

MatriCS®  
MatriCS® plus

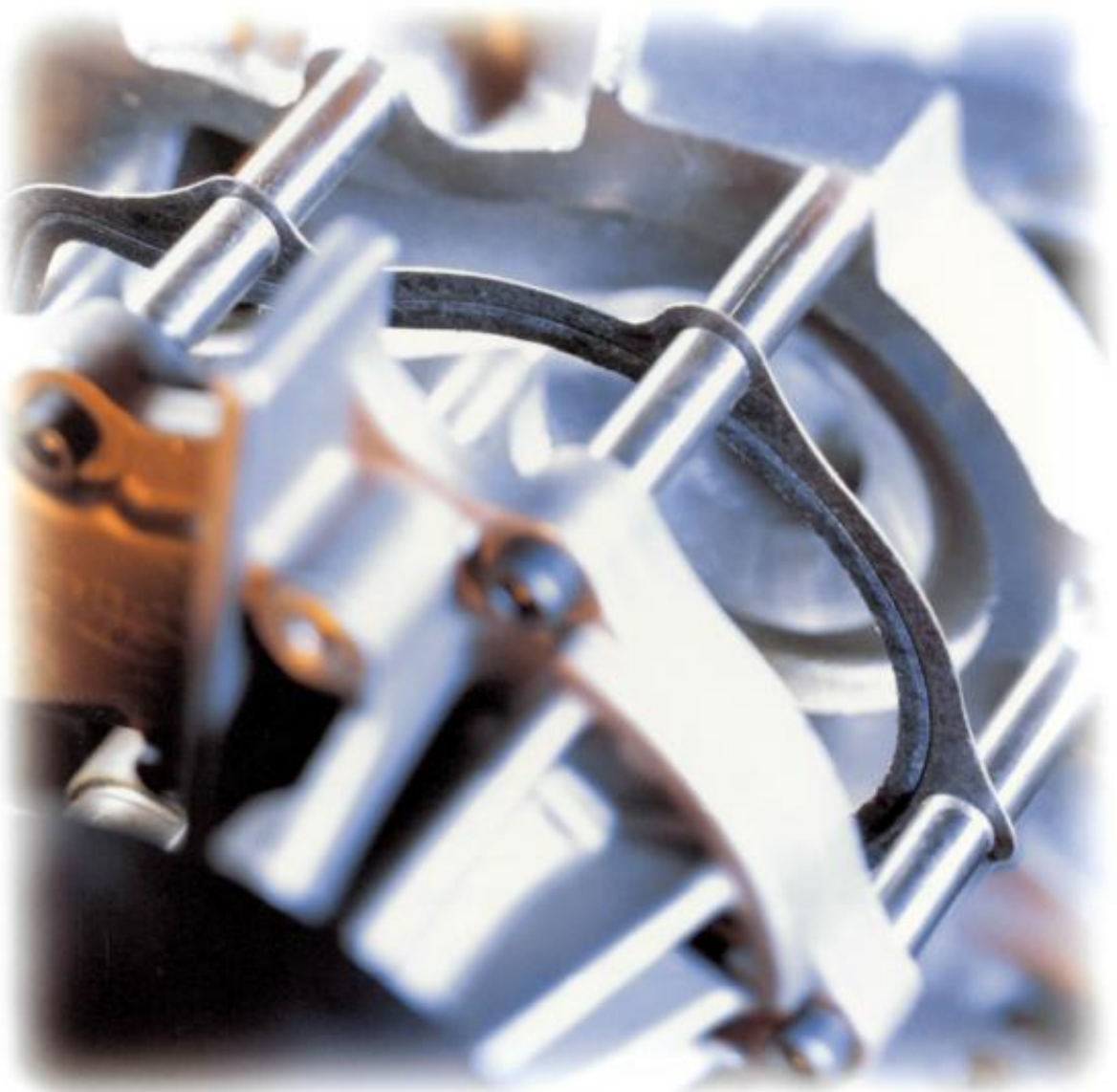


The new generation  
of rubber-metal gaskets

Solutions made by

**VICTOR REINZ®**





# There is no such thing as the perfect gasket yet ...

## A new product for new sealing concepts

Sealing products from VICTOR REINZ ... high-quality materials for an important task: providing a reliable seal against mineral and synthetic oils, fuels, coolants, dust, moisture, and many other media. And this is precisely where the "core competence" of VICTOR REINZ lies - sealing technology.

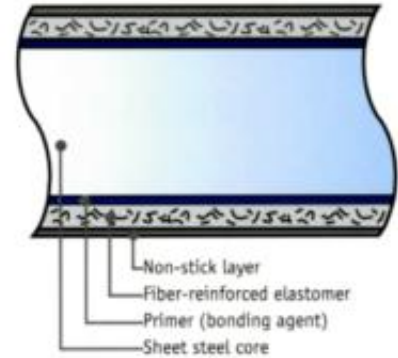
Because new ideas evolve every day in the areas of engine design and plant or apparatus engineering, we are actively engaged in developing suitable sealing concepts.

Welcome to VICTOR REINZ.

## What is MatriCS® / MatriCS® plus?

### Materials and construction

MatriCS® is another decisive step towards the perfect gasket. MatriCS® consists of a sheet C-steel core (a stainless steel core in the MatriCS® plus), coated on both sides with fiber-reinforced, temperature-resistant elastomer. The primer layer ensures a perfect rubber-metal bond. A high-quality non-stick gasket surface ensures optimum (dis)assembly properties.



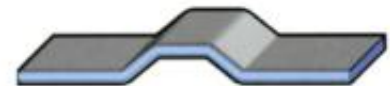
Cross-sectional view of MatriCS®

### Embossments

The gaskets are normally provided with embossments. Additional embossments provide:

- high elasticity, resulting in excellent recovery behaviour
- high line pressure and micro-adaptation, and
- even better macro-adaptation of the gasket.

There is a choice of full embossments and half embossments in various shapes.



a) full embossment



b) half embossment

*Different embossment geometries ensure optimum conformability.*

### Key advantages of the MatriCS® plus

The stainless steel core provides the following advantages compared to the MatriCS®:

- Corrosion-proof
- Long working life
- Even higher embossment recovery
- Better dynamic properties
- Approval for plastics in drinking water applications



... but there is a  
gasket that  
adapts  
perfectly.

### Numerous useful properties

MatriCS® boosts the good performance of rubber-metal gaskets through greatly improved adaption.

#### Properties

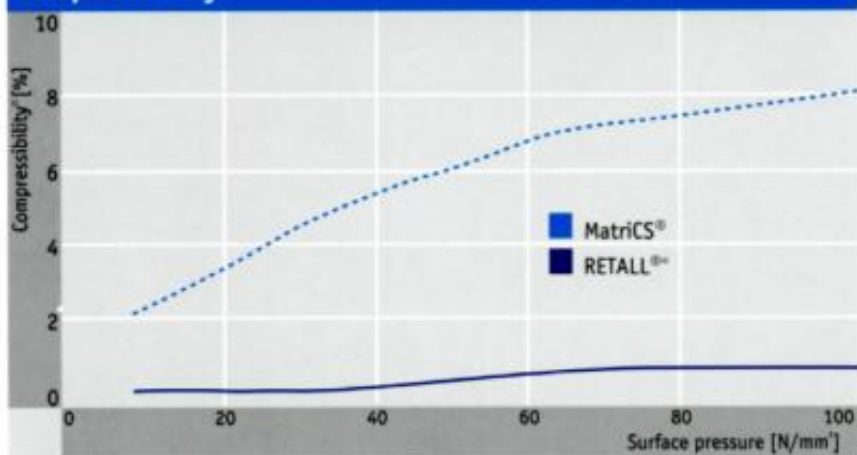
- high mechanical stability
  - high compressibility and elasticity
  - excellent tightness through line pressure along the embossments
- good creep resistance
  - high temperature resistance
  - good chemical resistance to mineral and synthetic oils, fuels, coolants, and many other media
  - installed thickness: 0.45 - 0.50 mm, depending on compression



*Test set-up to determine helium tightness.*

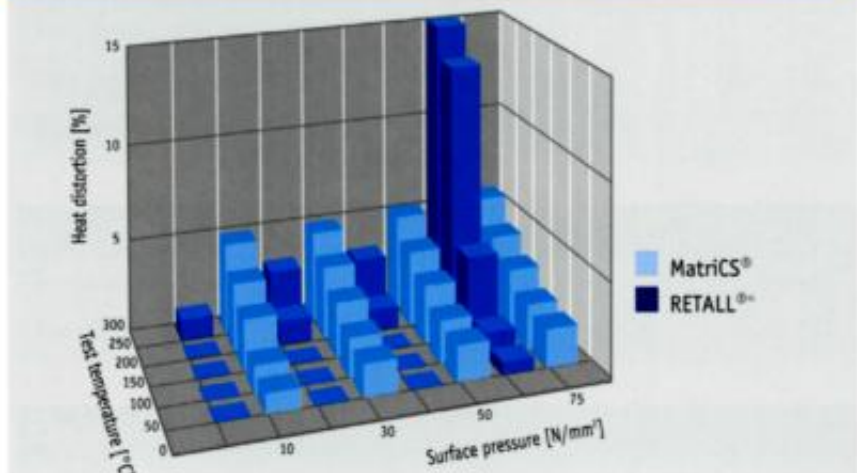
- <sup>1)</sup> RTM = REINZ Test Method
- <sup>2)</sup> Actually distortion with RETALL, because incompressible
- <sup>3)</sup> Measured without embossment
- <sup>4)</sup> Construction: C-steel/NBR

### Compressibility<sup>(1)</sup>



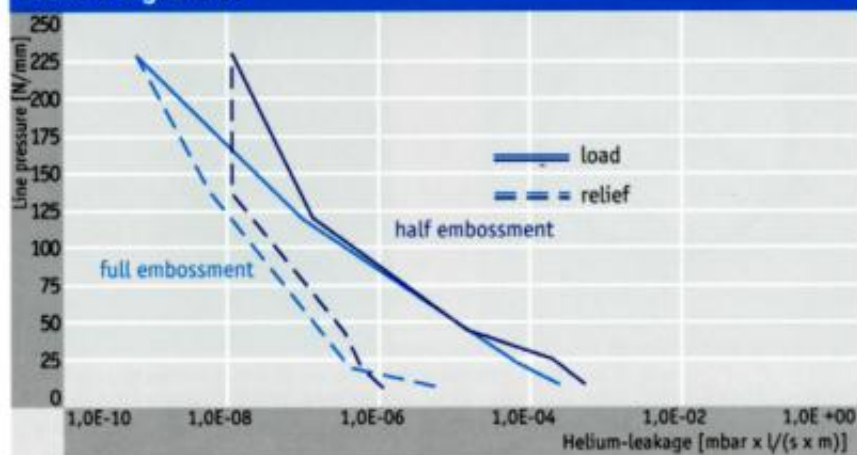
Determination of compression characteristics<sup>2</sup> according to RTM 511<sup>1)</sup>.

### Heat distortion<sup>1</sup>



Heat distortion under constant load and increasing temperature according to RTM 510-3D<sup>1)</sup>.

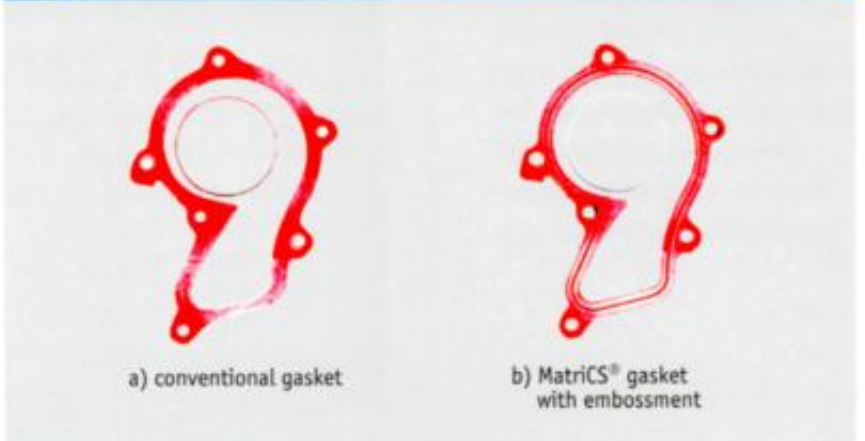
### Helium tightness



Determination of helium tightness of MatriCS® according to RTM<sup>2)</sup> 505.



## Adaption of MatriCS®



*Determining the surface pressure distribution by means of the pressure-sensitive „Presacle“ film from Fuji.*

## Numerous applications

### Application examples

Sealing joints subjected to extreme mechanical and thermal loads, e.g.

- Intake manifolds
- Oil pans

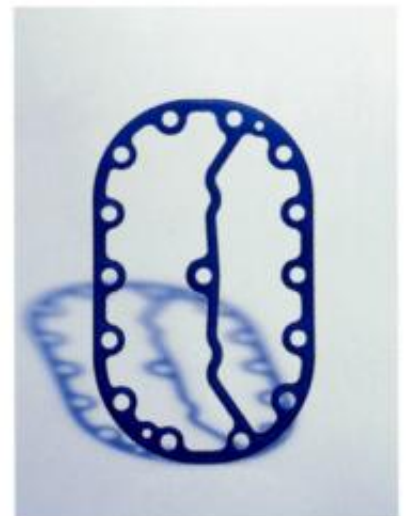
- Valve covers
- Transmissions
- Housings
- Compressors
- Pumps
- Axles
- Engine auxiliaries



*Embossed MatriCS® plus gasket for a water pump.*



*Embossed MatriCS® gasket for a front timing cover.*



*Embossed MatriCS® plus gasket for use in a refrigeration compressor.*

# MatriCS<sup>®</sup>/ MatriCS<sup>®</sup> plus in detail

## Technical data <sup>1)</sup>

<b>Weight per unit area</b>		
MatriCS <sup>®</sup>	[kg/m <sup>2</sup> ]	~2.20
MatriCS <sup>®</sup> plus	[kg/m <sup>2</sup> ]	~1.80
<b>Stress resistance, to DIN 52 913, 16 hrs, 300 °C</b>	[N/mm <sup>2</sup> ]	≥ 45
<b>Compressibility and recovery, to ASTM F 36, procedure J</b>		
Compressibility	[%]	4 to 10
Recovery	[%]	≥ 40
<b>Swelling, to ASTM F 146 In IRM 903 oil (replaces ASTM oil no. 3) 5h, 150 °C</b>		
Thickness increase	[%]	≤ 5
<b>In ASTM fuel B 5h, RT</b>		
Thickness increase	[%]	≤ 5
<b>In water/antifreeze (50:50) 5h, 100 °C</b>		
Thickness increase	[%]	≤ 5
<b>Peak temperature (short-term)</b>	[°C]	300
<b>Max. continuous temperature</b>	[°C]	-40 to 220
<b>Max. surface pressure at 220 °C</b>	[N/mm <sup>2</sup> ]	100

## Form of delivery <sup>2)</sup>

<b>Nominal thickness</b>	[mm]	0.50
<b>Tolerances</b>	[mm]	+/-0.05

## Approvals

<b>MatriCS<sup>®</sup></b>	-
<b>MatriCS<sup>®</sup> plus</b>	Approval for plastics in drinking water applications

<sup>1)</sup> The technical data is valid for MatriCS<sup>®</sup> with steel core, and for MatriCS<sup>®</sup> plus with stainless steel core.

<sup>2)</sup> We supply ready-to-mount gaskets according to your drawings, specifications, or in accordance with other agreements (max. width or diameter: 500 mm). Should you require additional technical information or material samples, please let us know. If you already have a specific sealing problem: Our application engineers are pleased to consult you, and ready to provide a customized solution. The data quoted above are valid for the material "as delivered" without any additional treatment. In view of the many possible installation and operating conditions, it is not possible to draw final conclusions regarding the behavior in a gasketed joint in every application case. The data cannot be used as basis for any warranty claims. In case of doubt, please contact us and specify the exact operating conditions.



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