

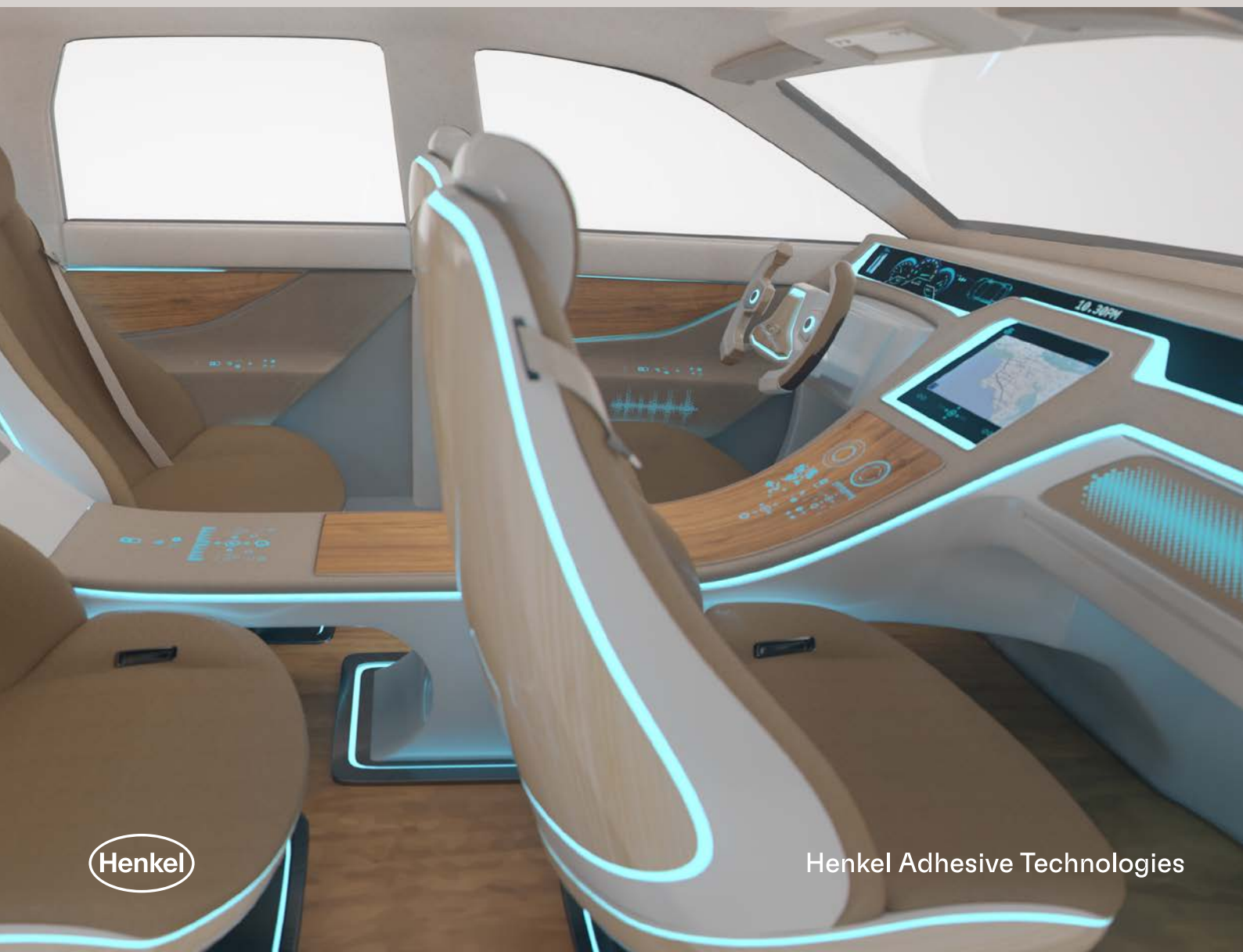
TECHNOMELT[®]

TEROSON[®]

AQUENCE[®]

HENKEL SOLUTIONS FOR

AUTOMOTIVE INTERIOR LAMINATION



Henkel Adhesive Technologies

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AT HENKEL,
WE MAKE IT HAPPEN
WITH **SOLUTIONS** THAT
MAKE A DIFFERENCE

Henkel offers a comprehensive portfolio of adhesives for automotive interior applications. With products ranging from reactive hot melts, PSA hot melts, and water-based adhesives, to micro emission hot melt adhesives, we will solve any lamination and assembly challenge.

ADDRESSING TRENDS IN AUTOMOTIVE **INTERIOR** WITH HENKEL SOLUTIONS



SUSTAINABILITY

- › Label free reactive adhesives
- › Non-VOC lamination adhesives
- › Hot melts with up to 60% renewable and recycled raw materials
- › Reduced energy consumption in lamination process due to reduced process temperature
- › Vehicle interior air quality
- › Low carbon footprint adhesive



COMFORT & SAFETY

- › **New Ambient Lighting Concepts:**
Transparent and UV resistant, non-yellowing adhesive for back-lighting
- › **Premium & Smart Surfaces:**
Natural textile fibers, vegan interior, delicate leather surfaces



MANUFACTURING PROCESS & COST LEADERSHIP

- › Short process times through fast setting adhesives
- › Reduced number of process steps
- › Low reactivation temperature

OUR SOLUTIONS FOR **AUTOMOTIVE** INTERIOR **ADHESIVES**

	TECHNOMELT. REACTIVE HOT MELTS	TECHNOMELT. NON-REACTIVE HOT MELTS	AQUENCE. WATER-BASED DISPERSIONS	TEROSON. SOLVENT-BASED
CHEMISTRY	PUR	PSA, PO	PUD	TPU, CR
ADHESIVE APPLICATION	Spray application Roll coat On carrier / Spacer fabric	Spray Roll coat On carrier / Spacer fabric	Spray application Roll coat On carrier / Spacer fabric	Spray application Roll coat On carrier / Spacer fabric
DRYING STEP	None Required	None Required	Oven Drying	Product Dependent
LAMINATION PROCESS	Prepositioning of dry laminate Successive lamination	Assembled when adhesive is liquid except PSA based	Prepositioning of dry laminate Successive lamination	Assembled as liquid adhesive Successive lamination

ROLL COAT APPLICATION



SPRAY APPLICATION



OVERVIEW

INTERIOR SYSTEMS

OVERHEAD & HEADLINER

- › Headliner
- › Sun visor

DOOR SYSTEM

- › Armrest
- › Door beltline
- › Door bolster
- › Door panel

COCKPIT & INSTRUMENT PANEL

- › Center consoles
- › Instrument panel
- › Instrument cluster
- › Steering wheel
- › Glove compartment
- › Shift knob

SEATING SYSTEM

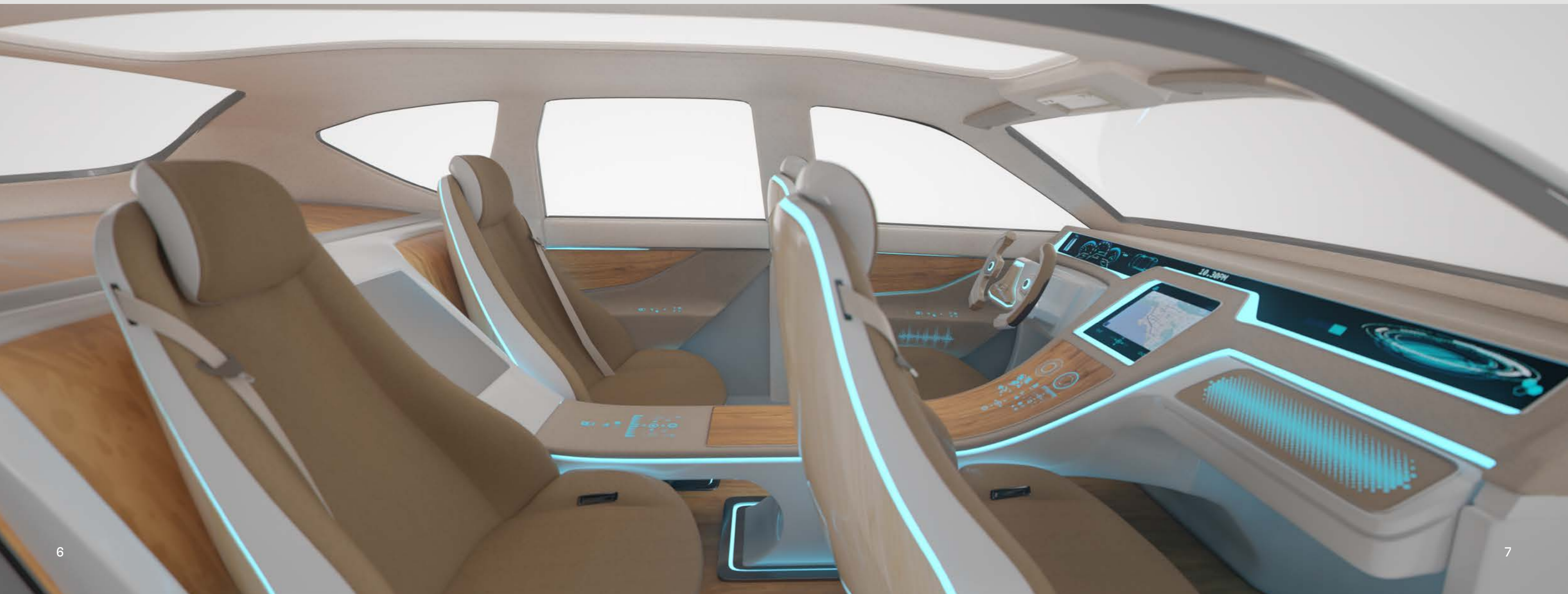
- › Cushion
- › Recliner
- › Seat track
- › Seat frames
- › Seat plates
- › Seating suspension
- › Seat belt
- › Arm rests
- › Head rests

CARPETING & TEXTILES

- › Carpet
- › Load floor
- › Package trays
- › Textiles

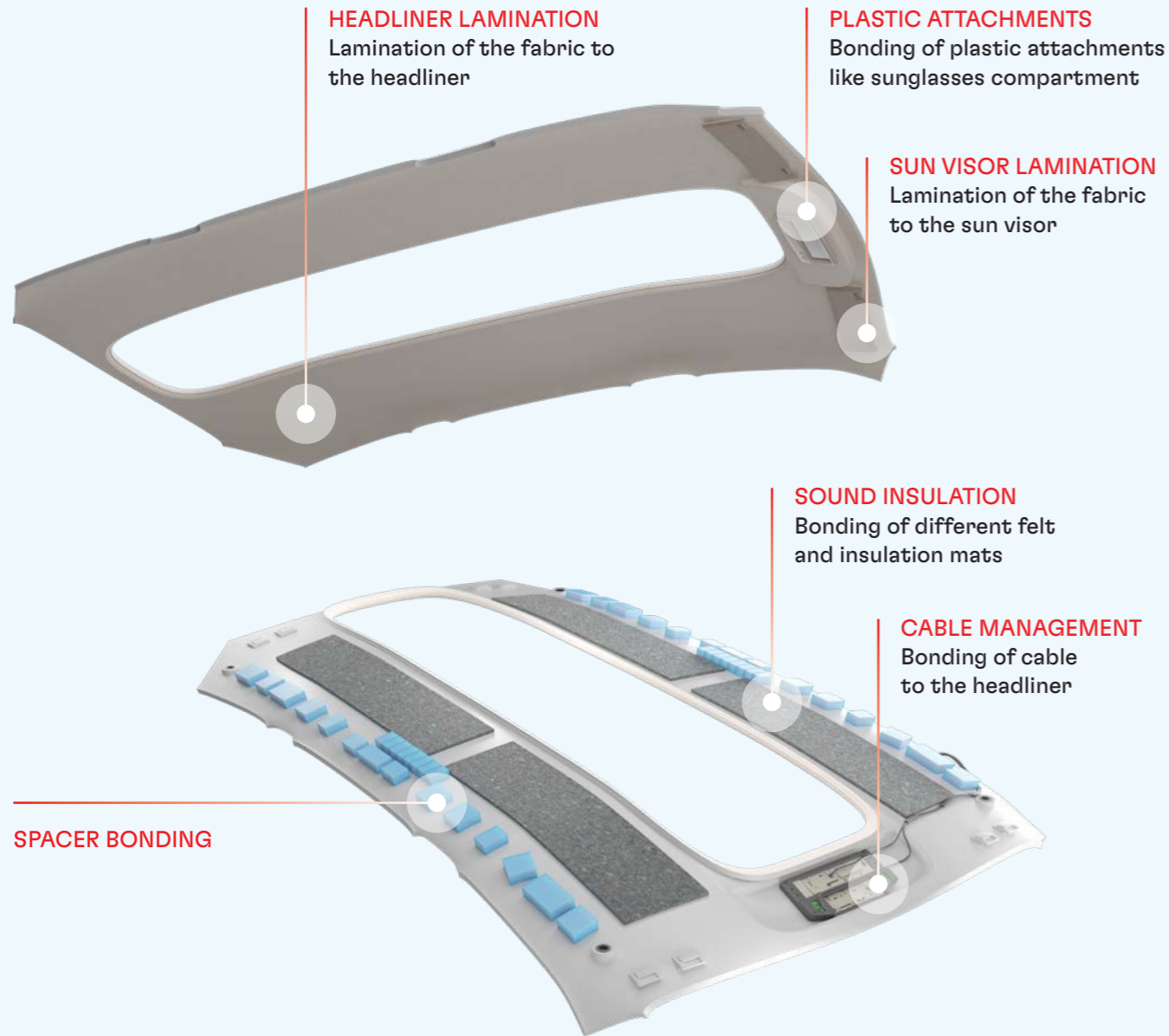
OTHER INTERIOR

- › PVC bi-laminates
- › Pillar trim
- › Rear view mirror



INTERIOR SYSTEMS

OVERHEAD & HEADLINER



GOOD TO KNOW ...

The headliner requires a broad range of bonding solutions. From easy ones like cable management and bonding of sound insulation to more complex applications like plastic attachments where a longer open time is required due to the handling time these parts require.

REACTIVE PUR HOT MELT

PRODUCT	APPLICATION	PROCESS	SUBSTRATES	BENEFITS
<u>TECHNOMELT PUR 4663</u>	Cable management	Manual / Robot bead application	Cable, felt, headliner	Long open time
<u>TECHNOMELT PUR 6225 LE</u>	Plastic attachments	Manual / Robot bead application	Headliner, metal frame, ABS	Low emission grade
<u>TECHNOMELT PUR 9622-02 UV/03</u>	Headliner lamination	Roller coater / spray application	Textile to headliner	Short cycle time

WATER-BASED ADHESIVE

PRODUCT	APPLICATION	PROCESS	SUBSTRATES	BENEFITS
<u>TEROSON PU A235 W</u> + <u>AQUENCE CATALYST R397</u>	Headliner lamination	Manual / Robot spray application	Textile to headliner	NMP/APEO free Long open time Tack free

PRESSURE SENSITIVE HOT MELT

PRODUCT	APPLICATION	PROCESS	SUBSTRATES	BENEFITS
<u>TECHNOMELT PS 203A</u>	Sound insulation, spacer	Manual / Robot bead application	Felt, PU foam	Short cycle time

NON-REACTIVE POLYOLEFIN HOT MELT

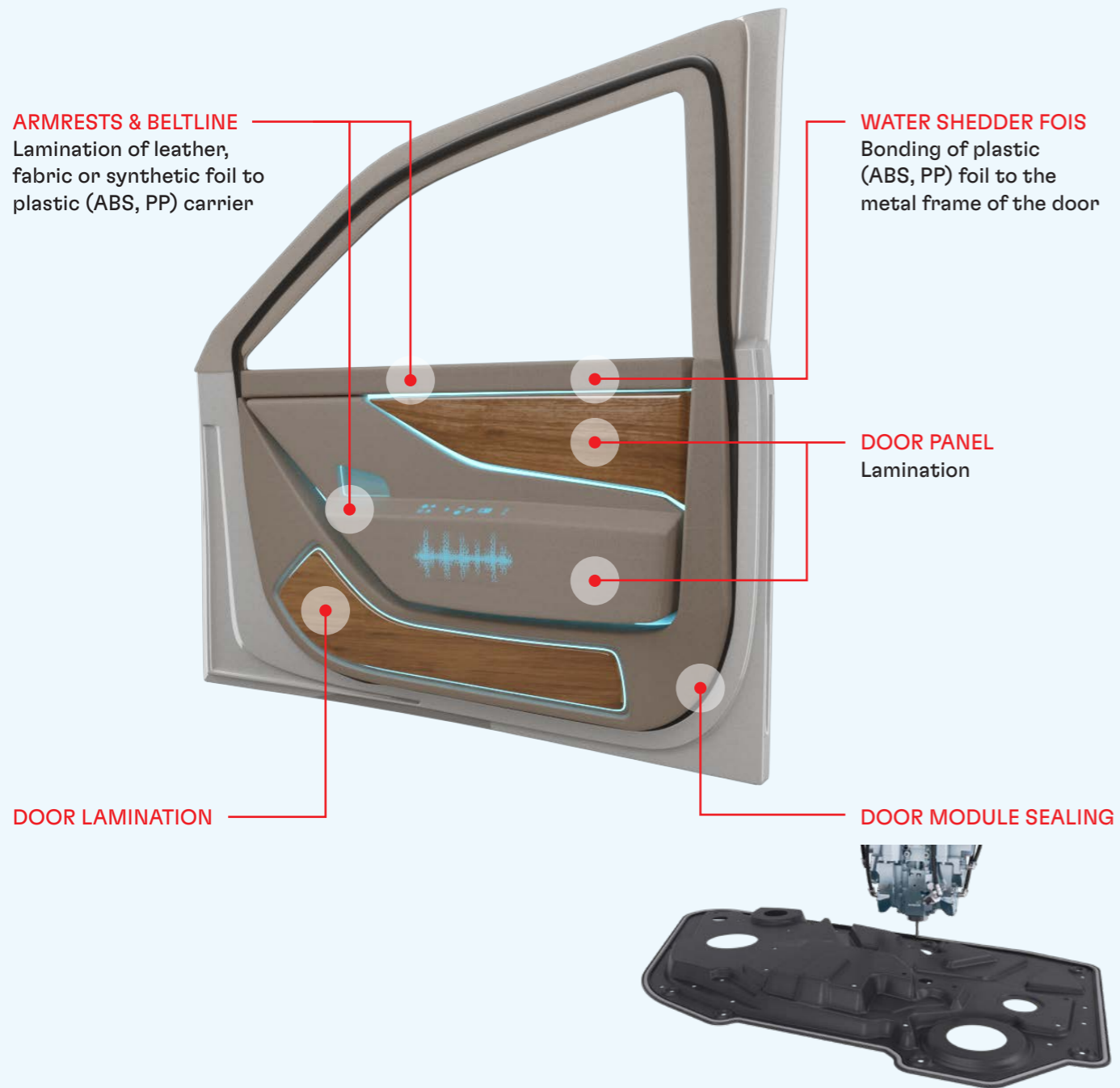
PRODUCT	APPLICATION	PROCESS	SUBSTRATES	BENEFITS
<u>TECHNOMELT AS SP101</u>	Sun visor lamination	Roller coater application	Fabric, PP foam	Good adhesion to non-polar substrates

PLEASE CONTACT US

to learn more about our portfolio of water-based adhesives for the APAC region.

INTERIOR SYSTEMS

DOOR SYSTEM



GOOD TO KNOW ...

Henkel offers solutions for all three types of lamination processes (Vacuum-, Press- and IMG Lamination). The shape and complexity of the substrates have a big influence on the selection of the adhesive.

REACTIVE PUR HOT MELT

PRODUCT	APPLICATION	PROCESS	SUBSTRATES	BENEFITS
<u>TECHNOMELT PUR 9622-02 UV</u>	Door lamination	Automated roller coater application, Vacuum / press lamination	ABS, PP (pre-treated), TPO foil	Standard grade for door lamination
<u>TECHNOMELT PUR 6220 UV LV</u>	Armrest lamination	Manual / Robot, spray application	ABS, PP (pre-treated)	Good spray ability, low viscosity
<u>TECHNOMELT PUR 9700 / 9720</u>	Door lamination	Automated roller coater application Vacuum lamination	PVC foil, ABS, acrylic NF	Good plasticizer resistance (PVC foil) fast setting time
<u>TECHNOMELT PUR 4663 / 4650</u>	Armrest bonding Retainer bonding	Manual / Robot, bead application	ABS, PP (pre-treated), NF	Long open time
<u>TECHNOMELT PUR 9800</u>	Door lamination	Automated roller coater application Vacuum / press lamination	ABS, PP (pre-treated), TPO	Low carbon footprint based on recycled and renewable raw materials

WATER BASED PU DISPERSION

PRODUCT	APPLICATION	PROCESS	SUBSTRATES	BENEFITS
<u>AQUENCE PL 2506</u>	Upper door panels lamination	Manual / Robot, spray application	PVC foil, ABS, PP (pre-treated)	NMP / APEO free, low reactivation (55°C)

NON-REACTIVE PRESSURE SENSITIVE HOT MELT

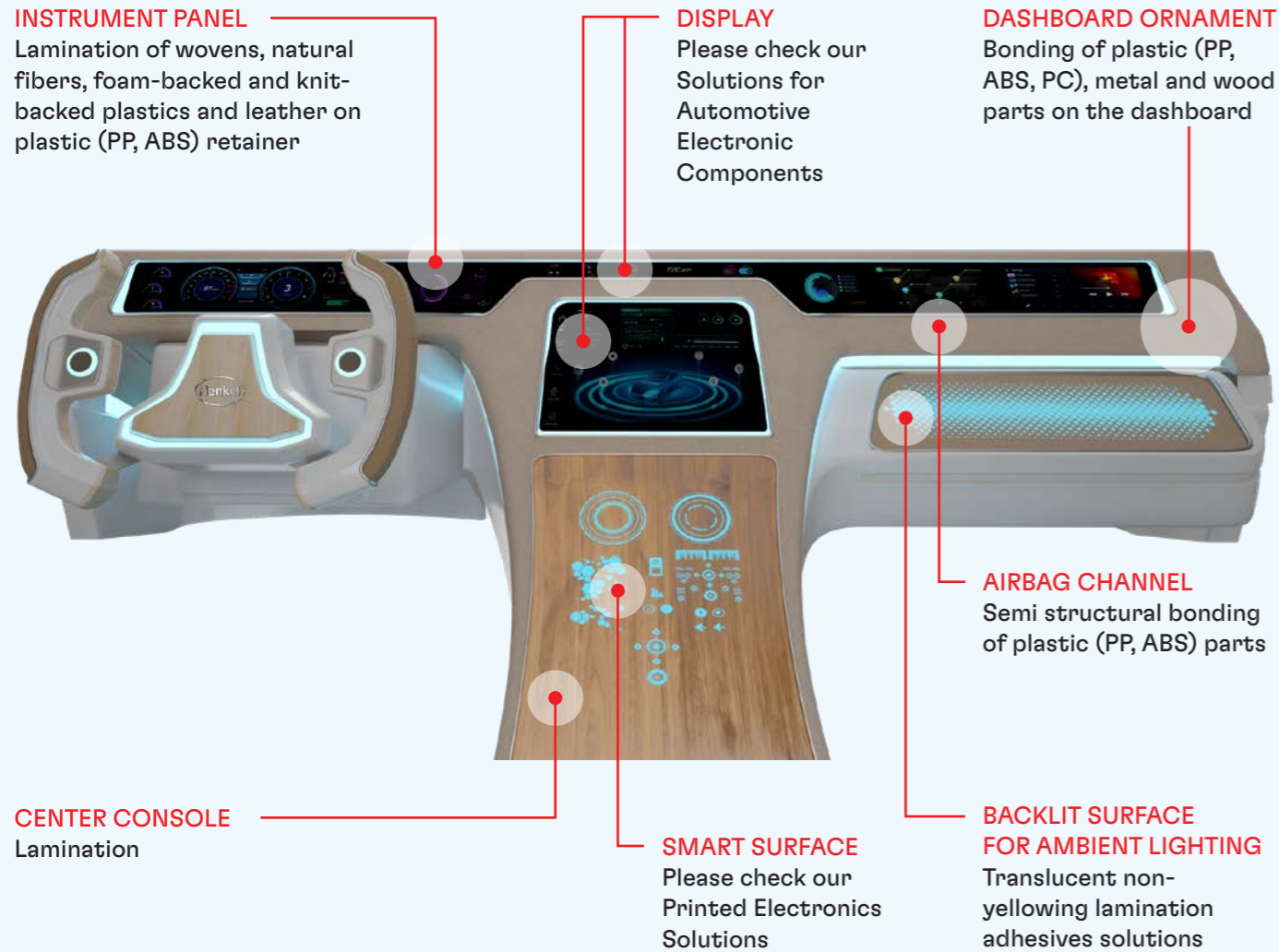
PRODUCT	APPLICATION	PROCESS	SUBSTRATES	BENEFITS
<u>TECHNOMELT PS 203A</u>	Water shedder foil bonding	Manual / Robot, bead application	PE foil, metal car body	Good adhesion to different surfaces

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INTERIOR SYSTEMS

COCKPIT & INSTRUMENT PANEL



GOOD TO KNOW ...

Because of the complex 3d shape of an instrument panel, vacuum lamination is often not possible, as the coverstock would be overstretched and destroyed. Hence, the coverstock is composed of single parts to fit the complex shape. The adhesive is sprayed on the plastic carrier and the woven or foam-backed cover is manually stretched onto the carrier and prefixed with a hot air gun. Therefore, sprayable adhesives are needed.

REACTIVE PUR HOT MELT

PRODUCT	APPLICATION	PROCESS	SUBSTRATES	BENEFITS
<u>TECHNOMELT PUR 6221 UV</u>	Instrument panel lamination	Automated by robot, manual correction Press lamination	Leather, TPO foil, ABS, treated PP	Standard grade for spray application
<u>TECHNOMELT PUR 6225 LE</u>	Instrument panel lamination	Automated by robot, manual correction Press lamination	Leather, TPO foil, ABS, treated PP	Low reactivation temperature
<u>TECHNOMELT PUR 4663</u>	Dashboard ornament bonding	Manual / Robot, bead application	Metal, Wood, ABS, PP (pre-treated)	Long open time
<u>TECHNOMELT PUR 9800</u>	Door lamination	Automated roller coater application Vacuum / press lamination	ABS, PP (pre-treated), TPO	Low carbon footprint based on recycled and renewable raw materials

NON-REACTIVE POLYOLEFIN HOT MELT

PRODUCT	APPLICATION	PROCESS	SUBSTRATES	BENEFITS
<u>TECHNOMELT AS 4209</u>	Center console bonding Airbag channel bonding	Manual / Robot, bead application	PP, ABS	Good adhesion to non-polar substrates
<u>TECHNOMELT AS 8383</u>	Instrument panel Center console	Roller coater spray application	PP, ABS	Good adhesion to non-polar substrates High heat resistance

MS POLYMER

PRODUCT	APPLICATION	PROCESS	SUBSTRATES	BENEFITS
<u>TEROSON MS 930 / 647</u>	Dashboard ornament bonding	Manual / Robot, bead application	Metal, wood, different plastic without pre-treatment	Elastic, good adhesion on different substrates
<u>TEROSON MS 647 2C</u>	Airbag channel bonding	Manual / Robot, bead application	PP (pre-treated), ABS	Wide adhesion range, elastic

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to learn more about our portfolio for automotive interior lamination.

INTERIOR SYSTEMS

SEATING SYSTEM



SEAT BACK LAMINATION
Lamination of fabric and leather to the plastic parts on the back of the seat

SEAMLESS SEAT COVER
Textile lamination of seat cover on polyester fleece

SEAT FRAME
Structural bonding

GOOD TO KNOW ...

A seat requires a wide range of solutions that Henkel can offer. It begins with the pre-treatment of the metal frame, bonding of additional parts to the frame, bonding of sensors in place and potting them, and it ends with the lamination of the seat cover.

REACTIVE PUR HOT MELT

PRODUCT	APPLICATION	PROCESS	SUBSTRATES	BENEFITS
TECHNOMELT PUR 9700	Seat back lamination	Automated roller coater application	ABS, reinforces NF, PVC or TPO foil	Good plasticizer resistance (PVC foil)
TECHNOMELT PUR 4663 ME	Seamless seat cover lamination	Manual / robot spray application (swirl)	Seat cover, polyester fleece	Micro emission grade

NON-REACTIVE PRESSURE SENSITIVE HOT MELT

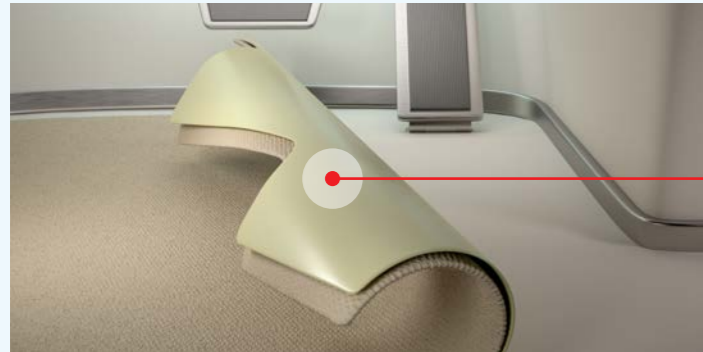
PRODUCT	APPLICATION	PROCESS	SUBSTRATES	BENEFITS
TECHNOMELT PS 8774	Seat heating bonding	Manual / robot bead application	Felt, seat heating	Very soft, flexible, tacky
TECHNOMELT DM 5633	Seat back lamination	Robot bead Spray application	Felt	Low viscosity, solvent free, fast tack and grab, good temperature resistance for below the belt application

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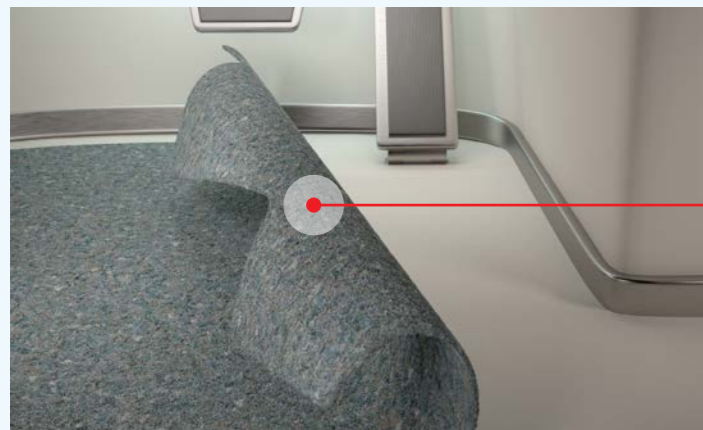
to learn more about our portfolio for automotive interior lamination.

INTERIOR SYSTEMS

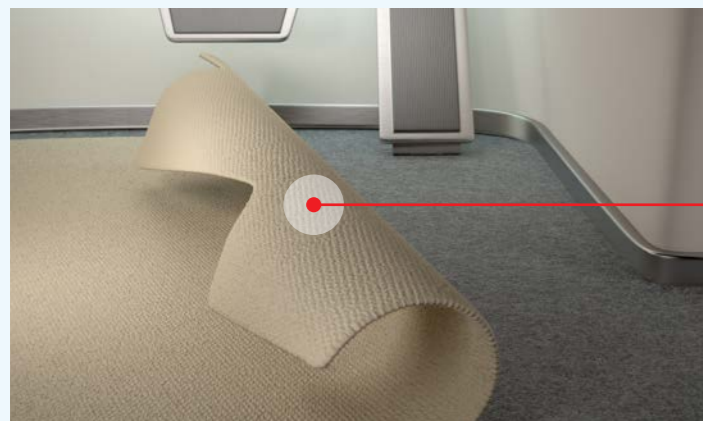
CARPETING & TEXTILES



LOAD CARPET
Carpet / textile to load floor bonding



SOUND INSULATION
Bonding of different felt and insulation mats



CARPET & CARPET BONDING
Carpet to body bonding
Carpet to felt / fleece bonding
Carpet to back seat bonding

GOOD TO KNOW ...

Carpet applications usually don't require high bonding strength, and very often maximum service temperature does not exceed 80°C. So non-reactive hot melts may be the right choice. Only overhead applications or complex 3D forms require reactive adhesives. Henkel offers both reactive and non-reactive adhesives that can help to accelerate and optimize the assembly processes and reduce total manufacturing cost.

REACTIVE PUR HOT MELT

PRODUCT	APPLICATION	PROCESS	SUBSTRATES	BENEFITS
<u>TECHNOMELT PUR 4663</u>	Load floor, carpet	Manual / Robot bead application	Baypreg, felt, carpet	Long open time
<u>TECHNOMELT PUR 9720</u>	Load floor	Manual / Robot / Roller Coater / Bead application Press lamination	Baypreg, PVC foil, carpet	Good adhesion on PVC foil
TECHNOMELT PUR 9800	Load floor, carpet	Roller coater / Bead application Press lamination	—	—

NON-REACTIVE PRESSURE SENSITIVE HOT MELT

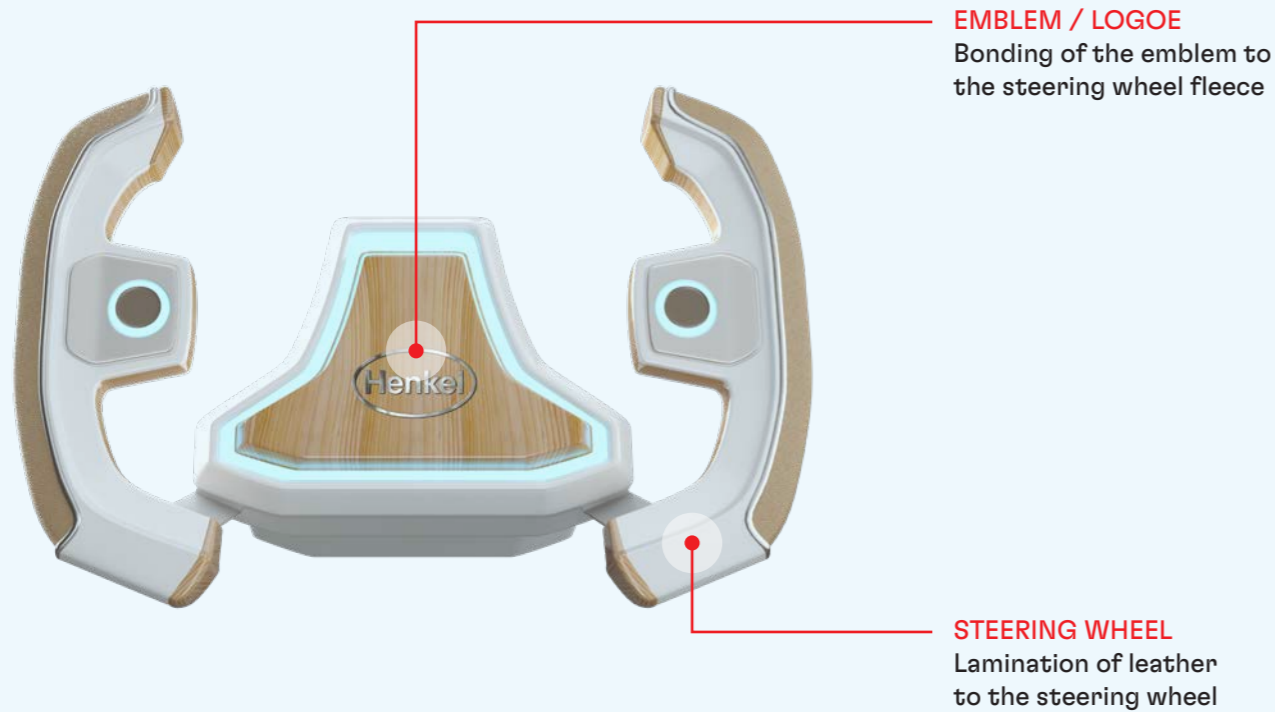
PRODUCT	APPLICATION	PROCESS	SUBSTRATES	BENEFITS
TECHNOMELT AS H321 TECHNOMEL AS H418	Headliner lamination	Manual / Robot spray application	Textile to headliner	NMP/APEO free Long open time Tack free
TECHNOMELT AS H757	Load floor	Manual / Robot / Roller Coater / Bead application Press lamination	Baypreg, carpet, thermoformed parts	Good adhesion to non-polar substrates like PP

NON-REACTIVE APAO HOT MELT

PRODUCT	APPLICATION	PROCESS	SUBSTRATES	BENEFITS
<u>TECHNOMELT AS 8383</u>	Carpet, sound insulation	Manual / Robot / Roller Coater / Bead application	Felt, carpet, metal body, different plastic	Creep resistance up to 110°C, good adhesion to different surfaces

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to learn more about our portfolio for automotive interior lamination.



GOOD TO KNOW ...

Steering wheel lamination is typically done manually. Water based dispersions are a sustainable alternative to solvent based adhesives. It can be dried and activated in one step with a hot air gun. For brand logo bonding, many different adhesives can be used depending on the process.

WATER BASED DISPERSION

PRODUCT	APPLICATION	PROCESS	SUBSTRATES	BENEFITS
<u>AQUENCE PL 1506</u>	Steering wheel lamination	Manual, brush or spray gun	Leather, synthetic leather	Drying and reactivation in one operation

MS POLYMER / 2C PU POLYMER

PRODUCT	APPLICATION	PROCESS	SUBSTRATES	BENEFITS
<u>TEROSON MS 9120</u>				
<u>TEROSON MS 647 (1c or 2c)</u>	Emblem bonding	Manual / Robot	PC-ABS, coating, ABS	Wide adhesion range, elastic Fast curing
<u>TEROSON PU 6700 ME</u>				

PLEASE CONTACT US

to learn more about our portfolio of water-based adhesives for the APAC region.



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