Victor Reinz® Sealing Solutions for Industrial Applications.
We are Your Industrial Sealing Expert.
We Are Ready for the Sealing Future.

Nearly 100 years of gasket technology inspired by the claim of always producing the best gasket material of the time. We are developing the gasket material of the future today.

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Major manufacturers trust Victor Reinz® gasket materials. Across the country and around the world, we bring to the table high-quality, innovative products, backed by service you can depend on.
Use the Benefits.

Victor Reinz® gaskets and gasket materials meet any industrial challenge: we carry exactly the right gasket material for your business and have the gasket know-how for your industry. This enables us to support you as our partner in choosing the best material. The world's best gasket fabricators trust Dana to supply the perfect fit for your needs.

Specialized in Industrial Sealing Applications.
Refrigeration compressors and evaporators, chemical and foodstuff production: Victor Reinz gasket materials are absolutely temperature-resistant and withstand the highest mechanical stresses and pressures.

Quality Makes the Difference.
High-quality materials and world class production, certified and environmentally safe: Victor Reinz gaskets and gasket materials meet top quality demands. All gaskets and materials undergo comprehensive tests and test routines.

Made in Germany.
Victor Reinz gasket materials are German-engineered and made at our plant in Neu-Ulm, Germany, under rigorous quality assurance to provide you with consistent top quality – all around the world, wherever you are present.

At Home in Your Country.
Excellent availability and shortest delivery times: we have an experienced sales partner in the U.S. gasket industry providing an excellent service.

We Are Ready for the Sealing Future.
Traditional and innovative: we’ve been in the gasket business for almost 100 years and know the field like few others. We continually look toward innovations to come – whatever gasket you might need in the future.
Gasket Solutions for Industrial Applications
and Everyday Challenges.

Our Industrial Applications experts develop and produce high-tech materials for gaskets as well as complete gasket solutions under the brand name Victor Reinz – from the classic flange gasket to the custom-designed high-pressure gasket.

The customers are companies in all sectors of the manufacturing industry: from the Heating, Ventilation, Air Conditioning and Refrigeration Industry (HVAC/R Industry) to the Chemical Industry and on to the Foodstuffs Industry. Victor Reinz gaskets seal wherever uncompromising safety is required.

Partner of the Industry and Gasket Fabricators.
Dana provides professional support to industrial end customers and to gasket fabricators. We provide the ideal material and gasket know-how for the development and production of your gaskets.

Distribution and Logistics on Site.
Our distributor Target Industrial Products in the United States stocks ample supplies of our products for fast, on-demand delivery. Assistance and advice are never more than a phone call or an e-mail away.
Materials.
We Have what You Need.

We produce innovative gasket solutions for challenging applications. Solutions range from eyeleted gaskets with stainless steel eyelet, via graphite materials on tanged steel core, on to ePTFE material. Rubber-coated metal materials and sealing compounds complete the range of products.
High-Performance Compressed Sheet.

Universally applicable and extremely durable! We count on high performance fibers and high quality elastomers as binders: the product group High-Performance Compressed Sheet.

- VR® 100
- VR® 90
- VR® 85
- VR® 80

VR 100
VR 100 is a compressed sheet material made from carbon fibers and other high-temperature-resistant substances. Due to its resistance to temperatures up to 520 °F (temporarily even up to a short-term peak of 825 °F) in combination with high chemical resistance, it is used especially by the oil processing industry. Another special feature of VR 100 is its excellent capability to seal alkaline solutions, e.g. brine in the pulp and paper industry.

VR 90
VR 90 is the most successful Victor Reinz gasket material of all time. The aramid fiber based classic is physiologically harmless and comes with numerous approvals (among others: TA Luft/German Clean air Act) as well as FDA conformity for all types of foodstuffs. Universally usable, this gasket material is the perfect sealing solution for a large number of fluids and withstands high temperatures and operating pressures.

VR 90 – like no other compressed sheet on the market – combines a variety of excellent properties such as ultimate tensile strength, excellent gas-tightness, ultimate chemical resistance, and superior creep resistance even under elevated temperatures.

Leading companies in the Heating, Ventilation, Air Conditioning and Refrigeration Industry (HVAC/R Industry) in the US have been trusting the VR 90 material and other Victor Reinz products for decades – used, for example, in refrigeration compressors, evaporators, condensers, chillers, valves, etc.
The areas of application include the chemical industry, foodstuffs production, the oil and gas industry, the HVAC/R industry on to engine construction and mechanical engineering, and many more.

**VR 90 CO**
In cases where VR 90 is the ideal material but surface irregularities or imperfections might lead to surface leakage, VR 90 CO is the answer. It features a special coating, called “CO coating”, that compensates for small irregularities to prevent leakage.

**VR 85**
VR 85 is suitable for sealing joints under high mechanical-thermal stresses where stability and tensile strength are required. Because of its good adaptability it seals oils, water, and gases very well. It is widely used, for example, in combustion engines and marine applications.

**VR 80**
VR 80 features excellent gas tightness coupled with high tensile strength and excellent creep resistance. It is therefore especially used for sealing tasks in the gas industry and for compressors, but also to seal fluids in pumps, transmissions and small engines, to name just a few.
General Service Compressed Sheet.

Sound quality at a good price for a wide range of applications! An important part of our product line: the General Service Compressed Sheet product group.

VR® 70
VR 70 is a sturdy gasket material and provides an excellent value for money. Used in demanding applications such as, e.g. in HVAC/R, oil & gas, pumps, compressors, and transformers.

VR® 60
Because of its great adaptability and physiological safety, VR 60 covers a wide range of applications from general mechanical engineering through sanitary installations on to potable water applications.

As a standard, all of our materials feature anti-bake properties, facilitating removal of the gasket. Additionally we offer a number of special-purpose material coatings. Please contact us for further details.
Soft Range Compressed Sheet.

Low bolt load? We have just the right gasket material: the Soft Range Compressed Sheet product group.

- VR® 55
- VR® 40

**VR 55**
VR 55 shows excellent sealability and adaptability already at low bolt load. Its good tensile strength makes it ideal for use in easily deformable construction components that are subjected to high mechanical stress. Accordingly, it is used in a broad range of applications, e.g. in housings, covers, gear boxes, HVAC/R, engines, marine applications and hydraulics, to name just a few.

**VR 40**
VR 40 shows excellent adaptability and sealability already at low bolt load. It is our well-priced material for lightweight applications, e.g. in HVAC/R, gear boxes and motors, housings, covers, etc.
### Material: High-Performance Compressed Sheet

<table>
<thead>
<tr>
<th>VR 100</th>
<th>VR 90</th>
<th>VR 85</th>
</tr>
</thead>
<tbody>
<tr>
<td>![VR 100 image]</td>
<td>![VR 90 image]</td>
<td>![VR 85 image]</td>
</tr>
</tbody>
</table>

#### Features
- **Highest Temperature Resistance**
- **Superior Creep Resistance**
- Carbon and Inorganic Fibers
- Nitrile Binder
- Ultimate Chemical and Mechanical Resistance
- **FDA-compliant for all kinds of Foodstuffs**
- Superior Creep Resistance combined with Ultimate Tensile Strength
- Aramid and Inorganic Fibers
- Nitrile Binder
- Ultimate Creep Resistance combined with Very High Tensile Strength
- Aramid and Inorganic Fibers
- Nitrile Binder

#### Typical Applications
- Oil Processing Industry, Pulp and Paper
- Chemical Industry, Food & Beverage, HVAC/R, Water, Oil & Gas, Engines, Marine Applications
- Combustion Engines, Marine Applications

### Technical Data

#### Standard Tensile Strength, Transverse
- **ASTM F 152**: > 2180 psi / > 15 MPa
- **ASTM F 38 B**: > 2610 psi / > 18 MPa
- **ASTM F 37 B**: > 2180 psi / > 15 MPa

#### Creep Relaxation (1/32" unless otherwise specified)
- **ASTM F 38 B**: 15 %
- **ASTM F 37 B**: 0.25 ml / h
- **ASTM F 36 B**: 0.12 ml / h
- **ASTM F 36 J**: 0.15 ml / h

#### Sealability
- **ASTM F 37 B**: 15 %
- **ASTM F 37 B**: ~ 0.1 mg / (s*m)
- **ASTM F 36 B**: < 0.1 mg / (s*m)

#### Compressibility
- **DIN 3535**: ~ 0.1 mg / (s*m)
- **DIN 3535**: ~ 0.02 mg / (s*m)
- **DIN 3535**: < 0.1 mg / (s*m)

#### Recovery
- **ASTM F 36 J**: > 6 %
- **ASTM F 36 J**: > 55 %
- **ASTM F 36 J**: > 50 %

#### VR-Hot Compression Test (@7250 psi):
- Thickness decrease at 68 °F (20 °C)
- **9 %**
- **11 % (520 °F / 270 °C)**
- **8 % (480 °F / 250 °C)**
- **7 % (480 °F / 250 °C)**

#### Increase in Thickness after Immersion:
- **IRM 903 Oil, 5 h, 300 °F**: 0 – 10 %
- **ASTM Fuel B, 5 h, 73 °F**: 0 – 10 %
- **Water/antifreeze 1:1, 5 h, 212 °F**: 0 – 10 %

#### Increase in Weight after Immersion:
- **IRM 903 Oil, 5 h, 300 °F**: 10 % maximum
- **ASTM Fuel B, 5 h, 73 °F**: 10 % maximum
- **Water/antifreeze 1:1, 5 h, 212 °F**: 7 % maximum

#### Density
- **ASTM F 104, respectively F 868 for metal reinforced materials**: 109 – 122 lb / ft³ / 1.75 – 1.95 g/cm³
- **ASTM F 104, respectively F 868 for metal reinforced materials**: 112 – 125 lb / ft³ / 1.8 – 2 g/cm³
- **ASTM F 104, respectively F 868 for metal reinforced materials**: 100 – 112 lb / ft³ / 1.6 – 1.8 g/cm³

#### ASTM Line Call-Out
- **F711110-A082E12K7M6**
- **F711110-A082E12K7M6**
- **F712120-A08B3E12K6M6**

#### Operating Temperature, Max. ¹)
- **Continuous**: 520 °F / 270 °C
- **Temporary (peak)**: 825 °F / 440 °C

#### Operating Pressure ²)
- **Max.**: 1880 psi / 130 bar
- **Max.**: 2180 psi / 150 bar
- **Max.**: 2180 psi / 150 bar

#### Standard Formats ³)
- **Sheet size respectively coil width**: 1.5 x 1.5 m (approx. 60 x 60") to 1.5 x 4.5 m
- **Thickness**: 1/64" to 1/8"

¹) Maximum operating pressure and maximum operating temperature must not occur simultaneously.

²) Special sheet sizes and material thicknesses on request.
### General Service Compressed Sheet

<table>
<thead>
<tr>
<th>VR 80</th>
<th>VR 70</th>
<th>VR 60</th>
<th>VR 55</th>
<th>VR 40</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="general-service-compressed-sheet.png" alt="Image" /></td>
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<td><img src="general-service-compressed-sheet.png" alt="Image" /></td>
<td><img src="general-service-compressed-sheet.png" alt="Image" /></td>
</tr>
<tr>
<td>High-Performance Sheet with Excellent Gas Tightness</td>
<td>Multi-Purpose General Service Sheet</td>
<td>Good General Service Sheet</td>
<td>Excellent Sealing Ability and Adaptability already at Low Bolt Load</td>
<td>Excellent Adaptability and Sealing Ability already at Low Bolt Load</td>
</tr>
<tr>
<td>Excellent Creep Resistance combined with High Tensile Strength</td>
<td>Very Good Creep Resistance combined with Good Tensile Strength</td>
<td>Good Creep Resistance</td>
<td>Good Tensile Strength combined with Good Creep Resistance</td>
<td>Good Creep Resistance</td>
</tr>
<tr>
<td>Aramid and Inorganic Fibers</td>
<td>Aramid and Inorganic Fibers</td>
<td>Aramid and Inorganic Fibers</td>
<td>Aramid and Inorganic Fibers</td>
<td>Aramid and Inorganic Fibers</td>
</tr>
<tr>
<td>Nitrile Binder</td>
<td>Nitrile Binder</td>
<td>Nitrile Binder</td>
<td>Nitrile Binder</td>
<td>Nitrile Binder</td>
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</table>

### Soft Range Compressed Sheet

<table>
<thead>
<tr>
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<th>VR 60</th>
<th>VR 55</th>
<th>VR 40</th>
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</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>Aramid and Inorganic Fibers</td>
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<td>Aramid and Inorganic Fibers</td>
<td>Aramid and Inorganic Fibers</td>
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<tr>
<td>Nitrile Binder</td>
<td>Nitrile Binder</td>
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<td>Nitrile Binder</td>
<td>Nitrile Binder</td>
</tr>
</tbody>
</table>

### Applications

- **Gas Industry, Compressors, Pumps, Transmissions, Small Engines**
- **HVAC/R, Oil & Gas, Pumps, Compressors, Transformers**
- **Potable Water, Sanitary Installations, Pumps**
- **Housings, Covers, Gear Boxes, HVAC/R, Engines, Marine Applications, Hydraulics**
- **HVAC/R, Gear Boxes and Motors, Housings, Covers**

### Specifications

<table>
<thead>
<tr>
<th>VR 80</th>
<th>VR 70</th>
<th>VR 60</th>
<th>VR 55</th>
<th>VR 40</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 1740 psi/&gt; 12 MPa</td>
<td>&gt; 1160 psi/&gt; 8 MPa</td>
<td>&gt; 1015 psi/&gt; 7 MPa</td>
<td>&gt; 1160 psi/&gt; 8 MPa</td>
<td>&gt; 1015 psi/&gt; 7 MPa</td>
</tr>
<tr>
<td>15 %</td>
<td>16 %</td>
<td>21 %</td>
<td>19 %</td>
<td>22 %</td>
</tr>
<tr>
<td>0.22 ml/h</td>
<td>0.14 ml/h</td>
<td>0.11 ml/h</td>
<td>0.02 ml/h</td>
<td>0.05 ml/h</td>
</tr>
<tr>
<td>~ 0.05 mg/(s*¹m)</td>
<td>&lt; 0.1 mg/(s*¹m)</td>
<td>~ 0.05 mg/(s*¹m)</td>
<td>&lt; 0.01 mg/(s*¹m)</td>
<td>&lt; 0.01 mg/(s*¹m)</td>
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<tr>
<td>7 – 15 %</td>
<td>7 – 15 %</td>
<td>9 – 18 %</td>
<td>14 – 23 %</td>
<td>15 – 25 %</td>
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<tr>
<td>&gt; 50 %</td>
<td>&gt; 50 %</td>
<td>&gt; 55 %</td>
<td>&gt; 50 %</td>
<td>&gt; 60 %</td>
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<tr>
<td>11 %</td>
<td>10 %</td>
<td>12 %</td>
<td>17 %</td>
<td>15 %</td>
</tr>
<tr>
<td>8 % (480 °F/250 °C)</td>
<td>17 % (480 °F/250 °C)</td>
<td>22 % (430 °F/220 °C)</td>
<td>28 % (390 °F/200 °C)</td>
<td>26 % (390 °F/200 °C)</td>
</tr>
<tr>
<td>0 – 10 %</td>
<td>0 – 10 %</td>
<td>10 – 25 %</td>
<td>0 – 10 %</td>
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<td>0 – 10 %</td>
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<td>10 – 25 %</td>
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<td>0 – 5 %</td>
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<td>0 – 10 %</td>
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<td>10 % maximum</td>
<td>15 % maximum</td>
<td>20 % maximum</td>
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<td>10 % maximum</td>
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<td>10 % maximum</td>
<td>10 % maximum</td>
<td>20 % maximum</td>
<td>15 % maximum</td>
<td>15 % maximum</td>
</tr>
<tr>
<td>109 – 122 lb/ft²/1.75 – 1.95 g/cm²</td>
<td>119 – 131 lb/ft²/1.9 – 2.1 g/cm²</td>
<td>109 – 122 lb/ft²/1.75 – 1.95 g/cm²</td>
<td>87 – 106 lb/ft²/1.4 – 1.7 g/cm²</td>
<td>94 – 106 lb/ft²/1.5 – 1.7 g/cm²</td>
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<tr>
<td>F712110-A9B3E12M5</td>
<td>F712110-A9B3E12M4</td>
<td>F712330-A9B4E35M4</td>
<td>F714130-A9B3E33M4</td>
<td>F714130-A9B4E23M4</td>
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<tr>
<td>480 °F/250 °C</td>
<td>480 °F/250 °C</td>
<td>430 °F/220 °C</td>
<td>480 °F/250 °C</td>
<td>390 °F/200 °C</td>
</tr>
<tr>
<td>750 °F/400 °C</td>
<td>750 °F/400 °C</td>
<td>570 °F/300 °C</td>
<td>660 °F/350 °C</td>
<td>570 °F/300 °C</td>
</tr>
<tr>
<td>1450 psi/100 bar</td>
<td>1450 psi/100 bar</td>
<td>870 psi/60 bar</td>
<td>1160 psi/80 bar</td>
<td>725 psi/50 bar</td>
</tr>
<tr>
<td>1.5 x 1.5 m (approx. 60 x 60&quot;) to 1.5 x 4.5 m</td>
<td>1.5 x 1.5 m (approx. 60 x 60&quot;) to 1.5 x 4.5 m</td>
<td>1.5 x 1.5 m (approx. 60 x 60&quot;) to 1.5 x 4.5 m</td>
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<td>1.5 x 1.5 m (approx. 60 x 60&quot;) to 1.5 x 4.5 m</td>
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<tr>
<td>1/64&quot; to 1/8&quot;</td>
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<td>1/64&quot; to 1/8&quot;</td>
<td>1/64&quot; to 1/8&quot;</td>
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</tbody>
</table>
High-Performance Metal Reinforced Gaskets.


- VR® 640
- VR® 108
- VR® 99
- VR® 98

**VR 640**
VR 640 is a metal reinforced fiber based gasket material featuring a galvanized tanged steel core. It exhibits very high mechanical strength together with high pressure and superior temperature resistance, yet it still conforms well to sealing surfaces. The material is resistant to oils, fuels, and mixtures of water and antifreeze or corrosion inhibitors. Areas of application: e.g. intercoolers, compressors, engines, marine applications, HVAC/R.

**VR 108**
VR 108 is the metal reinforced variant of our carbon fiber material VR 100, wired with a mesh of galvanized carbon steel. It is ideal for applications with fluctuating temperatures and pressures or vibrations, for example in the oil & gas and pulp and paper industry.

**VR 99**
VR 99 is our VR 90, reinforced with an expanded stainless steel. The strong metal reinforcement ensures a high degree of blowout safety and mechanical strength. Areas of application: e.g. chemical industry, HVAC/R, water, oil & gas.

**VR 98**
VR 98 is the wire mesh reinforced variant of VR 90. The reinforcement consists of a galvanized carbon steel mesh. Its sturdiness makes it ideal for use in compressors, pumps, HVAC/R, oil & gas.
Controlled Swell Gaskets.

**VR® 30 CS**
VR 30 CS is a high-performance controlled swell material with high tensile strength. The dimensionally stable gasket material swells in oil in a controlled manner. Because of its specific properties the material is especially suitable for sealing oil pans, valve covers and transmissions.

High-Temperature Metal Reinforced Mica Gaskets.

**VR®-X**
VR-X is the most heat-resistant material among the Victor Reinz gasket materials. The premium grade mica material, reinforced with a special heat-resistant tanged stainless steel, resists temperatures up to 1740 °F. Wherever things get extremely hot, VR-X demonstrates its enormous sealing potential: engines, exhaust systems, turbo chargers, marine applications, burners and ovens, etc.
## Material

- **Controlled Swell Gaskets**
  - VR 30 CS

- **High-Performance Metal Reinforced Gaskets**
  - VR 640

### Features

- High-Performance Controlled Swell Material
- Very Good Creep Resistance combined with High Tensile Strength
- Aramid and Inorganic Fibers
- Special Controlled Swell Binder
- Metal Reinforced with Galvanized Tanged Steel Core
- Ultimate Creep Resistance
- Superior Temperature Resistance
- Inorganic Fibers
- Nitrile Binder

### Typical Applications

- Oil Pans, Valve Covers, Transmissions
- Intercoolers, Compressors, Engines, Marine Applications, HVAC/R

### Technical Data (typical values refer to 1/16" thick material unless otherwise specified)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Standard</th>
<th>Nominal thickness 1.3 mm unless otherwise specified</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tensile strength, transverse</strong></td>
<td>ASTM F 152</td>
<td>&gt; 2030 psi / &gt; 14 MPa</td>
</tr>
<tr>
<td><strong>Creep relaxation (1/32&quot; unless otherwise specified)</strong></td>
<td>ASTM F 36 B</td>
<td>21 % [valid for t=1 mm]</td>
</tr>
<tr>
<td><strong>Sealability (1/32&quot;), Nitrogen</strong></td>
<td>ASTM F 37 B</td>
<td>0.40 ml/h</td>
</tr>
<tr>
<td><strong>Gas permeability</strong></td>
<td>DIN 3535/6</td>
<td>&lt; 0.1 mg/(s*ml)</td>
</tr>
<tr>
<td><strong>Compressibility</strong></td>
<td>ASTM F 36 J</td>
<td>8 – 15 %</td>
</tr>
<tr>
<td><strong>Recovery</strong></td>
<td>ASTM F 36 J</td>
<td>&gt; 55 %</td>
</tr>
<tr>
<td><strong>VR-Hot compression test (@7250 psi)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thickness decrease at 68 °F (20 °C)</td>
<td></td>
<td>11 %</td>
</tr>
<tr>
<td>Thickness decrease additional, at maximum</td>
<td></td>
<td>4 % (570 °F / 300 °C)</td>
</tr>
<tr>
<td>continuous application temperature</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Increase in thickness after immersion in:</strong></td>
<td>ASTM F 146</td>
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</tr>
<tr>
<td>IRM 903 Oil, 5 h, 300 °F</td>
<td>10 – 30 %</td>
<td>0 – 10 %</td>
</tr>
<tr>
<td>ASTM Fuel B, 5 h, 73 °F</td>
<td>10 – 30 %</td>
<td></td>
</tr>
<tr>
<td>Water/antifreeze 1:1, 5 h, 212 °F</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td><strong>Increase in weight after immersion in:</strong></td>
<td>ASTM F 146</td>
<td></td>
</tr>
<tr>
<td>IRM 903 Oil, 5 h, 300 °F</td>
<td>30 % maximum</td>
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<td>20 % maximum</td>
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<tr>
<td>Water/antifreeze 1:1, 5 h, 212 °F</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td><strong>Density</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASTM line call-out</td>
<td>ASTM F 104,</td>
<td>F712440-A9B4E35M6</td>
</tr>
<tr>
<td>respectively F 868 for metal reinforced</td>
<td>respectively F</td>
<td>0FMF1; F = F702100-B2E00M8</td>
</tr>
<tr>
<td>materials</td>
<td>868</td>
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</tr>
<tr>
<td><strong>Operating temperature, max.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>continuous</td>
<td>390 °F / 200 °C</td>
<td>570 °F / 300 °C</td>
</tr>
<tr>
<td>temporary (peak)</td>
<td>750 °F / 400 °C</td>
<td></td>
</tr>
<tr>
<td><strong>Operating pressure</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>max.</td>
<td>1740 psi / 120 bar</td>
<td></td>
</tr>
<tr>
<td><strong>Standard formats</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sheet size respectively coil width</td>
<td>1.5 x 1.5 m (approx. 60 x 60&quot;)</td>
<td>coil width max. 0.5 m (approx. 20&quot;)</td>
</tr>
<tr>
<td>Thickness</td>
<td>1/64&quot; to 1/8&quot;</td>
<td>0.75 to 1.8 mm</td>
</tr>
</tbody>
</table>

1) Maximum operating pressure and maximum operating temperature must not occur simultaneously.

2) Special sheet sizes and material thicknesses on request.
<table>
<thead>
<tr>
<th></th>
<th>VR 108</th>
<th>VR 99</th>
<th>VR 98</th>
<th>VR-X</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>→ Metal Reinforced with Galvanized Steel Mesh</td>
<td>→ Metal Reinforced with Expanded Stainless Steel Core</td>
<td>→ Metal Reinforced with Galvanized Steel Mesh</td>
<td>→ Metal Reinforced with Special Heat-Resistant Tanged Steel Core</td>
</tr>
<tr>
<td></td>
<td>→ Superior Creep Resistance</td>
<td>→ Superior Creep Resistance</td>
<td>→ Superior Creep Resistance</td>
<td>→ Excellent Creep Resistance</td>
</tr>
<tr>
<td></td>
<td>→ Very High Temperature Resistance</td>
<td>→ Ultimate Chemical Resistance</td>
<td>→ High Temperature Resistance</td>
<td>→ Ultimate Temperature Resistance up to 1740 °F (950 °C)</td>
</tr>
<tr>
<td></td>
<td>→ Carbon and Inorganic Fibers</td>
<td>→ Highest Pressure Resistance</td>
<td>→ Aramid and Inorganic Fibers</td>
<td>→ Mica Material</td>
</tr>
<tr>
<td></td>
<td>→ Nitrile Binder</td>
<td>→ Nitrile Binder</td>
<td>→ Nitrile Binder</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt; 3335 psi /&gt; 23 MPa</td>
<td>&gt; 7540 psi /&gt; 52 MPa</td>
<td>&gt; 2900 psi /&gt; 20 MPa</td>
<td>&gt; 7250 psi /&gt; 50 MPa</td>
</tr>
<tr>
<td></td>
<td>18 %</td>
<td>22 % [valid for t=1 mm]</td>
<td>23 %</td>
<td>26 % [valid for t=1.2 mm]</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>6 – 9 %</td>
<td>5 %</td>
<td>&gt; 5 %</td>
<td>5 – 15 %</td>
</tr>
<tr>
<td></td>
<td>&gt; 50 %</td>
<td>&gt; 60 %</td>
<td>&gt; 60 %</td>
<td>&gt; 40 %</td>
</tr>
<tr>
<td></td>
<td>9 %</td>
<td>6 %</td>
<td>7 %</td>
<td>18 %</td>
</tr>
<tr>
<td></td>
<td>8 % (520 °F / 270 °C)</td>
<td>5 % (480 °F / 250 °C)</td>
<td>7 % (480 °F / 250 °C)</td>
<td>11 % (570 °F / 300 °C)</td>
</tr>
<tr>
<td></td>
<td>0 – 10 %</td>
<td>0 – 10 %</td>
<td>0 – 10 %</td>
<td>0 – 5 %</td>
</tr>
<tr>
<td></td>
<td>0 – 5 %</td>
<td>0 – 5 %</td>
<td>0 – 5 %</td>
<td>5 – 20 %</td>
</tr>
<tr>
<td></td>
<td>10 % maximum</td>
<td>10 % maximum</td>
<td>10 % maximum</td>
<td>15 % maximum</td>
</tr>
<tr>
<td></td>
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<td>10 % maximum</td>
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<tr>
<td></td>
<td>7 % maximum</td>
<td>5 % maximum</td>
<td>5 % maximum</td>
<td>20 % maximum</td>
</tr>
<tr>
<td></td>
<td>122 – 134 lb/ft² / 1.95 – 2.15 g/cm³</td>
<td>153 lb/ft² / 2.45 g/cm³</td>
<td>125 – 137 lb/ft² / 2 – 2.2 g/cm³</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0FMF9; F = F711110-B3E12M7</td>
<td>0FMF9; F = F711110-B4E12M8</td>
<td>0FMF9; F = F711110-B4E12M6</td>
<td>0FMF1; F = F702120-B5E11M8</td>
</tr>
<tr>
<td></td>
<td>520 °F / 270 °C</td>
<td>500 °F / 260 °C</td>
<td>480 °F / 250 °C</td>
<td>1740 °F / 950 °C</td>
</tr>
<tr>
<td></td>
<td>825 °F / 440 °C</td>
<td>750 °F / 400 °C</td>
<td>750 °F / 400 °C</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2320 psi / 160 bar</td>
<td>3625 psi / 250 bar</td>
<td>2465 psi / 170 bar</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.5 x 1.5 m (approx. 60 x 60&quot;)</td>
<td>1.25 x 1.5 m (approx. 50 x 60&quot;)</td>
<td>1.5 x 1.5 m (approx. 60 x 60&quot;)</td>
<td>coil width max. 0.5 m (approx. 20&quot;)</td>
</tr>
<tr>
<td></td>
<td>1/32&quot; to 1/8&quot;</td>
<td>1.0, 1.5 and 2.0 mm</td>
<td>1/32&quot; to 1/8&quot;</td>
<td>1.2 and 1.6 mm</td>
</tr>
</tbody>
</table>
Special Gasket Solutions.
Eyeleted Gaskets.

Special requirements under extremely difficult conditions? Our answer: the Special Gasket Solutions product group.

- Eyeleted Gaskets
- Graphite Materials
- ePTFE-Material
- Rubber Coated Materials

AFM 34 CO ME™.
Thanks to our innovative coating (CO) in combination with an easily adaptable metal eyelet (ME), AFM 34 CO ME gaskets provide ultimate sealing already at low bolt load. The flange gasket with stainless steel eyelet is used especially in the chemical, petro-chemical and natural gas industry.

**Chemotherm SP™ and Chemotherm SPE™.**
Made of expanded graphite on a tanged steel core, Chemotherm SP is the special material for quick-changing thermal-mechanical operating conditions. Its excellent material properties give proof especially in the exhaust area or as a cylinder head gasket.

Our Chemotherm SPE features a tanged stainless steel core. Thus, the SPE version expands the range of applications to sealing aggressive fluids, e.g. in piping construction and apparatus engineering.

**REINZOFLOM E™.**
REINZOFLOM E consists of pure expanded PTFE (ePTFE) – a material with excellent chemical resistance to aggressive fluids. Because of its special structure, ePTFE is mechanically very strong and stable as well as soft and very adaptable. REINZOFLOM E is used wherever sealing against highly aggressive fluids, e.g. acids, is required.

**MatriCS™ and MatriCS plus™.**
MatriCS defines a new generation of rubber coated materials. It consists of a carbon steel core with fiber reinforced rubber coating; it is very compressible and features good recovery. MatriCS is the ideal solution for sealing joints that have to meet stringent mechanical and thermal requirements simultaneously.

MatriCS plus, compared to MatriCS, features stainless steel as metal core and a thicker fiber reinforced elastomer coating – for applications with high dynamics and/or where corrosion resistance is of importance.
For sealing gaps smaller than 0.006 inches between the two sealing surfaces, REINZOPLAST is the right choice. For gaps of 0.006 inches and larger our product REINZOSIL seals quickly and reliably.
Gasket material is our business – and we know it as few others do. Of course, we test our materials according to DIN and ASTM standards, but even these do not cover all properties essential in practical application. For this reason we always go one step further. We use our own additional standards, designated as RPM (Reinz test methods), which guarantee highest quality – for your safety’s sake.

For example:
- **RPM 511** measures the deformation (compressibility and recovery) as a function of surface stress (also known as LDC = load deflection curves).
- **RPM 510** hot compression test measures creep relaxation under temperature for different surface stress levels.

With all these tests we ensure that you receive materials that are ideal for your applications. Naturally, we have all required ISO certifications, e.g. ISO/TS 16949.

**Strict Testing Methods, International Certificates, Worldwide References.**
Rest assured that you’re always receiving the best quality.
Practical Tips for Gaskets.

Installation
Correct installation is a basic requirement for the reliable function of a gasket. The surface stress at assembly has to be in between the minimum required and maximum permissible for the respective gasket material.
- Use only new, undamaged, and dry gaskets. Please consider our storage recommendations, provided below.
- Clean the sealing surfaces carefully without scratching them. Make sure that the sealing surfaces are dry.
- Center the gasket. Do not apply any additional sealing compound, grease, releasing agent or similar substance to the gasket or the sealing surfaces.
- Do not use corroded bolts, nuts or washers. The calculated surface stress must match the actually achieved stress. Therefore, the bolts and nuts should be lubricated slightly.
- Align the two sealing surfaces and tighten the bolts by hand.
- In order to achieve an even distribution of the surface stress, the bolts must be torqued to the specified value in star pattern using at least three steps. Example:
  - Step 1: 20% of the specified torque
  - Step 2: 60% of the specified torque
  - Step 3: 100% of the specified torque
- All bolts must be torqued to the same specified value.
- Retorqueing of bolts is recommended before commissioning to compensate for potential settling of the gasket.
- Retorqueing of fiber or PTFE based gaskets that have been in operation must only be done under ambient temperature. Retorque with great care in several steps to avoid damage to the gasket.

Storage recommendations
Please consider the following storage conditions for fiber based gaskets and gasket material sheets:

Recommended maximum storage period is two to three years under the following conditions:
- Temperature: below 68 °F
- Relative humidity: 30...60%
- No direct sunlight
- No artificial lighting with high UV content
- No ozone
- Stress-free storage

Any significant deviation from the above will reduce the maximum storage period. When critical (e.g. toxic) gases are to be sealed, the storage period should not exceed one year. If necessary, the gaskets or gasket material sheets must be stored in airtight and lightproof packaging.

Warning
Properties/applications shown throughout this brochure are typical. Your specific application should not be implemented without independent study and evaluation for suitability. For specific application recommendations please consult us. Failure to select the proper sealing products could result in material damage and/or serious personal injury. Performance data published in this brochure is based on field tests, customer field reports and/or in-house testing. Field conditions will affect gasket performance. While utmost care has been taken while compiling this brochure, we assume no responsibility for errors. Specifications are subject to change without notice. We point out that this method for gasket selection is merely a general guide and should not be the sole means for selecting or rejecting a product.
Excellent availability and shortest delivery times: we have an experienced sales partner in the U.S. gasket industry providing an excellent service.
Dana Incorporated
Dana is an integral partner for virtually every major vehicle and engine manufacturer worldwide. Dana is a leading supplier of drivetrain, sealing, and thermal technologies to the global automotive, commercial-vehicle, off-highway markets and for industrial applications. Founded in 1904, Dana employs thousands of people across six continents.

What Can Dana Do For You?
This lineup of technologies from one source is designed to offer flexibility to vehicle manufacturers around the world – whether in automotive centers or emerging markets – and ensures that customers get the latest state-of-the-art technologies, as well as products adjusted for specific local markets. With technology centers strategically located throughout the world, Dana engineers have the superior resources to develop, design, test, and manufacture to suit individual customer needs. This close collaboration allows Dana to create everything from advanced single components to fully integrated modular systems.

Victor Reinz Sealing Solutions.
We are Your Industrial Sealing Expert.

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