araldite® 420 A/B	viscous liquid	60	RT	70	35	5		Tough adhesive, good peel strength.	●	●	●	●
Araldite® 501 A/B	4	90	RT	100	15	15		Low viscosity, temperature resistant sytem designed for repair of composite parts and Inserts bonding.	●	●	●	●
Araldite® AW 4859 / HW 4859	thixotropic	100	80	140	33	20		Resistant to high temperature, high strength and toughness, designed for bonding of composite parts.	●	●	●	●
Araldite® AV 138M-1 / HV 998	thixotropic	35	RT	120	15	15		Low out-gassing, gap-filling properties, high chemical resistance, good fatigue behavior.	●		●	
Epibond® 1217 A/B	paste	4 - 8	RT	55	15	3		Translucent, fast setting.	●	●	●	●
Epibond® 8543 C/B	non-sag paste	3	RT	55	15	3		Fast setting, 1:1 mixing ratio.	●		●	●
Epibond® 1539 A/B	paste	120	RT	65	15	5		High performance composite bonding.	●		●	●
Epibond® 1534 A/B	2	120	RT	65	20	5		Long work life, good properties in the presence of distilled water, salt water, JP-4, hydraulic fluids, etc.	●		●	●
Epibond® 1210 A/B	soft paste	50 - 75	RT	55	15	2		Flexible bond line.	●		●	●
Epibond® 1544-1 A-82 /D	semi-paste	70	RT	not determined	20	no data		Self-extinguishing, good chemical resistant, gap-filling properties.	●		●	●
Epibond® 156-1 A/B	soft paste	20 - 50	RT	95	20	15		High compression resistance, wipe-on paste adhesive.	●		●	●
Epibond® 1559-1 A/B	65	4 - 10	RT	55	20	3		Quick set time, flame retardant epoxy paste.	●	●	●	●
Epibond® 1210 A/9861	semi-paste	35 - 60	RT	150	20	15		Ideal for spacecraft applications with low out-gassing.	●		●	●
Epibond® 100 A/C	thixotropic	110	90	150	35	25		High temperature, long working time structural adhesive for composite bonding.		●	●	●
Epibond® 8000 FR A/B	thixotropic	55	RT	80	25	10		Structural adhesive for interior applications, FR & FST meeting requirements of FAR 25.853.		●	●	●
Polyurethane adhesive												
Uralane® 5774-A/C	semi-paste	15 - 25	RT	80	15	10		High peel strength, impact resistant, flame retardant.	●	●	●	●

[1] for RT curing class post-cure will improve performance I RT: Room Temperature = (23 ± 2)°C

Huntsman Advanced Materials

Our Advanced Materials division is a leading global chemical solutions provider with a long heritage of pioneering technologically advanced epoxy, acrylic, phenolic and polyurethane-based polymer products.

Our capabilities in high-performance adhesives and composites, delivered by more than 1 600 associates, serve over 2 000 global customers with innovative, tailor-made solutions and more than 1 500 products which address global engineering challenges.

HUNTSMAN

Enriching lives through innovation

For more information
www.huntsman.com/advanced_materials
advanced_materials@huntsman.com

We operate synthesis, formulating and production facilities around the world

Distributed by

Ihr Lieferant:

T-E-Klebetechnik
Anwendungs-, Verfahrens- und Dosiertechnik
Großer Kolonnenweg 3 — 30163 Hannover
Tel.: 0511 - 353982 - 0 — Fax.: 0511 353982 - 40
internet: www.t-e-klebetechnik.de — mail: infotek@t-e-klebetechnik.de

Find the right adhesive to fulfill your needs

www.Araldite Adhesives.com

Ref. No. Adhesives for aerospace industry 02.17_EN_EU

Responsible Care®
OUR COMMITMENT TO SUSTAINABILITY

Registered for REACH

Concept and design by Zygmund SARL