LOCTITE®

HIGH PERFORMANCE GASKETING

COMPLETE & INNOVATIVE SOLUTIONS FOR THE AUTOMOTIVE INDUSTRY

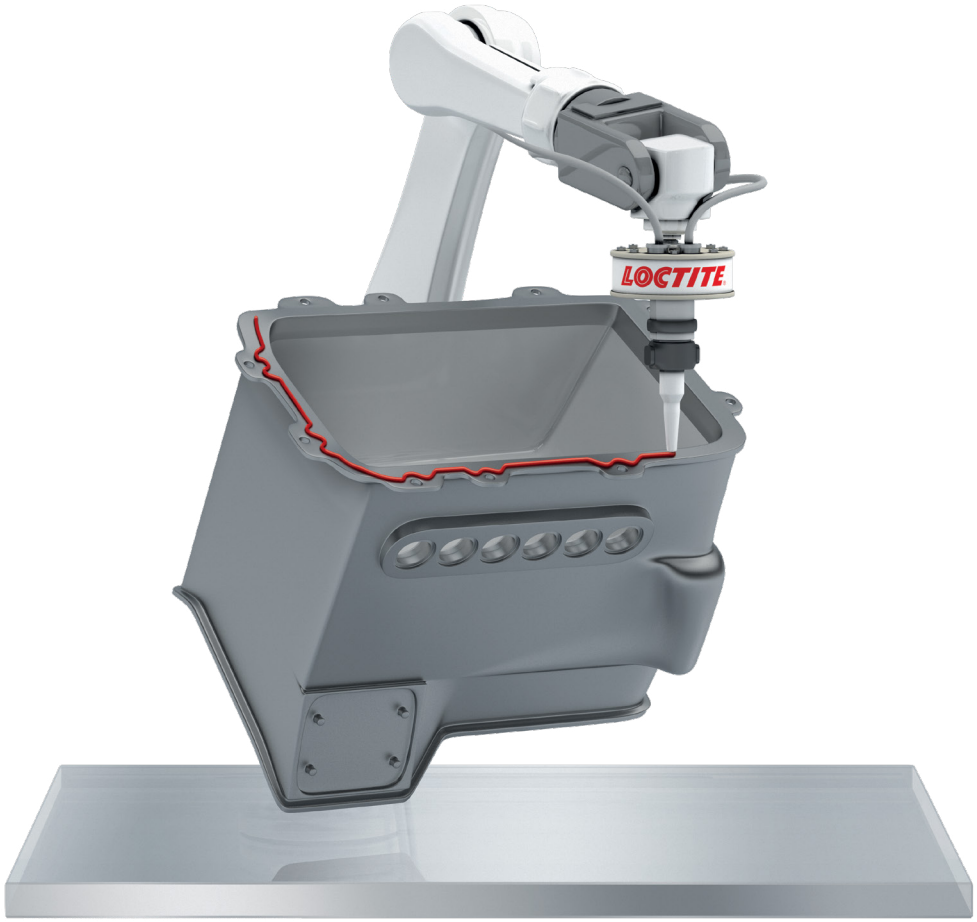
Henkel

Click for more information!

Henkel, a **trusted Solutions Partner**

“DRIVING INNOVATION, TOGETHER.„

CONTENT



Our aim is to
drive your efficiency and quality with sustainable solutions.

LOCTITE® liquid gasketing products are the most trusted sealing solutions for powertrain assemblies. With Henkel's well proven and innovative gasketing solutions combining both product and process design, LOCTITE® enables the highest quality and most efficient solution – even in demanding transmission components and pumps that previously required costly hard gaskets.

Henkel's LOCTITE® portfolio includes best-in-class sustainable and eco-friendly products.

1. INTERNAL COMBUSTION ENGINE and HYBRID POWERTRAIN SYSTEM

For decades, leading OEMs rely on Henkel's proven Formed-in-Place Gasketing (FIPG) products for sealing engine oil pans, timing cover, rear seal retainers, engine T-joints, oil pumps etc. Henkel's innovative Cured-in-Place Gasketing (CIPG) solutions enable new assembly processes.

2. TRANSMISSION SYSTEM

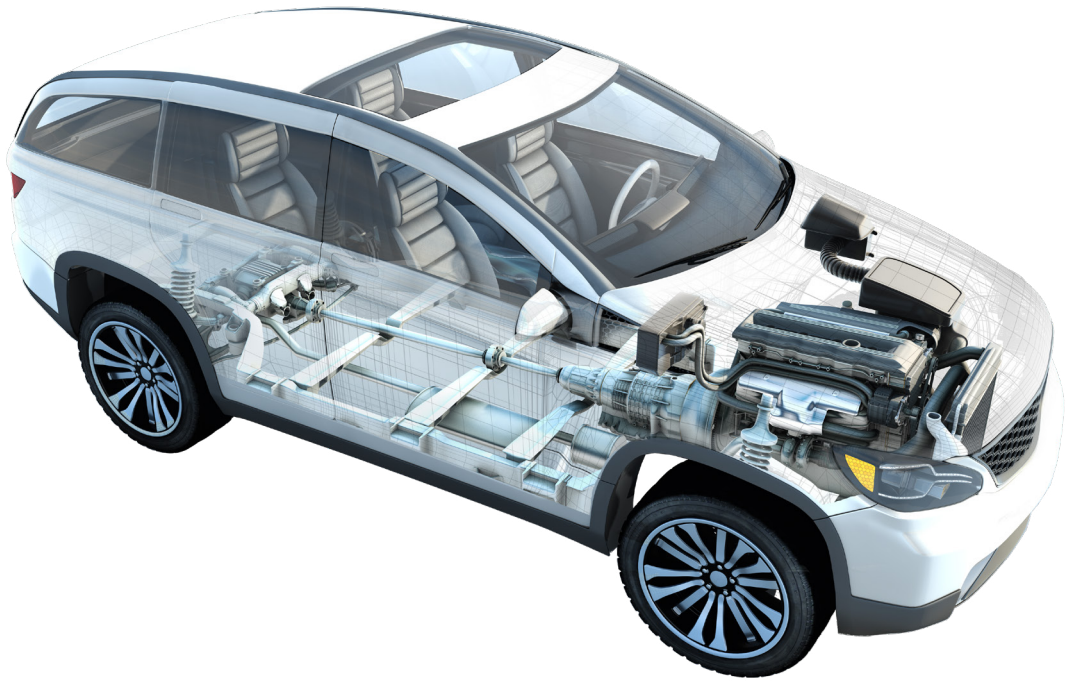
Innovative LOCTITE® FIPG and CIPG product range, with outstanding resistance against transmission fluids enable the use of machine dispensed liquid gaskets in demanding sealing applications. Transmission oil pans, housings, covers etc. no longer require hard gaskets, unlocking saving potentials in processes, materials and logistics.

3. COOLING & HEATING SYSTEM

With proprietary technology, LOCTITE® CIPG offers unmatched resistance against water+glycol mixtures, enabling cost efficient sealing solutions for the cooling/ heating system, including water pumps, header tanks or radiators.

4. EXHAUST SYSTEM

Henkel's gasketing products are suitable for turbo chargers and super chargers.



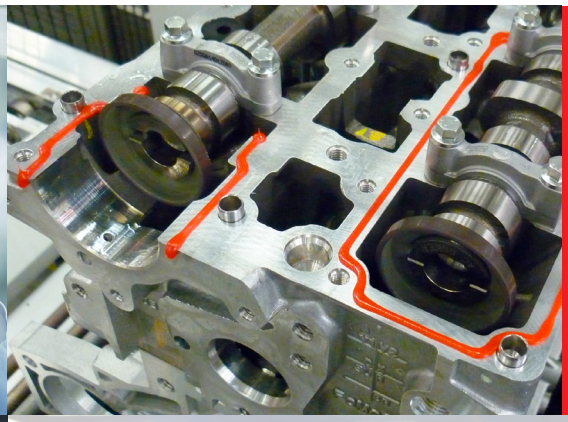
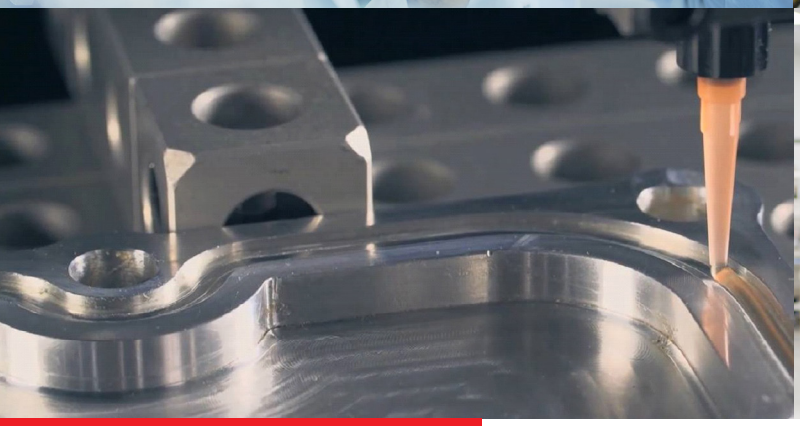
...by providing you
with a full solution package.

With engineering, design and application process capabilities, plus an established global infrastructure backed by a network of more than 3,000 engineers, Henkel delivers comprehensive and innovative solutions for individual applications and entire assembly lines.

1. BROAD TECHNOLOGY PORTFOLIO
We have a market leading position in FIPG, CIPG, adhesives, sealants and functional coatings. In addition, we support our customers in overcoming engineering challenges by leveraging our strong R&D competences to develop customized solutions.

2. PROCESS EXPERTISE
With over 60 years of experience in the automotive industry, our global team of solution engineers has an unparalleled application and process understanding. Our team offers dedicated support to co-develop sustainable production processes that meet large-scale manufacturing requirements.

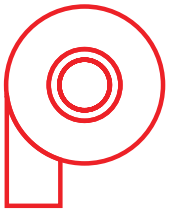
3. EQUIPMENT SUPPORT
Our portfolio also contains dispensing and curing equipment. In addition, we partner with a large network of leading equipment suppliers. We also have the capabilities and equipment available for modeling, simulation and mechanical validation.


Performance Comparison

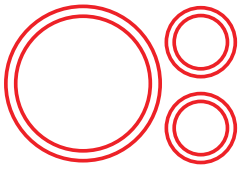
The advantages of LOCTITE® High Performance Gasketing over conventional gasketing.

CONVENTIONAL GASKETING METHOD	VS	LOCTITE® PERFORMANCE GASKETING



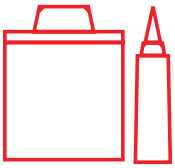
Tapes

- Relaxation and re-torquing
- Fretting corrosion manual application
- Large inventory



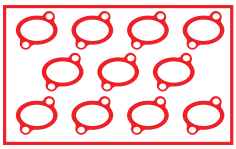
O-Rings

- Manual application
- Extra machinery operation
- Large inventory



Sealing Compounds

- Often solvent based
- Dogging and re-torquing
- Messy



Cutting Paper Gaskets

- Time consuming
- Operator skill demanded
- Inconsistent performance

Henkel has invented advanced gasketing solutions for decades. With the combination of cutting-edge technologies and innovative processes, Henkel is unmatched and unique in the adhesive and sealing industry.

High Performance Gasketing

Meet the most demanding application requirements with LOCTITE® performance gasketing solutions.

Every day at Henkel, we invent more than just quality LOCTITE® gaskets for the automotive industry; we provide high-performance sealing systems to meet all of today's biggest challenges.

Henkel has come up with a new range of breakthrough technologies and processes to help automotive manufacturers and tiered suppliers achieve their goals.

Innovative technologies: polyacrylate, reactive polyisobutylene, UV cured silicone, 2-component silicone, flexible anaerobic and foamed gaskets.

MATERIAL PERFORMANCE

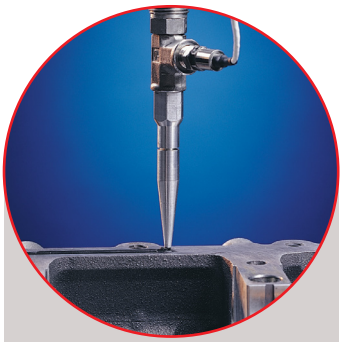
- High oil and ATF resistance
- High temperature resistance
- High adhesion to plastic
- High elongation
- Better permeation resistance
- Water glycol resistance

COUPLED WITH UNIQUE PROCESSES

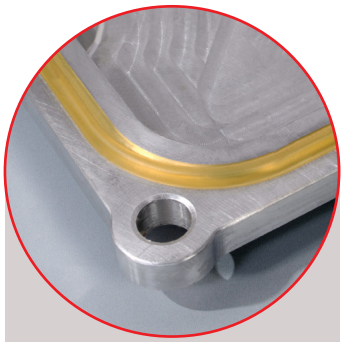
- Automated robotic application: fast, precise & floor space saving
- Fast UV-curing within seconds (no time-consuming oven cure)
- Application equipment with built-in QC solutions and high productivity

ENABLE DESIGN FREEDOM

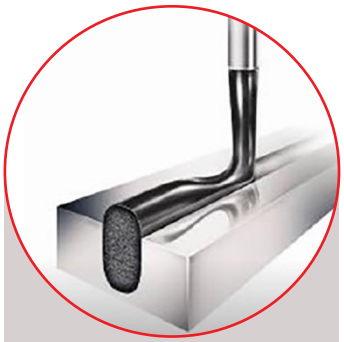
- Narrow and flexible flange design
- Supported by LOCTITE® design guidelines



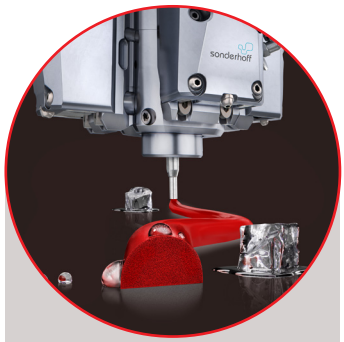
Formed-in-Place (FIP) gaskets are applied as a liquid sealant to one of the flange surfaces before the parts are assembled. After assembly, the FIP gasket spreads and cures between the flanges, filling gaps, scratches and surface irregularities to provide a durable seal.



Cured-in-Place (CIP) gaskets are liquids that are applied by machines. These machines dispense the gasket material in precise beads to one of the flanges. The material is cured by ultraviolet (UV) light to form an elastomeric material with adhesion to the flange surface. Sealing is achieved through compression of the cured gasket during flange assembly.



Foam sealing with FIPFG (Formed-In-Place-Foam-Gasket) technology is markedly more efficient and economical than conventional insert seals (EPDM, TPE, NBR). The fluid or thixotropic sealant mass is applied directly ("in place") to the component via a usually movable dispenser head, where it reacts at room temperature to form a flexible sealing foam.



The new FIP CC technology (Formed In-Place Closed-Cell) combines the fluid resistance of the silicone world with the attractive material costs of the polyurethane world.

Henkel can provide the application equipment for both types of physically foamed gaskets.

Design, engineering, prototyping & validation support

Henkel offers support – from part design, simulation, application process to prototyping and validation:

With our engineering, application and testing centers in Asia, Europe and North America, we can offer Advanced Customer Support, including: material cards generation, CAE software for performance simulation, design optimization, prototyping and application validation for our customers. Henkel also offers a small series production of ready-to-use CIPGs on customer parts.

Please contact us in your early planning phase to get our full engineering support from the design phase through part validation.

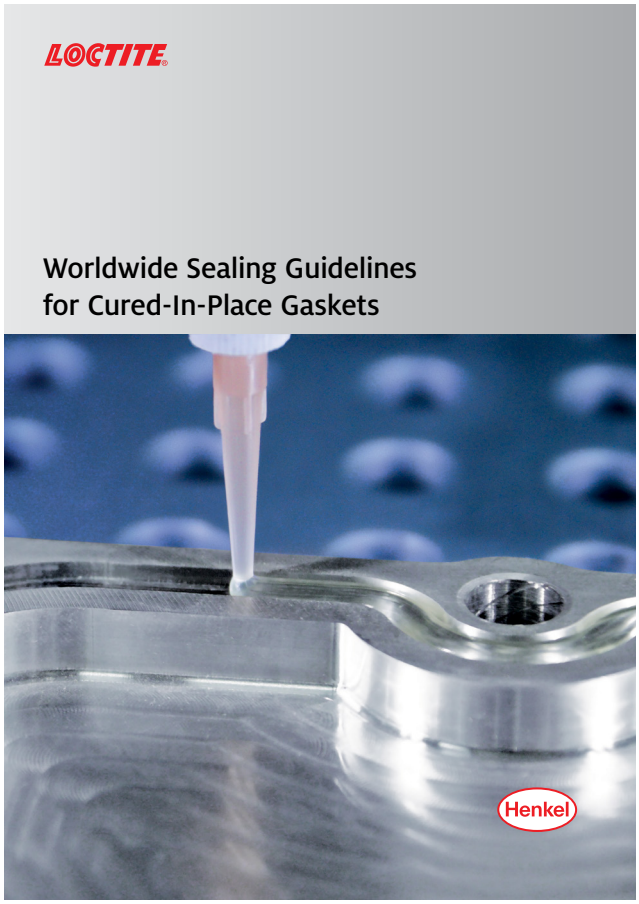
For more information, **please use our contact form below.**

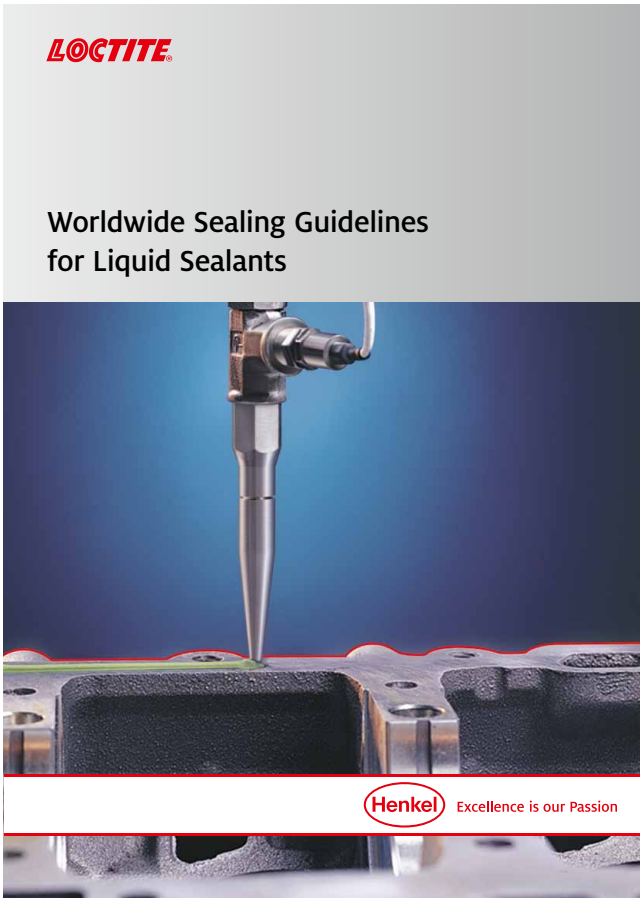
CONTACT US

Design, engineering, prototyping, validation

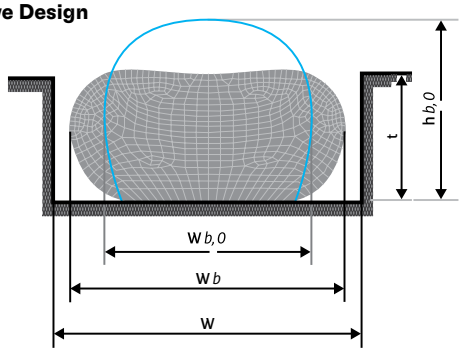
OUR SUPPORT FOR YOUR SUCCESS

Our Worldwide Sealing Guidelines for Cured-in-Place-Gaskets and Liquid Sealants will help you to optimize your flange design.

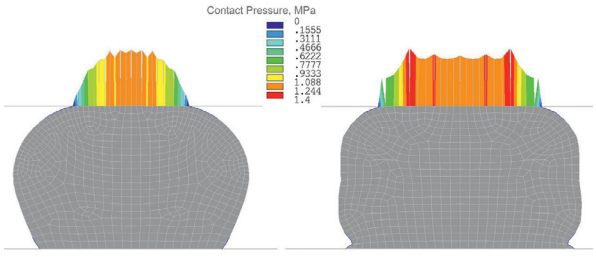


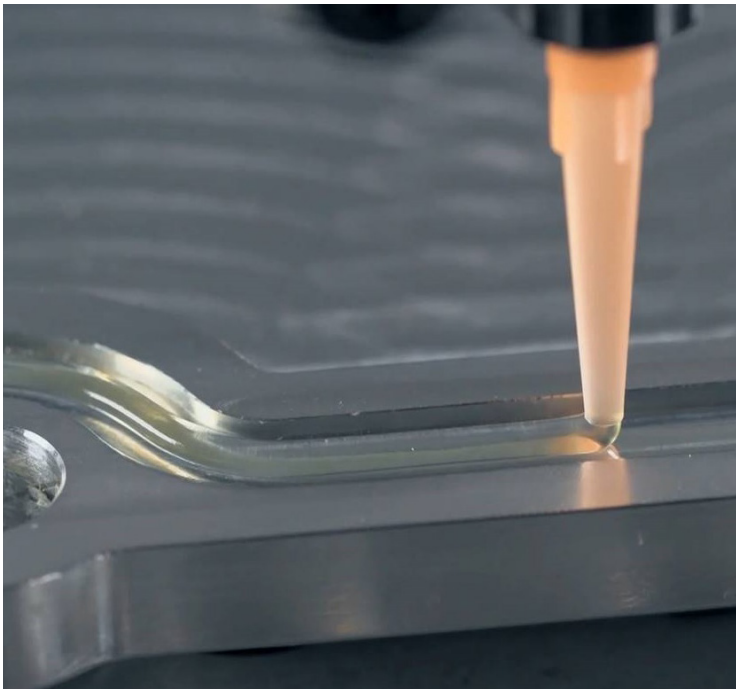


Groove Design



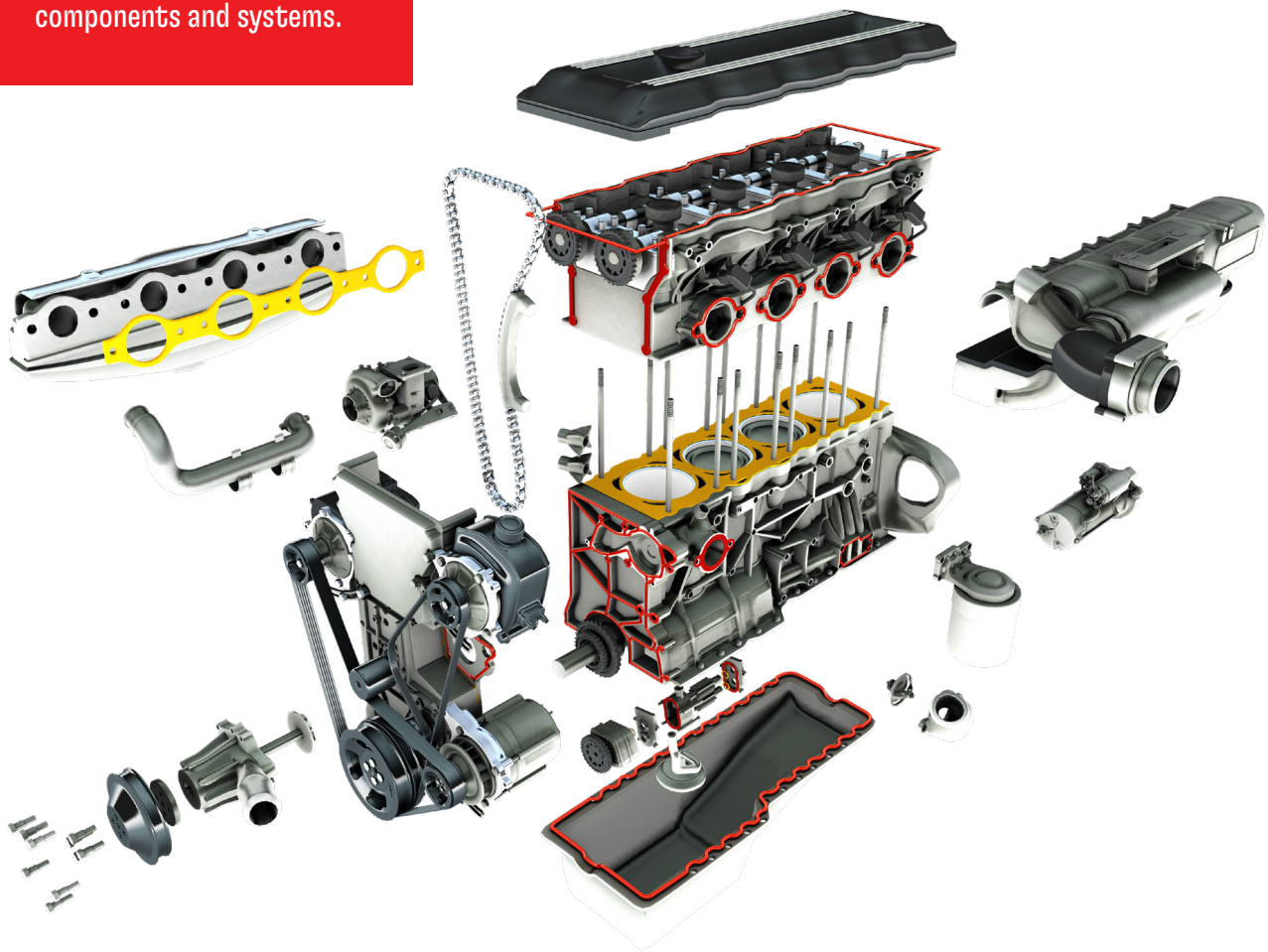
Minimum Required Compression





Our Ambitions

Henkel technology solutions are designed to optimize reliability and efficient assembly of engine components and systems.



Henkel Solutions for
ICE SYSTEMS

1. Oil Pan
2. Timing Cover
3. Valve Cover
4. Front and Rear Cover
5. Cam Caps
6. Turbo/Super Chargers
7. Core Plugs

Check the comprehensive LOCTITE® portfolio **for Core Plug Solutions**

Discover our portfolio for
ICE SYSTEMS

SILICONE FIPG

Product	Chemistry	Curing	Bond Strength / Shear Strength (N/mm^2)	Key properties
LOCTITE® SI 5970/5970C	Silicone	RTV	≥ 1.5	Good oil resistance, flexible to withstand high joint-movements, withstands on line low-pressure tests, oxime-free
LOCTITE® SI 5900/5910	Silicone	RTV	≥ 1.0	Excellent oil resistance, flexible to withstand high joint-movements, withstands on line low-pressure tests
LOCTITE® SI 5615	Silicone	Two-component room temperature cure	≥ 1.5	Fast curing, good oil resistance, flexible to withstand high joint-movements, withstands on line low-pressure tests, oxime-free
LOCTITE® SI 5660	Silicone	RTV	≥ 1.8	Good water/ glycol and oil resistance, flexible to withstand high joint-movements, withstands on line low-pressure tests
LOCTITE® SI 5781/5977	Silicone	RTV	–	Good oil resistance, good adhesion on oil-contaminated surfaces, flexible, oxime-free

POLYACRYLATE CIPG + FIPG

Product	Chemistry	Curing	Elongation	Key properties
LOCTITE® AA 5820/5821/ 5810B	Telechelic polyacrylate	RTV	≥ 150%	Non-silicone FIPG, outstanding oil resistance including ATF, high elongation, low permeability for hydrocarbons, no foaming of hot lubricants, withstands on line low-pressure tests
LOCTITE® AA 5884	Telechelic polyacrylate	UV	≥ 200%	Non-silicone CIPG, UV-cure within seconds, outstanding oil resistance including ATF, high elongation, low permeability for hydrocarbons, no foaming of hot lubricants

ANAEROBIC FIPG

Product	Chemistry	Curing	Bond Strength / Shear Strength (N/mm^2)	Key properties
LOCTITE® 5188/5189	Dimethacrylate	Anaerobic RT cure	≥ 7	Elastic gasket for rigid metal flanges, suitable for aluminum, excellent oil resistance, good adhesion on oil-contaminated surfaces
LOCTITE® 510/5102/5103	Dimethacrylate	Anaerobic RT cure	≥ 5	Gasket for rigid metal flanges, suitable for aluminum, excellent oil resistance, high temperature resistance up to 200°C service temperature
LOCTITE® 518/5182	Dimethacrylate	Anaerobic RT cure	≥ 5	Gasket for rigid metal flanges, suitable for aluminum, excellent oil resistance, good adhesion on oil-contaminated surfaces, allows disassembly of flanges for repair

Please check our online **Technical Data Sheets** for detailed technical information.

Our Ambitions

Improve your productivity, cut processing costs and simplify your logistics by replacing costly hard gaskets with media resistant CIPG and FIPG.

Discover our portfolio for
TRANSMISSION SYSTEMS

1. **Transmission Housing**
2. **Transmission Cover**
3. **Transmission Oil Pan**
4. **Differential Case**
5. **Transfer Case**
6. **Retaining**

Check the comprehensive LOCTITE® portfolio **for Retaining Solutions**

Discover our portfolio for
TRANSMISSION SYSTEMS

SILICONE FIPG

Product	Chemistry	Curing	Bond Strength / Shear Strength (N/mm^2)	Key properties
LOCTITE® SI 5970/5970C	Silicone	RTV	≥ 1.5	Good oil resistance, flexible to withstand high joint-movements, withstands on line low-pressure tests, oxime-free
LOCTITE® SI 5699/5999	Silicone	RTV	≥ 2.0	Good oil resistance, non-corrosive, blow-out resistant, flexible to withstand high joint-movements
LOCTITE® SI 5460	Silicone	RTV	0.6 – 1.6	Excellent oil resistance, flexible to withstand high joint-movements

POLYACRYLATE CIPG + FIPG

Product	Chemistry	Curing	Elongation	Key properties
LOCTITE® AA 5820/5821/ 5810B	Telechelic polyacrylate	RTV	≥ 150%	Non-silicone FIPG, outstanding oil resistance including ATF, high elongation, low permeability for hydrocarbons, no foaming of hot lubricants, withstands on line low-pressure tests
LOCTITE® AA 5884	Telechelic polyacrylate	UV	≥ 200%	Non-silicone CIPG, UV-cure within seconds, outstanding oil resistance including ATF, high elongation, low permeability for hydrocarbons, no foaming of hot lubricants

ANAEROBIC FIPG

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LOCTITE® 5188/5189	Dimethacrylate	Anaerobic RT cure	≥ 7	Elastic gasket for rigid metal flanges, suitable for aluminum, excellent oil resistance, good adhesion on oil-contaminated surfaces
LOCTITE® 510/5102/5103	Dimethacrylate	Anaerobic RT cure	≥ 5	Gasket for rigid metal flanges, suitable for aluminum, excellent oil resistance, high temperature resistance up to 200°C service temperature
LOCTITE® 518/5182	Dimethacrylate	Anaerobic RT cure	≥ 5	Gasket for rigid metal flanges, suitable for aluminum, excellent oil resistance, good adhesion on oil-contaminated surfaces, allows disassembly of flanges for service and repair
LOCTITE® 5203	Dimethacrylate	Anaerobic RT cure	1 - 6	Gasket for rigid metal flanges, suitable for aluminum, excellent oil resistance, allows easy disassembly of flanges for service and repair
LOCTITE® 5127	Methacrylate	Anaerobic RT cure	1 - 5	Elastic gasket for rigid metal flanges, suitable for aluminum, excellent oil resistance, can be used as coating/dressing for solid gaskets

Please check our online **Technical Data Sheets** for detailed technical information.

Our Ambitions

Enabling leaner, lighter and more cost-efficient designs.

Henkel solutions for
COOLING / HEATING SYSTEMS

1. Water Pump Housing
2. Water Pump ECU Housing
3. Connector Potting
4. Header Tank
5. Radiator

Discover our portfolio for

COOLING / HEATING SYSTEMS

SILICONE FIPG

Product	Chemistry	Curing	Bond Strength / Shear Strength (N/mm^2)	Key properties
LOCTITE® SI 5612	Silicone	Two-component room temperature cure	≥ 2.5	Good water resistance, fast curing, high temperature resistance, oxime-free
LOCTITE® SI 5699/5999	Silicone	RTV	≥ 2.0	Good oil resistance, non-corrosive, blow-out resistant, flexible to withstand high joint-movements
LOCTITE® SI 5660	Silicone	RTV	≥ 1.8	Good water/ glycol and oil resistance, flexible to withstand high joint-movements, withstands on line low-pressure tests

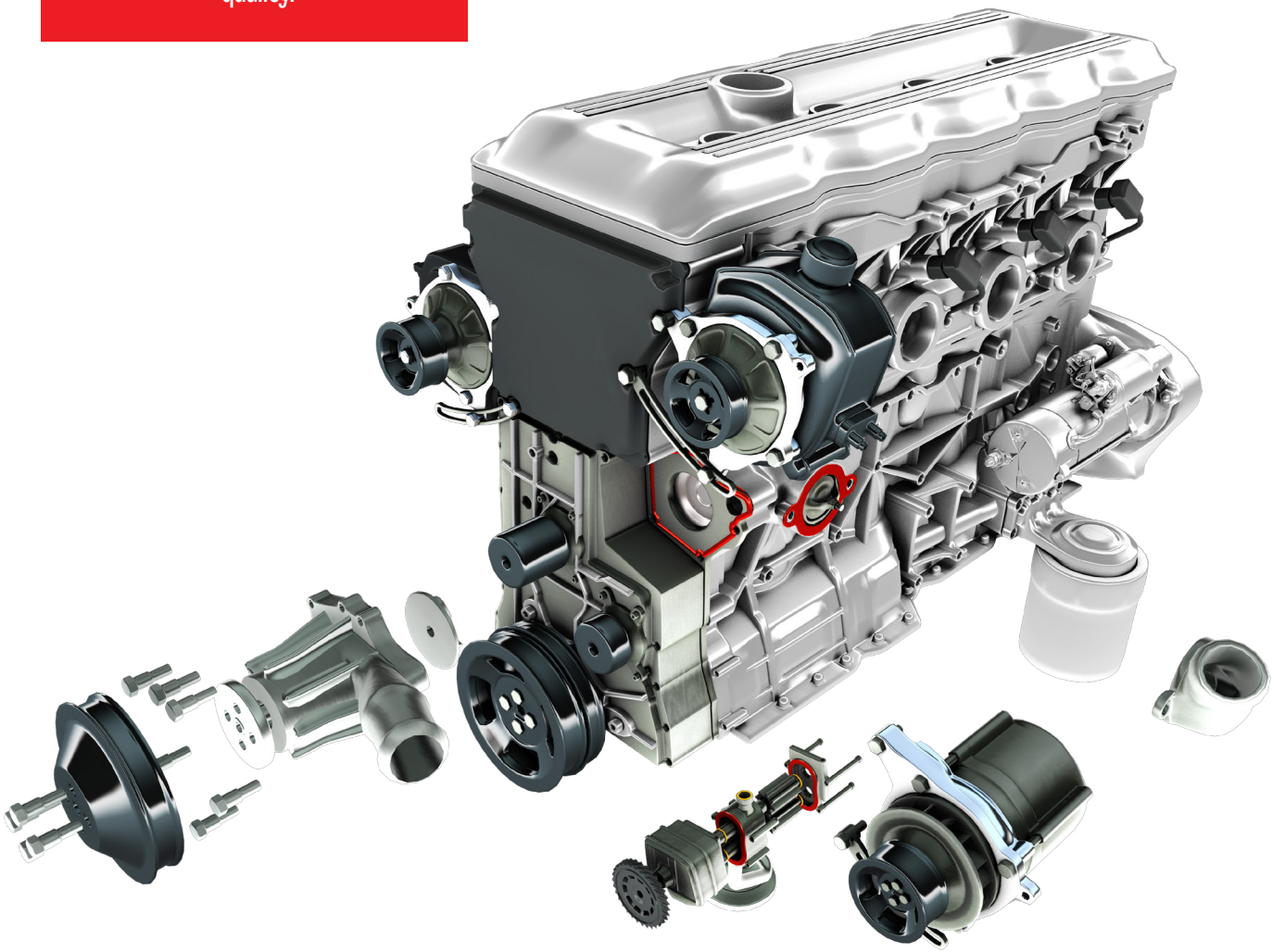
POLYACRYLATE CIPG

Product	Chemistry	Curing	Tensile Strength (N/mm^2)/ Elongation (%)	Key properties
LOCTITE® AA 5890	Polyacrylate	UV	6 Mpa/250%	Good coolant resistance, service temperature: -40°C to 130°C, good CS performance

Please check our online **Technical Data Sheets** for detailed technical information.

Our Ambitions

Enabling highly automated assembly process with constant quality.



Henkel solutions for
OIL PUMP

1. Pump Housing
2. ECU Housing
3. Connector Potting

Discover our portfolio for
OIL PUMP

SILICONE FIPG

Product	Chemistry	Curing	Bond Strength / Shear Strength (N/mm^2)	Key properties
LOCTITE® SI 5910	Silicone	RTV	≥ 1.0	Excellent oil resistance, flexible to withstand high joint-movements, withstands on line low-pressure tests
LOCTITE® SI 5699/5999	Silicone	RTV	≥ 2.0	Good oil resistance, non-corrosive, blow-out resistant, flexible to withstand high joint-movements
LOCTITE® SI 5970/5970C	Silicone	RTV	≥ 1.5	Good oil resistance, flexible to withstand high joint-movements, withstands on line low-pressure tests, oxime-free

POLYACRYLATE CIPG + FIPG

Product	Chemistry	Curing	Elongation	Key properties
LOCTITE® AA 5820/5821/ 5810B	Telechelic polyacrylate	RTV	≥ 150%	Non-silicone FIPG, outstanding oil resistance including ATF, high elongation, low permeability for hydrocarbons, no foaming of hot lubricants, withstands on line low-pressure tests
LOCTITE® AA 5884	Telechelic polyacrylate	UV	≥ 200%	Non-silicone CIPG, UV-cure within seconds, outstanding oil resistance including ATF, high elongation, low permeability for hydrocarbons, no foaming of hot lubricants

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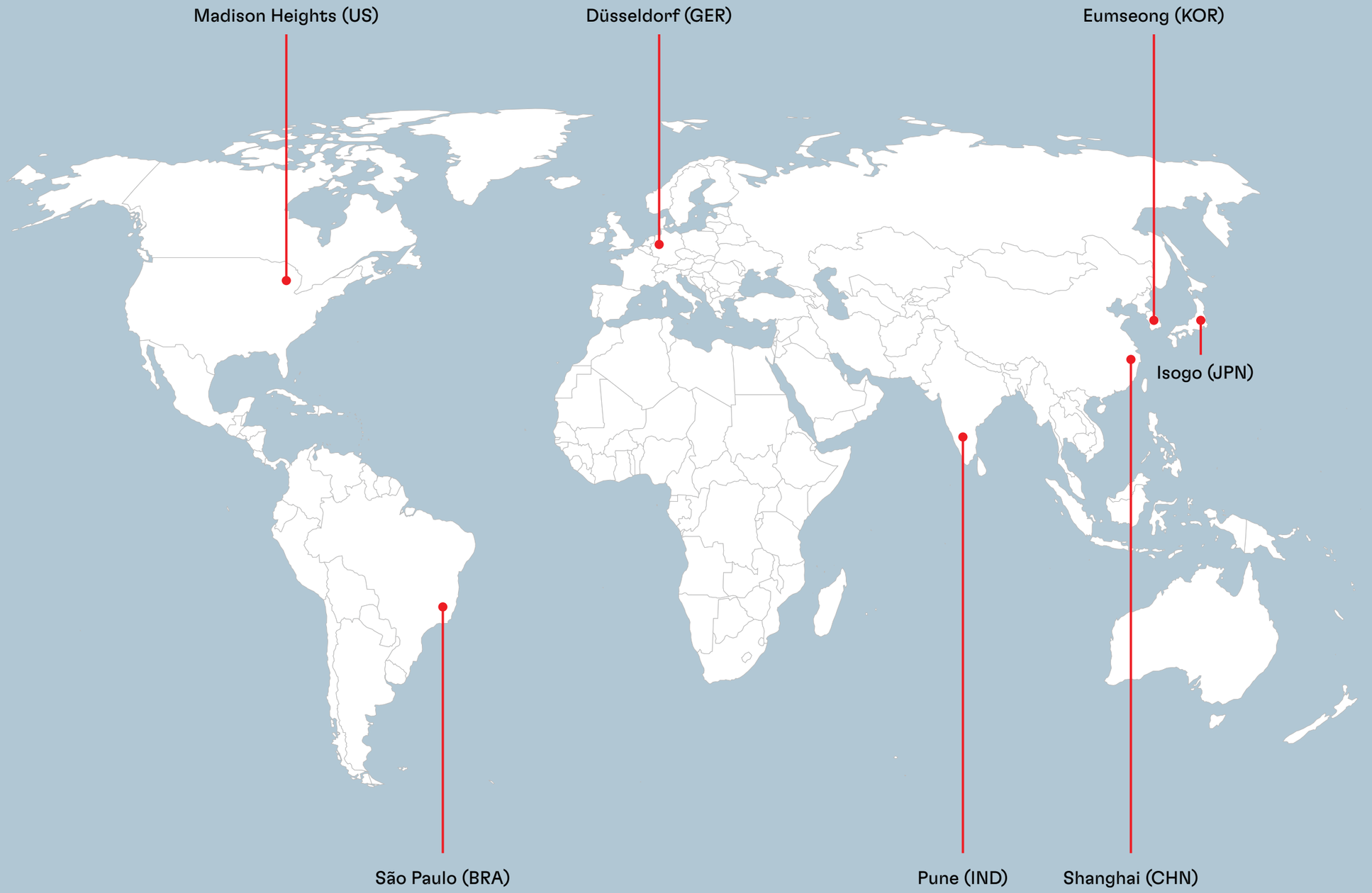
LOCTITE® 518/5182	Dimethacrylate	Anaerobic RT cure	≥ 5	Gasket for rigid metal flanges, suitable for aluminum, excellent oil resistance, good adhesion on oil-contaminated surfaces, allows disassembly of flanges for service and repair
LOCTITE® 5203	Dimethacrylate	Anaerobic RT cure	1 - 6	Gasket for rigid metal flanges, suitable for aluminum, excellent oil resistance, allows easy disassembly of flanges for service and repair

Please check our online **Technical Data Sheets** for detailed technical information.

Get in Touch with our Global Team of Solution Engineers

Learn More

Driving Innovation
TOGETHER



LOCTITE®

The data contained herein is intended as reference only. Some products/package sizes may not be available in your country or region or may have a lead time. Please contact your local Henkel subsidiary for assistance and recommendation on specifications and applications of these products.

henkel-adhesives.com/de/en/products/industrial-sealants/gasketing

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