

WACKER

CREATING TOMORROW'S SOLUTIONS



HEALTHCARE | MEDICAL ADHESIVES

MEDICAL SILICONE ADHESIVES

SILPURAN®

HEALTH. CARE. WACKER.



We care. And that's why we keep researching and developing medical solutions that improve quality of life. In applications such as medical devices, orthotics, prosthetics and medical silicone adhesives, you will feel the difference with our innovative silicones. Our experienced WACKER team knows how to find the right solution for the challenge of your specific product.

[More information](#)

www.wacker.com/healthcare



2



SILPURAN® MEDICAL SKIN ADHESIVES – GENTLE PROTECTION THAT STAYS IN PLACE

WACKER silicones satisfy the highest medical standards and offer unique processing advantages. Designed to create an optimal healing environment, SILPURAN® adhesives are perfect for the treatment of wounds and scars. And because they are available in various adhesive strengths, they are suitable for any application requiring a secure fixation and an easy removal. Because patient comfort comes first.

This brochure provides information regarding the use of medical skin adhesives for the following health care applications:

Advanced Wound Care



Wound Care, Tapes and Scars



(Trans)dermal Delivery Systems



Surgical Stoma Care



Medical Wearable Devices



Megatrends: Increased Mobility, Consumerism and Smart Devices

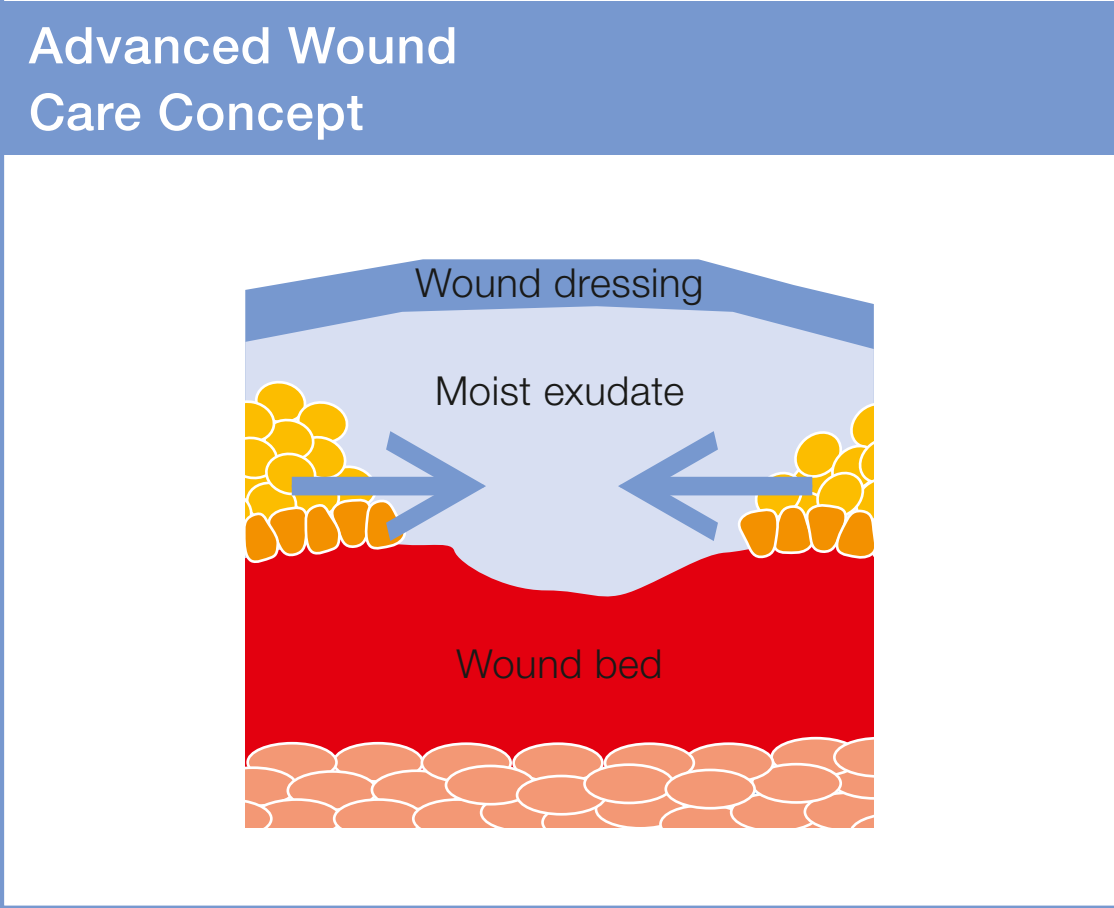
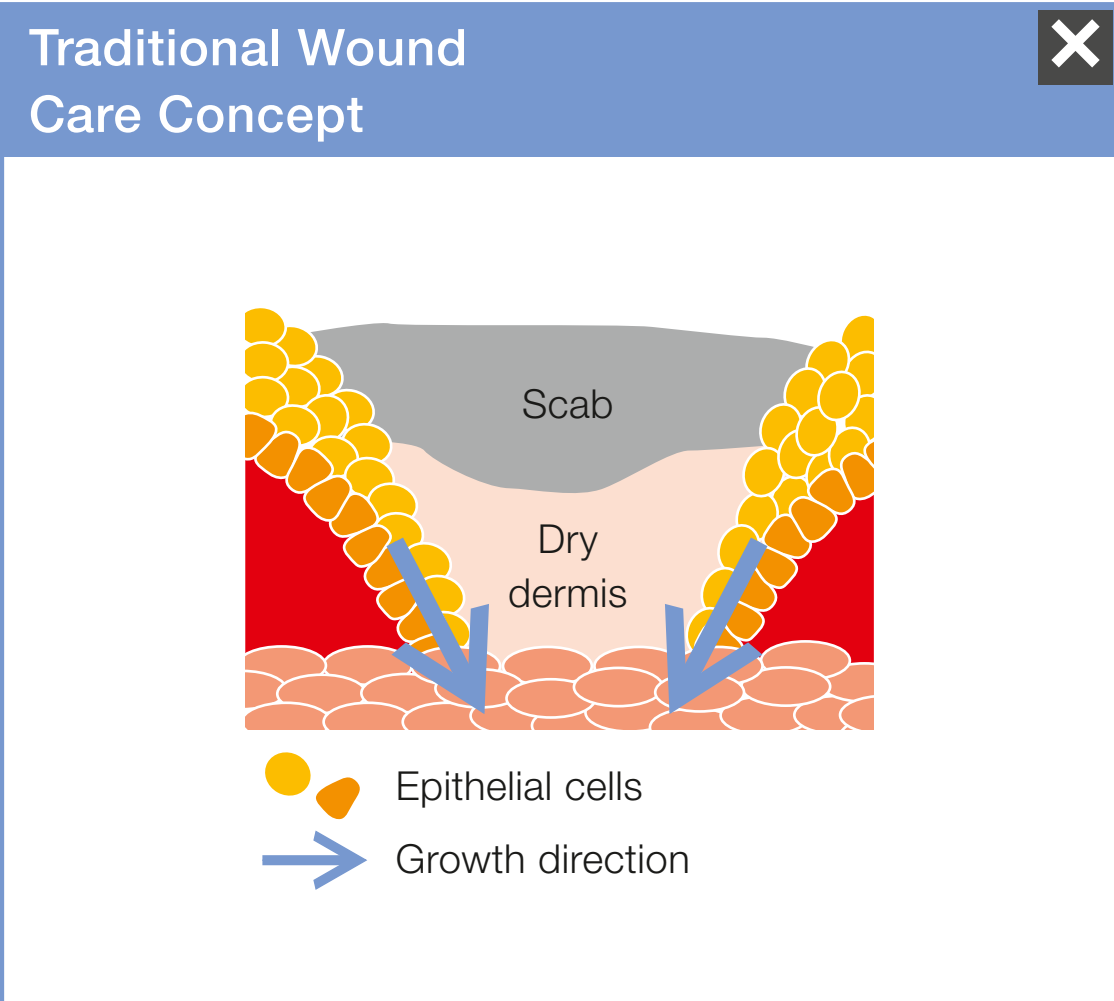
Skin-sensitive adhesives for surgical and chronic wounds

Higher adhesion and active ingredients for improved outcome and quality of life

Wound tracking and monitoring, consumer applications

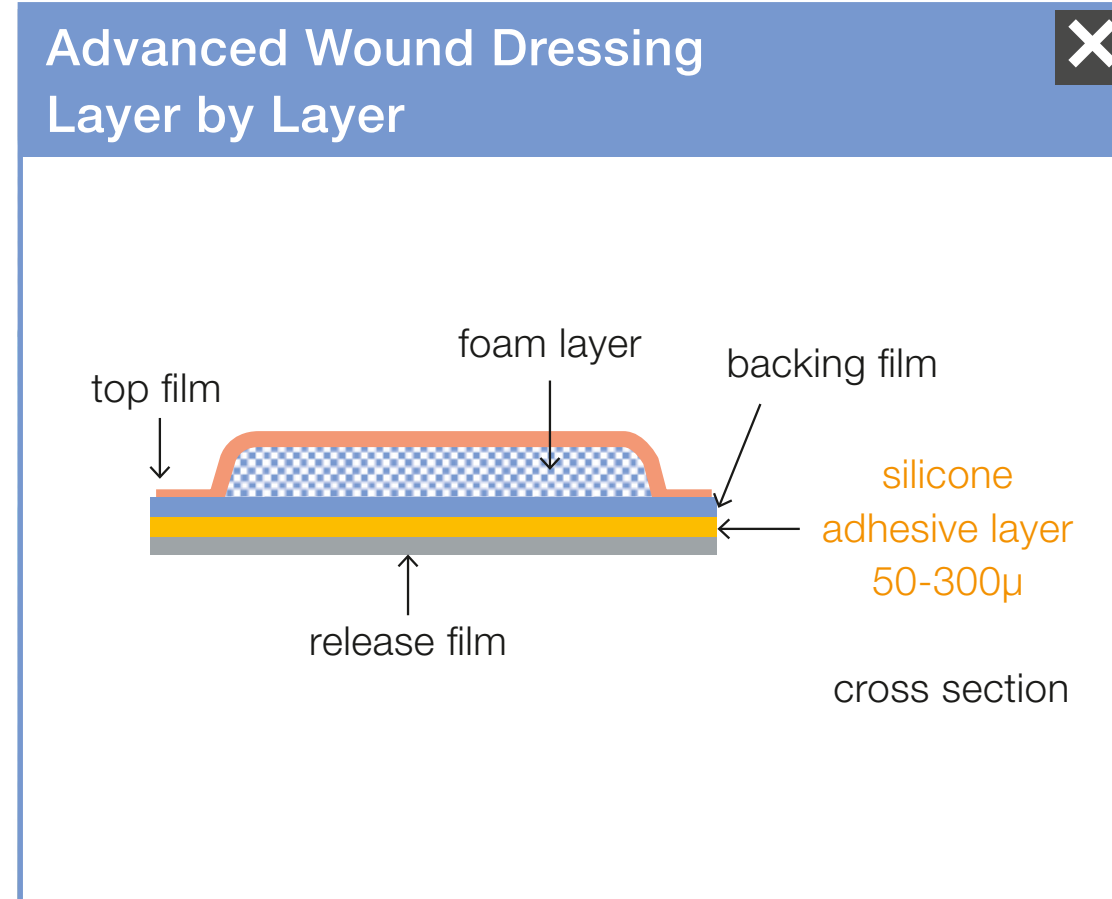


OPTIMAL HEALING ENVIRONMENT AND LONGER WEAR TIME FOR ADVANCED WOUND DRESSINGS



Skin Stripping from SILPURAN® Adhesive versus Standard Acrylic Adhesive

1. Skin cell layers before experiment
2. Strong cell stripping after removal of acrylic adhesive
3. No skin damage after removal of a SILPURAN® gel adhesive of similar adhesive strength



- Advanced Wound Dressings**
- Absorbent foam dressings to treat burns
 - Ulcer island dressings
 - Post-operative dressings
 - Wound contact layers for negative pressure wound therapy (NPWT)



PERFECT ADHESION AND ATRAUMATIC RELEASE FOR PATIENT AND CONSUMER USE

Patches for Scars and Wrinkles

The use of silicone sheets can improve the appearance of hypertrophic and keloid scars. Our SILPURAN® adhesives provide good fixation to the scar while making the products washable, repositionable and thus reusable.

The same properties are beneficial in cosmetic patches for wrinkle reduction, where the soft touch and feel of the silicone guarantees a durable, comfortable wear.

WACKER also offers a broad range of silicones for scar gels and cream formulations including dimethicones, silicone resin elastomer gels, gum blends and silicone waxes.

(Trans)dermal Delivery Systems

Active ingredients can be delivered transdermally through topical systems and patches with an adhesive silicone layer.

Comfortable Medical Fixation

The challenge of medical tapes is to maintain the adhesion to the skin while offering a high level of comfort for the user.

Easy Repositioning

The gentle releasability of WACKER silicone adhesives reduces pain during the removal and repositioning of bandages or tapes, making it a smooth process.

Technical Support

Always at the ready, our experienced WACKER team knows how to find the right solution for the challenge of your specific application. Get in touch with our experts now!



5



MEDICAL DEVICE FIXATION – HIGHER ADHESION, HIGHER MOBILITY

Technical developments in medicine are advancing at a steady pace. Portable devices for monitoring patients or administering medications are already making daily life easier for many people.

Reliable Fixation for Challenging Applications

SILPURAN® adhesives can be used in even the most challenging applications, such as stoma care, where strong adhesion is essential to prevent leakage of the device. In addition, the gentle removal properties significantly improve the user experience for the ostomates.

Study on Pain Reduction and Skin Integrity

A recent study* of skin adhesives has shown the advantage of newly developed silicone-based fixation products compared to acrylic adhesive fixation: stronger pain reduction and better maintenance of skin integrity. Overall, an average of more than 80 % of the tapes with silicone adhered well, even after 7 days.

More information

www.wacker.com/medical-adhesives

* BSN medical GmbH,
EWMA 2020 Virtual Conference



WEARABLES – STRONG FIXATION, YET SOFT ON SKIN

Secure Fixation, Easy Repositioning

SILPURAN® silicone adhesives reliably hold wearable technology and portable medical devices in place. Thanks to their excellent adhesive properties, insulin pumps and other devices for self-medication can be removed and repositioned gently.

Possible Applications

The non-sensitizing adherence of SILPURAN® silicone adhesives improves comfort in a range of possible applications, such as the following:

- Electronic skin patches
- Patient monitoring
- Smart dressings for wound tracking and monitoring
- Therapeutic devices



SILPURAN® – for wearable technology



[More information](#)

www.wacker.com/medical-adhesives



7



SILPURAN® MEDICAL SKIN ADHESIVE PRODUCT RANGE

SILPURAN® – Two-Component Medical Skin Adhesives

Adhesive Strength	Product Name	Viscosity A* [mPa s]	Viscosity B* [mPa s]	Penetration [1/10 mm]	Adhesive Strength** [N/2.5 cm]	Tack [N]**	Pot Life at 23 °C [min]
Low	SILPURAN® 2130	1,100	1,000	220	1.8	55	74
Medium	SILPURAN® 2112	11,600	11,500	225	2.6	55	76
	SILPURAN® 2100	34,000	35,500	205	2.7	54	73
	SILPURAN® 2117	33,000	13,000	210	3.0	63	40
Strong	SILPURAN® 2114	12,000	10,000	200	3.5	66	70
	SILPURAN® 2124	3000	3000	155	6	46	40

[Watch our video](#) to see how a penetration measurement is done.

SILPURAN® – One-Component Adhesive for Medical Components

Application	Product Name	Viscosity [mPa s]	Final Hardness Shore A (ISO 868)	Tensile Strength (ISO 37) [N/mm ²]	Elongation at Break (ISO 37) [%]	Tear Strength (ASTM D 624 B) [N/mm]
Substrate bonding	SILPURAN® 4200	200,000	35	5.5	300	10

* For standard specifications and technical parameters, refer to the technical data sheet

** On stainless steel

All figures are intended as a guide and should not be used in preparing specifications.

Measurement conditions for penetration: hollow cone 62.5 g, 60 sec.

Benefits of SILPURAN® Adhesives:

- Biocompatibility (e.g. ISO 10993, USP Class VI)
- FDA Master Files (MAF)
- Anti-allergenic, soft and comfortable on skin
- Good breathability
- Does not support microbial growth
- Biodurability, low surface tension, thermal and chemical stability
- Good media resistance
- Sterilizable for single or multiple use (ethylene oxide)
- Good UV and aging resistance
- High transparency
- Repositionable



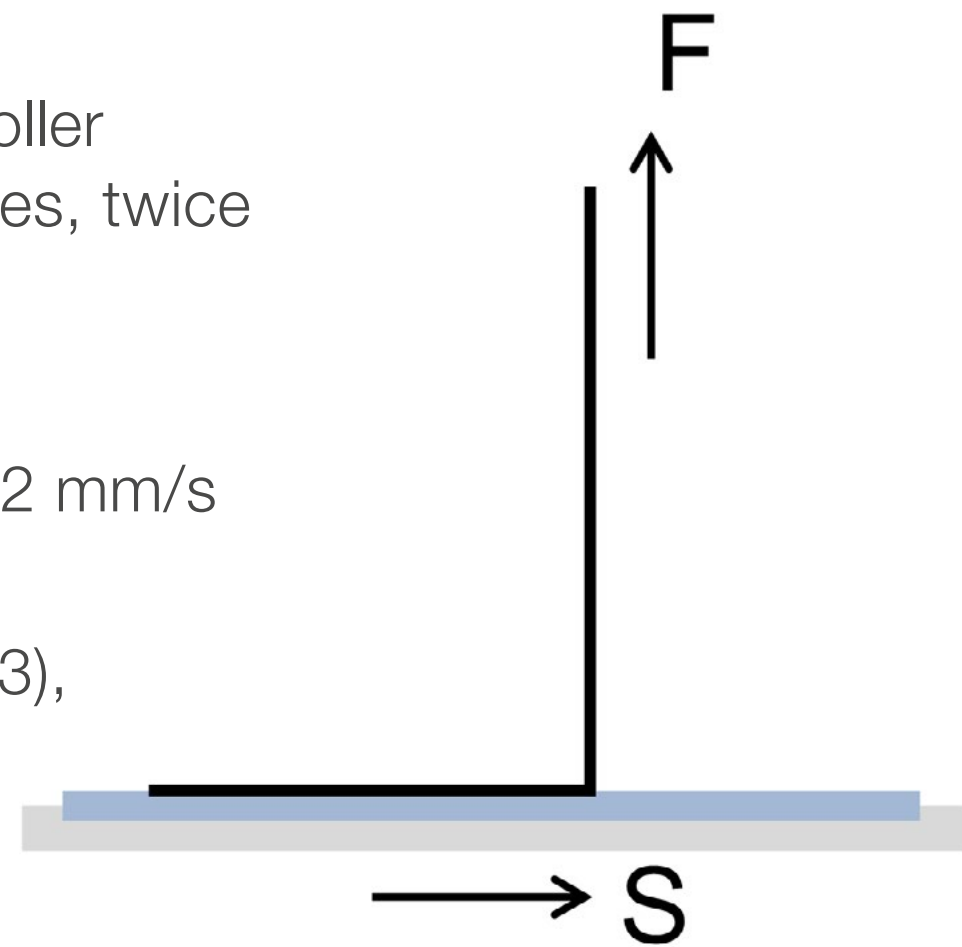
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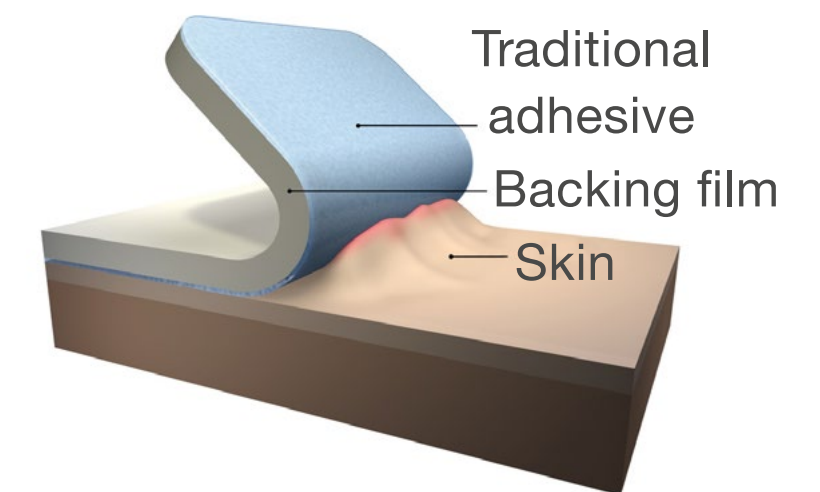
SILPURAN® SKIN ADHESIVES COVER A WIDE RANGE OF ADHESION AND TACK LEVELS

Technical Parameter for 90° Peel Release Force Measurements

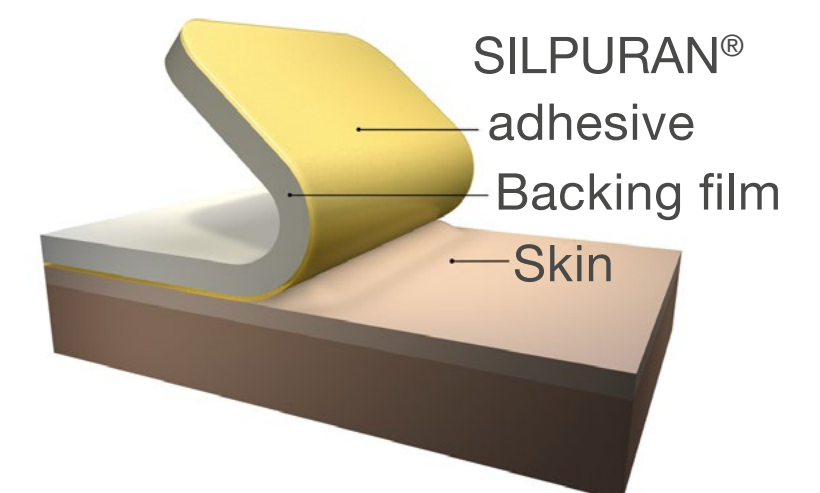
- Following DIN EN 1939:2003/ASTM D3330/D3330M
- Size of test stripes: 2,5cm x 12,5cm
- 100 µm adhesive layer
- 50 µm PU-film (Epurex®)
- Rigid fixation material
- Application weight: hand roller
2 kg Roller passes: 4 passes, twice in each direction
- Dwell time: 30 min
- Test speed: 5,0 mm/s ± 0,2 mm/s
- Substrates: stainless steel (according to EN1939:2003), human skin (for ...)



A. Wound Dressing Coated with an Acrylate Adhesive



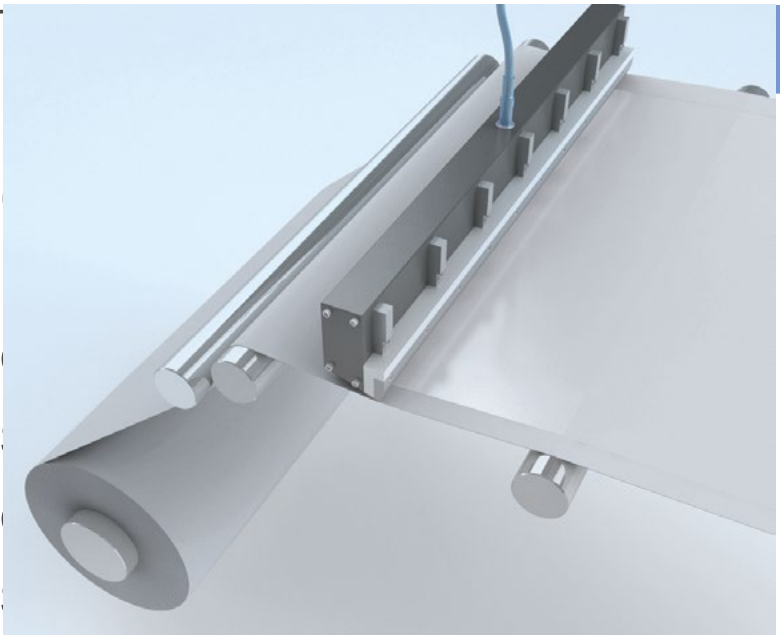
B. Wound Dressing Coated with SILPURAN®



9

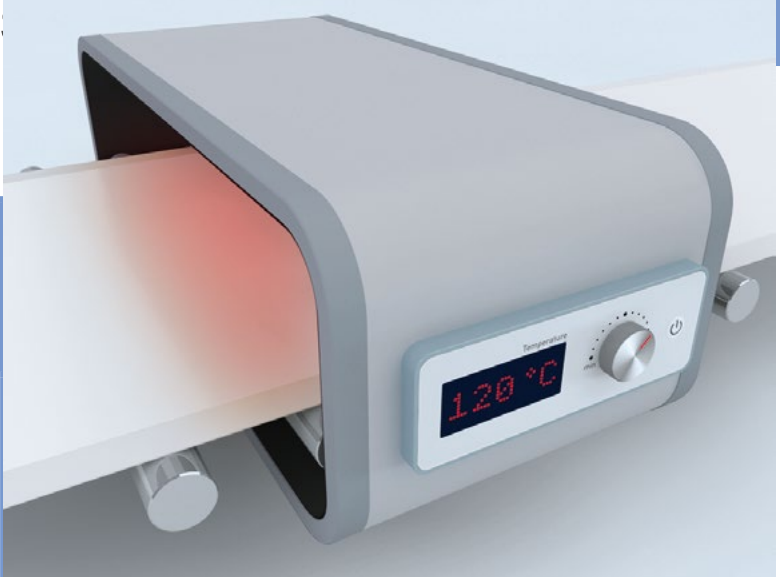


SILPURAN® PROCESSING AND COATING PROCESS



Applying the Silicone Adhesive

- The coating process involves applying the silicone adhesive on the carrier using a doctor blade, slot die or similar tool



Curing

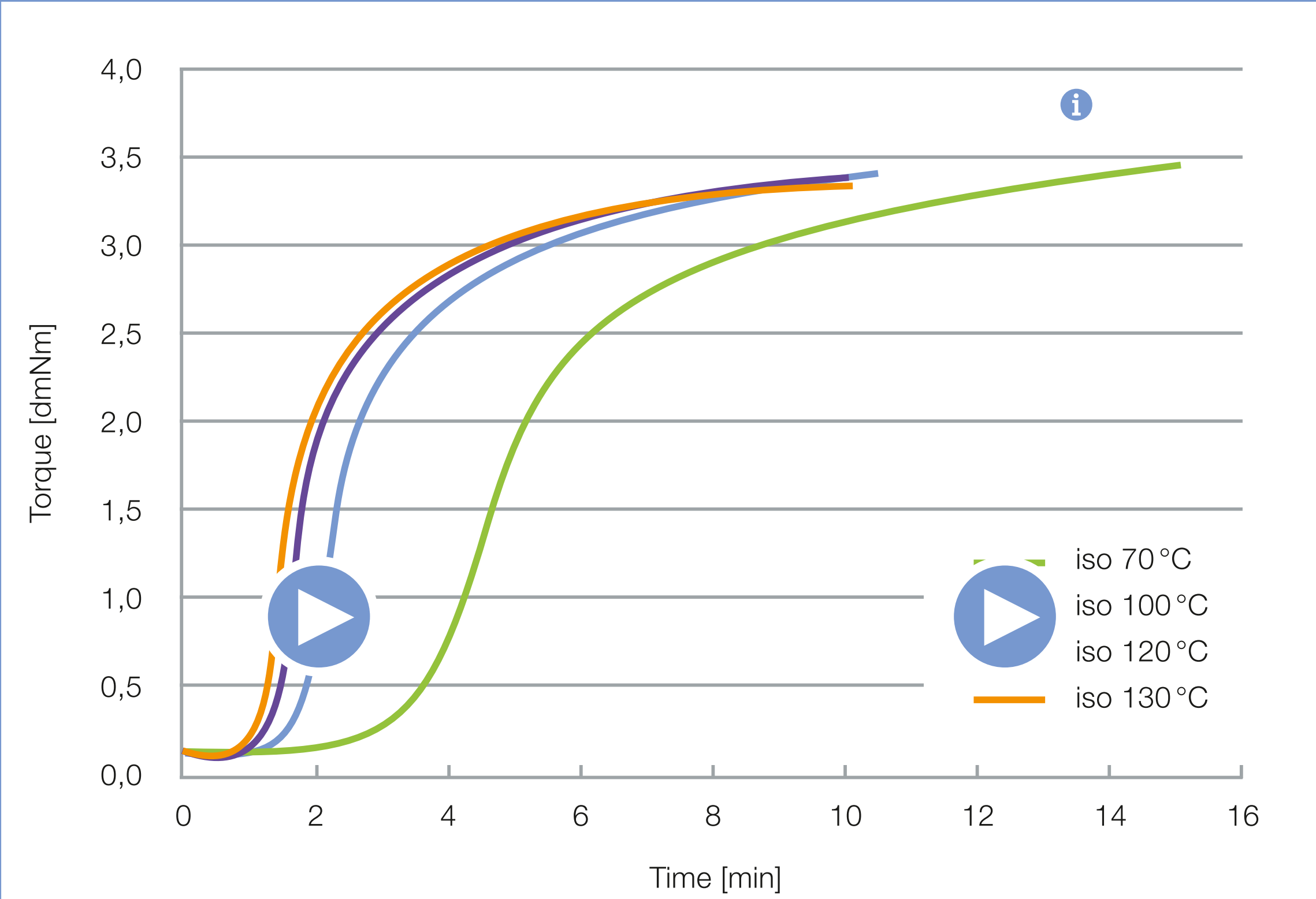
- The adhesive cures at room temperature, but the process can be accelerated by increasing the temperature up to 120°C



Cover

- The material composite can be finished once the silicone adhesive layer has been covered

Typical Curing Profile of SILPURAN® Adhesives (e.g. SILPURAN® 2100)



SILPURAN® HIGH PURITY TO MEET THE HEALTHCARE NEEDS



[More information
www.wacker.com/healthcare](http://www.wacker.com/healthcare)

WACKER's SILPURAN® product line was developed to meet the needs of the healthcare industry¹.

SILPURAN® products contain defined ingredients only and do not contain organic plasticizers.

SILPURAN® products provide biocompatibility based on certified compliance according to selected ISO 10993 and USP Class VI tests.

All products are produced according to the WACKER CLEAN OPERATIONS standard to meet the quality and cleanliness needs of healthcare applications.

Key features of WACKER CLEAN OPERATIONS

- Selected mixers, 50 µm filtration
- Air-controlled filling environment
- Trained, qualified employees
- Documentation and tracking

The WACKER CLEAN OPERATIONS standard has been implemented at several WACKER production sites.

¹ Limited to the WACKER healthcare policy



CREATING TOMORROW'S SOLUTIONS

A Diverse Array of Products for Growing Markets

Our product portfolio ranges from silicones, binders and polymeric additives to bioengineered pharmaceutical actives. In addition, we offer hyperpure silicon for semiconductors and solar applications.

Innovations That Improve the Quality of Life

As a technology leader focusing on sustainability, WACKER promotes products and ideas that offer considerable value-added potential to ensure that current and future generations enjoy a better quality of life, based on energy efficiency and protection of the climate and environment.

Global Knowledge for Local Markets

When you work with WACKER, you have 100 years of chemical expertise at your disposal, with access to the research findings and best practices of our experts throughout the world. Our knowledge base consists of a network of 23 technical centers, 14 training centers and our basic research center.

More information

www.wacker.com/sustainability

And most importantly: we are there. Worldwide. Wherever and whenever you need us.

Our local specialists know your markets and speak your language. By working with them, you will find innovative solutions that win over your customers and make you more competitive.

Follow us:

Find us on LinkedIn, YouTube and Twitter. We'll keep you up to date on the latest issues.



All figures are based on fiscal 2022.



Silicones and Polymers

3,200 specialty products from organic and inorganic chemistry



Global Market Leader

In dispersions and dispersible polymer powders based on vinyl acetate-ethylene (VAE), in building-protection silicones and in the production of cyclodextrin and cystein.



Globally Active

- Sites worldwide
- Headquartered in Munich
- 27 production sites in Europe, Asia and the Americas
- 26 technical centers
- 14 WACKER ACADEMY training centers
- 52 sales offices



Employees: 15,700



Total Sales

€8.21 billion



12








WACKER

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