

# **DRINKING WATER AND HEATING**

SWISS ENGINEERING OF SINGLE  
AND MULTI MATERIAL SEALINGS



## LEADING SUPPLIER FOR THE INDUSTRY

Datwyler focuses on high-quality, system-critical polymer components and has leading positions in attractive global markets such as mobility, healthcare, oil & gas, food & beverage and general industry.



**>500**

global customers and innovation leaders



**24**

manufacturing sites



**6,700**

talents worldwide



**80 million**

components produced per day



**> 1,000 million**

CHF in annual revenues

Thanks to its core competencies solution design, material expertise, and operational excellence, Datwyler supports and assists its customers at every stage of the process – from early development to serial production of molded parts, components molded onto metal or plastic, and O-rings with specific requirements.



*Datwyler's Core Competencies*

**Datwyler supports its partners to promote a world that is safer, smarter and more sustainable.**

## SUSTAINABLE INNOVATIVE SEALING

We all appreciate the refreshing taste of a glass of tap water on a hot sunny day and the shower in the evening. But do you know that water is the best controlled product in the world? Every day tap water is analyzed for a healthy quality.

Only long tested and certified materials make it into water installations. National regulations such as e.g. "Elastomerleitlinie", govern the type of testing required.

Datwyler develops high quality rubber material with very low compression sets. This gives your products a long-term sealing performance. Our recommended materials are compliant to the major regulations such as "UBA-Elastomerleitlinie", ACS, WRAS and NSF. For your products in this market, we offer rubber made of:

- **EPDM**
- **Silicone / Liquid Silicone Rubber**
- **Butyl**

With hardness's from 10 to 80 shore.

This wide range gives you the possibility to adapt the sealing ideally to the needs of your project and your customers.

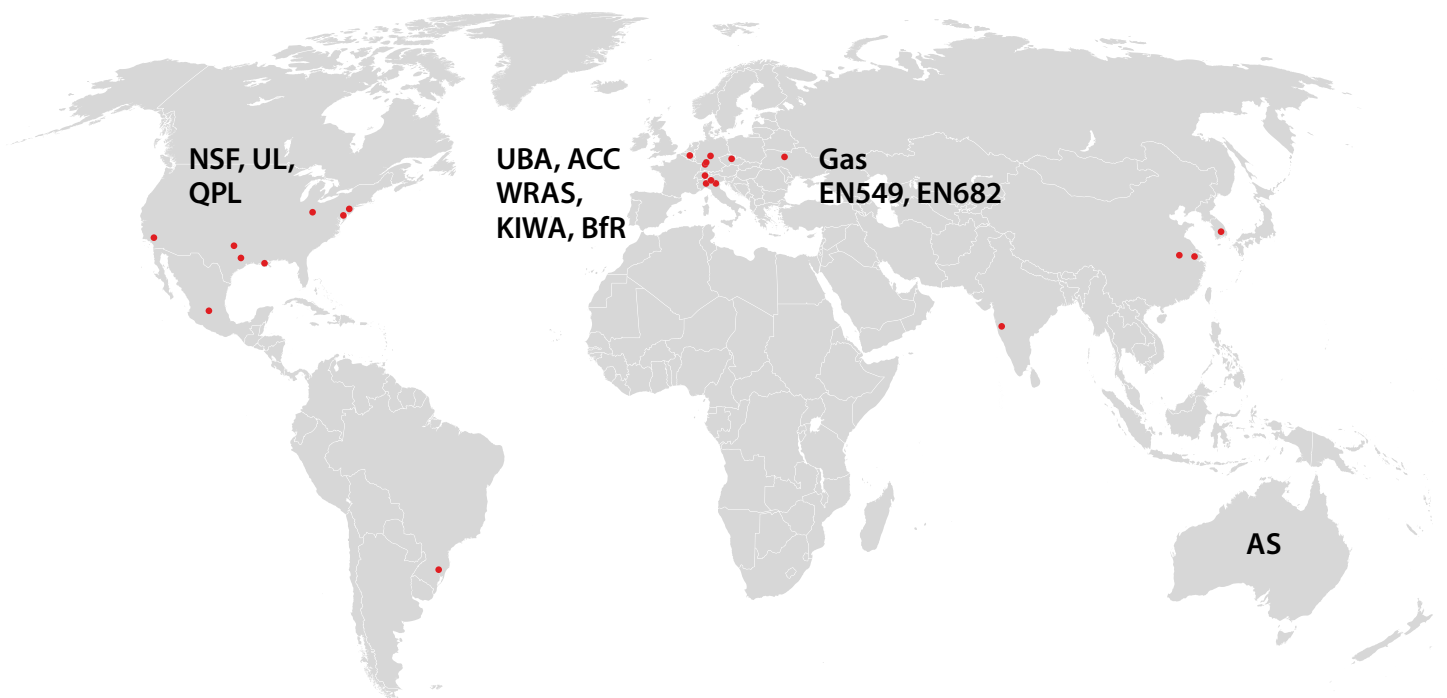
Although drinking water may also be used in heating devices, not the same strict regulations apply in case



of closed circuits. However, who has experienced a water puddle on the floor underneath the heater realizes how important safe sealing really is.

Datwyler **low compression set compounds** for gas and drinking water applications are key to a reliable performance of all heating devices with a water circuit.

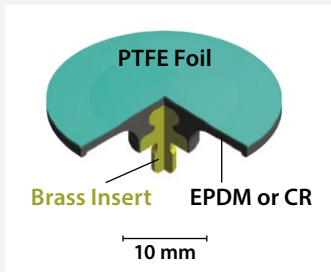
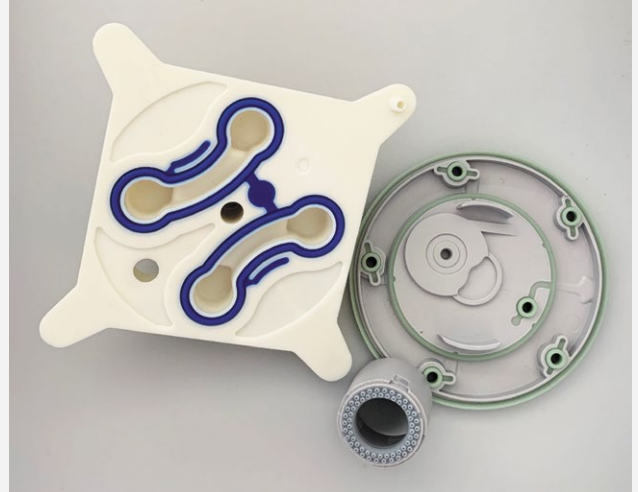
**Datwyler EPDM and silicone materials for drinking water as well as gas compounds are your friends when you want to enjoy the warm and cozy atmosphere at home.**



## HIGH PERFORMANCE 2K-PARTS

The integration of 2 functions in 1 part is key for a better performance and lower costs. Examples are combinations of PA, PMMA, PBT with liquid silicones (LSR) and rubbers such as EPDM. LSR has excellent properties and is available in almost every color.

- Low compression set
- Temp range from  $-50^{\circ}\text{C}$  to  $+200^{\circ}\text{C}$
- Drinking water homologations
- FDA, BfR, USP Class VI certified
- Excellent weathering behavior



## MEMBRANES AND COMPLEX PARTS OUT OF RUBBER OR MULTI-MATERIALS

Drinking water EPDM compounds can be directly bonded to PA substrates. This reduces costs and makes e.g. reliable membranes. Furthermore, metal inserts and even sensors and chips can be integrated.

The design and production of our own molds, makes Datwyler very flexible and fast in terms of design and time-to-market.

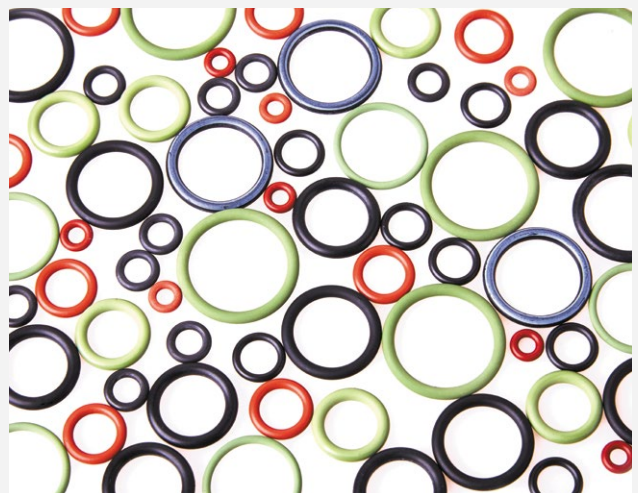
## O-RINGS AND STATIC SEALS

When considering a sealing solution, you must consider:

- Chemical resistance
- Mechanical requirements
- Type of homologation needed

Our low compression set compounds meet those requirements from NBR to FKM.

Special drinking water compounds, complying with the latest UBA certification, give you long term sealing performances.



## MATERIALS

In order to have your products complying with the latest regulations, we constantly strive for better performances and a wider homologation base. Below you find a list of the most frequent compounds used in your markets. However, this is only a part of our available materials. Besides, specific compounds or additional certifications are available.



Name	Material	Hardness	Compr. Set	at	Homologation
451121	EPDM	68	8,9	24/125	Water
452171	EPDM	75	7,4	24/125	Water
452151	EPDM	82	9,6	24/125	Water
S50R06E RED- S50B04E BLUE- S60R07ERED- S60B00E BLUE S70O03E GREY – S70R19E RED- S70A02E NATURAL- S70B06E BLUE - S70B07E BLUE	VMQ	40 – 70	max 35%	24/175°	Water
V70N00E	FKM black	70	< 40 %	168/175°	Gas
V70V05T	FKM green	70	< 40%	168/175°	Gas, UL157
S60B02E	VMQ blue	60	< 40%	168/175°	Gas
S60R00E	VMQ red	60	< 40%	168/175°	Gas
S60R13E	VMQ red	60	< 40%	168/175°	Gas
N70N00L	NBR	70	< 35%	168/100°	Gas
E70N01S	EPDM	70	< 20%	22h x70°	UL157
E50N01C	EPDM	60	< 15%	22 h x70°	UL157

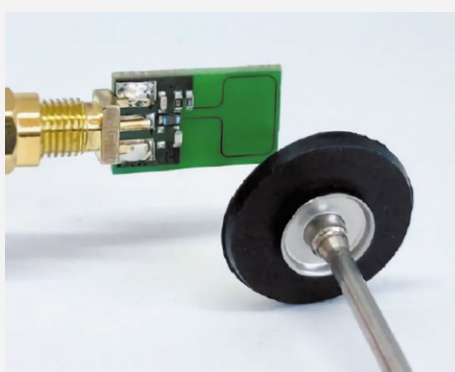
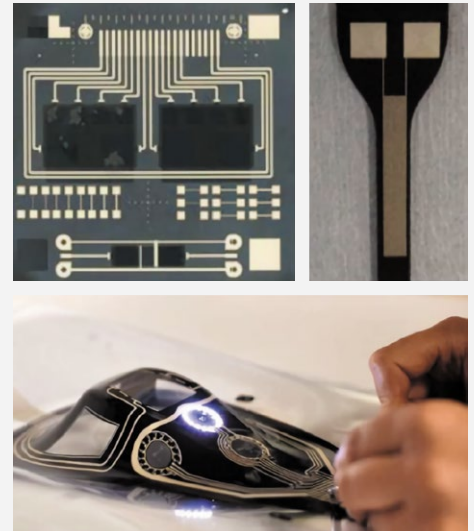
## ADVANCED MATERIALS

Making rubber “smart” is no longer a dream. Datwyler has multiple projects to make this dream come true. For instance, the integration of sensor, the usage of conductive materials and EAP (electro active polymer) stacks open the door to fully new ways of designs and products.

### PRINTED ELECTRONICS

Integrating sensors in a rubber product and connecting them via printed conductor paths are now possible. Measuring and transferring data while doing the sealing job makes our seals to be cutting edge, giving you benefits in many ways.

The printed circuit itself can be used in order to measure deformation of the product, giving you real time information about the current status and estimated remaining lifetime. This is especially helpful whenever gas or other hazardous material flows inside. One application might be a leakage detector. We assume your engineers will have even more ideas.



The integration of chips in your products guarantees full traceability throughout the whole supply chain.

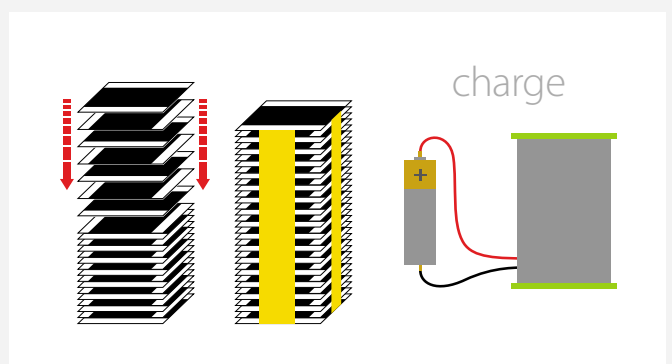
When it comes to critical devices such as gas boilers you want to be sure that no 3<sup>rd</sup> party products are used in case of repairs.

Our integration may be one component in your quality assurance system.

### ELECTROACTIVE POLYMER STACKED EAP ACTUATOR

Electrical power converts mechanical motion into elastic deformation. These EAP stacks can for example be used as sensors, dosing systems and intelligent switches with haptic feedback.

EAP offer you the possibility to completely think out of the box.



## COATINGS

While the compound itself meets chemical and mechanical requirements and stands for the very long product life, coating in addition improves the handling of the seals. Especially in case of O-rings, coatings are often used in order to reduce the mounting forces and hence prevent the ring from being damaged during installation.

Besides these one-time uses, specific coatings can be applied to increase functionality and in case of dynamic applications.

For the use in drinking water applications, specific coating, complying with UBA-Beschichtungsleitlinie and WRAS, are available. Most common coatings are:

- Plasma treatment
- PTFE based film coatings
- PTFE based spray coatings
- Fluorination and Chlorination of the surface
- Siliconization

The use of self-lubricating compounds are often very advantageous. While the performance of an applied coating might reduce over time, the one of self-lubricating material stays constant. The lubricant is inhibited in the compound. During a test in a gas installation, it was proved that the torque required for twisting a knob stayed constant over 10,000 cycles.

**You know best, where a self-lubricating compound may improve your product quality – challenge us.**



## ABOUT DATWYLER

Datwyler is a worldwide leading, Swiss industrial supplier and a key player in the global industrial industry. Datwyler has a strong sense of future trends and converting these into new solutions. With more than 100 years experiences, we offer state-of-the-art, system-critical sealing solutions in rubber, silicone, plastics and combinations of all.

Partnering with the world's top industrial companies, Datwyler stands by its mission to improve the quality of your products by constantly striving for zero defects from base material to delivery of the product.

The company's state of the art cleanroom manufacturing technologies helps you to comply with highest standards in your industry.

Datwyler has a clear social and environmental responsibility. We constantly challenge us. Already a high percentage of Datwyler total energy consumption comes from renewables with a public target of climate neutrality for all our own activities worldwide by 2030. We're also engaged in many social projects to improve the living conditions. Please have a look at our sustainability report on [www.datwyler.com/sustainability-report](http://www.datwyler.com/sustainability-report).

Datwyler is among the TOP 5 employers in Switzerland.



**Specific ISO certifications  
14001, 50001, OHSAS 18001**



**With the silver rating, Datwyler is in the top 15% of the more than 85,000 companies assessed worldwide by EcoVadis**

## Please contact us for further information

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