SIMONA® PFA
High-performance plastics for corrosion protection
SIMONA® PFA –
High-performance plastics for corrosion protection

SIMONA has extended its existing product range of partially fluorinated materials, such as PVDF, ECTFE and ETFE, to include fully fluorinated semi-finished parts. They include the high-performance plastics PFA-M and PFA.

Fully fluorinated SIMONA® Semi-Finished Parts are used primarily in highly demanding operating conditions, e.g. in the area of heavy-duty corrosion protection. Combining the benefits of excellent chemical resistance with high temperature stability, they contribute directly to the overall durability and reliability of applications.

Owing to their properties, fluoroplastics are predestined for use in the chemical and electroplating industry and the electrical and semiconductor industry as well as in the field of medical and nuclear technology or power and environmental technology.

SIMONA® PFA-M and PFA sheets can be supplied without any backing as well as with a glass fibre or aramid fibre backing. Sheets equipped with such backing offer superior safety for linings and composite construction.

**Broad scope of application**
- Drainage channels
- Extraction and filtration systems
- Absorbers
- Pickling systems
- Chemical piping
- Containers
- Sealing washers
- Diaphragm seals
- Storage and reaction tanks
- Pumps
- Stirring devices
- Tank linings
- Absorption towers und spray-tower scrubbers
- Ventilators, heat exchangers
- Cyclone systems
- Centrifuges

Glass fibre backing
Aramid fibre backing
**SIMONA® PFA-M**
SIMONA® PFA-M is a copolymer based on tetrafluoroethylene and perfluorinated methyl vinyl ether. Offering the advantage of high flexural resistance, this material can be used in a wide range of applications within the chemical process industry. Its upper temperature limit is 225 °C.

Thanks to its excellent stress crack resistance and extremely smooth surface, SIMONA® PFA-M is the perfect choice when it comes to ensuring the lowest possible decrease of pressure together with reduced caking of solids and efficient cleaning.

![Anchor point lining of a chimney flue made of SIMONA® PFA](image1)

**SIMONA® PFA**
SIMONA® PFA is a copolymer based on tetrafluoroethylene and perfluorinated propyl vinyl ether. This material is used primarily in areas of application requiring exceptional thermal stability, low levels of leaching (semiconductor industry) or high stress crack resistance.

Of all the thermoplastic fluropolymers, PFA has the highest chemical resistance. At 260 °C, it also has the highest upper temperature limit.

SIMONA® PFA is deployed mainly in the field of heavy-duty corrosion protection, e.g. as a lining for channel anchor points in flue gas desulphurisation systems.

![Thermoformed tanks made of SIMONA® PFA-M](image2)

---

### Product range

<table>
<thead>
<tr>
<th>Material</th>
<th>SIMONA® PFA-M</th>
<th>SIMONA® PFA-AK/-GK</th>
<th>SIMONA® PFA</th>
<th>SIMONA® PFA-AK/-GK</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pressed sheets</strong> (sizes/thicknesses in mm)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>590 x 590</td>
<td>25 - 80</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Extruded sheets and rolls</strong> (sizes/thicknesses in mm)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,500 x 1,500</td>
<td>-</td>
<td>-</td>
<td>5 - 8</td>
<td>0.8</td>
</tr>
<tr>
<td>3,000 x 1,500</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2.3 - 2.8</td>
</tr>
<tr>
<td>2,440 x 1,220</td>
<td>1.5 - 20</td>
<td>1.5 - 4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>10,000 x 1,500</td>
<td>-</td>
<td>-</td>
<td>0.8 - 3.8</td>
<td>0.8 - 3.8</td>
</tr>
<tr>
<td>15,000 x 1,500</td>
<td>-</td>
<td>-</td>
<td>0.8 - 2.8</td>
<td>1.5 - 2.3</td>
</tr>
<tr>
<td>15,240 x 1,220</td>
<td>2.3 - 4</td>
<td>1.5 - 4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>20,000 x 1,500</td>
<td>-</td>
<td>-</td>
<td>0.8 - 2.3</td>
<td>-</td>
</tr>
<tr>
<td>Colours</td>
<td>natural</td>
<td>natural (backed)</td>
<td>natural (backed)</td>
<td>-</td>
</tr>
</tbody>
</table>

| Welding rods (thicknesses in mm) | | | | |
| 2.0 kg coil, round rod | - | - | 3 - 4 | - |
| 2.3 kg coil, round rod | 3 - 4 | - | - | - |
| Colours | natural | natural | - | - |

Other sizes, thicknesses and colours available on request. AK = aramid fibre backing; GK = glass fibre backing
Please contact our sales department for further details concerning availability: sales@simona.de
## Material specifications

### SIMONA® PFA – Material specifications

<table>
<thead>
<tr>
<th>Property</th>
<th>SI M O N A® P F A M</th>
<th>SI M O N A® P F A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density, g/cm³, DIN EN ISO 1183</td>
<td>2.15</td>
<td>2.15</td>
</tr>
<tr>
<td>Yield stress, MPa, DIN EN ISO 527</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>Tensile modulus of elasticity, MPa, DIN EN ISO 527</td>
<td>440</td>
<td>450</td>
</tr>
<tr>
<td>Notched impact strength, kJ/m², DIN EN ISO 179</td>
<td>without break</td>
<td>without break</td>
</tr>
<tr>
<td>Elongation at break, %, DIN EN ISO 527</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>Mean coefficient of linear thermal expansion, k (°C–1), ISO 11359-2</td>
<td>1.4 x 10⁻⁴</td>
<td>1.4 x 10⁻⁴</td>
</tr>
<tr>
<td>Fire behaviour, DIN 4102</td>
<td>B1 low flammability</td>
<td>B1 low flammability</td>
</tr>
<tr>
<td>Thermal conductivity, W/m · K, DIN 52612</td>
<td>0.20</td>
<td>0.21</td>
</tr>
<tr>
<td>Specific surface resistance, Ohm, DIN IEC 60093</td>
<td>10¹¹</td>
<td>10¹¹</td>
</tr>
<tr>
<td>Temperature range, °C</td>
<td>−160 to +225</td>
<td>−190 to +260</td>
</tr>
</tbody>
</table>

All specifications are deemed to be approximate values in respect of the specific material and may vary depending on the processing methods used. In general, data specified applies to average values measured on extruded sheets with a thickness of 4 mm. In the case of sheets manufactured by means of pressing, testing is generally performed on sheets with a thickness of 20 mm. Deviations from the values specified are possible if the sheets in this thickness are not available. In the case of backed sheets, all technical specifications relate to the non-backed base sheets. Information presented herein is not necessarily applicable to other products (e.g., pipes, solid rods) of the same material or products that have undergone downstream processing. Suitability of materials for a specific field of application must be assessed by the party responsible for processing or the end-user. All technical specifications presented herein are designed merely to provide assistance in terms of project planning. They do not constitute a guarantee of specific properties or qualities.

### PRODUCTION SITES

- **SIMONA AG**
  - Teichweg 16
  - 55660 Kirm
  - Germany
  - Phone: +49 (0) 67 52 14-0
  - Fax: +49 (0) 67 52 14-211
  - mail@simona.de
  - www.simona.de

- **SIMONA AMERICA INC.**
  - 101 Power Boulevard
  - Archbald, PA 18403
  - USA
  - Boltaron Inc.
  - A SIMONA Company
  - 3 General Street
  - Newcomerstown, OH 43832
  - USA
  - Phone: +1 866 501 2992
  - Fax: +1 800 522 4857
  - mail@simona-america.com
  - www.simona-america.com

- **SIMONA IBERICA**
  - Simona Iberica S.L.
  - Doctor Josep Castells, 26-30
  - Poligono Industrial Fondalar
  - 08830 Sant Boi de Llobregat
  - Spain
  - Phone: +34 93 635 4103
  - Fax: +34 93 630 08 90
  - mail@simona-es.com
  - www.simona-es.com

- **SIMONA POLSKA Sp.zo.o.**
  - ul. Wrocławska 36
  - 05-020 Żórawina
  - Poland
  - Phone: +48 (0) 71 3 52 80 20
  - Fax: +48 (0) 71 3 52 81 40
  - mail@simona-pl.com
  - www.simona-pl.com

- **SIMONA INDIA PRIVATE LIMITED**
  - No. 368 Jinnu Road
  - High & New Technology Industrial Development Zone
  - Jiangmen, Guangdong
  - China 529000
  - Phone: +91(0) 22 6197 100
  - Fax: +91(0) 22 6197 105
  - sales@simona-in.com

- **SIMONA ENGINEERING PLASTICS (Guangdong) Co. Ltd.**
  - No. 368 Jinnu Road
  - High & New Technology Industrial Development Zone
  - Jiangmen, Guangdong
  - China 529000
  - Phone: +86 21 6267 0885
  - Fax: +86 21 5267 0885
  - shanghai@simona-cn.com
  - www.simona-cn.com

- **SIMONA AMERICA INC.**
  - 101 Power Boulevard
  - Archbald, PA 18403
  - USA
  - Phone: +1 866 501 2992
  - Fax: +1 800 522 4857
  - mail@simona-america.com
  - www.simona-america.com

- **SIMONA ENGINEERING PLASTICS TRADING (Shanghai) Co. Ltd.**
  - Room 5, 19/F, Block B
  - Hongqiao Nanfeng Town
  - No. 100 Junyi Road
  - Changning District
  - Shanghai
  - China 200051
  - Phone: +86 21 6267 0881
  - Fax: +86 21 6267 0885
  - shanghai@simona-cn.com
  - www.simona-cn.com

- **SIMONA INDIA PRIVATE LIMITED**
  - Star Hub, Unit No. 204,
  - 2nd Floor, Building No. 1,
  - Sahar Road, Andheri East,
  - Mumbai 400099
  - India
  - Phone: +91(0) 22 66197 100
  - Fax: +91(0) 22 66197 105
  - sales@simona-in.com

All information furnished in this publication reflects our current scope of knowledge on the date of publication and is designed to provide details of our products and potential fields of application (errors and omissions excepted, including typographical mistakes).