



System Solutions for Trailer Manufacturing



H.B. Fuller



KÖMMERLING



System Solutions for Higher Performance

BENEFITS OF ADHESIVE TECHNOLOGIES IN MODERN VEHICLE CONSTRUCTION

TRAILERS

Energy-efficient vehicles need to meet stringent requirements. To enable their fulfilment, we rely on technically sophisticated customer-specific solutions. The result are innovative products that already make welding, bolting and riveting unnecessary in many cases today. On the one hand, our products help to improve the noise dampening in vehicles like trucks and trailers. And on the other hand they also ensure a weight reduction that is immediately reflected in lower fuel consumption – and thus in the preservation of natural resources. Designed for more efficient transport, our products hence ultimately also benefit nature.

BENEFITS

Cost Savings	Added Value	Design
<ul style="list-style-type: none">+ Lower fuel costs through weight reduction+ Lower manufacturing costs by reducing the number of process steps+ Lower repair costs, fewer down-times thanks to reduced corrosion, etc.+ Lower long-term investment costs thanks to greater longevity	<ul style="list-style-type: none">+ Enhanced functionality+ Greater comfort+ Moisture-proof+ Noise dampening inside and outside+ Safety+ Reduction of emissions+ Lightweight+ Energy savings	<ul style="list-style-type: none">+ Improved look+ Greater freedom in the design+ Multi material mix

TECHNOLOGY IN TRAILER MANUFACTURING

The conveyance of temperature-controlled freights is one of the most exacting tasks in transport. Key requirements to be unfailingly met include the integrity of the conveyed goods, high standards in the area of hygiene, and precise temperature specifications - a task that can only be managed by effectively insulated refrigerated vehicles.

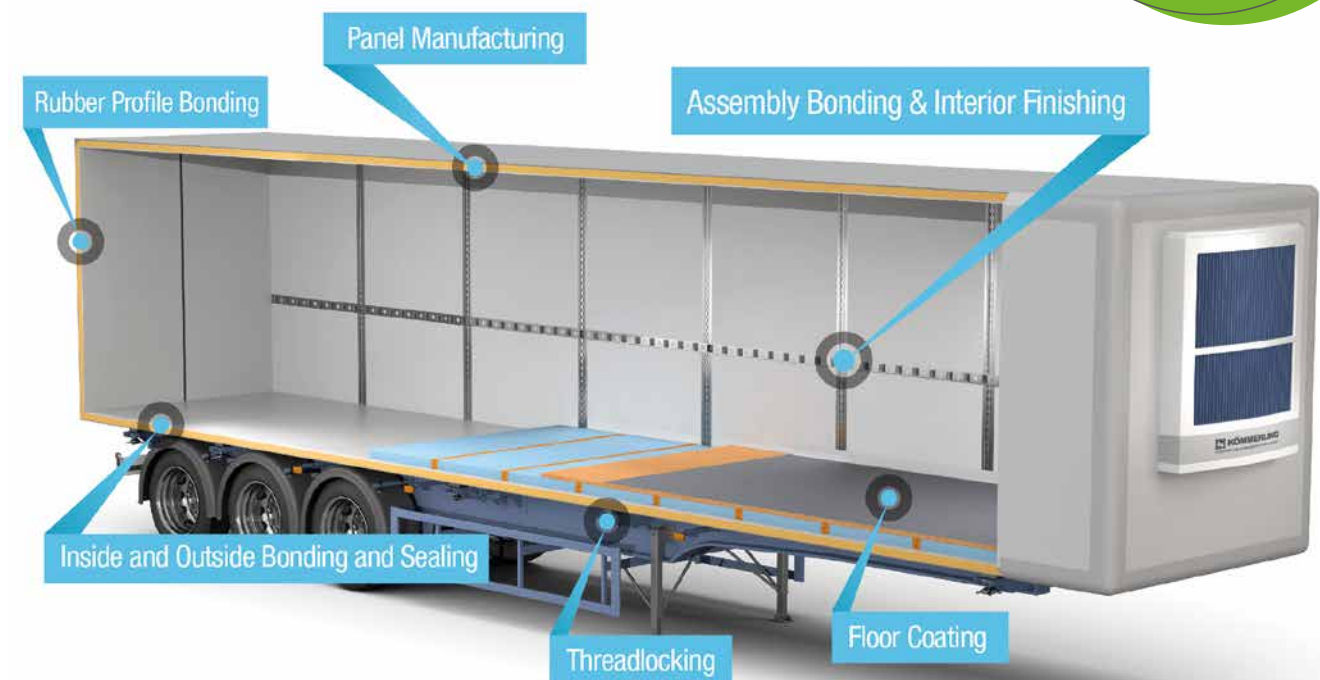
Refrigerated trailers are exposed to high mechanical stress throughout their lifetime. This includes the heavy weight of the freight, as well as the constant vibrations generated in operation. To save fuel, trailers need to have the lowest possible net weight, but without compromising their stability at the same time. H.B. Fuller and its affiliates KÖMMERLING and Cyberbond provide high-performance adhesives that optimally master all these requirements.

Adhesive applications in modern commercial vehicles are multi-layered and also highly customized in many cases. With the right adhesive consultant by your side, your optimal solution will be found for all relevant tasks.

From panel and composites manufacturing and floor coating to assembly bonding and interior finishing, our products have been extensively applied to commercial vehicle manufacturing and maintenance to meet the requirements on safety, reliability, noise reduction, lightweight, vibration reduction, and more. Learn more about how we deliver superior expertise in adhesives for trailer manufacturing.

Our philosophy in this respect is to cater to the specific wishes and possibilities of the trailer manufacturer and come up with adhesives that are tailored to the respective bonding process. Ever since our establishment more than 130 years ago we have continually set milestones in modern bonding and sealing by the development of new technologies, making us one of Europe's leading adhesive suppliers for commercial vehicles.

APPLICATIONS



RECOMMENDED TECHNOLOGIES

2-K Polyurethane Reaction Adhesives | Körapur

Solvent-free, 2-component polyurethane-based reaction adhesives that will harden at room temperature for bonding a great variety of surfaces such as wood-based materials, GFRP, untreated, primed and painted steel and aluminium sheets, many plastics and foams cores based on PUR, PS or PVC.

Körapur 2-component products consist of a resin and a hardening component that are mixed at a fixed ratio, whereupon they will harden into structural or semi-structural adhesives, irrespective of the humidity, that are also particularly suitable for applications involving large surfaces.

1-K Polyurethane Reaction Adhesives | Körapur, Icema™

Polyurethane-based 1-component reaction adhesives that will harden at room temperature for bonding and sealing a great variety of materials such as wood-based materials, GFRP, untreated, primed and painted or anodized metals, as well as many plastics.

1-component PUR products react with moisture to form elastic adhesives and sealants that are in particular applied where different thermal length expansions require permanent compensation.

1-K Silane-Terminated (Polymer) Reaction Adhesives | Körapop

Solvent-free 1-component reaction adhesives that are based on silane-terminated polymers and will harden at room temperature for bonding and sealing a great variety of components such as wood-based materials, GFRP, untreated, primed and painted or anodized metals, as well as many plastics.

Körapop 1-component products react with moisture to form elastic adhesives and sealants that are in particular applied where different thermal length expansions require permanent compensation.

2-K Epoxy Resin Coating Systems | Körapox

Solvent-based 2-component coating and primer that will harden at room temperature to form a non-slip surface on a 2-component Körapur base coat as well as aluminium, GFRP and primed sheets of steel.

Körapox 2-component products are in particular applied for vehicles transporting refrigerated food, meat, fish and frozen goods.

Hotmelt Adhesives | Köramelt, Swift®melt

Fast adhesive solution with immediate position tack. Hotmelt adhesives are 100 % solid materials based on different polymers: they do not contain water or solvents and simply melt with heat. Hotmelt adhesives are applied in their liquid state (melted) onto a surface. When the two surfaces to be bonded are pressed together, the heat accumulated in the adhesive disappears quickly and the adhesive solidifies, resulting in an almost instant bond. Hotmelts are differentiated into thermoplastic and reactive hotmelts.

Thermoplastic hotmelts are non-reactive adhesives that become liquid at high temperatures to make it easy to apply and stick parts together quickly.

Reactive hotmelt products are more resistant to high temperatures and, therefore, more durable. The working principle of reactive hotmelt is similar to the thermoplastic hotmelt, as it is also applied once it has been heated and melted but it uses an additional chemical reaction with moisture to build a strong connection that cannot be opened again once it is cross-linked.

Cyanoacrylates | CB

Solvent-free 1-component reaction adhesives, based on cyanoacrylate esters. They react with air humidity and cure by polymerization within seconds at room temperature. To reach optimal results it is important to work with thin adhesive layers and to keep the mating parts as small as possible as the adhesives react very quickly.

Cyanoacrylates are used to bond metals, plastics, wood and elastomers.

RECOMMENDED TECHNOLOGIES

Anaerobics | CB

Solvent-free 1-K reaction adhesives curing in absence of oxygen on metal contact. Therefore anaerobics are only suitable for bonding and sealing metals.

Typical application fields are locking of threads, retaining of threads, shafts, hubs and bearings and sealing of threads.

Methylmethacrylate Adhesives (MMA) | WeldMount AT

Acrylic non-sag adhesives which hold the parts in place on a vertical or overhead surface providing permanent high strength bonds. Our adhesives create structural bonds which provide excellent tensile strength in 20 to 30 minutes.

MMA are ideal for production applications.

Besides the acrylic adhesives our WeldMount System also includes fasteners like wire tie mounts, hose and cable clamps, studs, standoffs, floating nut plates and other mounting solutions which are mounted with our AT adhesives. Our system can be easily installed without extensive training, eliminating the high costs associated with welding or drilling and tapping. For more information please check out our progressive web app!



Just scan the QR code with your mobile device or enter the following link in your browser:
<https://eguide.to/weldmount-eu/>



APPLICATIONS

PANEL MANUFACTURING

Panel-type structures and designs are particularly suitable when it comes to achieving the lowest possible weight for vehicles without compromising their stability. This involves combining various materials such as wood, metal, plastic or composites with a foam core to form side panels, roofs and floors. Conventional assembly methods such as riveting or bolting would lead to the thermal insulation being damaged by deformation or corrosion. The use of adhesives and sealants not only prevents this, but even increases the stiffness while lowering the panel weight, thus improving the insulation.

Körapur range

2-K PUR adhesives

- + Broad range of consistencies from low viscosity to thixotropic formulations
- + Reaction speed individually adjustable within a broad potlife range
- + High tolerance to wood moisture contents of up to +16 %

ASSEMBLY BONDING AND INTERIOR FINISHING

After the sandwich production side panels, front wall, rear door frame, roof and floor are assembled. This is followed by the finishing of the trailer's inside such as the attachment of loading rails, skirting boards or door seals. At the end, the vehicle's inner and outer seams are sealed against water entry. Our adhesives and sealants will safely bond the various materials, are temperature-resistant and weatherproof, compensate different linear expansions, and will keep moisture out for good. Their broad pot life range meanwhile qualifies them for manual as well as automated application.

Körapur range

1-K PUR adhesive

- + Permanently elastic, vibration-damping
- + Can be overpainted after hardening
- + Non-sagging to self-levelling formulations
- + Certified for indirect contact with food
- + Also applicable as 2-component products with accelerator paste

Körapop range

1-K silane-terminated polymers

- + Permanently elastic, vibration-damping
- + Good ageing-, UV- and weather resistance
- + Can be overpainted wet-in-wet
- + Non-sagging to self-levelling formulations
- + Certified for indirect contact with food
- + Also applicable as 2-component products with accelerator paste

Körapur range

2-K PUR adhesives

- + Hard-tough to impact-resistant types with high damping across a broad temperature range
- + Reaction speed individually adjustable within a broad pot life range
- + High stability

Icema™ range

1-K PUR liquid moisture curing adhesives

- + Solvent free
- + Easy application
- + Broad range of open times

Swift®melt range

Hotmelt moisture curing adhesives

- + High tack
- + Excellent heat resistance



INSIDE AND OUTSIDE BONDING AND SEALING

Whether for design or safety requirements many attachments on trailers need to be bonded or sealed. Our adhesives and sealants for the outside applications offer very good water, weathering and UV resistance. Inside the vehicle many materials are bonded or sealed to absorb vibration and enhance noise dampening. It additionally avoids mechanical fixation.

Körapur range

1-K PUR adhesive

- + Permanently elastic, vibration-dampening
- + Can be overpainted after hardening
- + Non-sagging to self-levelling formulations
- + Certified for indirect contact with food
- + Also applicable as 2-K products with accelerator paste

Körapop range

1-K silane-terminated polymers

- + Permanently elastic, vibration-dampening
- + Good ageing-, UV- and weather resistance
- + Can be overpainted wet-in-wet
- + Non-sagging to self-levelling formulations
- + Hardens with little to no shrinkage in volume
- + Certified for indirect contact with food
- + Also applicable as 2-K products with accelerator paste

FLOOR COATING

Floor coatings need to meet many requirements, even more so in refrigerated vehicles. They need to be hygienically flawless while being easy to clean and also keeping the temperature stable. The frequent loading and unloading with lift trucks or forklifts require high resilience and slip resistance.

For this application, we offer a modular system based on polyurethane and epoxy resins. The products can be flexibly combined in keeping with the requirements for the floor coating.

Base Coat

Körapur range

2-K polyurethane adhesives

- + Especially used for vehicles transporting refrigerated food, meat, fish and frozen goods (tested up to -30 °C)
- + Self-levelling base coating, silica sand-containing sealant
- + Uniform look
- + Usually applicable without primer
- + Certified for indirect contact with food
- + Stacked container for convenient use

Anti-Slip Surface

Körapox range

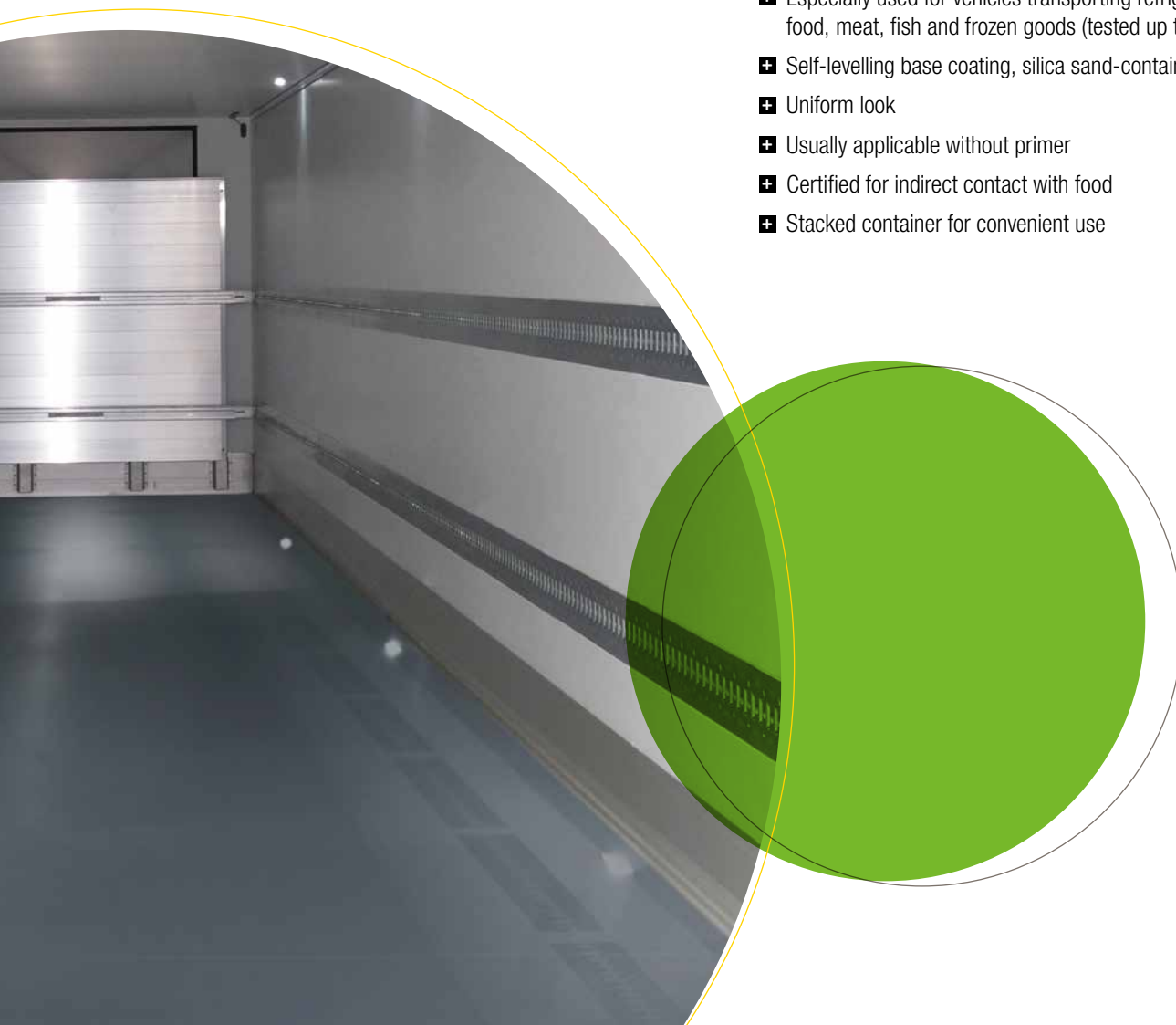
Epoxy resins

- + Especially used for vehicles transporting refrigerated food, meat, fish and frozen goods (tested up to -30°C)
- + Good abrasion resistance
- + Boosts the resistance to chemicals and media
- + Good UV-resistance
- + Low-viscosity and/or silica sand-containing sealant
- + Certified for indirect contact with food
- + Stacked container for convenient use

Körapur range

2-K polyurethane adhesives

- + Especially used for vehicles transporting refrigerated food, meat, fish and frozen goods (tested up to -30 °C)
- + Self-levelling base coating, silica sand-containing sealant
- + Uniform look
- + Usually applicable without primer
- + Certified for indirect contact with food
- + Stacked container for convenient use



RUBBER PROFILE BONDING

Bonding rubber profiles such as corner or all-round door profiles with our Cyanoacrylates or 2-K silane terminated polymers allows to join dissimilar materials quickly without the need for mechanical fixing. It provides further benefits like vibration or interior and exterior noise damping, improved aerodynamic or efficient air-conditioning.

CB range

Cyanoacrylate adhesives

- + Fast setting
- + Flexible adhesives available
- + Several viscosities

Körpop range

2-K silane-terminated polymers

- + Good weather and temperature resistance
- + Excellent moisture resistance

THREADLOCKING, SEALING AND RETAINING

Vibration may cause the self-loosening of threads and consequently lead to liquid or gas leakages. This problem can be solved by applying the Cyberbond T, S or R series for threadlocking, sealing and retaining. The products can easily be applied and protect against rust and corrosion.

T range

Anaerobic curing adhesives

- + Threads, nuts and bolts are secured in the strength classes low, medium and high
- + Different viscosities available

S range

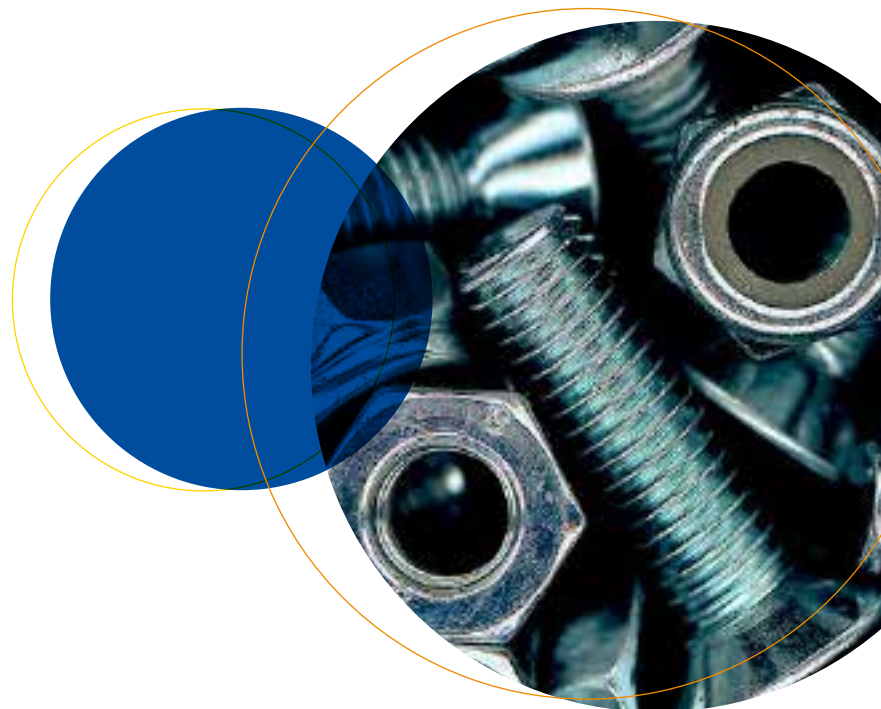
Anaerobic curing adhesives

- + For sealing of joints against various media
- + Prevention of loosening from shock and vibration
- + Protection against rust and corrosion
- + Easy application

R range

Anaerobic curing adhesives

- + Retain cylindrical parts such as bearings, studs, bushes, shaft/collar connections etc.
- + Bridge small gaps
- + Avoid friction corrosion
- + Assembly of parts with different elongation is possible



COMPLEMENTARY PRODUCTS

The reliable adhesion of the glue on the surface of the material is a decisive factor for successful execution. To ensure this, the surface needs to be thoroughly cleaned beforehand. Apart from that, the adhesion between substrate and glue can also be optimized by the application of a primer.

For the pre-treatment of metal and plastic surfaces, we have developed primers and cleaners that are individually tailored to the materials to be bonded, and to our adhesives. This ensures that the products reach their greatest possible effectiveness.

Körabond HG 79

Primer for pre-treating absorbent substrates such as wood or concrete, etc.

Körabond HG 81 / Körabond HG 83

Bonding agent for pre-treating painted surfaces, metals or plastics.

Körabond HG 92 / Körabond HG 93

Moisture-hardening primer for pre-treating stainless steel, aluminium, rigid PVC and GFRP, as well as absorbent substrates such as wood, etc.

Körabond PR 262

Primer for pretreating TPE, PE, PP, EVA and EPDM as base for the subsequent bonding.

Körasolv WL

Cleaner for cleaing of greasy and waxen surfaces.

Körasolv GL

Cleaner for cleaing and degreasing different plastic, metal and glass surfaces.

Körasolv PU

Toluene-free cleaner for cleaning and degreasing different metal surfaces.

Körasolv PR

Toluene-free deluting and cleaning agent and for pre-treatment of CC-metal sheets before application of Körapur adhesives.

Körasolv EC

Cleaning agent to solve fresh adhesive residues, working tool and mixing heads of 2-K mixing and metering machines.



WE ARE YOUR RELIABLE PARTNER

Our competent consultancy in all product selection, process and quality assurance issues is based on decades of experience gained in cooperation with the leading bus manufacturers, and offers a broad foundation for the safe use of the adhesive and sealant technology.

We consider ourselves as a system provider offering not only high-quality products, but also individual consultancy and support services which are tailored to our customers and their needs, from the project planning through to the final realization.

Our superior technologies set us apart. We specialize in the development of custom formulations to meet your specific needs. And as always, we're working to support emerging transportation industry trends with new technologies that enable us to reduce the overall carbon footprint and make a sustainable contribution to weight reduction, air tightness and sound-damping.

Our top priority is individual customer support – which will naturally also include on-site assignments. We will support our clients in the selection of the sealants and adhesives, in the attendant surface preparation, in the project phase, the integration of our products in their manufacturing process, and in their specific quality and production control.

Our Service Portfolio



- + Adhesion and compatibility tests
- + Application training at the processor's site
- + Support for working with independent laboratories for external testing
- + Development of quality assurance programmes





Want to learn more about our adhesive solutions for trailer manufacturing?
Just scan the QR code with your mobile device:



 H.B. Fuller |  KÖMMERLING For more information about our company, visit www.hbfuller.com or www.koe-chemie.com

 Join the Conversation | www.hbfuller.com/connect

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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