ADVANCED COMPOSITE TECHNOLOGIES

PRODUCT PORTFOLIO

KORDSA

THE REINFORCER

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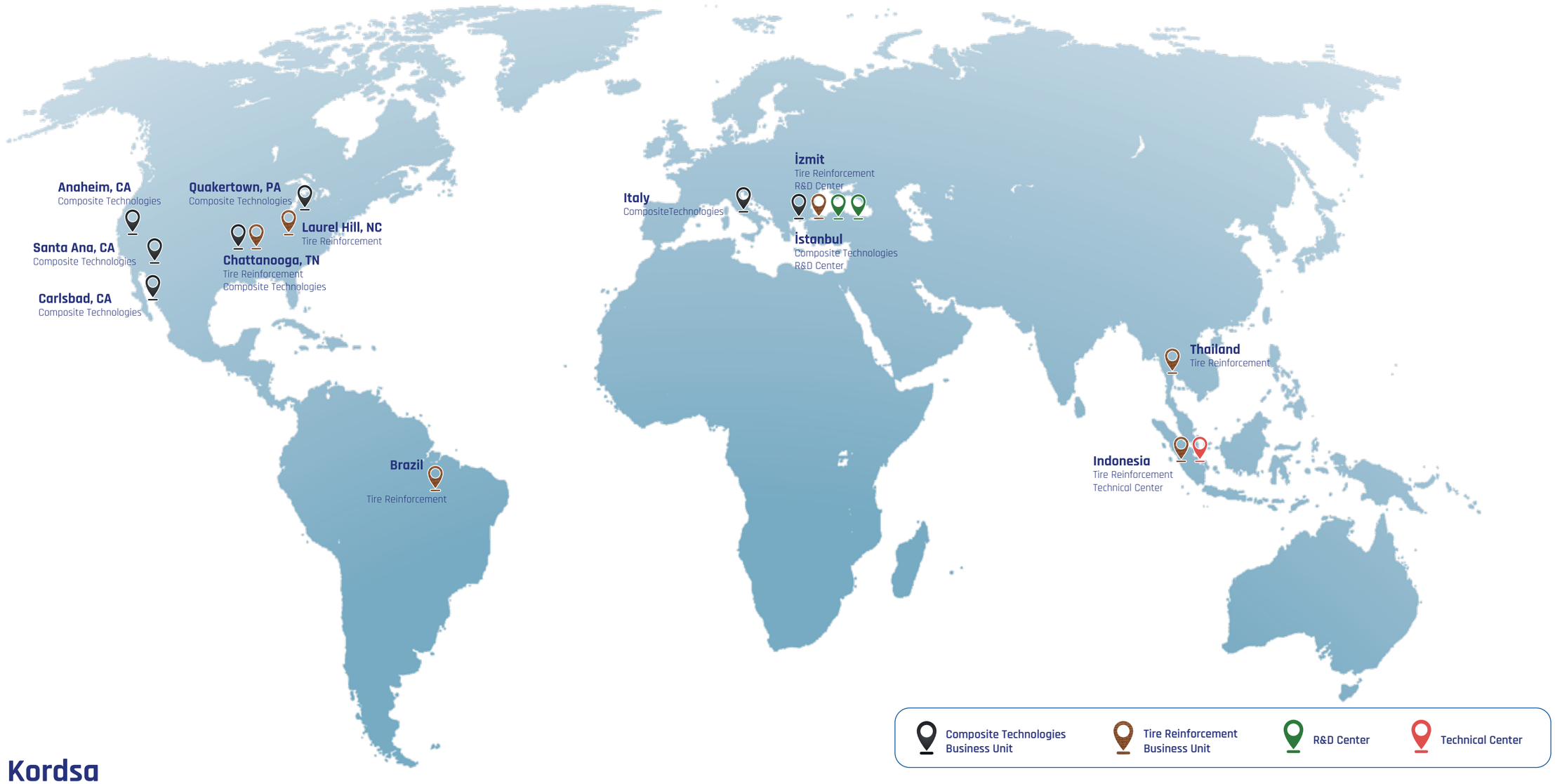

About Kordsa

Founded in 1973 as a Sabancı Holding subsidiary, Kordsa is the leading player in the material technologies market with its tire reinforcement and composite technologies products. Kordsa offers its reinforcement products to the whole world with its production in a wide geography extending from America to Asia Pacific. By offering high-value-added, innovative tire reinforcement and composite solutions, Kordsa aims to create sustainable value for its customers, employees, stakeholders, and communities. With a vision to “Reinforce Life”, Kordsa is now in a position to reinforce landing tracks of aircraft with its and aircraft fuselage, engine, wings, and interior with its composite technologies. Providing environmentally friendly products in the tire industry that reduce fuel consumption and provide betterwet grip, Kordsa develops technologies that allow for vehicle light weighting, performing with lower fuel consumption and lower carbon emissions in the composite industry. R&D and innovation are an integral part of Kordsa's corporate culture. Kordsa's first R&D center, established in Izmit in 2007, serves as an innovation center for tire reinforcement technologies for both the global and Turkish markets.

Kordsa's second R&D center is in the Composite Technologies Center of Excellence (CTCE) with Sabancı University which brings R&D, innovation, and production together under one roof. CTCE, one of the very few test centers globally, hosts basic and applied research, prototype production, technology and product development, entrepreneurship, and production processes as well as researchers, designers, engineers, production process managers and workers, PhD students, post-doctoral fellows, faculty members, and incubation center entrepreneurs. With an open innovation approach, Kordsa cooperates with several universities and institutions, thus extending its R&D and innovation efforts to develop technologies that create differences and value. In 2024, the opening of Kordsa's Advanced Materials Inc. Technical Center in Santa Ana, California, through its subsidiary Axiom Materials Inc., strengthens Kordsa's commitment to global innovation. The center develops cutting-edge materials specifically for the mobility, aviation, and space technology sectors while housing a team of specialized scientists and engineers dedicated to researching and developing next-generation materials.

Kordsa develops innovative and unique intermediate products and applications for composites technologies for a variety of industries, notably aerospace, aircraft interior, urban air mobility, automotive, motorsports, railway interiors, marine, medical, sports & leisure, life protection as well as industrial applications.

Aerospace

With great experience, our experts continue to innovate and optimize material solutions supporting our customers throughout the entire development cycle, from design and certification to production industrialization. Kordsa offers Fire, Smoke, Toxicity prepregs, high precision narrow width slit tapes, Nomex® honeycomb sandwich panels and adhesives for special needs of our customers in the aircraft interior and urban air mobility (UAM).

Automotive & Railway

50 years of expertise in automotive industry in the reinforcement technologies places Kordsa's composite materials at the core of auto manufacturers needs to develop sustainable and efficient mobility systems. Kordsa provides high-performing solutions, extensive knowledge and exceptional customization to facilitate current and next-generation automotive and railway applications. Our product portfolio is designed for the latest automotive and railway interior trends and includes snap cure, high-fatigue resistance and Fire, Smoke, Toxicity (FST) prepregs, cosmetic range materials, surfacing films, adhesive films and bio composites as well.

Marine

Kordsa meets marine industry requirements with a wide range of product portfolio and with a great capability to produce high qualified reinforcing materials. Kordsa is reinforcing the marine applications by carbon prepregs, glass prepregs and hybrid prepreg systems which are developed by specific resin matrix systems in house.

Sports & Leisure

Lightweighting plays an ever more important role in high performance Sports & Leisure applications. Carbon fibers are the natural choice for the lightweighting of many sports applications where high performance is required. Kordsa reinforces sports & leisure industries with our high performance carbon fabrics, carbon & glass prepregs as well as high precision narrow width slit tapes with regular or high temperature resin systems.

Medical & Prosthetics

In every part of our lives, our body functions are quite important. Kordsa is supporting medical prosthetics manufacturers with innovative and qualified materials solutions. Carbon prepregs and carbon fabrics are the main players of those application. Kordsa reinforces prosthetics industry with its own weaving capability and developed resin systems.

Life Protection

Ultra-High Molecular Weight Polyethylene (UHMWPE) Uni-directional (UD) sheet materials are used in a wide range of protective and industrial applications where layers of UD fibers cross plied in 0°/90° orientations are used by consolidating with matrix systems. Kordsa has the capability to reinforce protective applications by developing its own resin matrices in-house.

							Processing			Product Attributes			Market Segments							Production style					Fibers				
	Resin	Production Plant	Cure Temperature (C°)	KEY PRODUCT CHARACTERISTICS	Tg (C°)		OOA	Autoclave	Press	Aesthetic	FST	Toughned	Marine	Automotive	Motorsport	Aerospace	industrial	Life Saving	Sport & Leisure	Fabric	UD	Tape	HM	Solvent	Carbon	Glass	Aramide	UHMWPE	Natural Fibers
Primary Structural	KT238-8A-1-A	CTCE	121 (250 °F)	☑ Primary and secondary structural aircraft parts requiring retention of properties ☑ Components that require good durability and/or low processing temperatures ☑ Helicopter rotor blades, rotating or cycled components	140 (284 F°)			✓	✓			✓			o	o				o	o	o	o		o	o			
Aerospace, High Tg Epoxy	KY10	CTCE	135 - 180 (275 - 356 °F)	☑ Dual cure options ☑ Very low void contana for vacuum bag ☑ Good impact resistance and damage t ☑ High toughness with excellent mechani ☑ Great resistance to hot/wet conditions	160 - 180 (266 °F- 356 °F)		✓	✓				✓				o				o	o		o		o	o			
	AX-220	Axiom/CTCE	177 (350 °F)	☑ High temperature composite laminates ☑ Aircraft leading edges, pylons, and control surfaces ☑ Radomes & antennas ☑ Ducting and high temperature tubing ☑ High temperature engine parts or components	205 (401 °F)			✓				✓				o				o	o		o		o	o	o		
Slit Preg	OM12LT	CTCE	90 - 120 (194 °F - 248 °F)	☑ Vacuum Bag only Mid Tg resin	120 (248 °F)		✓	✓				✓	o				o				o	o	o		o				
	AX-201XL	Axiom/CTCE	Variable	☑ Toughened Epoxy ☑ Laminating Prepreg Extra-long Outlife ☑ High strength laminates requiring good structural properties and/or high clarity ☑ Flame Retardant (XL/FR) variant available.	121 (250 °F)		✓	✓				✓	o				o		o		o	o	o		o				
	AX170	Axiom/CTCE	127 - 180 (260 °F - 356 °F)	☑ Low dielectric constant and low dissipation factor for radome applications. ☑ Structures for motorsport and defense applications requiring service temps up to 250°C. ☑ Resistance to out gassing for space applications. ☑ Inherently flame retardant. ☑ The adhesive AX171 was developed to work together with AX170	371 (700 °F)			✓						o	o	o	o				o	o	o		o				
General Purpose	OM11	CTCE	120 - 130 (248 °F - 266 °F)	☑ Leaf spring applications ☑ Great hot de-molding performance ☑ Suitable for thick section manufacturing ☑ Suitable for structural applications ☑ Structural parts requiring low prosity and excellent surface finish ☑ Good chemical resistance	117 (243 °F)				✓			✓		o						o	o		o			o			
	OM12	CTCE	90 - 120 (194 °F- 248 °F)	☑ Vacuum Bag only Mid Tg resin ☑ Designed for general applications	110 (230 °F)		✓	✓				✓	o							o	o		o		o	o			
	E9-150	Microtex Srl	80 - 140 (176 °F - 284 °F)	☑ Versatile cure schedules–80°C to 140°C ☑ Designed for general applications ☑ The viscosity of the system offers flexible processing and a range of handling characteristics. ☑ Can be used at continuous operating temperatures up to 90°C.	115 (239 °F)		✓	✓							o		o			o	o		o	o	o	o	o		o

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	Resin	Production Plant	Cure Temperature (C°)	KEY PRODUCT CHARACTERISTICS	Tg (C°)		OOA	Autoclave	Press	Aesthetic	FST	Toughned	Marine	Automotive	Motorsport	Aerospace	industrial	Life Saving	Sport & Leisure	Fabric	UD	Tape	HM	Solvent	Carbon	Glass	Aramide	UHMWPE	Natural Fibers
General Purpose, Structural	AX-220	Axiom/CTCE	177 (350 °F)	☑ High Temperature Epoxy Prepreg ☑ High temperature laminates and high temperature ducting ☑ Post cure recommended for peak performance. ☑ FR grade available.	204 (399 °F)		✓	✓	✓		✓	✓				o	o			o	o		o		o	o	o		
	AX-201XL	Axiom/CTCE	Variable	☑ Optimum tack and drape characteristics ☑ Laminating Prepreg Extra-long Outlife ☑ High strength laminates requiring good structural properties and/or high clarity ☑ Flame Retardant (XL/FR) variant available.	121 (250 °F)		✓	✓	✓		✓	✓	o	o			o		o	o	o		o	o	o	o		o
	AX-206	Axiom	Variable	☑ Toughened Epoxy Prepreg ☑ High toughness laminates for prosthetics and race car industry ☑ Self adhesion properties ☑ Good clarity, good UV resistance	121 (250 °F)			✓		✓		✓		o	o		o			o	o		o		o	o	o		
	AX-270	Axiom	149 (300 °F)	☑ Structural composite components ☑ Color variations available. ☑ Flame retardance available.	177 (351 °F)			✓			✓	✓		o		o	o			o	o		o		o	o	o		
	AX-200	Axiom	121 (250 °F)	☑ Toughened, High Clarity Epoxy Prepreg ☑ Performance sporting goods, automotive parts & components ☑ General purpose ☑ Suitable for high-voltage handling equipment	121 (250 °F)			✓				✓					o		o	o			o		o	o			
	E3-120	Microtex Srl	80 - 140 (176 °F - 284 °F)	☑ Versatile cure schedules–80°C to 140°C ☑ General purpose component prepreg	125 (257 °F)		✓	✓	✓			✓	o	o	o		o		o		o		o		o	o	o		
	E3-122	Microtex Srl	70 - 130 (158 °F - 266 °F)	☑ Versatile cure schedules–70°C to 130°C ☑ Low Exotherm System ☑ Impact resistance	110 (230 F°)		✓	✓	✓			✓	o	o	o		o			o	o		o	o	o	o	o		
	E3-150	Microtex Srl	70 - 130 (158 °F - 266 °F)	☑ Versatile cure schedules–70°C to 130°C ☑ General structural applications ☑ Toughned system	110 (230 F°)		✓	✓	✓			✓	o	o	o	o	o		o	o	o		o	o	o	o	o	o	
	E4-123	Microtex Srl	85 - 130 (185 °F - 266 °F)	☑ Versatile cure schedules–85°C to 130°C ☑ Good adhesion properties ☑ High toughned	120 (248 F°)		✓	✓				✓		o	o	o				o	o		o		o	o	o		
	E4-195	Microtex Srl	80 - 160 (176 °F - 320 °F)	☑ Versatile cure schedules–80°C to 160°C ☑ 6-week out life ☑ After post cure a DMA Tg onset over 200°C ☑ Good impact ressistance	210 (410 F°)		✓	✓		✓		✓		o	o	o				o	o		o	o	o	o	o		

	Resin	Production Plant	Cure Temperature (C°)	KEY PRODUCT CHARACTERISTICS	Tg (C°)		Processing			Product Attributes			Market Segments							Production style					Fibers				
							OOA	Autoclave	Press	Aesthetic	FST	Toughned	Marine	Automotive	Motorsport	Aerospace	industrial	Life Saving	Sport & Leisure	Fabric	UD	Tape	HM	Solvent	Carbon	Glass	Aramide	UHMWPE	Natural Fibers
Ballistic Prepregs	EF14	CTCE	130-175 (266 F°- 347 F°)	☑ Flame Retardant with High Toughness ☑ High Energy Transfer ☑ Very Low Tack ☑ Life Protection (helmet, vehicle armor, ceramic backing applications)	NR		✓	✓	✓		✓	✓						o		o			o				o			
	EF30	CTCE	120-130 (248 F° - 266 F°)	☑ Enhanced performance-to-weight ratio, ☑ Better kinetic energy absorption than woven products, ☑ High temperature stability and high rigidity, ☑ No Tack ☑ Hard protective clothing (helmet), spall liner, platform protection plates (air, naval and landvehicles) and rigid life protection plates	NR				✓									o			o							o		
Aesthetic	AX-205	Axiom	Variable	☑ High clarity, UV stable ☑ Low temp or standard temp option for laminates requiring a high quality surface and cosmetic appearance ☑ Low temp cure grade available (S)	121 (250 F°)			✓		✓				o			o		o	o	o		o	o					
	X3-170	Microtex Srl	145 (293 °F)	☑ Whitewash free ☑ Dicy free system ☑ Good cosmetic properties	145 (293 F°)			✓		✓				o			o		o	o			o	o	o	o			
	X4-140	Microtex Srl	140 (284 °F)	☑ Excellent UV and Heat resistance ☑ Good surface qualities, dicy free system ☑ Touhgned system of X4 160	125 (257 F°)			✓		✓		✓		o			o		o	o			o	o	o				
	X4-160	Microtex Srl	145 (293 °F)	☑ The system has high cosmetic results, dicy free system ☑ Excellent UV and Heat resistance	135 (275 F°)			✓		✓				o			o		o	o			o	o	o				
	X1-151	Microtex Srl	130 (266 °F)	☑ Versatile cure schedules–80°C to 140°C ☑ Superior UV and Heat resistance propreties with good Tg	145 (293 F°)			✓		✓		✓		o	o		o		o	o	o		o		o	o			o
	X1-161	Microtex Srl	135 (375 °F)	☑ Superior cosmetic apperaence: Transparency, UV and Heat resistance propreties with high Tg ☑ After post cured at 165°C for 60 min, Tg value is 170°C	155 (311)			✓		✓		✓		o	o	o	o		o	o	o		o	o	o	o			o
Fast cure, Toughened	R5-130	Microtex Srl	85-120 (185 °F -248 °F)	☑ Versatile cure schedules–85°C to 120°C ☑ High Impact resistance ☑ Good tack and drapability for complex shapes	>140 (>284 F°)				✓			✓		o					o	o	o		o		o	o			

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	Resin	Production Plant	Cure Temperature (C°)	KEY PRODUCT CHARACTERISTICS	Tg (C°)		OOA	Autoclave	Press	Aesthetic	FST	Toughned	Marine	Automotive	Motorsport	Aerospace	industrial	Life Saving	Sport & Leisure	Fabric	UD	Tape	HM	Solvent	Carbon	Glass	Aramide	UHMWPE	Natural Fibers
Tooling	AX-260EL	Axiom	52°C initial, 193°C final (125°F initial, 380°F final)	☑ Low temperature cure, high temperature service tooling ☑ Low temperature initial cure, then free-standing postcure to achieve Tg	191 (376 F°)			✓					o	o	o	o	o		o	o			o		o	o			
	E6-187	Microtex Srl	50 - 60 (122 °F - 140 °F)	☑ Tooling options of 1-8-1, 1-6-1 AND 1-5-1 quasi-isotropic constructions ☑ Initial autoclave cure between 50 °C and 75°C	175 (347 F°)			✓					o	o	o	o	o		o	o			o	o	o	o			
	E6-215	Microtex Srl	45 - 60 (113 °F - 140 °F)	☑ Initial autoclave cure between 45 and 60°C ☑ Free-standing post cure cycle ☑ Shelf life 2-3 days	190 (DSC) (374 F° - DSC)			✓					o	o	o	o	o		o	o			o	o	o	o			
	E6-216	Microtex Srl	50 - 60 (122 °F - 140 °F)	☑ Initial autoclave cure between 45 and 60°C ☑ Free-standing post cure cycle Shelf life 5-6 days	200 (392 F°)			✓					o	o	o		o			o			o	o	o				
	E6-215BS	Microtex Srl	45 - 60 (113 °F- 140 °F)	☑ It can co-cure with the entire E6-215 family ☑ Non fibre printing ☑ Its low viscosity makes it suitable for use in SMC prepregs up to 3900gsm	200 (DSC) (392 F° -DSC)		✓	✓	✓		✓	✓				o				o	o		o	o	o	o	o		
Aerospace, FST	R3-300	Microtex Srl	120 - 150 (248 °F - 302 °F)	☑ Designed specifically for the production of composite components having low heat release and fire smoke toxicity properties ☑ Meet FAR 25.853, APP. F, Part I, IV, V ☑ Good self adhesion properties	160 (320 F°)			✓			✓	✓				o				o	o	o	o		o	o	o		
	AX-180	Axiom/CTCE	121 - 160 (250 °F - 320 °F)	☑ Low OSU / FST Epoxy Prepreg ☑ Aircraft interior laminates & panels, A/C ducting ☑ Meets FAR 25.853 & FST / OSU ☑ High Tack (HT) version is available	121 (250 F°)				✓		✓	✓				o				o	o	o	o		o	o	o		
	AX-180SC	Axiom/CTCE	121 - 160 (250 °F - 320 °F)	☑ Low OSU / FST Epoxy Prepreg ☑ Aircraft interior laminates & panels, A/C ducting ☑ Meets 25.853 & FST / OSU ☑ Snap Cure version of AX180.	121			✓			✓	✓				o	o			o				o		o			
	AX-100	Axiom	132 (270 °F)	☑ Toughened Low Dielectric Epoxy Fiberglass Prepreg High transmission applications, radomes ☑ Meets FAR 25.853.	112 (233 F°)			✓			✓	✓				o	o			o			o			o	o		
	AX-110	Axiom	121 (250 °F)	☑ Toughened and self adhesive ☑ Flame retardant laminates, honeycomb and foam panels ☑ Meets FAR 25.853.	82 (180 F°)		✓	✓	✓		✓	✓				o	o		o	o				o	o	o	o		
	AX-112 and AX-112 T	Axiom/CTCE	121 (250 °F)	☑ Highly toughened epoxy matrix is ideal for multiply laminates and honeycomb paneling requiring excellent peel strength, impact resistance, and flammability resistance. ☑ Meets FAR 25.853. High ☑ Temp (HT) grade available.	113 (235 F°)		✓	✓		✓	✓				o	o		o	o				o	o	o	o			

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Cyanate Ester & BMI	AX-170	Axiom/CTCE	127- 180 (260 °F - 356 °F)	☑ Low dielectric constant and low dissipation factor for radome applications. ☑ Structures for motorsport and defense applications requiring service temps up to 250°C. ☑ Resistance to out gassing for space applications. ☑ Inherently flame retardant. ☑ The adhesive AX171 was developed to work together with AX170	371 (700 F°)			✓						o	o	o	o			o	o				o	o			
	AX-280	Axiom/CTCE	176 - 232 (350 °F - 450 °F)	☑ Excellent mechanical properties to 400F ☑ Tg up to 550F ☑ Good FST properties, and long outlife	288 (550 F°)			✓	✓		✓	✓		o	o	o	o			o					o				
	AX-280 VBO	Axiom/CTCE	176 - 232 (350 °F - 450 °F)	☑Excellent mechanical properties to 400F, Vacuum Bag only BMI system ☑Tg up to 550F ☑Good FST properties, and long outlife	288 (550 F°)		✓				✓	✓		o	o	o	o			o					o				
	AX-281	Axiom/CTCE	176 - 232 (350 °F - 450 °F)	☑ Excellent mechanical properties to 400F ☑Tg up to 550F ☑Good FST properties, and long outlife	288 (550 F°)			✓	✓		✓	✓		o	o	o	o			o					o				
Phenolic Resin	AX-300	Axiom	149 (300 °F)	☑High Temperature Phenolic Laminating Prepreg ☑Ballistic panels, high temperature laminates ☑Resin meets MIL-R-9299C ☑FST/OSU capable	260 (500 F°)		✓	✓	✓		✓	✓				o	o			o				o	o	o	o		
	AX-500	Axiom/Microtex	135 (275 °F)	☑Toughened Phenolic Prepreg ☑Self-Adhesive ☑Honeycomb panels for aircraft interior components ☑Press grade and layup grade available.	121 (250 F°)		✓	✓	✓		✓	✓				o	o			o				o	o	o	o		
	F2-888B	Microtex Srl	135 (275 °F)	☑Thermosetting phenolic matrix with high temperature resistance ☑Excellent FST and heat release characteristics.	150 (302 F°)			✓			✓						o			o				o	o	o	o		
Modified Silica S-glass	AX-605	Axiom	177 (350 °F)	☑Modified Silica S-glass Prepreg ☑High service temp laminates for insulation & aircraft structures ☑For autoclave or pressing processes. ☑Low tack.	510 (950 F°)			✓	✓		✓					o				o				o	o	o			
Polyimide Resin	AX-611	Axiom	177 (350 °F)	☑MDA-free Condensation Polyimide Prepreg ☑High temp laminating applications ☑Self-adhesive, Flame Retardant ☑Excellent thermal stability	177 (351 F°)			✓			✓			o	o	o				o				o	o	o			

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	Resin	Production Plant	Cure Temperature (C°)	KEY PRODUCT CHARACTERISTICS	Tg (C°)		OOA	Autoclave	Press	Aesthetic	FST	Toughned	Marine	Automotive	Motorsport	Aerospace	industrial	Life Saving	Sport & Leisure	Fabric	UD	Tape	HM	Solvent	Carbon	Glass	Aramide	UHMWPE	Natural Fibers
Adhesive Film	AX-2114	Axiom/CTCE	113 - 121 (235 °F - 250 °F)	☑ High performance / toughness bonding: metal & composite substrates ☑ Aramid/ Nomex & Metallic honeycomb sandwich panel bonding ☑ Polymer foam core panel bonding ☑ Ceramic bonding / tile bonding ☑ Applications requiring compliance with MMM-A-132 Type 1 Class 2, SAE-AMS-A-25463 Type 1 Class 1 or 2 adhesive specifications as well as FAR 25.853 for only flammability	103 (217 F°)		✓	✓			✓	o	o	o	o	o		o				o									
	AX-2116F	Axiom	121 - 170 (250 °F - 338 °F)	☑ High bond strength from -67°F to 250°F ☑ Metal to metal bonding ☑ Honeycomb sandwich construction ☑ High peel and high lap shear strength ☑ Excellent resistance to high moisture environments ☑ X-ray opaque for use of x-ray NDI methods ☑ Greater than 3 week out-time ☑ Unsupported versions available for reticulation ☑ Blue color for easy identification	121 (250 F°)		✓	✓			✓	o	o	o	o	o		o				o									
	AX-2121	Axiom	71 (160 °F)	☑ Variable Temp. Cure Epoxy Film Adhesive ☑ Low temperature curing / prototype development / snap curing ☑ Also available unsupported. ☑ Color variations available.	121 (250 F°)		✓						o	o		o							o							
	AX-2130	Axiom	163 (325 °F)	☑ High Temperature, toughened Epoxy Film Adhesive ☑ High temperature metal / metal or composite bonding, honeycomb bonding ☑ Also available unsupported. ☑ Color variations available.	177 (351 F°)		✓				✓		o	o	o	o							o							
	AX-2150	Axiom	121°C or 177°C (250 °F - 350 °F)	☑ Modified Thermosetting Film Adhesive ☑ Low weight / medium load bonding applications. Honeycomb peel strength improvement ☑ Heavier weights and supported versions available.	121 (250 F°)		✓						o	o	o	o							o							
	AX-2151	Axiom	121 (250 °F)	☑ PVB Phenolic Ballistic Film Adhesive ☑ Bonding promotion and high energy load transfer between fabrics for ballistic applications ☑ Typically used in aramid ballistic laminates.	93 (199 F°)		✓						o	o	o	o							o							
	AX-2190 M/FR	Axiom	121°C or 177°C (250 °F - 350 °F)	☑ Foaming Epoxy Core Splice Adhesive ☑ Core splicing and edge-banding of honeycomb cores and paneling ☑ Available in a variety of forms. ☑ Flame retardant versions are available.	149 (300 F°)		✓			✓			o	o	o	o							o							
	AF-120	Microtex Srl	120 - 140 (248 °F - 284 °F)	☑ Suitable for autoclave and oven vacuum bag curing ☑ Medium tack	-		✓					o	o	o		o		o				o							
	AF-121	Microtex Srl	80 - 135 (176 °F-275 °F)	☑ Suitable for autoclave and oven vacuum bag curing ☑ Medium tack ☑ Versatile cure schedules–80°C to 135°C	-		✓					o	o	o		O		o				o							

	Resin	Production Plant	Cure Temperature (C°)	KEY PRODUCT CHARACTERISTICS	Tg (C°)		Processing			Product Attributes			Market Segments							Production style					Fibers				
							OOA	Autoclave	Press	Aesthetic	FST	Toughned	Marine	Automotive	Motorsport	Aerospace	industrial	Life Saving	Sport & Leisure	Fabric	UD	Tape	HM	Solvent	Carbon	Glass	Aramide	UHMWPE	Natural Fibers
Surface Film	KY10SF	CTCE	121 (250 °F)	☑ Perfect surface finish for painting process ☑ Sanding Application compatible ☑ Good tackiness ☑ Co curable with prepregs to reduce surface defects	168 (334 F°)		✓							o									o							
	AX-2140	Axiom	121°C or 177°C (250 F° or - 350 F°)	☑ Epoxy Surfacing & Finishing Film Adhesive ☑ Cocure with prepreg to reduce pitting and smooth part surfaces. Eliminates fill, fair, and repair ☑ Color variations available. ☑ May be consolidated with lightning strike materials. ☑ Low temperature cure available.	121 (250 F°)			✓	✓					o	o	o	o						o	o						
	AX 2115	Axiom	121 (250 F°)	☑ Easy to sand and lay-up ☑ Good tack and drapability ☑ Excellent resistance to aging tests ☑ Protects underlying laminate ☑ Working Life at 24°C (75°F) 14 days			✓	✓	✓					o	o		o						o						
	SF-150	Microtex Srl	80 - 140 (176 °F -284 °F)	☑ Versatile cure schedules–80°C to 140°C ☑ Medium tack	-			✓						o			o		o				o						
	SF-151	Microtex Srl	80 - 140 (176 °F -284 °F)	☑ Versatile cure schedules–80°C to 140°C ☑ Medium tack with improved surface quality	-		✓	✓					o	o			o		o				o	o					
Ancillary Products	MEX-116	Microtex Srl	125 - 140 (257 °F - 284 °F)	☑ Expanding core Unsupported epoxy syntactic film ☑ Internal pressure generation during cure lead to expanding capabilities up to 250% ☑ Providing after expansion completely homogenous cell structure	-			✓						o	o		o						o						
	AX-1000	Axiom	121 for bake (250 F° for bake)	☑ Corrosion Inhibiting Primer ☑ General purpose corrosion inhibition for metal / metal bonding ☑ Compatible with most 250°F (121°C) film adhesives	149 (300 F°)			✓						o	o	o	o		o										
	AX-1001	Axiom	177 for bake (350°F for bake)	☑ High Temperature Corrosion Inhibiting Primer ☑ General purpose corrosion inhibition for high temperature metal / metal bonding ☑ Compatible with most 350°F (177°C) film adhesives	182 (360 F°)			✓						o	o	o	o		o										
	AX-1013	Axiom	Room Temp.	☑ Room temperature bonding for metal/metal, metal/composite, composite/composite parts ☑ General Purpose Structural Epoxy Paste Adhesive	71 (160 F°)		✓	✓						o	o	o	o		o										
	AX-1014	Axiom	Room Temp.	☑ General Purpose, Two Component Epoxy Paste Adhesive ☑ General purpose bonding of masonry, concrete, composites, and metals ☑ Low viscosity ☑ Designed for masonry-composite bonding	71 (160 F°)		✓	✓						o	o	o	o		o										
	AX-1033FR	Axiom	Room Temp.	☑ Low Density, Flame Retardant Epoxy Core Edge Closeout ☑ Core edge filling of honeycomb structures ☑ Designed for weightsensitive applications	82 (180 F°)		✓	✓			✓			o	o	o	o		o										
	AX-1300	Axiom	149 (300 F°)	☑ Phenolic Sealing Resin ☑ Sealing and finishing of phenolic composites ☑ Can be dyed black	260 (500 F°)			✓			✓			o	o	o	o		o										
	AX-1611	Axiom	177 (350 F°)	☑ Polyimide Sealing Resin, MDA-Free ☑ Can be dyed black	338 (640 F°)			✓						o	o	o	o		o										

							Processing			Product Attributes			Market Segments							Production style					Fibers				
	Resin	Production Plant	Cure Temperature (C°)	KEY PRODUCT CHARACTERISTICS	Tg (C°)		OOA	Autoclave	Press	Aesthetic	FST	Toughned	Marine	Automotive	Motorsport	Aerospace	industrial	Life Saving	Sport & Leisure	Fabric	UD	Tape	HM	Solvent	Carbon	Glass	Aramide	UHMWPE	Natural Fibers
Ceramic Prepregs	AX-7800-610	Axiom	-	☑ Water-based Ceramic Matrix Composite (CMC) Prepreg, ☑ High-strength Aircraft engine components, ducting, oil & gas tubing, advanced energy, motorsports ☑ Structural applications, solvent-free ceramic matrix	982 (1800 F°)			✓	✓						o	o				o			o							
	AX-7810-610	Axiom	-	☑ Solvent-based Ceramic Matrix Composite (CMC) Prepreg, High-strength ☑ Aircraft engine components, ducting, oil & gas tubing, advanced energy, motorsports ☑ Structural applications	982 (1800 F°)			✓	✓						o	o				o				o						
	AX-7810UD	Axiom	-	☑ Solvent-based Ceramic Matrix Composite (CMC) ☑ Unidirectional Prepreg Advanced Fiber Placement & Automated Tape Laying ☑ Structural applications	982 (1800 F°)			✓	✓						o	o					o	o		o						
	AX-7820-610	Axiom	-	☑ 100% Aluminum Oxide Waterbased Ceramic Matrix Composite (CMC) Prepreg, High-strength ☑ Aircraft engine components, ducting, oil & gas tubing, advanced energy, motorsports ☑ Structural applications, solvent-free ceramic matrix	982 (1800 F°)			✓	✓						o	o				o			o						
	AX-7900-720	Axiom	-	☑ Solvent-based Ceramic Matrix Composite (CMC) Prepreg, Low Creep / High Temperature ☑ Aircraft engine components, ducting, oil & gas tubing, advanced energy, motorsports ☑ Improved Creep resistance, higher temperature applications	1090 (2000 F°)			✓	✓						o	o				o				o						
	AX-7900UD	Axiom	-	☑ Solvent-based Ceramic Matrix Composite (CMC) Prepreg, Low Creep / High Temperature ☑ Advanced Fiber Placement & Automated Tape Laying ☑ Improved Creep resistance, higher temperature applications	1090 (2000 F°)			✓	✓						o	o					o	o		o						
	AX-7900-312	Axiom	-	☑ Solvent-based Ceramic Matrix Composite (CMC) Prepreg ☑ Thermal/fire barriers, exhaust components, refractory, furnace hardware, insulation, radomes ☑ Low dielectric material	850 (1562 F°)			✓	✓							o	o				o				o						
	CerFaceTM AX-8900	Axiom	-	☑ Solvent-based Ceramic Matrix Composite (CMC) Surfacing Film ☑ Aircraft engine components, ducting, oil & gas tubing, advanced energy, motorsports ☑ Improved surface finish, localized impact protection, cocures with ox-ox solvent-based prepreg	1090 (2000 F°)			✓	✓							o	o								o						
	AX-8900-BMC	Axiom	-	☑ Ox-Ox Ceramic Matrix Composite (CMC) Bulk Molding Compound ☑ Radomes, Engine Volutes, Crucibles, Nozzles, Joints ☑ Improved manufacture flexibility over pre-impregnated fabric	1090 (2000 F°)			✓	✓							o	o														
Thermoplastic Prepregs	PP	Microtex Srl	180 - 210 (356 F°- 410 F°)	☑ T-preg solutions offer exceptional strength ☑ Wide range of application area ☑ Exceptional aesthetic properties ☑ Customized solutions ☑ Reduced enviromental impact ☑ UV, scratcg, impact & Fire resistant interior parts	NR				✓					o	o		o		o	o					o	o	o	o	o
	PC	Microtex Srl	280 - 320 (536 F° - 608 F°)						✓					o	o		o		o	o					o	o	o	o	o
	PA6	Microtex Srl	230 - 290 (446 F° - 554 F°)						✓					o	o		o		o	o					o	o	o	o	o
	PA11	Microtex Srl	230 - 270 (446 F° - 518 F°)						✓					o	o		o		o	o					o	o	o	o	o
	PA12	Microtex Srl	200 -250 (392 F° - 482 F°)						✓					o	o		o		o	o					o	o	o	o	o
	TPU low temp	Microtex Srl	130 -155 (266 F° - 311 F°)						✓					o	o		o		o	o					o	o	o	o	o
	TPU low temp	Microtex Srl	190 - 230 (374 F° - 446 F°)						✓					o	o		o		o	o					o	o	o	o	o

	Resin	Production Plant	Cure Temperature (C°)	KEY PRODUCT CHARACTERISTICS	Tg (C°)		Processing			Product Attributes			Market Segments							Production style					Fibers				
							OOA	Autoclave	Press	Aesthetic	FST	Toughned	Marine	Automotive	Motorsport	Aerospace	industrial	Life Saving	Sport & Leisure	Fabric	UD	Tape	HM	Solvent	Carbon	Glass	Aramide	UHMWPE	Natural Fibers
SMC	X1 120BS	Microtex Srl	120 - 150 (248 °F - 302 °F)	☑ General use for automotive ☑ Ideal for UV resistant properties ☑ Good cosmetic properties	130 (266 F°)			✓	✓	✓			o	o	o		o		o	o			o		o				
	X1 120BR	Microtex Srl	130 - 150 (266 °F - 302 °F)	☑ Fast cure version of X1 120BS ☑ Co-curable with felt and fabric ☑ Good surface finish ☑ Good flow	130 (266 F°)				✓	✓				o			o		o	o			o		o				
	X1 150BS	Microtex Srl	120 - 150 (248 °F- 302 °F)	☑ Mid-Tg ☑ Cosmetic values retained at high temperatures ☑ Ideal for UV resistant properties ☑ Controlled flow	150 (302 F°)			✓	✓	✓			o	o	o					o			o		o				
	E4 193BS	Microtex Srl	135 - 180 (275 °F - 356 °F)	☑ Versatile cure schedules–135°C to 180°C ☑ Post curable for higher Tg ☑ Co-curable with E4-195HM ☑ Toughened system with good flow in press	150 (302 F°)			✓	✓	✓		✓		o	o		o		o	o			o		o				
Tow Preg	E3 156	Microtex Srl	140 - 160 (284 °F - 320 °F)	☑ Developed for power-grid application ☑ Toughened ☑ Very long shelf life ☑ Design for impact resistance	140 (284 F°)		✓	✓				✓					o								o				
	E9 132	Microtex Srl	100 - 140 (212 °F - 284 °F)	☑ Flexible cure schedules 100-150°C ☑ Design specifically for Type-3 and Type-4 pressure vessels. ☑ Good surface finish	130 (266 F°)		✓	✓									o								o				
	E4 193	Microtex Srl	100 - 150 (212 °F - 302 °F)	☑ Flexible cure schedules 100-140°C ☑ Can be post cured ☑ Toughened system with good balance of mechanical properties ☑ Suitable for high thickness components ☑ Intended for use at high temperatures or in hot and humid environments.	200 (392 F°)		✓	✓				✓				o	o								o				
	AV14	CTCE	80 - 125 (176 °F- 257 °F)	☑ Ideal handling characteristics for medium-large parts ☑ Versatile cure from 80°C to 125°C (176°F to 257°F ☑ May be cured using vacuum bag oven, autoclave ☑ Suitable for large industrial or marine components	111 (231 F°)		✓	✓				✓					o								o				
Marine	X2-121	Microtex Srl	80 - 140 (176 °F - 284 °F)	☑ Low curing temperature 80°C ☑ High strenght pre-preg system ☑ Certified for DNV and BV systems ☑ Designed for OoA (Out of Autoclave) processing,	115-135 (239 F°- 275 F°)		✓	✓					o				o			o	o		o		o	o	o		o
	X2-121LV	Microtex Srl	85 -120 (185 °F - 248 °F)	☑ Flexible cure schedules 85-120°C ☑ Ideal system for large structures ☑ Intermediate tack	115-135 (239 F°- 275 F°)		✓	✓					o				o			o	o		o		o	o	o		o
	X2 121LT	Microtex Srl	85 -120 (185 °F - 248 °F)	☑ Low tack version on X2-121 family. ☑ Tailor made for made with mandrel sail masts.	115 (239 F°)		✓	✓					o				o			o	o		o		o	o	o		o
Aesthetic, FST	X1-304	Microtex Srl	80 - 150 (185 °F - 302 °F)	☑ Pass UL94 V0, FAR.25.853 ☑ High versatility in prepreg weigth	144 (291 F°)			✓	✓	✓	✓			o	o		o			o	o		o	o	o	o	o		
	X1-351	Microtex Srl	130 - 180 (266 °F - 356 °F)	☑ Versatile cure schedules–130°C to 180°C ☑ Pass UL94 V0 ☑ Good cosmetic properties with fully transparent system	170 (338 F°)			✓		✓	✓			o	o					o	o		o		o	o	o		o
Aesthetic, Press	R2-150	Microtex Srl	120-150 (248 °F - 302 °F)	☑ Fast cure system for aesthetic propreties ☑ Good tack and drapability	140 (284 F°)			✓	✓	✓				o	o		o		o	o	o		o	o	o	o	o		
	R2-151	Microtex Srl	120-150 (248 °F - 302 °F)	☑ Fast cure system for aesthetic propreties ☑ Good tack and drapability ☑ Good UV properies	136 (277 F°)			✓	✓	✓				o	o		o		o	o	o			o	o	o	o		
	X1-161 XF	Microtex Srl	135 (275 °F)	☑ Superior cosmetic apperaence: Transparency, UV and Heat resistance propreties with high Tg ☑ After post cured at 165°C for 60 min, Tg value is 170°C	150 (302 F°)				✓	✓		✓		o	o					o	o		o		o	o	o		o
	CM11	CTCE	130 - 160 (266 °F - 320 °F)	☑ Designed for fast press molding ☑ Class A Surface quality ☑ Good hot de-molding performance ☑ Suitable for structural applications ☑ Good chemical resistance ☑ Suitable for Cataphoresis/ Hot Painting/ Hot adhesive bonding ☑ Suitable for autoclave short curing cycle	140 (284 F°)				✓	✓				o			o			o	o		o		o	o			

About Kordsa Affiliates

Fabric Development, Inc.

Fabric Development, Inc. (FDI) was established in 1972 to manufacture specialty woven fabrics to meet specialty end use requirements. In time, FDI has greatly expanded its capabilities to work with all high performance fibers, including Carbon (standard to ultra-high modulus), Aramid (Kevlar®&Twaron®), Spectra®, Ceramics, Quartz, PTFE, Nomex® and Vectran™. FDI has manufactured these fibers in a variety of fabric geometries, hybrid structures, polar weaves and multilayer fabric structures. This capability allows FDI to serve the expanding needs of specialty fabric applications.

www.fabricdevelopment.com

Textile Products, Inc.

Textile Products Inc. operating as a Kordsa company, is a specialty textile manufacturer, experienced in the development and production of custom fabrics. TPI offers a wide range of standard fabrics as well as custom design textiles engineered to meet specific requirements including: Uni-directional, Bi-directional, Multi-directional and Hybrid fabrics and tapes. TPI also has considerable experience with all available yarns, including Carbon-Standard, Intermediate and High Modulus, Aramid-Kevlar™ & Twaron™, Ceramic-Nextel™ & Nicalon™, Quartz, Metallic Wires, Nickel Coated Carbon and Commingled Thermoplastics.

www.textileproducts.com

Axiom Materials, Inc.

Axiom Materials, Inc., is a progressive composite materials manufacturer founded with the intention of combining a quality prepreg, adhesive, and ancillary composite products platform with customer focused service and forward-thinking design. Axiom Materials, Inc. has recently merged with Advanced Honeycomb Technologies, which manufactures a wide range of honeycomb core used in products as diverse as commercial and military aircraft, communications and transportation equipment, space vehicles, construction materials and recreational and sporting goods. Axiom Materials manufactures an unrivaled range of composite materials and engineered products, including ceramic prepregs, epoxy unidirectional carbon prepregs, tooling prepregs and film adhesives.

www.axiommaterials.com

Microtex Composites S.r.l.

Microtex Composites S.r.l. is a vertically integrated manufacturer of advanced composites from weaving of carbon fiber to producing prepregs. Today the company is a European excellence for carbon fiber widely used for structural and aesthetic composites, carbon look interiors for motorsports, automotive, rail, sport & leisure, marine, industrial and interior design sectors. Furthermore, performing continuous R&D activities, the company boasts cutting-edge technologies.

www.microtexcomposites.com

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