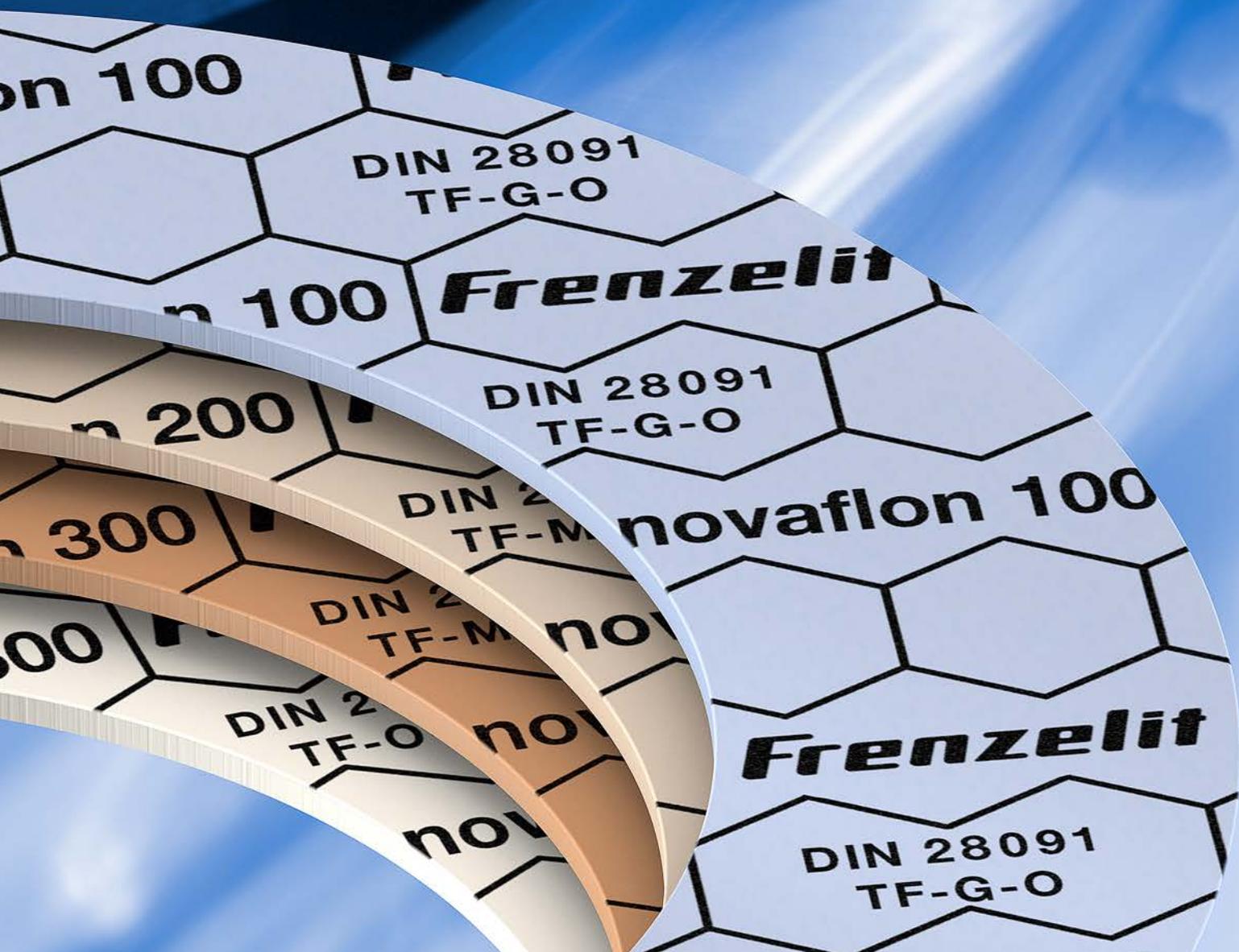


novaflon®

PTFE gaskets for  
industrial applications.



GASKETS

TECHNICAL TEXTILES

EXPANSION JOINTS

INSULATION

NEW MATERIALS

 **Frenzelit**

creating hightech solutions



## At a glance: the benefits of novaflon®

novaflon® combines decisive advantages over conventionally manufactured PTFE:

- Excellent media resistance to most lyes and acids throughout the pH range (pH levels 0-14)
- High residual stress
- Resistant to cold flow
- High mechanical resistance
- Wide temperature range from -210 °C to 260 °C
- Unlimited shelf life
- Excellent leakage properties: Meets TA Luft (German Clean Air Act) [leakage rate <math>< 10^{-4}</math> mbar·l/(s·m)]
- Compliance with FDA 177.1550 Perfluorocarbon regulation

### Typical application areas for novaflon®

- All-purpose use in the chemical, petrochemical, pharmaceutical, paper and food industries
- Oils and greases, acids and alkalis, solvents, refrigerants, water, steam
- Compliance with TA Luft (German Clean Air Act) in these areas :
  - Petrochemicals
  - Chemical industry
  - Pharmaceutical industry
  - Food Industry

# The better choice: novaflon® - Gaskets made from PTFE

## novaflon® 100

### Modified PTFE with hollow glass microspheres

Thanks to its extremely high compressibility, novaflon® 100 is eminently suitable for use in stress-sensitive flanges, such as glass, ceramic and FRP flanges.

Very good anti-stick properties are an outstanding feature of the all-purpose gasket made from modified PTFE. Downtime is minimised as a result, while machine reliability and availability are increased.

Another advantage:

novaflon® 100's impressive adaptability enables it to compensate for minor damage or unevenness in the flange surface.

Excellent media resistance makes novaflon® 100 the ideal solution for use in the chemical industry.

## novaflon® 200

### Modified PTFE with barium sulphate

novaflon® 200 has the best chemical resistance to strong alkalis.

High mechanical resistance, high pressure resistance (vacuum to 83 bar) and strongly optimised creep properties are convincing features of the all-purpose flat gasket made from modified PTFE.

The high purity of the gasket material, which is physiologically harmless, makes novaflon® 200 the ideal solution for use in the food and pharmaceutical industry.

## novaflon® 300

### Modified PTFE with silica

novaflon® 300 offers a very good balance between chemical resistance and reduced creep properties. The flat gasket is not affected by concentrated acids either (except for hydrofluorides). The all-purpose gasket made from modified PTFE is therefore the product of choice for process industry applications.

High mechanical resistance at both high pressure (vacuum to 83 bar) and high temperatures makes novaflon® 300 the ideal solution for use in the chemical and petrochemical industry.

## novaflon® 500

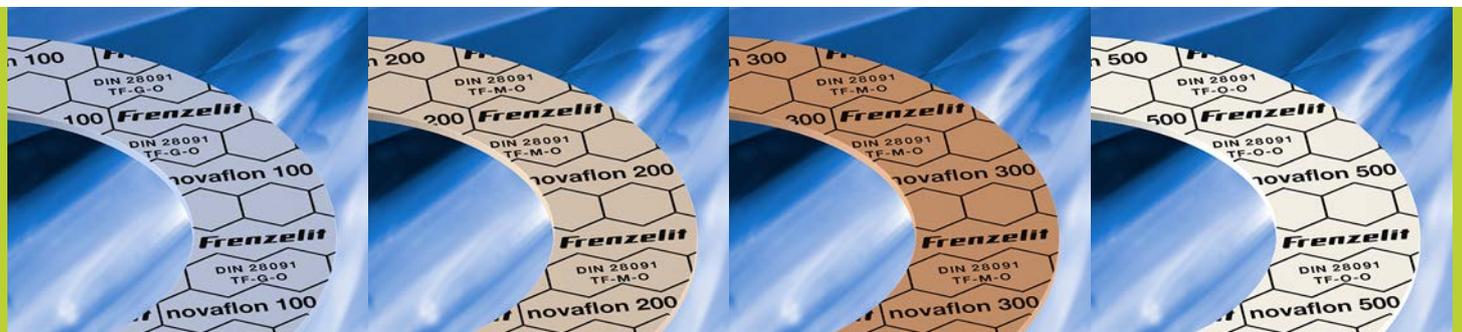
### Pure, multi-directionally expanded PTFE

novaflon® 500 offers a universal chemical resistance (pH 0-14).

Due to its unique production process novaflon® 500 shows an extremely good resistance to creep and cold flow.

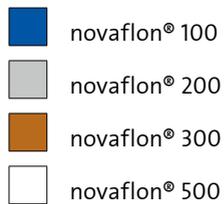
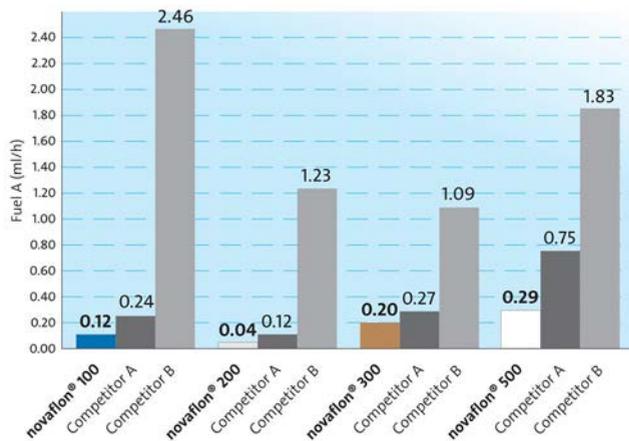
The gasket material compensates low bolt forces as well as flange irregularities and moreover stands out by extremely high pressure resistance (vacuum up to 100 bar).

These properties predestine novaflon® 500 for the application in the pharmaceutical industry, the food and beverage industry, especially suitable for glass lined flanges and FRP equipment or in reactors in the process industry.



# Technical information about novaflon®

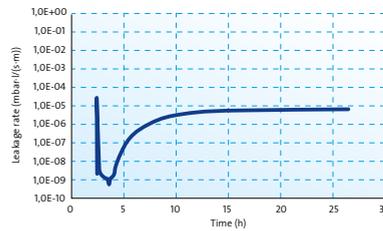
## Leakage measurement – ASTM F 37 A



## novaflon® meets TA Luft (German Clean Air Act)

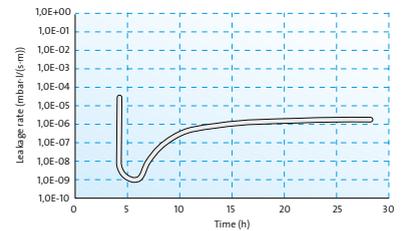
### novaflon® 100

Leakage rate  $\lambda$   $5.8 \cdot 10^{-6}$  mbar-l/(s-m)



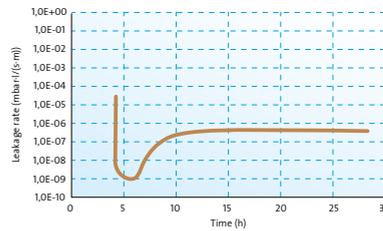
### novaflon® 200

Leakage rate  $\lambda$   $1.7 \cdot 10^{-6}$  mbar-l/(s-m)



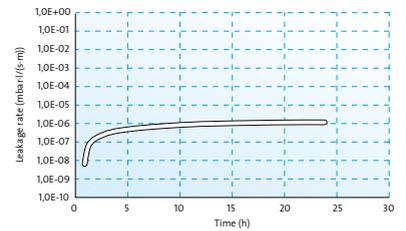
### novaflon® 300

Leakage rate  $\lambda$   $5.4 \cdot 10^{-6}$  mbar-l/(s-m)



### novaflon® 500

Leakage rate  $\lambda$   $1.2 \cdot 10^{-6}$  mbar-l/(s-m)

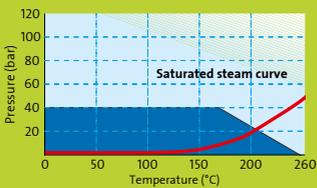


## Recommendations for use

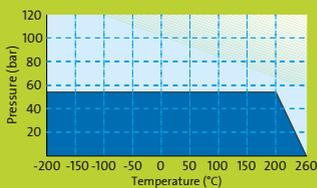
Depending on pressure and temperature levels

### novaflon® 100

Water / steam

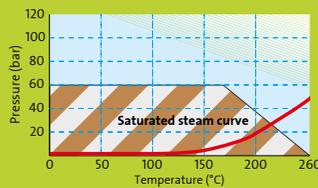


Other media\*

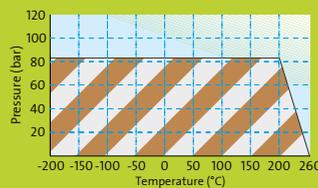


### novaflon® 200 / 300

Water / steam

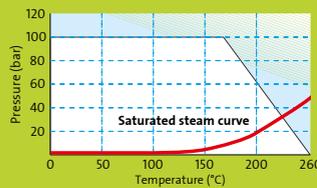


Other media\*

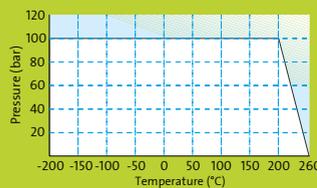


### novaflon® 500

Water / steam



Other media\*



The temperature and pressure recommendations in the graphs apply to gaskets 2.0 mm thick that are used with raised face flanges. Higher stresses are possible when thinner gaskets are used! The information provided must therefore be considered as estimates that are on the safe side rather than as specific operational limits.

\* Example for the most common other media. Exact data for specific individual cases are available in the Frenzeli novaDISC programme or contact our application engineering specialists.

### Warranty disclaimer

In view of the variety of different installation and operation conditions and applications and processing engineering options, the information given in this prospectus can only provide approximate guidance and cannot therefore be used as the basis for warranty claims.

# Material data

## Blow-out test passed convincingly

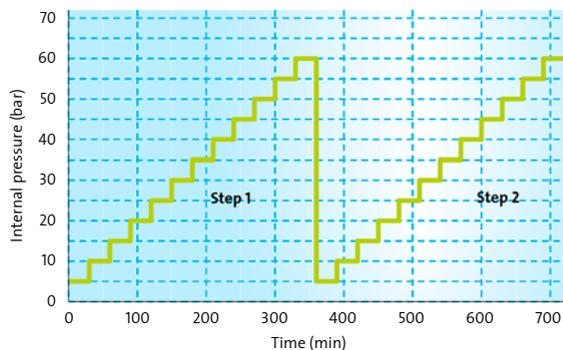
Not only a leakage rate that satisfies TA Luft (German Clean Air Act) but also proof of the blow-out resistance of the gasket is required for flange connections that are subject to TA Luft. This is to avoid sudden high leakage. According to the latest version of VDI 2200 that was issued in 2007, the gasket has to be able to withstand 1.5 times nominal pressure with a large reduction in surface pressure. To make sure that this is the case, the gasket is installed with an initial surface pressure level of  $Q_{\min(L 0.01)}$  according to DIN EN 13555 and the flange system is stored at 150 °C for 48 hours. After cooling down to room temperature, the internal pressure is first of all increased gradually at the remaining surface pressure level to a maximum of 60 bar nitrogen and the leakage rate per step is determined. The pressure would drop very rapidly if the gasket connection failed.

The surface pressure level is then reduced further to 5 MPa in a second operation and the leakage rate is measured again while increasing the internal pressure gradually. Even in the most critical case of an extremely low surface pressure level of 5 MPa and maximum pressure of 60 bar, novaflon® gaskets demonstrate impressive blow-out resistance in line with TA Luft – without an inner eyelet (metal edging). We can provide you with a certificate confirming this on request.

## General data

			novaflon® 100	novaflon® 200	novaflon® 300	novaflon® 500
Approvals and tests		FDA	✓	✓	✓	✓
		TA Luft	✓	✓	✓	✓
		GL (German. Llyod)	✓	✓	✓	✓
		EG 1935/2004	✓	✓	✓	✓
		DVGW	-	✓	✓	-
		BAM	-	✓	✓	✓
		Blow-out VDI 2200	✓	✓	✓	✓
Colour			light blue	white	fawn	white
<b>Physical properties</b> Sample thickness 2.0 mm			<b>Value*</b>	<b>Value*</b>	<b>Value*</b>	<b>Value*</b>
Density	DIN 28 090-2	[g/cm³]	1.5	2.9	2.1	0.9
Tensile strength	DIN 52 910	[N/mm²]	15	18	17	26
Residual stress 150 °C	DIN 52 913	[N/mm²]	14	14	16	18
Compressibility	ASTM F 36 M	[%]	35	3	5	50
Recovery			30	45	45	10
Cold compressibility $\epsilon_{KSW}$	DIN 28 090-2	[%]	24	3	3	40
Cold recovery $\epsilon_{KRW}$			6	1	1	3
Hot creep $\epsilon_{WSW/150}$			35	40	20	15
Hot recovery $\epsilon_{WRW/150}$			6	4	3	2
Specific leakage rate	DIN 3535-6	[mg/(s·m)]	< 0.015			
* Modal value (Typical value)						
<b>Product data</b> (Tolerances acc. to DIN 28091-1)						
Dimensions [mm]			For thickness 1.0: 1200 x 1200 From thickness 1.5: 1500 x 1500			1500 x 1500
Thicknesses [mm]			1.0 / 1.5 / 2.0 / 3.0			0.5 to 9.0
Further dimensions and thicknesses on request.						

## Blow-out test



If you have any application engineering questions, we will be delighted to answer them. Just contact:

[gaskets@frenzelit.com](mailto:gaskets@frenzelit.com)

# Good for people and the environment.

From research and development to our manufacturing operations and use of the product by the customer: quality assurance and a responsible approach to resources and the environment are a firm commitment we observe in everything we do throughout the life cycle of all products.

The Frenzelit gasket division has obtained certification that the company complies with the requirements of ISO 9001, ISO 14001 and ISO 50001. This means complete transparency in all areas and therefore provides a high degree of security – for the benefit of our employees, the environment and our customers.

## Quality management

ISO 9001

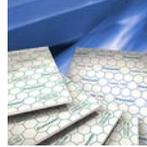
## Environment management

ISO 14001

## Energy management

ISO 50001

## Engineered by Frenzelit: Gasket materials / fibre-reinforced compound

novapress®	novatec®	novafilon®	novaphit®	novamica®	novaform® Soft Compounds	novaplan®	isoplan®
							
200°C	250°C	260°C	550°C	1000°C	250°C	1000°C	1100°C
-100°C	-100°C	-200°C	-200°C	-200°C	-100°C	-100°C	-100°C
Elastomer-bonded fibre gaskets	Fibre-reinforced graphite gaskets	Modified and filled PTFE gaskets	Expanded graphite with/without stainless steel expanded metal insert	Phlogopitemica with/without stainless steel expanded metal insert	Technical films for insulation, sealing, acoustic applications etc.	Soft layer/insert for heat shield applications and cylinder head gaskets	High-temperature insulation materials

### GASKETS

### TECHNICAL TEXTILES

### EXPANSION JOINTS

### INSULATION

### NEW MATERIALS

Frenzelit GmbH  
P.O. Box 11 40  
95456 Bad Berneck  
Germany  
Phone +49 9273 72-0  
Fax +49 9273 72-221  
info@frenzelit.com  
www.frenzelit.com

 **Frenzelit**  
creating hightech solutions