Automotive Interior Trim Americas 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 we offer 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.

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
Carpet

CARRIERS

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

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 reactive 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®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®lock 2039 DEV, a moisture-curing reactive polyurethane hot melt, provides a long-sought solution for the challenge of reliably bonding PVC foil to ABS carriers. With heat resistance up to 250°F/120°C for this substrate combination, Swift®lock 2039 DEV is ready for the most demanding interior applications.
Swift®lock 2682, another moisture-curing reactive polyurethane hot melt, is used for precision lamination and is especially suited for premium interiors. Excellent spray properties, long open time and high heat resistance make this product a top choice for leather and artificial leather laminated parts when precision lamination and high heat resistance are required. The rapid cure rate of Swift®lock 2682 allows users to ship high-value premium parts more quickly and reduces finished goods inventory.

Regulatory initiatives around worker safety led to our development of **Swift®lock 2029,** a low-residual isocyanate adhesive hot melt moisture-curing polyurethane. This general-purpose lamination adhesive offers solid, reliable performance while meeting the European H351 label-free standard for isocyanates.

Hot Melt Bonding Solutions

Product	Technology	Vacuum Lamination	Press Lamination	Premium Lamination	Attachments	Description
Swift®lock 2003	Polyolefin Reactive	Suitable	Recommended			Robust performance on untreated polypropylene, general lamination
Swift®lock 2009	Polyolefin Reactive	Recommended	Suitable			Fast curing, with premium performance and strength on untreated polypropylene and ABS
Swift®lock 2028	Polyurethane Reactive	Recommended	Suitable			High-initial strength and bonding performance, suitable for high-energy processes
Swift®lock 2028-1	Polyurethane Reactive	Suitable	Recommended			Lower activation temperature than Swift®lock 2028, excellent for low-energy processes
Swift®lock 2039 DEV	Polyurethane Reactive	Recommended	Suitable			PVC foil to ABS carrier lamination, heat resistance up to 250°F/120°C
Swift®lock 2681	Polyurethane Reactive	Recommended	Suitable			Excellent spray properties, high initial strength and bonding performance for high-energy processes
Swift®lock 2682	Polyurethane Reactive		Suitable	Recommended		Excellent spray properties, low-activation temperature, fast curing, low isocyanate
Swift®therm 2003NA	Polyolefin Thermoplastic				Recommended	High heat resistance, cost effective solution for attachments with short open time
Swift®therm 2103NA	Polyolefin Thermoplastic				Recommended	High heat resistance, cost effective solution for attachments with long open time
Swift®therm 2699	Polyolefin Thermoplastic	Recommended	Recommended			High heat resistance for untreated polypropylene and ABS, suitable for preapplication, low-VOC emissions
Rapidex™ NP2075T	Polyurethane Reactive				Recommended	Very high-initial strength for attachment, fast-curing

Recommended Suitable

Water-Based

Built on the foundation of **Thermonex® 063-05A**, the industry standard for performance and reliability in interior trim lamination, our 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 water-based 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.

Water-Based Bonding Solutions

Product	Product Type	Vacuum Lamination	Press Lamination	Premium Lamination	Description
Thermonex® 3820-07A*	2k	●	●		Premium bonding performance for high-energy processes
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® 073-05A*	2k	●	●	●	New generation 2k, premium performance for all process types
Thermonex® 115-02A*	2k	●	●	●	Balance of performance and economics
Thermonex® 3086A*	2k			●	Cold contact adhesive for premium lamination
Thermonex® 090-05	1k	●	●		Low-activation temperature, suitable for pre-application, simplified handling

*Use in conjunction with Thermonex®hardener for thermosetting performance

● Recommended ● Suitable

Hardener Portfolio

Product	Description
Clearbond™ Thermonex®hardener 100B	Clear, general purpose
Thermonex®hardener 006B	Blue, general purpose
Thermonex®hardener 007B	Blue, enhanced speed and performance

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. Our 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 lamination is **Swift®col 2511**. 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.

Solvent-Based Bonding Solutions

Product	Chemistry	Vacuum Lamination	Press Lamination	Premium Lamination	Edge Folding	Priming	Attachment	Description
Swift®col 2607-02*	Polyurethane	●	○					BTX-free solution with low-VOC emissions, suitable for high-energy processes
Swift®col 2607-03*	Polyurethane	○	●	○				Versatile, "all-in-one" adhesive, BTX-free, low-VOC emissions
Swift®col 2607-04*	Polyurethane		○	●				BTX-free, very low-activation energy, low-VOC emissions
Swift®col 2511	Polychloroprene		●	○	●	●	●	BTX-free, high performance on untreated polypropylene, cold contact
Swift®col 2035	Polychloroprene		○		●	○	●	BTX-free, high performance on polar materials, cold contact
Swift®col 5109NA	Polychloroprene		○		●	○	●	BTX-free, high performance on polar materials, cold contact, higher viscosity

*Use in conjunction with Swift®hardener

● Recommended ○ Suitable

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	Mixing ratio, weight basis
Swift®hardener 2541	Fast	100 part adhesive: 3 parts hardener

Primers

Our solvent-based primers offer surface treatment specially developed to provide the highest bonding performance when using the Swift®col and Thermonex® polyurethane products on low surface energy substrate applications, especially untreated polypropylene.

Product	Key Attributes
Swift®prime 2599	High-performance primer for untreated polypropylene
Swift®prime VP 509/51	High-performance primer for coating TPO and PVC foils

Liquid Polyurethane

H.B. Fuller's Reactive Liquid Polyurethane (PU) technology offers the possibility of very high daily production rates for the interior trim lamination processes. The solvent-free **Swift®bond** portfolio gives proven reliability and high performance bondings. Formulations are optimized for headliner laminations and flocking processes to deliver high efficiency. Using our catalysts will also allow the exact adjustment of processing speeds for each specification. Our experienced application engineers will help you fine-tune your bonding process while our global manufacturing capabilities will help simplify your logistics and supply chain.

Liquid PU Bonding Solutions

Product	Headliners Construction	Flocking	Description
Swift®bond 3U012	●		Solvent- and catalyst-free. Very fast processing and curing with high stiffness
Swift®bond 2U010*	●		Solvent-free. Reliable two component solution for headliners construction.

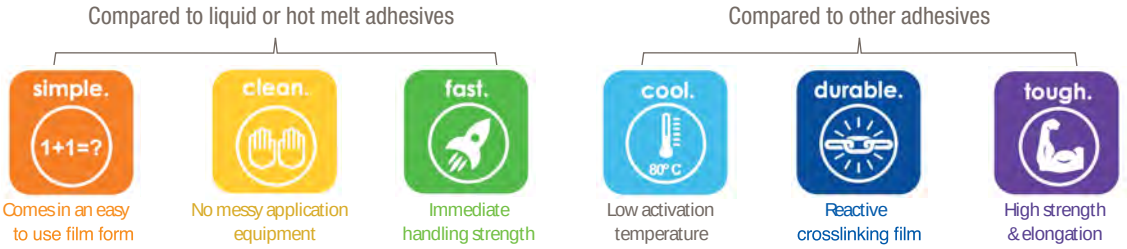
* Use with catalyst Swift®hardener 22014

● Recommended ● Suitable

Flexel™

Flexel™ is a new approach to bonding in Interior Trim. This game-changing technology is based on a fully thermoset adhesive system presented in a film format that can be pre-cut. Although being a thermosetting system, the film can also be pre-applied to the substrate and the set can be stored for months before being used in the final application.

Flexel™ reactive film adhesives from H.B. Fuller provide an advanced alternative to thermoplastic film, hot melt and liquid adhesives.



Product	Chemistry	Description	Color	Recommended Substrates	Tacking Temperature	Typical peel strength on polycarbonate (N/25 mm)	Typical peel strength on SUS 304 (N/25 mm)
Flexel™ FN1000	RFA	• Low activation temperature • High strength and elongation • Good heat and chemical resistance	Milky White	Plastics Textiles Leather	45 – 55	65 – 70	35 – 40
Flexel™ FN2100	RFA	• Best adhesion to metal • Low activation temperature	Milky White	SUS, Aluminum, Plastics, Textiles, Leather	45 - 55	70 – 75	70 – 75

Thickness	25 µm (1.0 mil)	50 µm (2.0 mil)	75µm (3.0 mil)	100 µm (4.0 mil)
Roll Length	200 m (656 ft)	150 m (492 ft)	125 m (410 ft)	125 m (410 ft)

Standard Roll Widths are 1.3m (51.2") and 0.25m (9.8")

Cleaning Materials

Product	Form	Distribution
Swift®clean 2U373	Flake	Roll cleaner, for hot melts
Swift®clean 9037	Bulk / Pellets	Purge, polyurethane reactives
Swift®clean 2U011-N	Liquid	Roll cleaner for liquid moisture cures
Swift®clean 2460	Liquid	Purge for liquid isocyanates in automated mixing systems
Swift®clean 9050	Liquid	All purpose spray cleaner for thermoplastic hot melts and uncured or partially cured reactive materials

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.

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