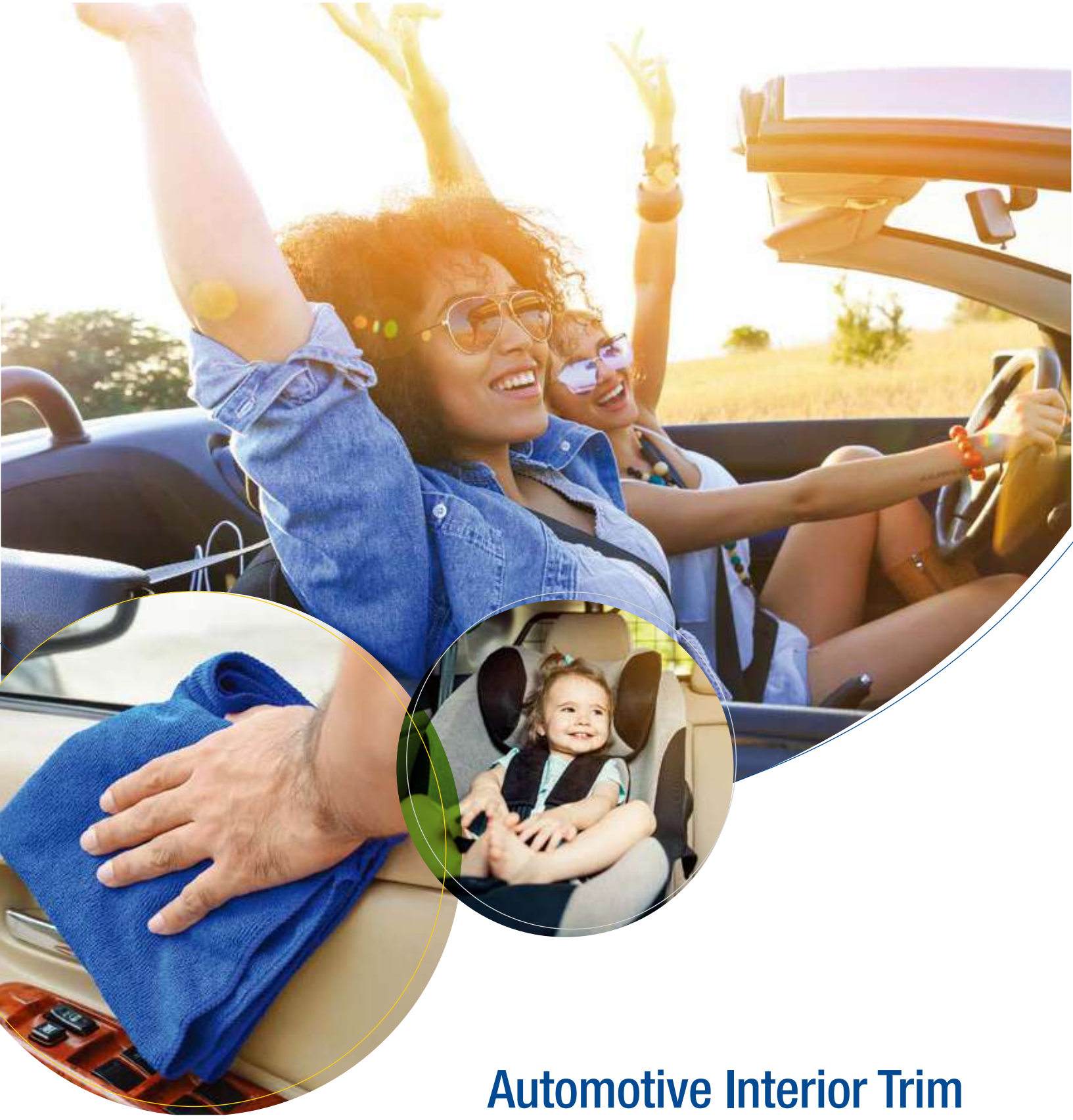


Automotive Interior Trim Asia Pacific Product Guide

H.B. Fuller | Engineering Adhesives

We've got you covered

Whether you're vacuum laminating door panels or manually wrapping instrument panels, we've got you covered with unique technologies and are your partner for value-added, high-performance solutions from concept to commercialization.

As a leading global innovator and supplier of interior trim lamination adhesives, H.B. Fuller has technology and products to ensure efficient, reliable manufacturing processes and aesthetically pleasing, durable bonds. Our broad range of high-performance reactive and thermoplastic hot melt, water-based and solvent-based adhesives help address your leather, synthetic or composite bonding challenges.

Our team of experts is committed to the advancement of automotive interior trim adhesives. The demands of lightweighting, safety, durability and comfort come together in the vehicle interior, and H.B. Fuller offers the most complete set of solutions available. Our automotive interior adhesives help you minimize process space, time and complexity, providing tools to reduce costs and maximize return on capital.

Our products are globally recognized and offer a promise of safety, reliability and performance. Low-volatile organic compounds (VOC), high-temperature resistance, short cycle times, low-activation temperatures and adhesion to a broad range of substrates ensure the lowest possible cost in use. State-of-the-art low-VOC and low-isocyanate adhesives keep you ahead of increasing consumer and manufacturer demands for safer, cleaner driving and working environments. Even under extreme heat conditions, our hot melt adhesives for interiors can reduce or even eliminate volatile organic compounds to attain safe, stable levels.

For more information, please visit : **www.hbfuller.com**
or scan the QR code.

Auto Interior Trim

Engineering Adhesives

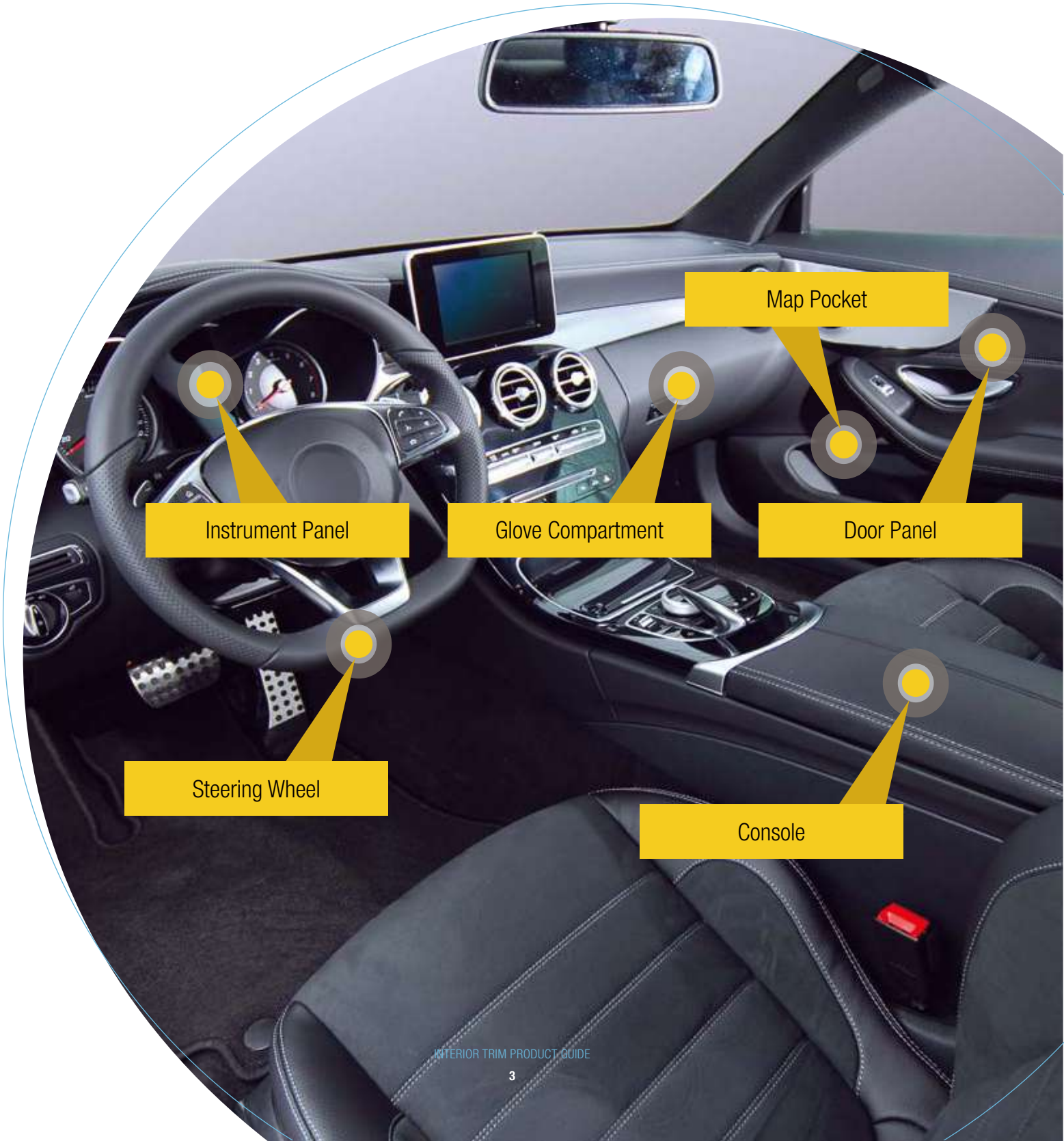
Engineering Adhesives APP

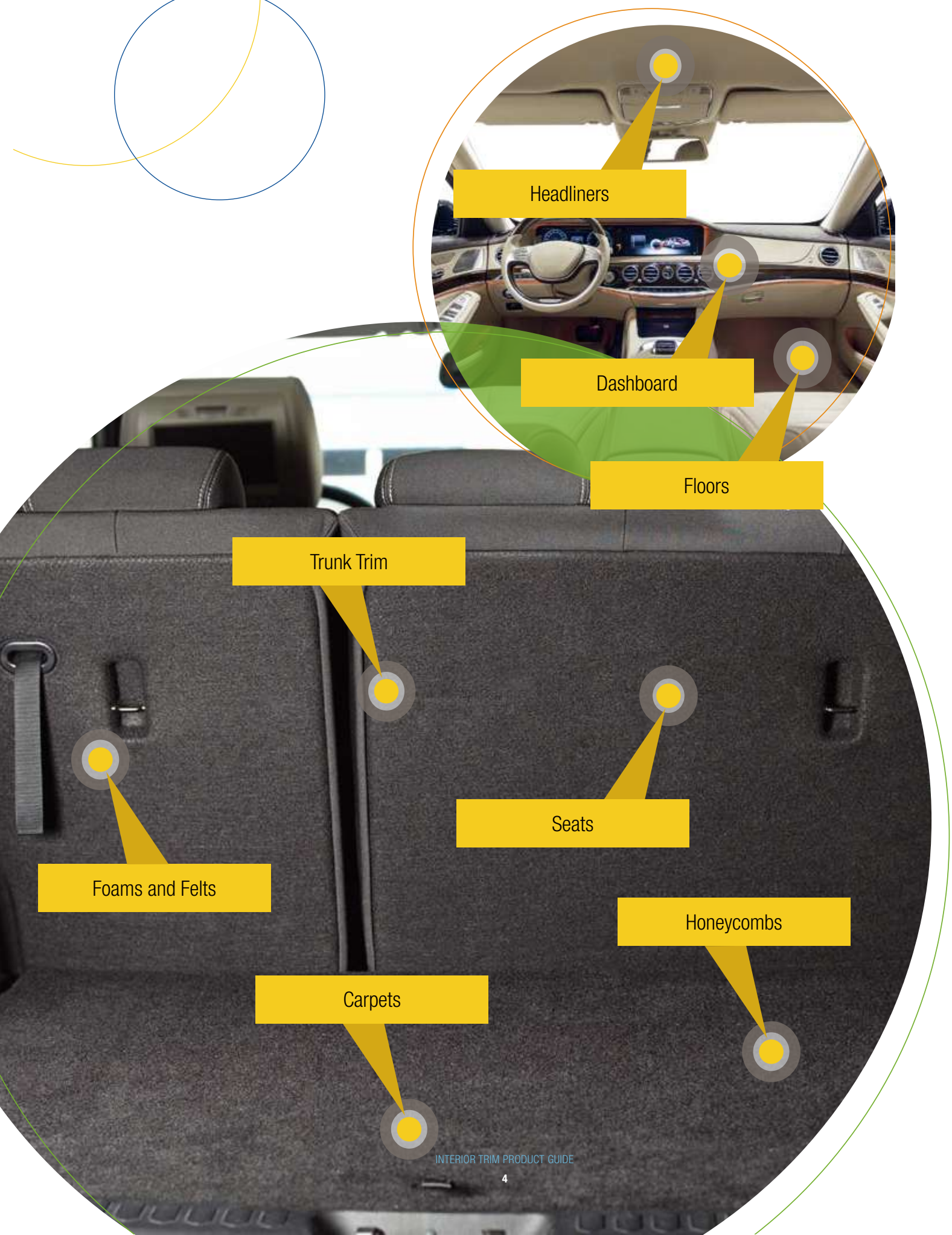
FLEXIBLE SUBSTRATES

Textile and textile-backed foam
Natural and artificial leather
TPO, primed and unprimed
PVC and PVC-backed foam
Spacer fabrics
Foam and felt

CARRIERS

Wood and composite wood
Polyurethane honeycomb
Polypropylene and NFPP
ABS and PC/ ABS




Headliners
Dashboard
Floors
Trunk Trim
Seats
Foams and Felts
Honeycombs
Carpets

Hot Melt

As a long leader in hot melt technologies, H.B. Fuller offers a full product line of hot melt moisture-curing polyurethane, reactive polyolefin, and thermoplastic polyolefin hot melts. Our manufacturing and formulating know-how allows us to bring you durable bonding solutions for your most challenging laminations and assemblies. Recent technological advancements have resulted in products that enhance processing speed, worker safety and substrate-specific adhesion-most notably on untreated polypropylene and ABS.

Swift®lock 2009, a reactive polyolefin that bonds to untreated polypropylene and ABS, sets a new standard in hot melt technology for speed of heat resistance and strength development. Rapid curing gives you the peace of mind to operate in just-in-time mode, knowing that parts have reached the ultimate OEM performance requirements of your OEM customers before they leave your factory.

Swift®lock 2077-XX, family are moisture curing polyurethane hotmelt's offering a wide range of viscosity, open time and activation energy to cover any specific bonding process needs for Interiors customers. Suitable for being sprayed, roll coated and slot died, any product of this family is providing high initial strength and heat resistance while showing excellent peel resistant and lasting bonding.

Swift® therm 2290-X, family are a thermoplastic olefin hotmelt's offering a wide range of viscosity, open time and softening point to cover any specific bonding process needs for Interiors customers. This family provide excellent bonding, not only on non-polar surfaces like untreated Polypropylene or Polyethylene, but also on polar surfaces such as ABS. Suitable for being pre-applied on TPO and PVC foils back foamed, as well as die cut textile and PVC back foamed pieces, simplifying customers processes and reducing their inventories levels. Products from this family provide high initial strength and heat resistance while presenting reduced VOC's and odor values.

Swift®therm 2699, a thermoplastic polyolefin hot melt, is another robust option for bonding untreated polypropylene and ABS. Suitable for both slot die and roll coating, the extended shelf life and easy reactivation make pre-application of **Swift®therm 2699** months in advance of lamination not only a possibility but also an economical choice for high-speed vacuum lamination processes. Best of all, **Swift®therm 2699** is a clean, thermoplastic material with low-VOC emissions.

Swift®melt 2873, a thermoplastic pressure sensitive, APAO based, hotmelt suitable for press lamination processes in acoustic soft trim components. **Swift®melt 2873** is providing high initial strength, shear and heat resistance while presenting reduced VOC's and odor values.

Reactive Hot Melt Bonding Solutions

Product	Technology	Vacuum Lamination	Press Lamination	Premium Lamination	Attachments	Description
Swift®lock 2003	Polyolefin Reactive	●	●			Robust performance on untreated polypropylene, general lamination
Swift®lock 2009	Polyolefin Reactive	●	●			Fast curing, with premium performance and strength on untreated polypropylene and ABS
Swift®lock 2077 XX	Polyurethane Reactive	●	●	●	●	Several viscosity, open time and activation energy options are available (versions HV, LV, YF). Excellent bonding performance
Swift®lock 2028	Polyurethane Reactive	●	●			High-initial strength and bonding performance, suitable for high-energy processes
Swift®lock 2028-1	Polyurethane Reactive	●	●			Lower activation temperature than Swift®lock 2028, excellent for low-energy processes
Swift®lock 2682	Polyurethane Reactive		●	●		Excellent spray properties, low-activation temperature, fast curing
Swift®lock 2083	Polyurethane Reactive		●	●		Lower activation temp. with high initial strength, good for premium lamination
Swift®lock 2U464	Polyurethane Reactive	●	●		●	High viscosity, high initial strength and high temperature resistanceSutable for textile and foam materials to be lamination
Swfit®lock 2876	Polyurethane Reactive		●			Specially developed for Laminate Construction (back foam bonding with textiles and PVC parts)
Swift®lock 2097-1	Polyurethane Reactive	●	●			Short open time and suitable for roller coating
Swift®lock 2319	Polyurethane Reactive		●			Cost effective high initial strength PUR for AST lamination
Swift®lock 2377	Polyurethane Reactive		●			Cost effective solution with short open time, recommended for acoustic soft trim applications
Swift®lock 2902	Polyurethane Reactive		●		●	Good adhesion on metal substrate

● Recommended ● Suitable

Thermoplastic Hot Melt Bonding Solutions

Product	Technology	Vacuum Lamination	Press Lamination	Preminum Lamination	Attachments	Description
Swift®therm 2290-X	Polyolefin Thermoplastic	●	●		●	Several viscosity, open time and softening points options are available (versions 1 and 2). Excellent bonding performance suitable for being pre-applied with low VOC's and odor values
Swift®therm 2699	Polyolefin Thermoplastic	●	●		●	High heat resistance for untreated polypropylene and ABS, suitable for preapplication, low-VOC emissions
Swift®therm 2190	Polyolefin Thermoplastic		●			Cost effective solution with long open time, suitable for acoustic soft trim applications
Swift®melt 2871	Rubber		●			Premium performance pressure sensitive specially developed for acoustic soft trim applications
Swift®melt 2873	Polyolefin Thermoplastic		●		●	APAO based PSA hotmelt, premium performance with heat resistance and better wetting property

● Recommended ● Suitable

Cleaning Materials

Product	Form	Distribution
Swift®clean 2017	Pellets	Purge, hot melt reactives, high viscosity
PUR-C60	Powder	Roller cleaner
NP2038	Pellets	Purge for any hot melt, high viscosity, transparent

Water-based

Built on the foundation of **Thermonex® 063-05A** , the industry standard for performance and reliability in interior trim lamination, H.B. Fuller's complete line of water-based dispersions and global manufacturing network has you covered wherever you are. From highly automated vacuum lamination to meticulously constructed manual processes, H.B. Fuller has the right water-based solution for your substrate, performance and manufacturing requirements.

Our spirit of innovation and unwavering focus on better solutions for our customers is evident by our growing product portfolio.**Thermonex® 073-05A** represents the beginning of the next generation of laminating adhesives, combining performance and processing advantages to offer unprecedented value for vacuum, press and premium lamination.

Processing speed and performance enhancements are achievable across the entire product line through **Thermonex®hardener 007B.** The combination of a **Thermonex®resin** and **Thermonex®hardener 007B** provides faster curing and higher ultimate strength than other commonly used hardeners when applied and evaluated under the same conditions. Look to the combination of **Thermonex® 073-05A** and **Thermonex®hardener 007B**, yielding increased processing speeds and higher performing parts, to see the future of two-component waterbased laminating for automotive interiors.

Thermonex® 090-05 delivers high heat resistance and low-activation temperature and is suitable for pre-application months before lamination. Further, this one-component product eliminates onsite mixing of hardener, bringing simplicity and consistency to the factory floor by eliminating a process step.

Thermonex® 2C2199H- X family are a water-based polyurethane bonding solutions, developed in China, following the Best Practices from the **Thermonex®** product line. A remarkable example is **Thermonex® 2C2199H-8**, an special bonding solution for any PVC substrate, with a medium activation energy, suitable for both automatic bonding and manual edge-folding finishing. Combine with the hardener **Thermonex® Hardener 007B** will provide a increased performance on heat and plasticizer resistance while showing a fast-curing behavior, helping to reduce the inventories.

Water-based Bonding Solutions

Product	Product Type	Vacuum Lamination	Press Lamination	Premium Lamination	Description
Thermonex® 063-05A*	2k		●	●	Premium bonding performance for low-energy processes
Thermonex® 063-12A*	2k		●	●	Roll-coatable version of Thermonex® 063-05A, optimized for porous substrates
Thermonex® 090-05	1k	●	●		Low-activation temperature, suitable for pre-application, simplified handling
Thermonex® 073-05A*	2k	●	●	●	New generation 2k, premium performance for all process types
Thermonex® 2C2199H*	2k	●	●	●	General purpose bonding solution offering a wide process window and superior performance
Thermonex® 2C2199H-8*	2k	●	●		Especially designed for PVC applications, providing excellent performance
Swift®tak 6888*	2k	●	●	●	General purpose and cost effective bonding solution suitable for all Interiors processes. Balanced performance
Swift®tak 3859*	2k	●	●		Excellent hydrolysis resistance 2K water-based adhesive, suitable to laminating PVC foil
Swift®tak 3128-05*	2k		●		Designed for headliners lamination and medium energy processes, is offering a high initial strength and heat resistance with a low activation energy
Swift®tak 1899	1K		●	●	One-component, thermosetting bonding solution offering excellent brushability and low activation energy with excellent performance. Recommended for steering wheel laminations
Swift®tak 3900	2K		●	●	2K water-based adhesive for bonding normal PU foam in Steering Wheel lamination
Swift®tak 1901	1k		●		Cold & Wet-contact solution designed for acoustic soft trim applications bonding textiles, non-woven and Polyurethane foams
Swift®tak 1605	1k		●		Water-based PSA, excellent green strength, good creep resistance, good adhesion on wide range of substrates
Swift®tak 2C1200 H	1k		●	●	Cold-contact Polychloroprene bonding solution with low viscosity and high initial strength, recommended for Polyurethane foams repairment and non-woven bondings

*Use in conjunction with Thermonex® hardener or Swift® hardener for thermosetting performance

● Recommended ● Suitable

Hardener Portfolio

Product	Description
Thermonex® hardener 006B	Blue, general purpose
Thermonex® hardener 007B	Blue, enhanced speed and performance
Thermonex® hardener 012B	Light grey, general purpose
Swift®hardener 9338B	Blue, general purpose, Chinese local production
Swift®hardener 9338N	Transparent, general purpose, Chinese local production
Swift®hardener 9319N	Improve performance of bonding strength, heat and hydrolysis resistance as thermosetting with water-based A-component

Solvent-based

Whether you are edge folding, priming or laminating in vacuum, press, or premium processes, H.B. Fuller's diverse line of solvent adhesives has the right solution for you. Our polyurethane, neoprene and pressure sensitive products are built on clean solvents that are low emitting and BTX-free. Decades of proven reliability, ease of application, process consistency and high performance characterize our solvent adhesives and primers for interiors.

Application know-how complements our extensive compounding and manufacturing abilities. H.B. Fuller engineers are ready to support you wherever auto parts are made. We'll help you select the optimum adhesive, hardener and primer package to deliver the results you need on TPO, leather, PVC, foams, felts and plastics including untreated and fiber-filled polypropylene, carpets, textiles and spacer fabrics.

An exciting option in the world of solvent-based solutions is **Swift®col 1911**. Based on neoprene and offering the toughness and performance expected of this chemistry, it bonds to untreated polypropylene. This combination of properties yields robust, streamlined performance and processing while eliminating the need for surface pretreatment. Suitable for any Interior Trim process the product is also offering the lowest values in VOC's and odor.

Solvent-based Bonding Solutions

Product	Chemistry	Vacuum Lamination	Press Lamination	Premium Lamination	Edge Folding	Priming	Attachment	Description
Swift®col 2607-3*	Polyurethane	●	●	●				Versatile, "all-in-one" adhesive, BTX-free, low-VOC emissions
Swift®col 2607-4*	Polyurethane		●	●				BTX-free, very low-activation energy, low-VOC emissions
Swfit®col 2496*	Polyurethane	●	●	●				Versatile, "all-in-one" adhesive, BTX-free, low-VOC emissions, being a fast drying processing adhesive
Swfit®col 2142CN*	Polyurethane		●	●				Designed for Premium laminations with long open time and low activation energy
Swift®col 1911	Polychloroprene	●	●	●		●	●	BTX-free, suitable for bonding untreated polypropylene substrate
Isarcoll 5109	Polychloroprene			●				Recommended for steering wheel bonding application

*Use in conjunction with Swift®hardener

● Recommended ● Suitable

Primers

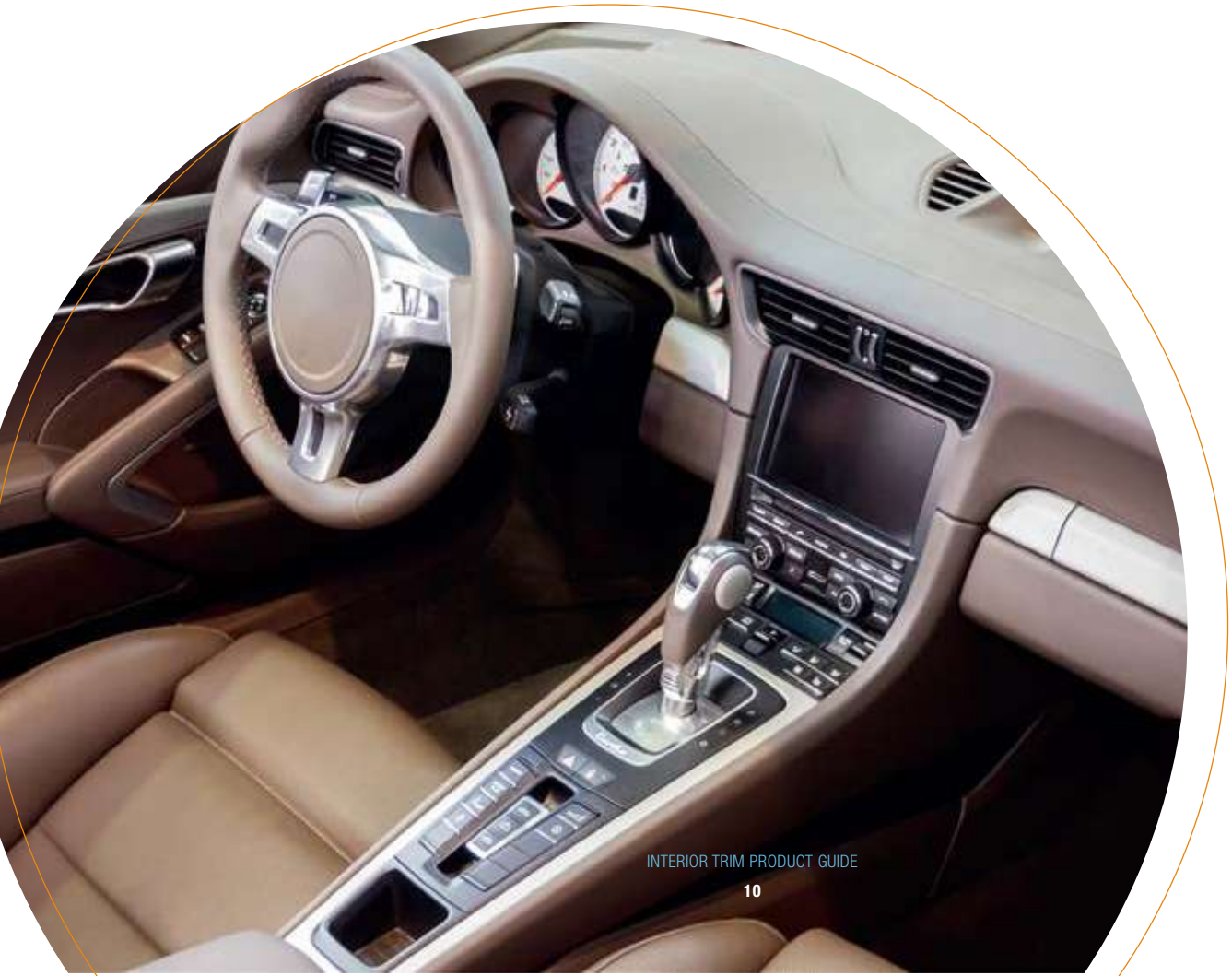
Our solvent-based primers offer surface treatment specially developed to provide the highest bonding performance when using the **Swift®col, Swift®tak** and **Thermonex®** polyurethane products on low surface energy substrate applications, especially untreated polypropylene. Both solvent-based and water-based technologies are available on the **Swift®prime** portfolio.

Product	Key Attributes
Swift®prime 2599	High-performance primer for untreated polypropylene, BTX-fee
Tonsan® 1779	Cost effective solvent-based primer for untreated polypropylene
Swift®prime VP 509/51	High-performance primer for coating TPO and PVC foils
Swift®prime 1163	Water-based primer suitable for untreated polypropylene and polyethylene

Hardener Portfolio

To obtain better bonding properties, our **Swift®col** portfolio can be used in addition with a hardener component. No hardener is needed for our one-component neoprene solutions.

Product	Curing Time	Description
Swift®hardener 9151	Slow	100 parts adhesive : 6 parts hardener
Swift®hardener 9133	Slow	100 parts adhesive : 6 parts hardener
Swift®hardener 9553	Medium	100 parts adhesive : 10 parts hardener
Swift®hardener 2541	Fast	100 parts adhesive : 3 parts hardener



Liquid Polyurethane

H.B. Fuller's reactive liquid Polyurethane technology offers the possibility of very high daily production rates for the Interior trim lamination processes. Both the solvent-free and low emitting, BTX-free, solvent-based **Swift®bond** portfolio give proven reliability and high performance bondings. Formulations are optimized for Headliner laminations, Acoustic Soft Trim (AST) laminations and Flocking processes to deliver high efficient and the possibility of using the H.B. Fuller's catalysts selection allows to exactly adjust the process speed to each individual expectation. H.B. Fuller engineers application know-how will help you fine-tuning your bonding process while our global manufacturing capabilities will simplify your logistics and supply chain.

Lamination process are boosted when using **Swift®bond 2846**, or its black pigmented version **Swift®bond 2845-Black** for dark substrates. Extremly high production rates are possible by minimizing the bonding process with the **Swift®bond** technology. Complete curing occurs in a few hours giving the chance of shipping final parts the same day of the production. The high solid content from **Swift®bond 2846** will minimize the overall adhesive consumption.

Liquid PU Bonding Solutions

Product	Headliners Construction	Headliners Lamination	Press Lamination	Description
Swift®bond 2800 PR	●			Solvent and catalyst free. Very fast processing and curing with high stiffness
Swfit®bond 9C1800	●			Solvent and catalyst free, lower odor, fast curing, recommend for headliners application
Swfit®bond 1505		●		Solvent and catalyst free, recommended for headliners lamination
Swfit®bond 2846 PR*		●	●	45% solid content. BTX-free. Extremely fast processing and curing. Black version available
Swfit®bond 2845 Black PR*			●	High initial strength, recommended for AST bonding application

*To be used with a catalyst

● Recommended ● Suitable

Catalysts

To obtain the speed of the bonding process and curing profile to the exactly needs of each individual circumstance our **Swift®bond** portfolio could be used in addition of a catalyst component. Catalyst are not making part of the final performance of the bonding.

Catalyst Portfolio

Product	Description
Swift®hardener 2005	Metallic catalyst
Swift®hardener 2003	Aminic catalyst

Flocking Solution

Product	Key Attributes
Swfit®bond 2701*	Flocking adhesives solution
Thermonex® 080-02**	Cost effective, water-based flocking adhesives solution
Swift®tak 34021**	Water-based flocking solution with excellent scratch-resistance performance

*To be used with Swfit®hardener 9532

** To be used with Thermonex®hardener

H.B. Fuller

For more information about our company, visit **www.hbfuller.com**.

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IMPORTANT: It is the user's responsibility to test and determine the suitability of a product for the user's intended use. Any product samples provided for testing are provided in accordance with standard limited warranties as stated on our technical data sheets.