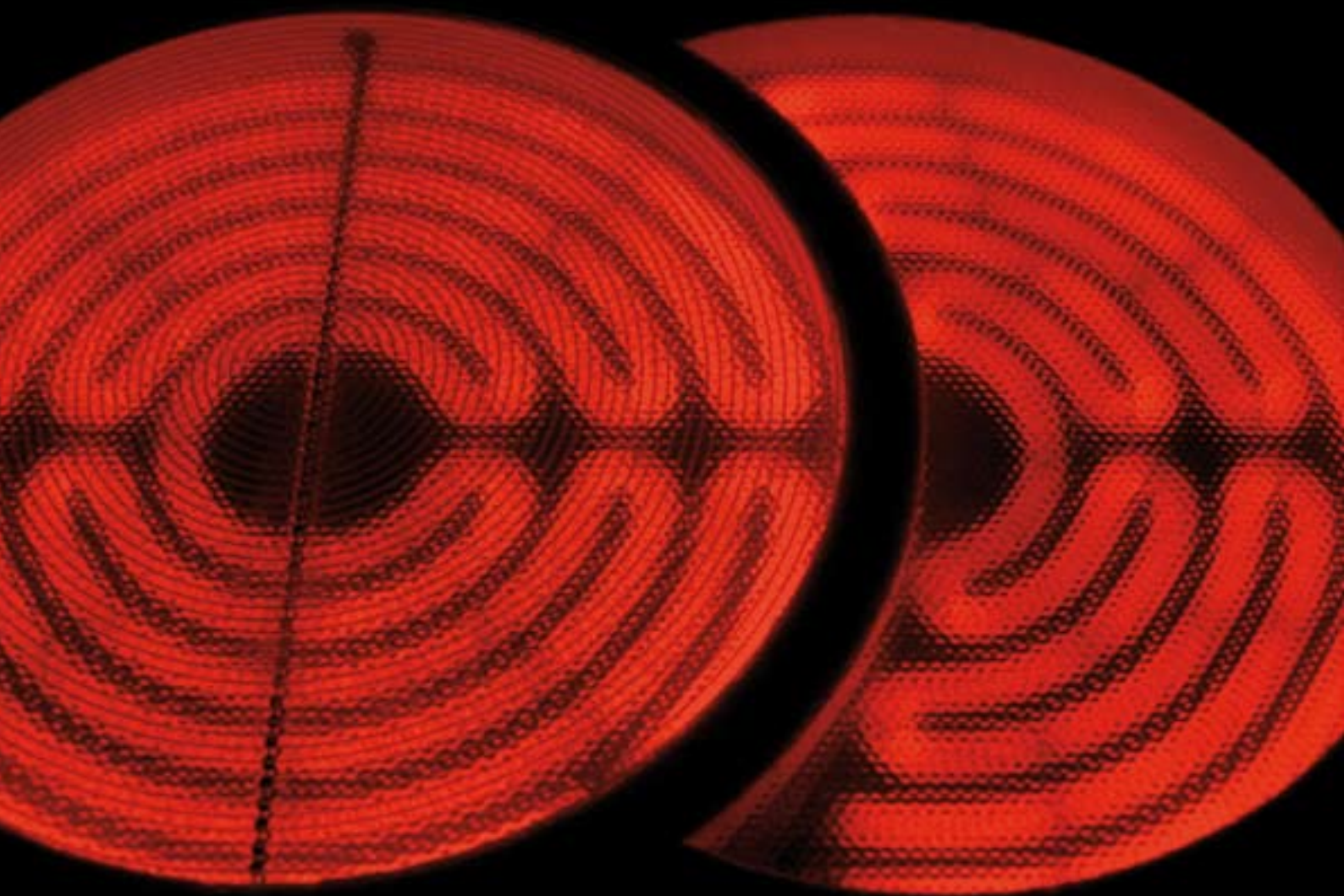


Bonding and sealing on  
**household appliances**



**OTTO  
CHEMIE**

Sealants • Adhesives

Brand quality

## down to the most minute detail

In the case of kitchen and household appliances, sealants and adhesives account for only a relatively small proportion of the total costs. Nevertheless, their impact on the device, costs and the brand image is greater than one would initially think. This is because the quality of the finish, the performance, material compatibility and the service life of consumer goods are not perceived until they fail to meet the requirements. This results in higher production costs and is expensive for end consumers.

With its sophisticated product concepts OTTO pursues a sustainable approach which also makes commercial and technical sense. With OTTO products and adhesives you save money, without skimping on sealants and adhesives. A broad range of highly specialised products for all applications and experienced advisors make it easier for you to choose the right product for processing in industry.

The present brochure is intended to give you an initial overview of the many applications in which OTTO products are used. It goes without saying that we are still available with advice and assistance for any type of question you may have after reading the present product overview.



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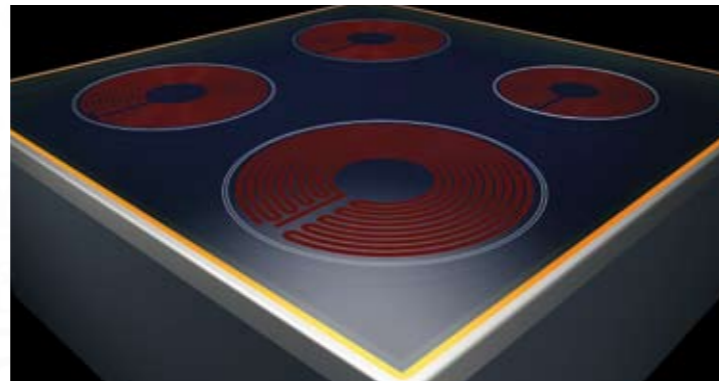
The information in the present document corresponds to the status quo at the time of going to print. Please refer to the index on the outside back cover. Owing to the many types and conditions of applications in which our products are used, it is always necessary for the user to test and verify in practice all important product properties for the respective purpose of the applications before using them. To this end, please pay attention to the information in the relevant updated technical data sheet, which is available on request. Subject to errors, omissions and typographical errors.

# Perfect finish for visible joints on glass ceramic hobs

For visible joints on glass ceramic hobs ("open sealing"), silicone products require a particularly high degree of viscosity in order to realise a perfectly even appearance. For this purpose it is primarily one-part silicone products with a specific degree of viscosity which are the best option.

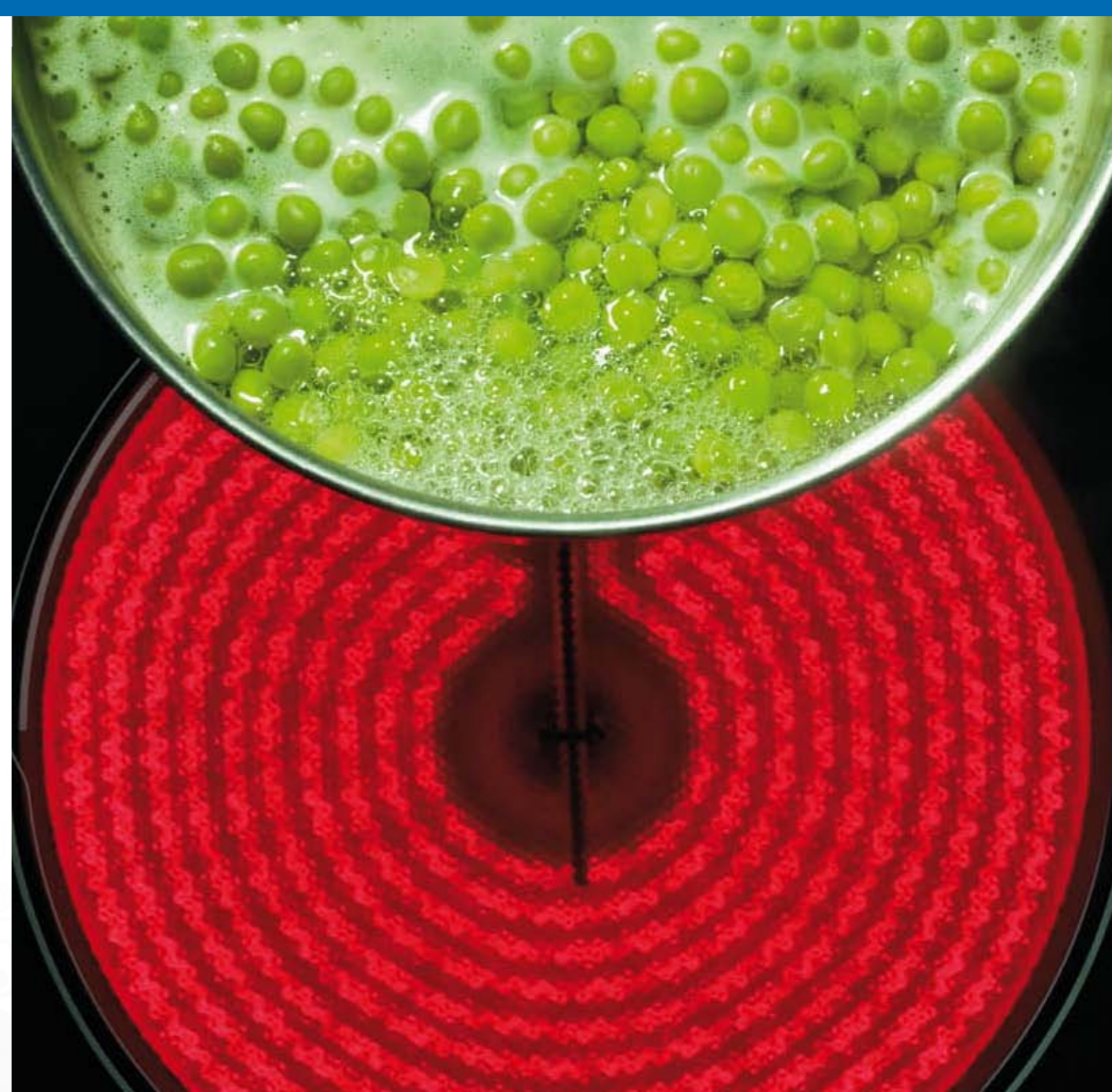
The OTTO products for this sector are also distinguished by the requisite high heat resistance and their excellent adhesion properties on smooth materials, especially glass ceramics, metals or enamel.

Approval by the well-known ceramic glass manufacturer, Schott AG, gives additional assurance.



### The OTTO solution.

Glass ceramic hobs are subjected to maximum temperature stress. For this reason the joints are also extremely stressed by the varying expansion behaviour of the materials. Silicone adhesive sealants from OTTO facilitate perfect sealing and reliably compensate tensions.

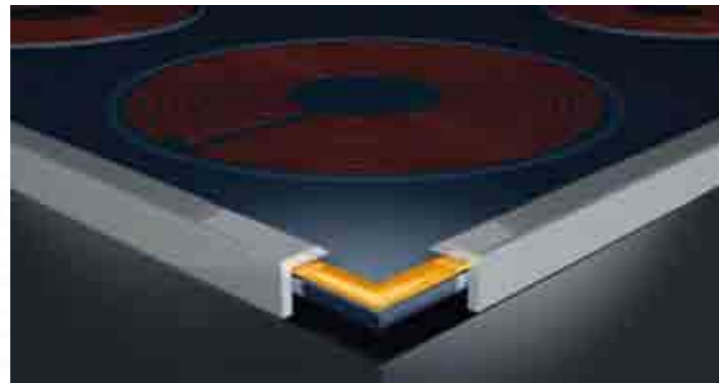


Novasil®	S 26	S 95	S 96	SP 4667	S 76
CROSS-LINKING SYSTEM	One-part acetate silicone	One-part oxime silicone	One-part alkoxy silicone	One-part oxime silicone	One-part acetate silicone
CURING CHARACTERISTICS	Approx. 2-3 mm / 24 h	Approx. 2 mm / 24 h	Approx. 2 mm / 24 h	Approx. 2-3 mm / 24 h	Approx. 2-3 mm / 24 h
WORKING TEMPERATURE	+ 180 °C	+ 180 °C	+ 220 °C	+ 225 °C	+ 285 °C
PRINCIPAL CHARACTERISTICS	Very high viscosity / "strong body"	High viscosity	High viscosity	Very high viscosity / "strong body"	High viscosity
		Non-corrosive	Non-corrosive	Non-corrosive	
	Very good adhesion on glass, ceramic glass, enamel and metallic materials with primer	Very good adhesion on many materials, mainly without primers	Very good adhesion on many materials, mainly without primers	Very good adhesion on many materials, mainly without primers	Very good adhesion on glass, ceramic glass, enamel and metallic materials with primer
	UL 94 HB, RTI 105 °C	UL 94 HB, RTI 105 °C	UL 94 HB, RTI 105 °C		UL 94 HB, RTI 105 °C
	Approved by Schott AG for bonding ceramic glass		Approved by Schott AG for bonding ceramic glass		Approved by Schott AG for bonding ceramic glass

# Fast processing of invisible joints on glass ceramic hobs

Generally speaking bonds on glass ceramic surfaces are realised with two-part silicone adhesives, which - contrary to "open sealing" - do not have to meet high aesthetic demands because they remain hidden from the end consumer.

Besides processing times, curing times are also restricted to a minimum and therefore have a positive impact on the production and cycle times. Here too, the adhesive displays maximum temperature resistance, is compatible with metal (including coated surfaces) and adheres excellently to all customary materials, usually without any primer.



### The OTTO solution.

Since this type of joint is not visible on glass ceramic hobs, the bonding process can be set up optimally in terms of time and sequence as part of the production process.



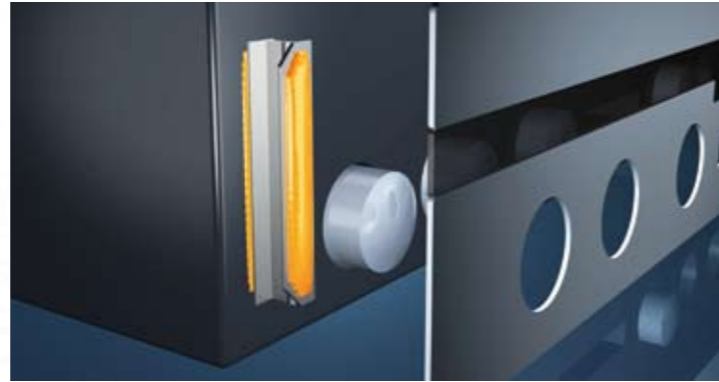
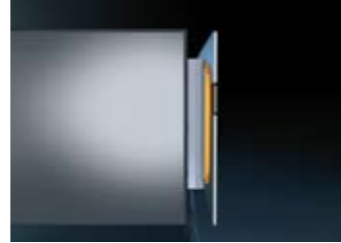
Novasil®	S 44	S 44 SP 5349	S 44 SP 5836
CROSS-LINKING SYSTEM	Two-part alkoxy silicone	Two-part alkoxy silicone	Two-part alkoxy silicone
CURING CHARACTERISTICS			
POT LIFE	10-25 minutes	5-10 minutes	2-10 minutes
SHORE A HARDNESS	Approx. 20 after 2 hrs	Approx. 18 after 45 minutes	Approx. 14 after 30 minutes
WORKING TEMPERATURE	+ 180 °C Temporarily +200 °C	+ 200 °C Temporarily + 250 °C	+ 200 °C Temporarily + 250 °C
PRINCIPAL CHARACTERISTICS			
	Mixing ratio 10:1 (v/v)	Mixing ratio 10:1 (v/v)	Mixing ratio 10:1 (v/v)
	Very good adhesion on many materials, mainly without primers	Very good adhesion on many materials, mainly without primers	Very good adhesion on many materials, mainly without primers
	Non-corrosive	Non-corrosive	Non-corrosive
	UL 94 HB, RTI 105 °C		



# Structural bondings around the stove

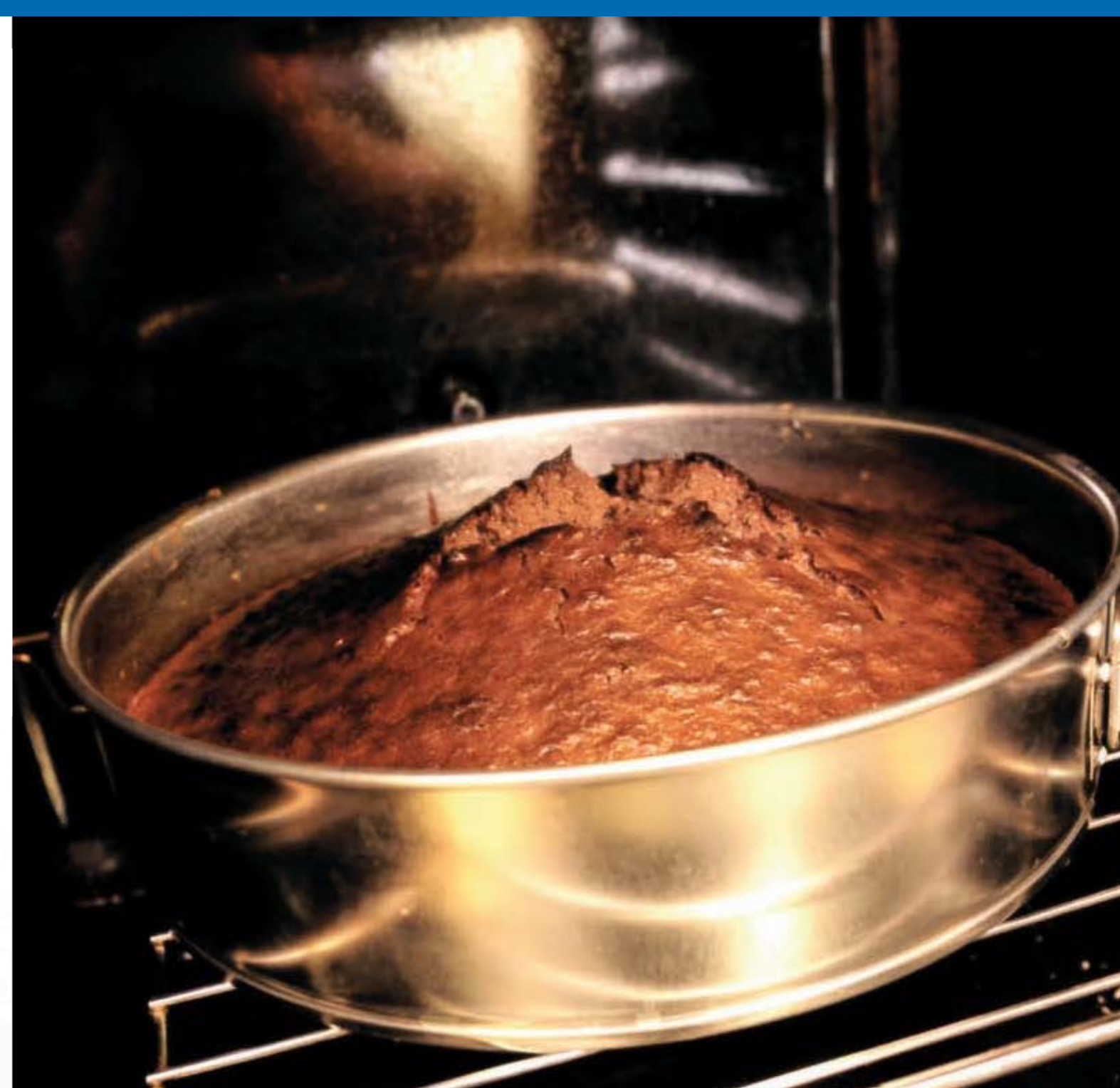
Both ready-to-use one-part silicone adhesives with longer curing times and fast-curing two-part silicones can be used for fixing brackets and switch covers. It goes without saying that the product characteristics include compatibility with metal and very good adhesion on all standard materials.

OTTO products also have a high viscosity rate and improved stability. Among other things, this makes it possible to meet special requirements during production.



### The OTTO solution.

By adjusting the colours it is possible to prevent the adhesive on coated glass from showing through.



Novasil®	S 10 SP 3528	S 44	S 44 SP 5349	S 44 SP 5752	S 44 SP 6212
CROSS-LINKING SYSTEM	One-part oxime silicone	Two-part alkoxy silicone	Two-part alkoxy silicone	Two-part alkoxy silicone	Two-part alkoxy silicone
CURING CHARACTERISTICS	3-4 mm/24 hrs	10-25 minutes Approx. 20 after 2 hrs	5-10 minutes Approx. 18 after 45 min	10-15 minutes Approx. 16 after 60 min	8-15 minutes Approx. 30 after 4 hrs
POT LIFE					
SHORE A HARDNESS					
WORKING TEMPERATURE	+ 180 °C	+ 180 °C Temporarily + 200 °C	+ 200 °C Temporarily + 250 °C	+ 200 °C Temporarily + 250 °C	+ 200 °C Temporarily + 250 °C
PRINCIPAL CHARACTERISTICS	Ready-to-use	Mixing ratio 10:1 (v/v)	Mixing ratio 10:1 (v/v)	Mixing ratio 10:1 (v/v)	Mixing ratio 10:1 (v/v)
	Very good adhesion on many materials, mainly without primers	Very good adhesion on many materials, mainly without primers	Very good adhesion on many materials, mainly without primers	Very good adhesion on many materials, mainly without primers	Very good adhesion on many materials, mainly without primers
	Non-corrosive	Non-corrosive	Non-corrosive	Non-corrosive	Non-corrosive
		UL 94 HB, RTI 105 °C			
				High degree of viscosity, improved body	High degree of viscosity, improved body

# Wide range of solutions for hot applications

**B**onding points on doors and interior panes and also on mounting brackets and decorative elements are often exposed to stress from high temperatures and steam.

**O**TTO has a wide range of one-part and two-part silicone adhesives to offer for such bonding challenges. Depending on the requirement, they have different curing times and even at temperatures up to 285 °C they adhere reliably and securely.



### The OTTO solution.

Even if oils and grease are involved, OTTO silicone adhesives used for bonding on stove doors fulfil their function impeccably.

Novasil®	S 53 SP 5007	S 56	S 76	SP 5139	SP 6384	S 44 SP 5349	S 44 SP 5836
CROSS-LINKING SYSTEM	One-part oxime silicone	One-part oxime silicone	One-part acetate silicone	Two-part alkoxy silicone	Two-part alkoxy silicone	Two-part alkoxy silicone	Two-part alkoxy silicone
CURING CHARACTERISTICS	3-4 mm/24 hrs	2-3 mm/24 hrs	2-3 mm/24 hrs	10-20 minutes Approx. 20-30 after 4 hrs	30-60 minutes Approx. 10-20 after 4 hrs	5-10 minutes Approx. 18 after 45 min	5-10 minutes Approx. 14 after 30 min
POT LIFE							
SHORE A HARDNESS							
WORKING TEMPERATURE	+ 265 °C	+ 250 °C	+ 285 °C	+ 250 °C	+ 250 °C	+ 200 °C temporarily + 250 °C	+ 200 °C temporarily + 250 °C
PRINCIPAL CHARACTERISTICS	Ready-to-use	Ready-to-use	Ready-to-use	Mixing ratio 10:1 (v/v)	Mixing ratio 10:1 (v/v)	Mixing ratio 10:1 (v/v)	Mixing ratio 10:1 (v/v)
	Very good adhesion on many materials, mainly without primers	Very good adhesion on many materials, mainly without primers	Very good adhesion on glass, ceramic glass, enamel and on metallic materials with primer	Very good adhesion on many materials. In some cases a primer is necessary	Very good adhesion on many materials. In some cases a primer is necessary	Very good adhesion many materials, mainly without primers	Very good adhesion on many materials, mainly without primers
	Non-corrosive	Non-corrosive		Non-corrosive	Non-corrosive	Non-corrosive	Non-corrosive
		UL 94 HB, RTI 105 °C	UL 94 HB, RTI 105 °C				

# Tight and fast on microwaves

**M**icrowave doors can be bonded and sealed by using self-levelling OTTO products with alternatively short or long curing times.

**T**hey withstand temperatures of up to 250 °C and adhere excellently to most materials even without any primer.



### The OTTO solution.

OTTO silicone adhesives are even impervious to microwave energy.



Novasil®	SP 4919	SP 6240
CROSS-LINKING SYSTEM	One-part oxime silicone	Two-part alkoxy silicone
CURING CHARACTERISTICS	Approx. 2 mm / 24 hrs	
POT LIFE		10-20 minutes
SHORE A HARDNESS		15-20 after 4 hrs
WORKING TEMPERATURE	+ 250 °C	+ 180 °C
PRINCIPAL CHARACTERISTICS	Ready-to-use	Mixing ratio 10:1 (v/v)
	Liquid, self-levelling	Liquid, self-levelling
	Very good adhesion on many materials, mainly without primers	Very good adhesion on many materials, mainly without primers
	Non-corrosive	Non-corrosive



# Safe under steam

To bond and seal zones reliably which - like the steam chambers on irons - are exposed to high temperatures, OTTO has developed silicone products which have truly proven their worth.

To enable easy processing, they are liquid and self-levelling.

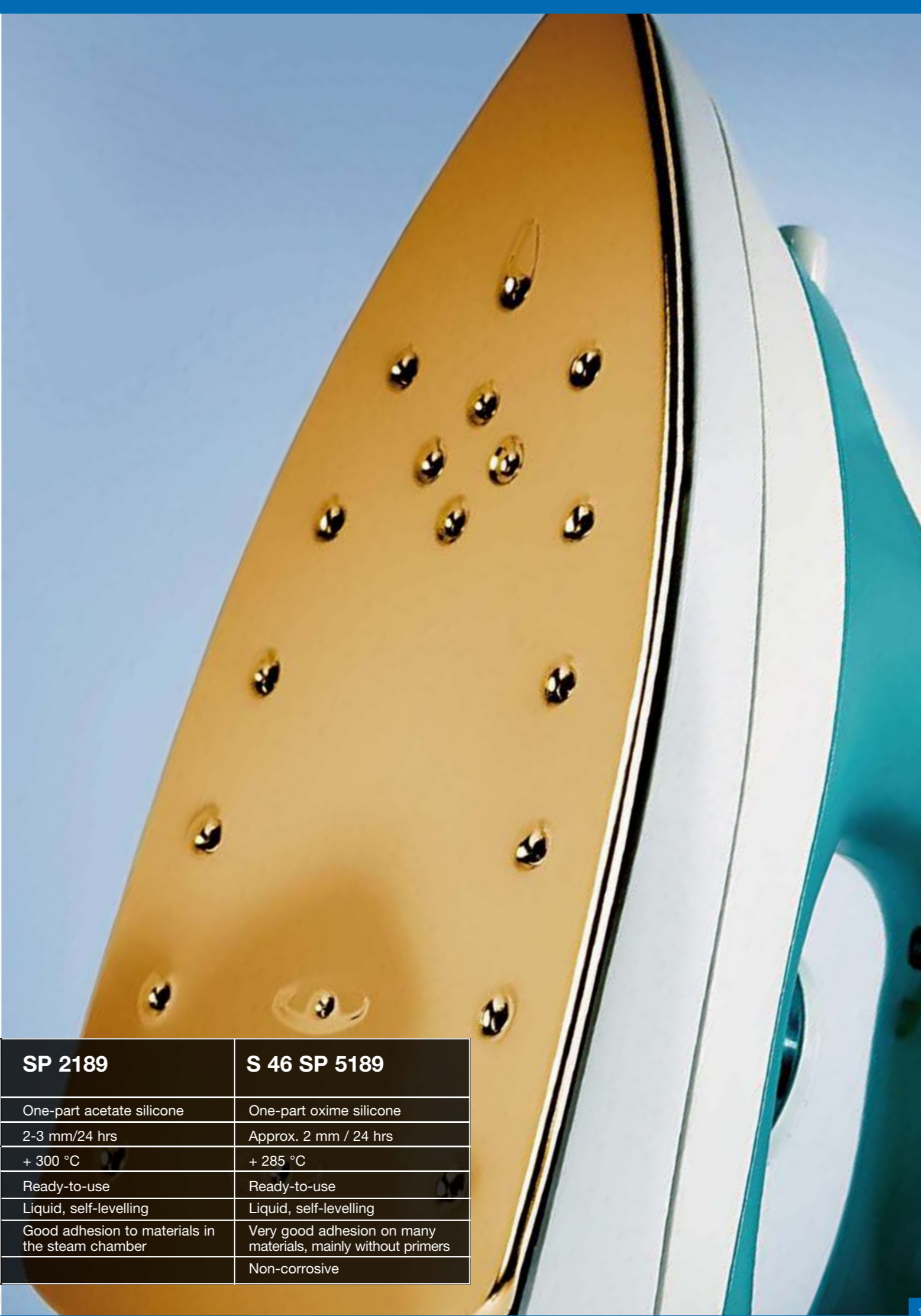


### The OTTO solution.

The special composition of the OTTO products facilitates temperature-resistant sealing up to 300 °C.



Novasil®	SP 2189	S 46 SP 5189
CROSS-LINKING SYSTEM	One-part acetate silicone	One-part oxime silicone
CURING CHARACTERISTICS	2-3 mm/24 hrs	Approx. 2 mm / 24 hrs
WORKING TEMPERATURE	+ 300 °C	+ 285 °C
PRINCIPAL CHARACTERISTICS	Ready-to-use	Ready-to-use
	Liquid, self-levelling	Liquid, self-levelling
	Good adhesion to materials in the steam chamber	Very good adhesion on many materials, mainly without primers
		Non-corrosive

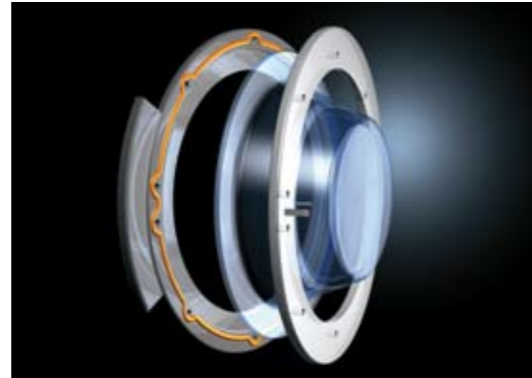




# Reliable, even when things start to spin

Very specific properties such as great strength and adhesive power are required on washing machines, dryers and refrigerators in order to provide top performance for bonded covers, balance weights or insulating elements, even if there are vibrators.

OTTO also offers a series of PU adhesives with a wide variety of hardness grades and processing times, depending on what is required.

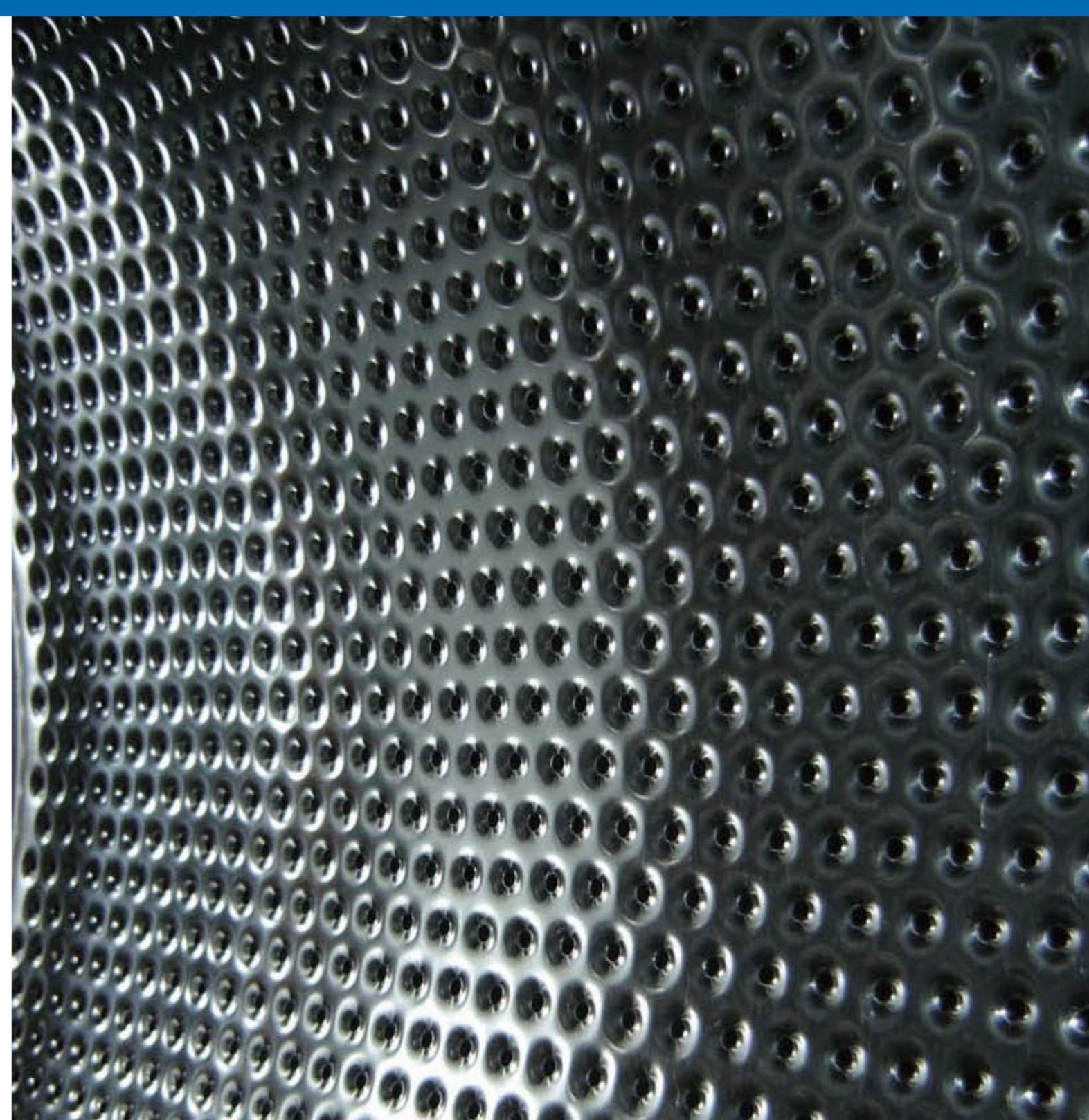


### The OTTO solution.

For these applications OTTO offers a broad spectrum of two-part PU adhesives with a wide variety of reactivity settings and features. These can be adjusted to individual requirements.



OTTOCOLL®	P 520	P 520 SP 4897	P 520 SP 5276	P 520 SP 5477	P 520 SP 5747	P 520 SP 6319
CROSS-LINKING SYSTEM	Two-Part PU / 1:1 (v/v)	Two-Part PU / 1:1 (v/v)	Two-Part PU / 1:1 (v/v)	Two-Part PU / 1:1 (v/v)	Two-Part PU / 1:1 (v/v)	Two-Part PU / 1:1 (v/v)
CURING CHARACTERISTICS POT LIFE	Approx. 60 minutes	Approx. 50 minutes	Approx. 2 minutes	Approx. 7 minutes	Approx. 5 minutes	Approx. 20 minutes
WORKING TEMPERATURE	- 30 to + 80 °C Temporarily +100 °C	- 30 to + 80 °C Temporarily +100 °C	- 30 to + 80 °C Temporarily +100 °C	- 30 to + 80 °C Temporarily +100 °C	- 30 to + 80 °C Temporarily +100 °C	- 30 to + 80 °C Temporarily +100 °C
PRINCIPAL CHARACTERISTICS	Non-slump / thixotropic	Non-slump / thixotropic	Non-slump / thixotropic	Non-slump / thixotropic	Non-slump / thixotropic	Non-slump / thixotropic
	Mixed viscosity approx. 400,000 mPas	Mixed viscosity approx. 250,000 mPas	Mixed viscosity approx. 400,000 mPas	Mixed viscosity approx. 200,000 mPas	Mixed viscosity approx. 230,000 mPas	Mixed viscosity approx. 300,000 mPas
	Shore D approx. 60	Shore D approx. 70	Shore D approx. 85	Shore D approx. 75	Shore D approx. 80	Shore D approx. 65












# Ready- to-Use

**O** TTO Premium products are available in containers in various useful shapes and sizes.

**T**o make them easier to use in production, two-part silicone adhesives are packed into pre-configured, ready-to-use mixing units.

**T**he table gives you an initial overview. If you have any questions or special wishes, we will gladly advise you.

	20 l Plastic pail	60 l Metal pail	200 l Metal drum	310 ml Plastic cartridge	400 ml Aluminium sachet	580 ml Aluminium sachet	330 ml Side-by-side cartridge (mixing ratio 10:1)	2 x 190 ml Side-by-side cartridge (mixing ratio 1:1)	2 x 310 ml Side-by-side cartridge (mixing ratio 1:1)
<b>Outer diameter</b>				50 mm	48 mm	48 mm			
<b>Inner diameter</b>	282 mm +/- 1.5 mm	355 mm	571.5 mm +/- 1.5 mm						
<b>Length</b>				215 mm	220 mm	320 mm	247.7 mm	170.0 mm	240.0 mm
<b>Height</b>	367 mm +/- 2 mm	656 mm	887 mm +/- 3 mm						
<b>Width</b>							70.0 x 51.0 mm	90.8 x 50.4 mm	90.8 x 50.4 mm
									
<b>Remarks</b>	For <b>automated</b> application			For <b>manual</b> application of <b>one-part</b> materials			For <b>two-part silicones</b> in testing and / or <b>pre-series</b> phase	For <b>OTTOCOLL® P 520</b>	



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