

Novasil® Products for electronics



Quality creates cohesion



SEALING & BONDING

Quality creates cohesion ... for over 140 years!



Founded in Berlin in 1881 by Hermann Otto as a window putty manufacturer, the company has been producing silicone sealants since the early 1960s. Adhesives based on polyurethanes, silane-terminated polymers (hybrid) and acrylates round off the product range. The sealants and adhesives are developed in OTTO's own laboratories and marketed under the brand names of OTTOCOLL® (sealants), OTTOCOLL® (adhesives) and Novasil® (industrial applications). A broad range of special products facilitates solutions to complex problems.

As a manufacturer, OTTO is synonymous with top expertise in sealing and adhesive technology in industry and trade across all sectors. With its products, most of which are premium, OTTO has done more than just secure market leadership in its sector; it is also considered a driver of innovation in many fields due to its quality and performance.

A close partnership with its customers provides the precondition for OTTO satisfying the needs

of discerning customers. Sales currently occur through more than 40 field staff employees. OTTO is appreciated as a socially committed, reliable employer by its around 490 employees. Modern production plants and an attractive administration building provide the perfect working atmosphere from both a profession and social point of view and create the best conditions for employees who are both satisfied and motivated.

With the large training rooms, the OTTO training centre offers plenty of room to hold theoretical as well as practical seminars and training sessions on all topics relating to sealants and adhesives.

OTTO is expanding its production capacities by building a new production plant. Following a construction period lasting just 18 months, the first stage of construction's fully automatic production line was commissioned on schedule in late summer 2020.

OTTO – quality creates cohesion

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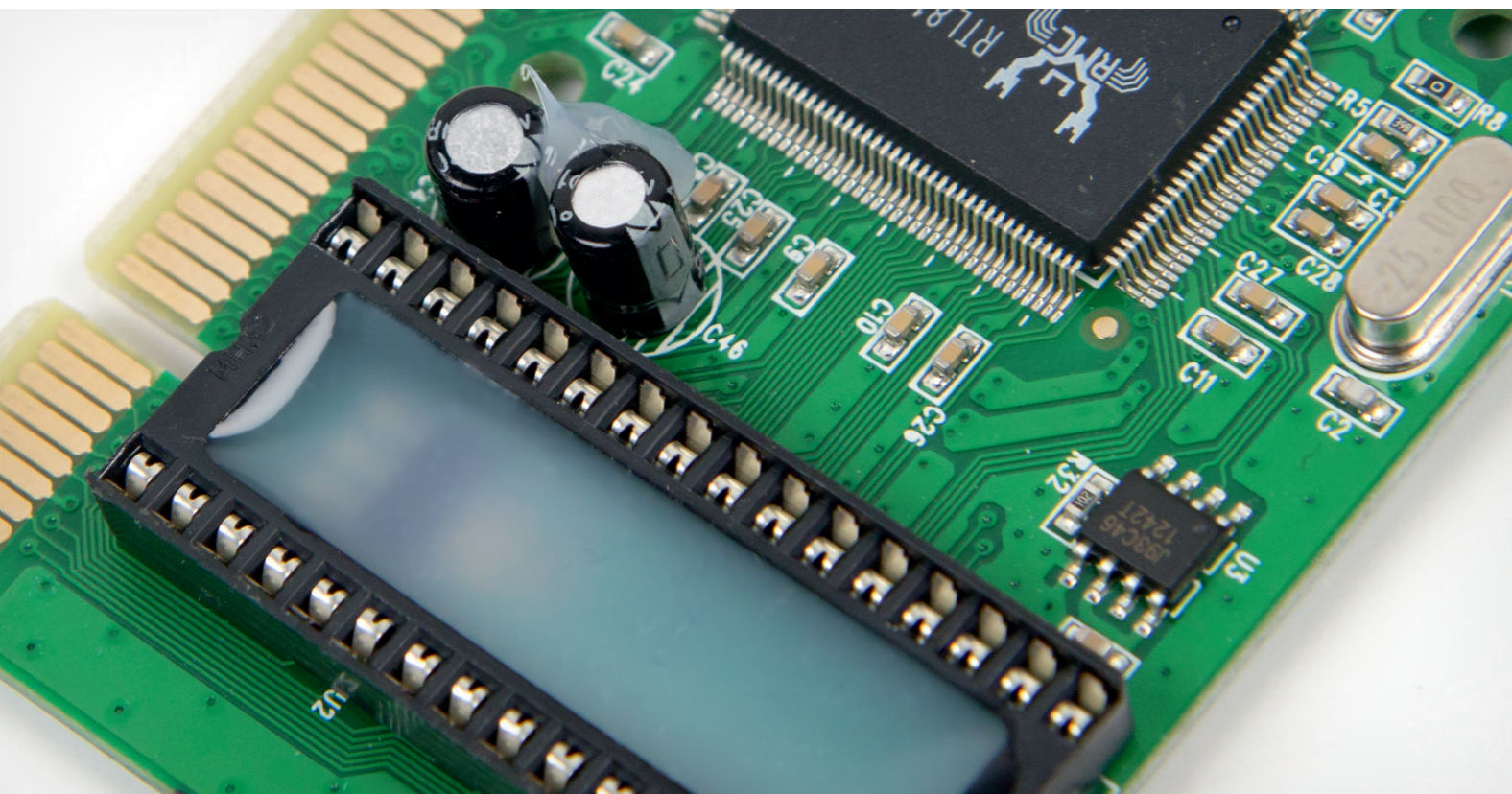
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www.otto-industry.com

The information in the present document corresponds to the status quo on going to print, (refer to the index on the outside back cover). With a new edition this edition becomes invalid.

Due to the many possible influences during and after application, the customer always has to carry out trials first. Please observe the respective technical data sheet! This information is available on the Internet at www.otto-chemie.com. Errors and typographical errors are excepted.

Potting electronic components



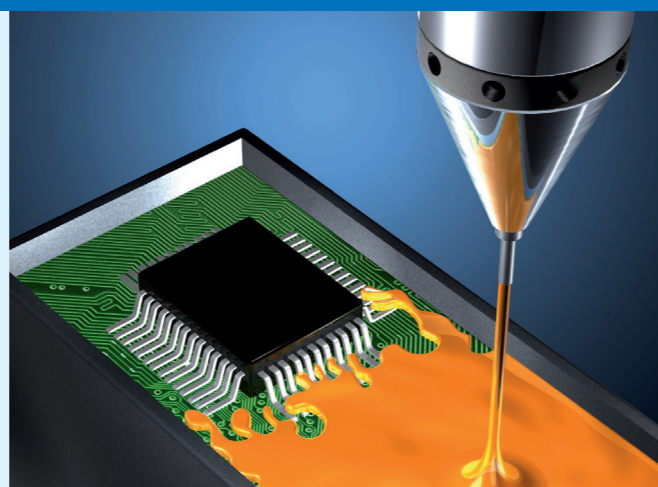
Increasing requirements on the quality and resilience of electronic components require materials that support their functionality.

The dissipation of heat at high power densities, the protection of components and possible undercuts, the high temperature resistance, the compensation of stresses, and much more require the highest standards for a permanently stable potting materials.

The OTTO solution

Potting materials from OTTO protect highly sensitive electrical and electronic components from moisture, short circuits and jolts. Among other things, they offer the following advantages:

- ✔ Excellent adhesion to many plastics
- ✔ Quick curing, even with thick layers for fast industrial production
- ✔ Low viscosity for filling cavities without air bubbles



Novasil® RTV-2 Addition cure silicones for potting Gel & thermal conductive

Silicones	AS620	AS622	AS624	AS830	AS832	AS835
Characteristics	2-components	2-components	2-components	2-components	2-components	2-components
Type	TC	TC	TC	Gel	Gel	Gel

Processing properties

Very flowable < 8,000 mPas	✔	✔	✘	✔	✔	✔
Flowable > 8,000 mPas	✘	✘	✔	✘	✘	✘

End state

Hard – Shore A > 80	✘	✘	✘	✘	✘	✘
Medium elastic – Shore A > 30	✔	✔	✔	✘	✘	✘
Soft elastic – Shore A < 30	✘	✘	✘	✔	✔	✔

Features

Thermal conductive	✔	✔	✔	✘	✘	✘
Temperature > 150 °C	✔	✔	✔	✔	✔	✔
UV indicator	✘	✘	✘	✘	✘	✘
Color	red	grey	grey	crystal clear	crystal clear	crystal clear

Tests

UL 94 V-0	✔	✔	✔	✘	✘	✘
UL 94 HB	✘	✘	✘	✔	✔	✔

Applications

Potting electronic components	✔	✔	✔	✔	✔	✔
Potting components stressed by high temperatures	✔	✔	✔	✔	✔	✔
Dissipation of heat	✔	✔	✔	✘	✘	✘

Characteristics

Tacky & self bonding	✘	✘	✘	✔	✔	✔
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Novasil® RTV-2

Condensation cure silicones for potting standard application

Silicones - alkoxy	S822	S823	S824	S825	S152	S651
Characteristics	2-components	2-components	2-components	2-components	2-components	2-components
Type	Potting	Potting	Potting	Potting	Potting	Potting

Processing properties

Very flowable <8,000mPas	☑	☑	☑	✗	☑	☑
Flowable >8,000mPas	✗	✗	✗	☑	✗	✗

End state

Hard – Shore A >80	✗	✗	✗	✗	✗	✗
Medium elastic – Shore A >30	✗	☑	✗	☑	☑	☑
Soft elastic – Shore A <30	☑	✗	☑	✗	✗	✗

Features

Heat conductive	✗	✗	✗	☑	☑	☑
Temperature > 150°C	✗	✗	✗	✗	✗	✗
UV indicator	✗	✗	✗	✗	✗	✗
Color	transparent	white	black	white	white	black

Tests

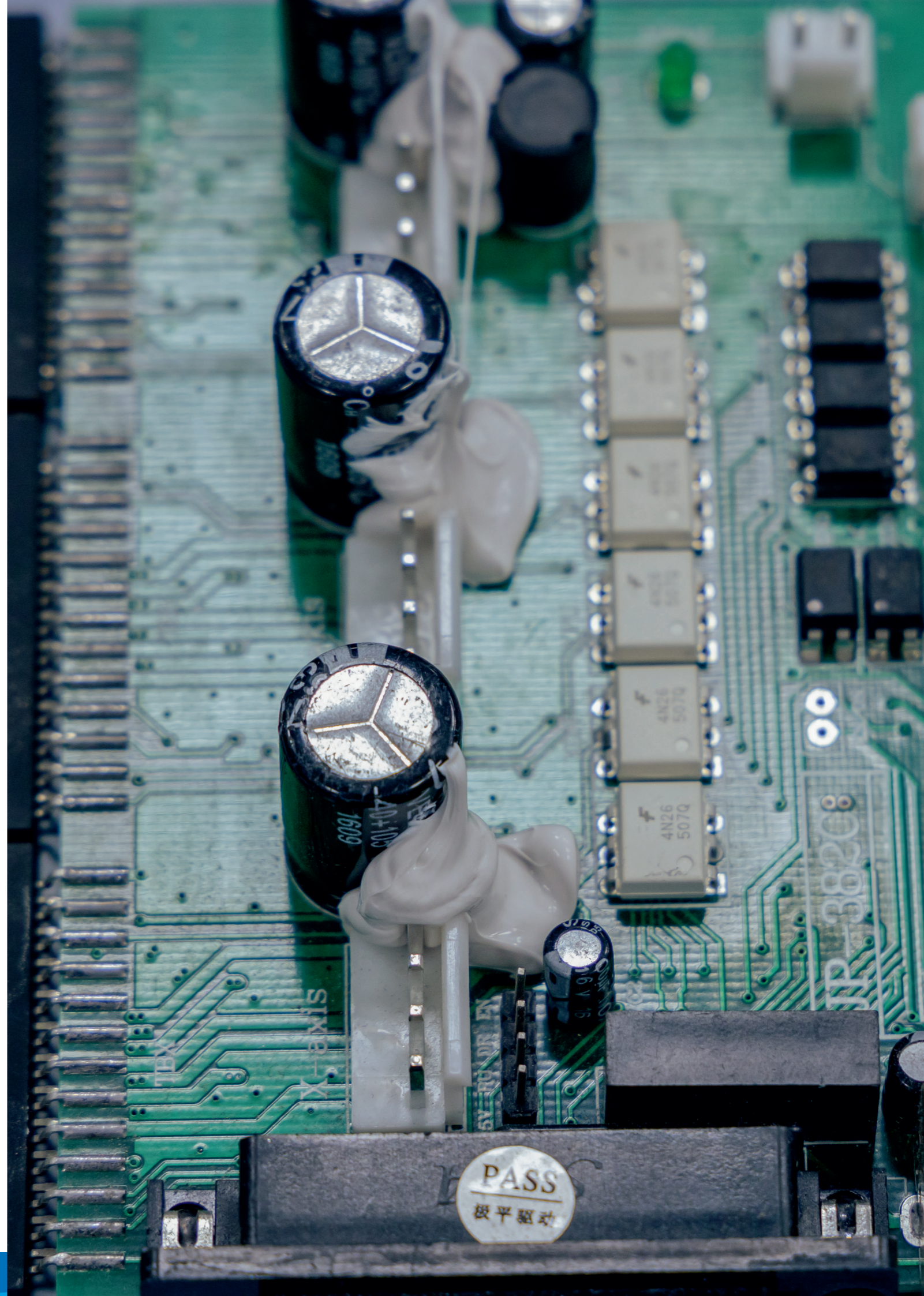
UL 94 V-0	✗	✗	✗	✗	☑	☑
UL 94 V-1	✗	✗	✗	☑	✗	✗
UL 94 HB	☑	☑	☑	✗	✗	✗

Applications

Potting electronic components	☑	☑	☑	☑	☑	☑
Potting components stressed by high temperatures	☑	☑	☑	☑	☑	☑
Dissipation of heat	✗	✗	✗	☑	☑	☑

Characteristics

Self bonding	☑	☑	☑	☑	☑	☑
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Novasil® RTV-1 & 2

Condensation cure silicones

adhesive sealant & conformal coating

Silicones - alkoxy	S800	S802	S49	S803
Characteristics	1-component	1-component	2-components	1-component
Type	Adhesive	Sealant	Adhesive	Coating
Processing properties				
Flowable > 8,000mPas	✗	✗	✗	☑
Paste	☑	☑	☑	✗
End state				
Medium elastic – Shore A > 30	☑	✗	☑	✗
Soft elastic – Shore A < 30	✗	☑	✗	☑
Features				
High temperature > 150 °C	☑	☑	☑	☑
UV indicator	✗	✗	✗	☑
Color	black/white	transparent	black	transparent
Tests				
UL 94 HB	☑	☑	☑	☑
Applications				
Elastic bonding and sealing of electrical and electronic components	☑	☑	☑	☑
Glass adhesion	☑	☑	☑	☑
Very good plastic adhesion	☑	☑	☑	☑
PCB Coating	✗	✗	✗	☑
Characteristics				
Excellent weathering, ageing and UV-resistance	☑	☑	☑	☑
Non-corrosive	☑	☑	☑	☑
Good temperature resistance (- 40 °C to 180 °C)	☑	☑	☑	☑
High adhesion strength	☑	☑	☑	✗



Benefit from knowledge and experience

High quality and highly specialised sealants and adhesives make OTTO an important partner for many industries.

For the lights and electronics industry, we already offer a wide range of products that should cover most of your projects. Our offer is completed by our customer-oriented services.

Not only can you expect always consistently high product quality and quick and reliable delivery from OTTO, but also the greatest possible flexibility, many years of experience and extensive expert knowledge when it comes to developing tailor-made solutions.

The earlier you contact us, the better we can meet your needs. From the first product design to setting up production, we are at your side to help and advise.



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Application consultation

Which sealant and adhesive suits your task best? Our application consultation defines a profile of requirements together with you, helping you to find exactly the right product from our product range.

Prototype consultation

Are you planning a new product? The earlier you speak with us, the better we can grasp your ideas. And perhaps even your optimise your product idea when it comes to the design and costs. We are also happy to give you sample sealants and adhesives to use for prototype tests.

Individual product solutions

If we do not have the sealant or adhesive to meet your ideas, then we will work on implementing one. We will first clarify together with you the exact requirements, such as the physical and chemical loads, the materials used, the specific properties of the point of bonding, aesthetic requirements and production sequences. Then we will develop exactly the solution that suits your product. Also in a small series.

Process consultation

The integration of sealants and adhesives into the production process is another focus of our range of consultation. No matter whether semi-automatic or fully automatic, we are happy to advise you in choosing the processing machines and optimise the processing times to ensure a fluid production process.

The OTTO360° service package

MORE THAN SEALANTS AND ADHESIVES

As an OTTO customer, you get more than premium quality sealants and adhesives. You also benefit from a comprehensive service package that supports you in your daily work and makes it noticeably easier.

Whether it's advice, ordering and delivery or equipping our retailers on site, with our OTTO360° service package we always try to offer our customers the best possible support in all areas – from professionals for professionals.

 Flexible production



 Prototype consultation | Industry testing



 Process consultation for new systems & production automation



 Development of product solutions together with the customer



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