Flexitallic is proud to introduce the SIGMA family of biaxially-oriented PTFE sheet—proven to perform where gasket integrity is paramount. Specified by more than 500 major corporations, SIGMA stands side-by-side with Flexitallic metal gaskets and Thermiculite® gasket materials to provide you with the complete and innovative sealing solutions you demand to handle all your sealing needs.

Flexitallic's global and national contracts are helping major petrochemical facilities achieve their performance, maintenance and budgetary goals. By designing seals that last longer in the most difficult applications, SIGMA helps production processes increase their output capabilities. That's just one example of how Flexitallic is leading The Innovation of Integrity.

SIGMA® 588
WHITE W/WHITE CORE (AS SHOWN)
Biaxially-oriented pure PTFE core with highly conformable surface layers for controlled compressibility
- Ultra-high compression
- Ideal for greatly distorted or damaged flanges
- Optimized for ultra-low load, low stress applications
- Suitable for use with Hydrogen Fluoride
- Pure PTFE—No filter
- Universal chemical resistance

SIGMA® 599
WHITE W/WHITE CORE
Biaxially-oriented PTFE containing hollow glass microspheres
- Replacement for cumbersome envelope gaskets
- FDA compliant

Effectively manage your gasket selection process, simplify inventory requirements and receive proven long-term sealing with SIGMA® gasket material—
The Innovation of Integrity

Contact your local Allied Distributor today!
The Innovation of Integrity.

FOR THE MOST DEMANDING APPLICATIONS

TOTAL INTEGRITY

CHEMICALLY RESISTANT. UNIFORMLY STRONG. INHERENTLY CLEAN.

STANDARDIZATION THROUGH INNOVATIVE ENGINEERING

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OTHER INNOVATIVE SIGMA® PRODUCTS FROM FLEXITALlic

SIGMA® 588
WHITE/MULLESE CORE (AS SHOWN)
Biaxially-oriented pure PTFE core with highly conformable surface layers for controlled compressibility
• Ultra-high compression
• Ideal for greatly distorted or damaged flanges
• Optimum for ultra-low load, low stress applications
• Suitable for use with Hydrogen Fluoride
• Pure PTFE—No fiber
• Universal chemical resistance

SIGMA® 599
WHITE MULLSE CORE
Biaxially-oriented PTFE containing hollow glass microspheres
• Replacement for cumbersome envelope gaskets
• FDA compliant

OTHER SIGMA® PRODUCTS FROM FLEXITALlic

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• Modified PTFE inner core design to maximize sealability and prevent blow-out
• FDA Compliant

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281.604.2400

Flexitallic, Ltd.
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Marsh Works
Sheffield Road
Castleford, West Yorkshire, UK
BD19 5BT
+44 1274 851273

www.flexitallic.com

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The Sigma range of materials offers outstanding chemical resistance of PTFE with enhanced non-stick properties. Developed for processes ranging from cryogenic temperatures to 500°F (260°C), and suitable for sealing virtually every chemical medium across the entire pH range (0-14), SIGMA pairs the excellent removal after usage to dramatically reduce the downtime on shutdown.

The non-stick properties of the Sigma range of materials offer the choice for superb chemical resistance, they are not ideally suited for molten alkali metals, fluorine gas and hydrogen fluoride.

While conventional PTFE-based sealing materials have long been the choice for superior chemical resistance, they are not ideally suited to achieve the minimum reduction of creep in situations where seal integrity is paramount—a vital consideration for stringent long-term emission control.

SIGMA® 500

- Enhanced compressibility for low bolt loads
- Improved flexibility over conventional calendared and graphite sheets
- Moderate concentrations of acids & caustics, chlorine, hydrogen peroxide
- Can be used for all concentrations of sulfuric acid
- WRAS approved for hot and cold potable water services

SIGMA® 511

- Standard compressibility
- Strong acids (except hydrofluoric) to general chemicals
- Can be used for all concentrations of sulfuric acid
- Not suited for molten alkali metals, fluorine gas and hydrogen fluoride
- WRAS approved for hot and cold potable water services

SIGMA® 533

- Standard compressibility
- Ideal for sealing food, pharmaceutical and other non-contamination applications
- Strong alkaline solutions to other general chemicals
- Aqueous hydrofluoric acid below 48%
- Not suited for sealing molten alkali metals or fluorine gas

For Sigma 588 gasket characteristics please consult Flexitallic Applications & Engineer Department.

Gasket Compressibility & Design Information

- ASTM N
- ASTM Y
- PVC
- PVC-C
- Tymax
- Dielectric Strength
- ASTM F94 Lowe Callout

Physical Properties

- Color: Blue
- Color: Fawn
- Color: Off-White
- Density
- Mechanical Properties ASTM F152
- Grass Tensile
- With-Tensile

Pressure Containment and Temperature

- Pressure (psi) (MPa)
- PVRC Gs1
- PVRC a1
- PVRC Gb1
- ASME y
- ASME m
- Cold Compression Value
- Cold Recovery Value
- Warm Setting Value
- Warm Recovery Value
- Max. Compressive Stress @ 200°C
- Min. Initial Stress

Gasket Characteristics According to DIN 28090

- Max. Compressive Stress
- Cold Recovery
- Warm Recovery
- Warm Setting Value
- Min. Initial Stress
- Max. Compressive Stress

For Sigma 588 gasket characteristics please consult Flexitallic Applications & Engineer Department.
**SIGMA 500**

- Enhanced compressibility for low bolt loads
- Improved flexibility over conventional calendared and graphic sheets
- Moderate concentrations of acids & caustics, chlorine, hydrogen peroxide
- Can be used for all concentrations of sulfuric acid
- WRAS approved for hot and cold potable water services

**SIGMA 511**

- Standard compressibility
- Strong acids (except hydrofluoric) to general chemicals
- Can be used for all concentrations of sulfuric acid
- Not suited for molten alkali metals, fluorine gas and hydrogen fluoride
- WRAS approved for hot and cold potable water services

**SIGMA 533**

- Standard compressibility
- Ideal for sealing food, pharmaceutical and other non-contamination applications
- Strong alkaline solutions to other general chemicals
- Aqueous hydrofluoric acid below 98%
- Not suited for sealed molten alkali metals or fluorine gas

---

**Gasket Characteristics According to DIN 28090**

<table>
<thead>
<tr>
<th>Material</th>
<th>Max. Compressive Stress @ 200°C (psi)</th>
<th>Min. Initial Stress @ 0°C (psi)</th>
<th>Min. Warm Recovery Value @ 130°C (psi)</th>
<th>Cold Recovery Value @ 0°C (psi)</th>
<th>Warm Setting Value @ 200°C (psi)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIGMA 500</td>
<td>1740 (12.0)</td>
<td>2176 (15.5)</td>
<td>2280 (15.6)</td>
<td>2235 (15.0)</td>
<td>2275 (15.7)</td>
</tr>
<tr>
<td>SIGMA 511</td>
<td>1940 (13.5)</td>
<td>2216 (15.0)</td>
<td>2255 (15.2)</td>
<td>2275 (15.7)</td>
<td>2235 (15.0)</td>
</tr>
<tr>
<td>SIGMA 533</td>
<td>1940 (13.3)</td>
<td>2216 (15.0)</td>
<td>2255 (15.2)</td>
<td>2275 (15.7)</td>
<td>2235 (15.0)</td>
</tr>
</tbody>
</table>

**Physical Properties**

<table>
<thead>
<tr>
<th>Material</th>
<th>Color</th>
<th>Density (lb/ft³)</th>
<th>Dielectric Strength (kV/mm)</th>
<th>Surface Finish</th>
<th>Thicknesses (mm)</th>
<th>Sheet Sizes (US STANDARD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIGMA 500</td>
<td>Blue</td>
<td>&gt;1.05</td>
<td>&gt;36.0</td>
<td>0.75 mm – 3.0 mm</td>
<td>60” x 60”</td>
<td>2 m x 2 m</td>
</tr>
<tr>
<td>SIGMA 511</td>
<td>Fawn</td>
<td>&gt;0.80</td>
<td>&gt;22.8</td>
<td>0.75 mm – 3.0 mm</td>
<td>60” x 60”</td>
<td>2 m x 2 m</td>
</tr>
<tr>
<td>SIGMA 533</td>
<td>Off-White</td>
<td>&gt;0.60</td>
<td>&gt;17.7</td>
<td>0.75 mm – 3.0 mm</td>
<td>60” x 60”</td>
<td>2 m x 2 m</td>
</tr>
</tbody>
</table>

**TA Luft, DVGW, BAM, Eurochlor, Bureau Vertitas, WRAS, UDT, FDA, The Chlorine Institute**
### SIGMA 500

- **Enhanced compressibility for low bolt loads**
- **Improved flexibility over conventional calendered and graphitite sheets**
- **Moderate concentrations of acids & caustics, chlorine, hydrogen peroxide**
- **Can be used for all concentrations of sulfuric acid**
- **WRAS approved for hot and cold potable water services**

#### Gasket Characteristics According to DIN 28090

<table>
<thead>
<tr>
<th>Thickness</th>
<th>psi (MPa)</th>
<th>1/16”</th>
<th>1/8”</th>
<th>5/32”</th>
<th>3/16”</th>
<th>1/4”</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.08”</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.125”</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.156”</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** The pressure/temperature chart below is used simultaneously.

#### Physical Properties

<table>
<thead>
<tr>
<th>Color</th>
<th>Blue</th>
<th>Fawn</th>
<th>Off-White</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density</td>
<td>67.1 (4.6)</td>
<td>137.3 (9.1)</td>
<td>160.2 (10.9)</td>
</tr>
</tbody>
</table>
| Mechanical Properties ASTM F152

- **Density** kg/m³
- **Preferred Grade** According to ASME B16.10

#### Mechanical Properties

- **Color:** Blue, Fawn, Off-White

#### Gasket Constants & Design Information

- **ASME AX** psi (MPa)
- **PVC GO** psi
- **PVC G** psi
- **PVC GL** psi
- **Density** kg/m³
- **Electrical Strength** kV/m
- **ASTM F185 Low-Cut**

#### Material Compliance and Approvals:

- DIN 28090-1
- DIN 28090-2
- DIN 28090-3

**NOTE:** Data based on 1/16” material. Based on 1/16”.

### SIGMA 511

- **Standard compressibility**
- **Strong acids (except hydrofluoric) to general chemicals**
- **Can be used for all concentrations of sulfuric acid**
- **WRAS approved for hot and cold potable water services**

#### Gasket Characteristics According to DIN 28090

<table>
<thead>
<tr>
<th>Thickness</th>
<th>psi (MPa)</th>
<th>1/16”</th>
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- **Density** kg/m³
- **Preferred Grade** According to ASME B16.10

#### Mechanical Properties

- **Color:** Blue, Fawn, Off-White

#### Gasket Constants & Design Information

- **ASME AX** psi (MPa)
- **PVC GO** psi
- **PVC G** psi
- **PVC GL** psi
- **Density** kg/m³
- **Electrical Strength** kV/m
- **ASTM F185 Low-Cut**

#### Material Compliance and Approvals:

- DIN 28090-1
- DIN 28090-2
- DIN 28090-3

**NOTE:** Data based on 1/16” material. Based on 1/16”.

### SIGMA 533

- **Standard compressibility**
- **Ideal for sealing food, pharmaceutical and other non-contamination applications**
- **Strong alkaline solutions to other general chemicals**
- **Aqueous hydrofluoric acid below 48%**
- **Not suited for sealing molten alkali metals or fluorine gas**

#### Gasket Characteristics According to DIN 28090

<table>
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<tr>
<th>Thickness</th>
<th>psi (MPa)</th>
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</table>

**NOTE:** The pressure/temperature chart below is used simultaneously.

#### Physical Properties

<table>
<thead>
<tr>
<th>Color</th>
<th>Blue (pigment-free)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density</td>
<td>67.1 (4.6)</td>
</tr>
</tbody>
</table>
| Mechanical Properties ASTM F152

- **Density** kg/m³
- **Preferred Grade** According to ASME B16.10

#### Mechanical Properties

- **Color:** Blue (pigment-free)

#### Gasket Constants & Design Information

- **ASME AX** psi (MPa)
- **PVC GO** psi
- **PVC G** psi
- **PVC GL** psi
- **Density** kg/m³
- **Electrical Strength** kV/m
- **ASTM F185 Low-Cut**

#### Material Compliance and Approvals:

- DIN 28090-1
- DIN 28090-2
- DIN 28090-3

**NOTE:** Data based on 1/16” material. Based on 1/16”.

### SIGMA 500/511/533/588

- **Temperature Range:** 0°C to 260°C
- **Pressure:** 0.08” to 1.4 psi (686 bar)

#### Physical Properties

<table>
<thead>
<tr>
<th>SIGMA 500</th>
<th>SIGMA 511</th>
<th>SIGMA 533</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Blue</td>
<td>Blue</td>
</tr>
<tr>
<td>Density</td>
<td>kg/m³</td>
<td>kg/m³</td>
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| Mechanical Properties ASTM F152

- **Density** kg/m³
- **Preferred Grade** According to ASME B16.10

#### Mechanical Properties

- **Color:** Blue, Blue (pigment-free)

#### Gasket Constants & Design Information

- **ASME AX** psi (MPa)
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- **PVC GL** psi
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#### Material Compliance and Approvals:

- DIN 28090-1
- DIN 28090-2
- DIN 28090-3

**NOTE:** Data based on 1/16” material. Based on 1/16”.

### Gasket Characteristics According to DIN 28090

- **Max. Compressive Stress @ 200°C**
- **Max. Initial Stress**
- **Warm Setting Value**
- **Warm Recovery Value**
- **Cold Compression Value**
- **Max. Compressive Stress @ 20°C**

**NOTE:** The pressure/temperature chart below is used simultaneously.

#### Mechanical Properties

- **Color:** Blue, Blue (pigment-free)

#### Gasket Constants & Design Information

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- **PVC G** psi
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#### Gasket Characteristics According to DIN 28090

- **Max. Compressive Stress @ 20°C**
- **Max. Initial Stress**
- **Warm Setting Value**
- **Warm Recovery Value**
- **Cold Compression Value**
- **Max. Compressive Stress @ 20°C**

**NOTE:** The pressure/temperature chart below is used simultaneously.

#### Mechanical Properties

- **Color:** Blue, Blue (pigment-free)

#### Gasket Constants & Design Information

- **ASME AX** psi (MPa)
- **PVC GO** psi
- **PVC G** psi
- **PVC GL** psi
- **Density** kg/m³
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