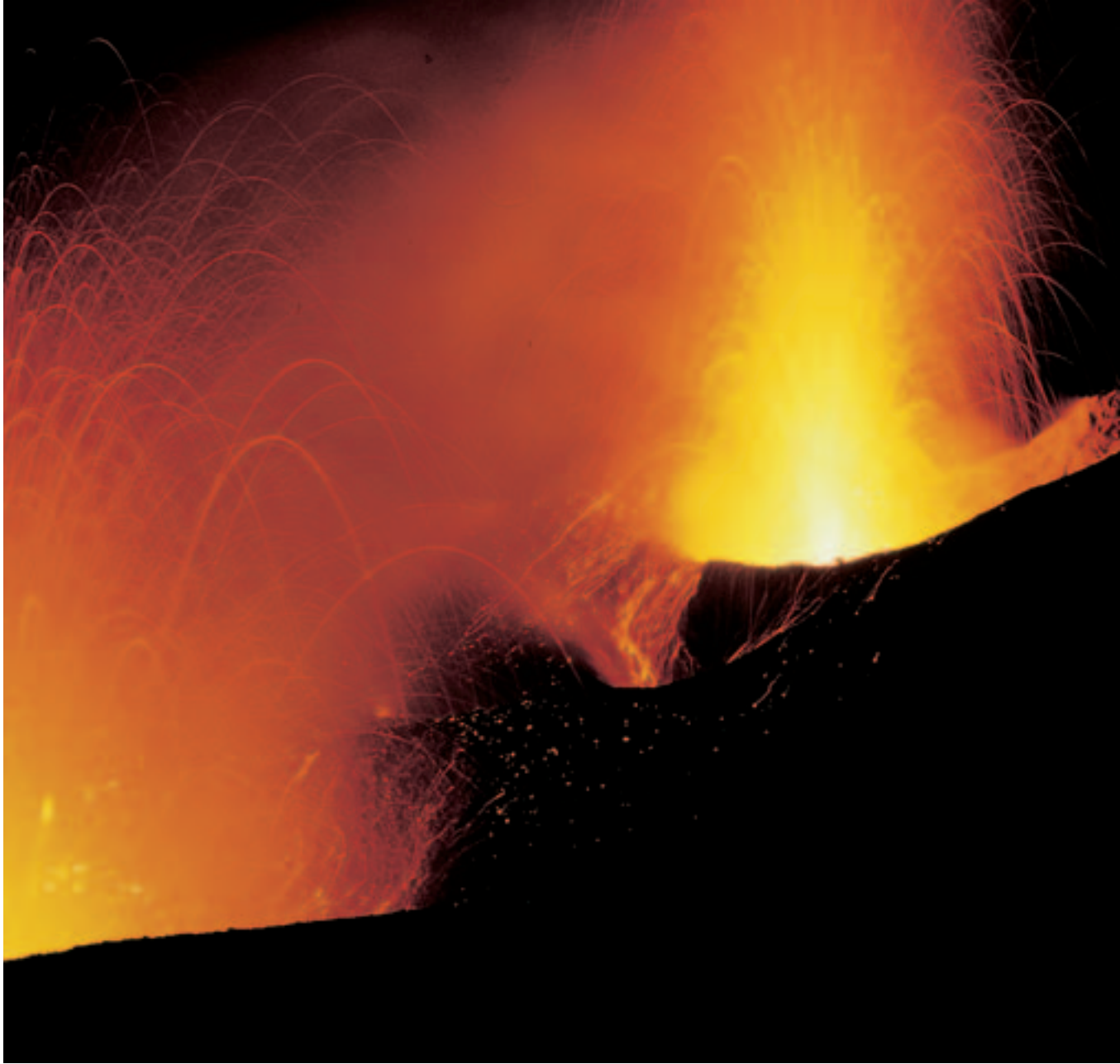


Industry



Hot. Fluid. Fast-acting.
SikaMelt Hotmelt Technology

Sika®

One technology, two solutions

SikaMelt hotmelt technology offers a choice of non-reactive and reactive hotmelt adhesive solutions. The non-reactive products rely on a physical cure mechanism and are based on thermoplastic polymers, while the reactive hotmelts are based on polyurethane prepolymers.

Non-reactive hotmelts

Sika's physically curing hotmelt adhesives are based on modified polyamide (PA), polyester (PES) or polypropylene (PP), depending on the desired performance characteristics. With this range of products Sika can provide an adhesive for virtually every type of substrate in common use. Non-reactive hotmelts are one-component, solvent-free products, which are heated to melting point prior to application. Because they cure by physical means (the material hardens by passing from the molten to the cold, solid state), they are characterized by high early strength.

PSA hotmelts constitute a special category of hotmelt adhesives. "PSA" stands for "pressure-sensitive adhesive", indicating a product whose surface remains permanently tacky.

Reactive hotmelts

Reactive hotmelts combine the properties of hotmelts with those of reactive polyurethanes. The requisite degree of early strength is attained as the material passes from the liquid to the solid state during cooling. In the final stage of curing the polyurethane constituents react with atmospheric moisture to form a tightly crosslinked structure. Unlike the non-reactive hotmelts the adhesive is transformed by this process into an infusible elastomer, making it more resistant to high temperatures.

Sealing refrigerators and chest freezers to prevent escape of insulation foam



Decorative furniture facings



Broad range of applications

The physically curing (non-reactive) hotmelts are typically used to bond plastics, textiles or fibrous materials that are not exposed to extremes of temperature. These include:

- Assembly joints (e.g. air ducts, fresh-air filters, polypropylene components with no surface preparation in vehicle interiors)
- Seals in refrigerators and chest freezers

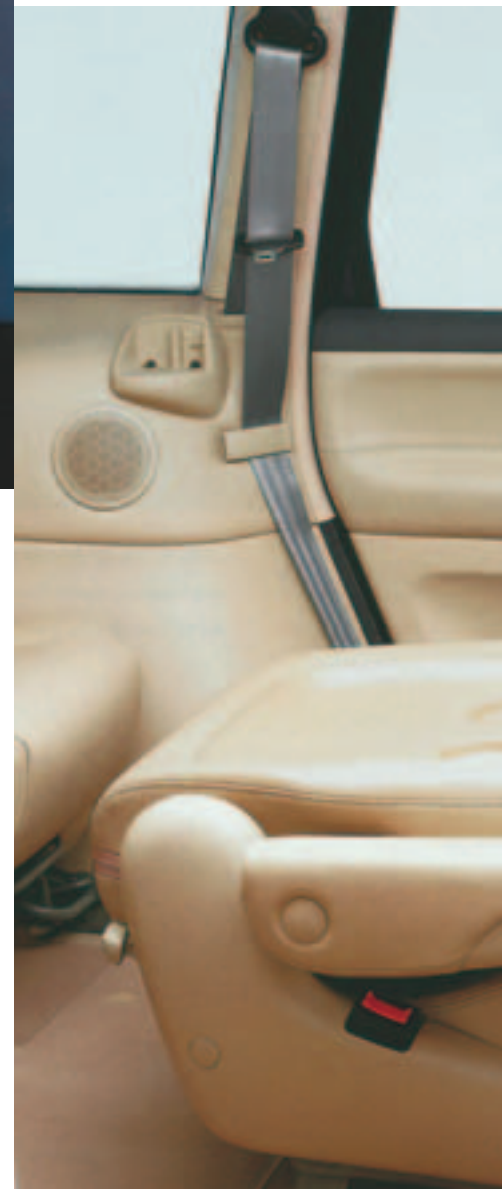
PSA hotmelts are particularly suitable for imparting self-adhesive properties to linings or trim materials that are not subject to spring-back forces. Typical examples include:

- Carpets
- Felts, foams and heavy-gauge films
- Insulation materials and sound-deadening quilts

Reactive hotmelts adhere well to textiles, plastics and other porous substrates that may be subject to high temperatures. Typical applications include:

- Fast structural bonding applications
- Bonding trim components in vehicle interiors
- Heat-resistant interfacial bonding of textiles
- Decorative furniture facings
- Adhesive bonding of PU foams as an alternative to flame laminating

Bonding of textile/foam and textile/quilt linings as an alternative to flame laminating



Fast assembly of door panel trims and retaining clips with the aid of reactive hotmelts



Bonding carpeting in vehicle cabins



Many different application options

Sika hotmelts are applied at temperatures ranging from approximately 100 °C (reactive hotmelts) to 200 °C (standard hotmelts), depending on the product. At this temperature range they are of liquid consistency. They may be applied in bead form (either continuous or in dabs) or as an all-over surface film. In the latter case the adhesive is applied by roller or spray at a coverage rate of 30–100 g/m² approx. The bond is made immediately after application, applying light pressure.

With pressure-sensitive adhesives (PSA hotmelts) the contact surface remains permanently tacky, and the bond is formed by pressing the adhesive-coated component against the substrate. The big advantage is that components can be supplied pre-coated and ready for bonding, with no further activation necessary: all that is required is to peel off the backing paper or foil and press into place.

The choice of application equipment is determined by the type of application and the volume of production. SikaMelt is available in all the standard packaging formats, including cartridge, solid block, portion pack, small drum or large bulk drum. Application systems for hotmelts must meet the following requirements:

- Gradual, gentle heating of the adhesive
- Precise temperature control
- Standby operating mode to prevent overheating and spoilage of adhesive
- Precise application (positioning and dosage)
- No stringing during application

Cartridge application

Cartridges are designed for use with electrically heated compressed-air guns, fitted with the appropriate nozzle for the type of application required (continuous string, dabs or blobs, spray pattern). The temperature can normally be set within the range 50–215 °C via a separate control unit or by an adjustable control on the gun itself. To ensure that application can proceed continuously, the next cartridge should always be placed in a suitable warming oven to heat up while the present one is being dispensed.

Working with hotmelts in block form

The SikaMelt blocks are melted by placing them in a special heated tank. Gear pumps then pump the adhesive along heated hoses to the applicator head. The melting tank is designed and dimensioned to suit the required delivery rate or pump capacity.

Dispensing hotmelts from bulk drums

A special heated pump unit is needed for dispensing hotmelts from bulk drums. The pump may be of the piston, gear or screw type, depending on the viscosity of the material, and it is essential to select the correct type of pump for the adhesive.

For detailed information and guidance on the design of application equipment please contact your local Sika technical consultant.



Cartridge warming oven



Cartridge gun



Block melter



Drum melter



A wide range of products to meet every requirement

SikaMelt fast-acting adhesives for assembly work are the ideal complement to Sikaflex® adhesive bonding systems. Developing a high degree of initial strength in a matter of seconds, they provide cost-effective adhesive solutions that can be integrated into fast-moving series production processes. In traditional elastic bonding applications with Sikaflex® products, SikaMelt allows manufacturers to dispense with the assembly aids that have previously been required (clamps, jigs, etc.), thereby streamlining and simplifying production processes. Specialized laminating and textile adhesives complete the SikaMelt product family.

The hotmelts that make up the SikaMelt product family are formulated on different chemical bases (polyamide, polyester, polypropylene, etc.), depending on the particular area of application for which they are intended. The choice of adhesive system is determined essentially by three factors: What substrates/materials are to be bonded together? What strengths is the bond required to attain? And how much heat will the bond have to withstand in service?

Non-reactive hotmelt
SikaMelt-9170, a polypropylene-based hotmelt, is characterized by excellent adhesion to polypropylene, other polyolefine-based substrates (with no surface preparation) and wood. SikaMelt-9170 possesses good heat resistance and mechanical strength.

Pressure-sensitive adhesives (PSAs)
 The advantage of PSAs lies in their ability to adhere well to a wide range of different substrates, including critical substrates such as polypropylene and polyethylene. Due to their tack or stickiness they effectively have an unlimited working or open time, and can easily be adjusted for position when in place.

Reactive hotmelts
 The reactive polyurethane adhesives in the SikaMelt family are formulated for very specific performance requirements, depending on their area of application. The principal applications are laminating (e.g. textile to textile), interfacial linings (e.g. textile to rigid backing material) and assembly joints.

SikaMelt-9675 is used for bonding large components or for extended assembly processes. This is made possible by a relatively long open time of several minutes and good adhesion on a wide range of substrate materials.

SikaMelt-9680 is designed for laminating polyurethane films to textiles (single- and double-sided). SikaMelt-9680 is highly resistant to washing and sterilization procedures. It is also very effective for bonding critical materials such as water-repellent textiles.

All application equipment must be correctly and regularly maintained to ensure optimum operating performance and top-quality results with all the above adhesive products. A cleaning agent has been specially developed for this purpose: **SikaMelt-9900** is suitable for equipment used with all reactive hotmelts.

SikaMelt-9230 is a medium-tack PSA that is ideal for imparting self-adhesive properties to materials in assembly work. Typical examples include self-adhesive insulation materials such as felts, padding and foams.

SikaMelt-9600 laminating adhesive is ideal for bonding textiles to textiles, or textiles to quilts and padding materials. A thin application of adhesive is sufficient to attain a high-strength bond, with no adverse effect on the tactile qualities of the textile materials.

SikaMelt-9280 is uniquely heat-resistant (up to nearly 100°C) and is also characterized by very low odour. Thanks to these characteristics the product is widely used in interior finishing work and in car interiors.

SikaMelt-9630 develops its initial strength within seconds and is ideal for fast assembly joints. It adheres particularly well to plastics and natural fibres.

SikaMelt-9670 satisfies the most demanding requirements for early strength. This product system can withstand extremely high initial stresses after a very short waiting time.



Product	Description	Chemical base	Application temperature	Packaging format
SikaMelt-9170	Polypropylene- and wood-hotmelt	Polyolefine hotmelt	170–190 °C	Box containing 3.5 or 7.5 kg block
SikaMelt-9230	The multipurpose PSA-hotmelt	PSA-hotmelt	150–170 °C, short time 200 °C	Box containing 4 or 8 kg block
SikaMelt-9280	High performance PSA-hotmelt	PSA-hotmelt	170–190 °C, short time 200 °C	Box containing 4 or 8 kg block
SikaMelt-9600	Textile lamination PUR-hotmelt	Polyurethane reactive hotmelt	100–140 °C, short time 160 °C	20 kg hobbock, 200 kg drum
SikaMelt-9630	High green strength PUR hotmelt	Polyurethane reactive hotmelt	100–160 °C, short time 170 °C	0.33 kg cartridge, 2.5 kg bag, 20 kg hobbock, 190 kg drum
SikaMelt-9670	The assembly specialist	Polyurethane reactive hotmelt	100–160 °C, short time 170 °C	0.33 kg cartridge, 2.5 kg bag, 20 kg hobbock
SikaMelt-9675	Long open time PUR-hotmelt	Polyurethane reactive hotmelt	100–140 °C, short time 160 °C	0.33 kg cartridge, 2.5 kg bag, 20 kg hobbock
SikaMelt-9680	Lamination hotmelt for breathable textile lamination	Polyurethane reactive hotmelt	100–160 °C, short time 180 °C	18 kg hobbock, 180 kg drum
SikaMelt-9900	Hotmelt cleaner	Synthetic resin	90–150 °C	20 kg bag

Note: Our most current General Sales Conditions shall apply. Please consult the Technical Data Sheet(s) prior to any use or processing.



Quality and Service

A deep-seated culture of quality and service is an integral part of Sika's corporate ethos. "Quality first" is the standard by which every production process, every workplace and every member of staff is measured. The Sika management system conforms to the international standards ISO 9001, ISO 14001 and QS 9000. For our customers this means top-quality products, first class service and professional technical support for the implementation of systems solutions by more than a dozen Sika Technical Service and Systems Engineering organizations around the world.

Sika – A Global Network

Sika has local teams of experienced specialists in more than 60 countries to provide on-site support for our customers worldwide.



Switzerland

Sika Schweiz AG
Tüffenwies 16
Postfach
CH-8048 Zürich
Telephone: +41 1 436 40 40
Fax: +41 1 436 45 30
E-Mail: industry@ch.sika.com
Internet: www.sika.com

Germany

Sika GmbH
Kleb- und Dichtstoffe Industry
Stuttgarter Strasse 139
D-72574 Bad Urach
Telephone: +49 7125 940 761
Fax: +49 7125 940 763
E-Mail: industry@de.sika.com
Internet: www.sika-industry.de

United Kingdom

Sika Ltd.
Watchmead
Welwyn Garden City
GB-Herts AL7 1BQ
Telephone: +44 1707 39 44 44
Fax: +44 1707 32 91 29
E-Mail: sika@uk.sika.com
Internet: www.sika.co.uk

USA

Sika Corporation
30800 Stephenson Hwy.
US-Madison Heights, MI 48071
Telephone: +1 248 577 0020
Fax: +1 248 577 0810
E-Mail: CSMH@sika-corp.com
Internet: www.sikasolutions.com

Canada

Sika Canada Inc.
601-Delmar Avenue
Pointe-Claire
CA-Quebec H9R 4A9
Telephone: +1 514 697 26 10
Fax: +1 514 697 48 26
E-Mail: sika@sikacanada.com
Internet: www.sikacanada.com

Brazil

Sika SA
Av. Dr. Alberto Jackson Byington 1525
Vila Menk
Osasco
BR-São Paulo, CEP 06276-000
Telephone: +55 11 3687 4602
Fax: +55 11 3601 0280
E-Mail: industry@sika.com.br

South Africa

Sika South Africa (Pty) Limited
P.O. Box 15408
Westmead Kwa Zulu Natal
ZA-Pinetown, 3608
Telephone: +27 31 700 1700
Fax: +27 31 700 1760
E-Mail: headoffice@sika.co.za

Japan

Sika Ltd.
1 - 1, Nagatoro
Hiratsuka-Shi
JP-Kanagawa-ken 254-0021
Telephone: +81 463 21 11 04
Fax: +81 463 21 16 14
E-Mail: shibata.rieko@jp.sika.com
Internet: www.sika-japan.co.jp

Australia

Sika Australia Pty. Ltd.
55 Elizabeth Street
(Locked Bag 482 BDC)
AU-Wetherill Park NSW 2164
Telephone: +61 2 9725 1145
Fax: +61 2 9725 2605
E-Mail: admin@sika.com.au
Internet: www.sika.com.au



Details of other Sika companies and further information can be found on our website at:
www.sika-industry.com

