

SIMONA



SIMONA[®] PFA and SIMONA[®] PFA-HP
High-performance plastics for challenging applications

GLOBAL THERMOPLASTIC SOLUTIONS

SIMONA® PFA – High-performance plastics for challenging applications

SIMONA offers an extensive range of products for chemical tank and equipment engineering. Within this portfolio, fully fluorinated semi-finished products made of PFA are key players when it comes to temperature and chemical resistance.



Fully fluorinated SIMONA® semi-finished products are the perfect choice for use in demanding operating conditions, e.g. for heavy-duty corrosion protection. Here, the combination of excellent chemical resistance and high temperature stability ensures maximum reliability and a long service life.

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-HP and PFA sheets are available 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.

Wide range of applications

CPI

- Chemical installations
- Bio- and pharmaceutical industry
- Food production
- Power plant technology
- Mining
- Renewable energy

Examples of specific use:

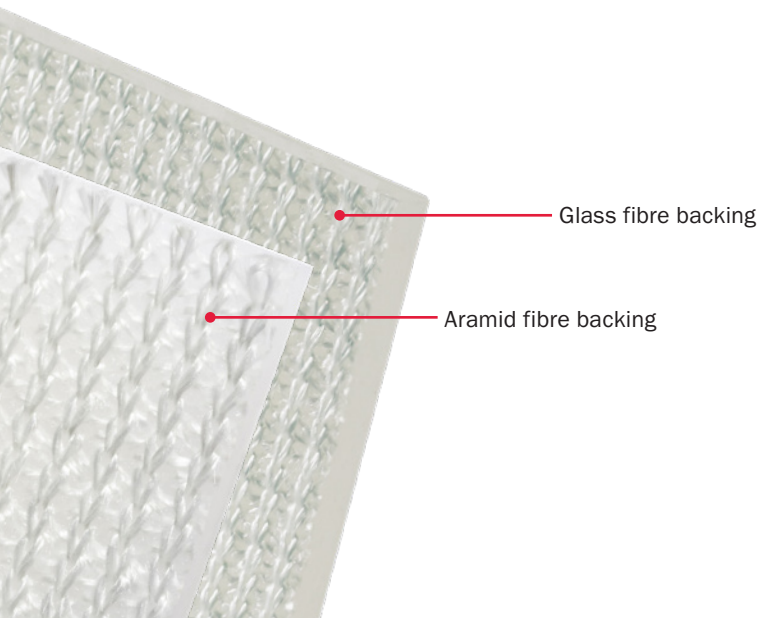
- Draining channels
- Extraction und filtration systems
- Absorbers
- Pickling systems
- Chemical lines
- Sealing washers
- Storage and reaction tanks
- Pumps
- Stirring devices
- Ventilators, heat exchangers
- Centrifuges

Semicon

- Wet benches
- Etching process
- Process tank
- Process components

Examples of specific use:

- Valves
- Pumps
- Pipes
- Tanks and tank linings
- Storage and reaction tanks
- Etching tanks

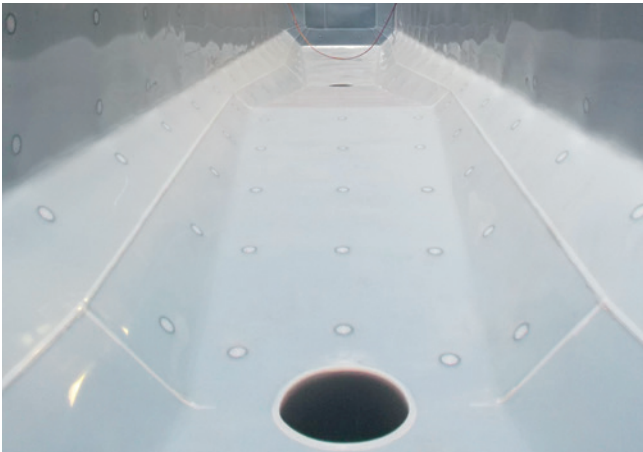


SIMONA® PFA

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 fluoropolymers, 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.

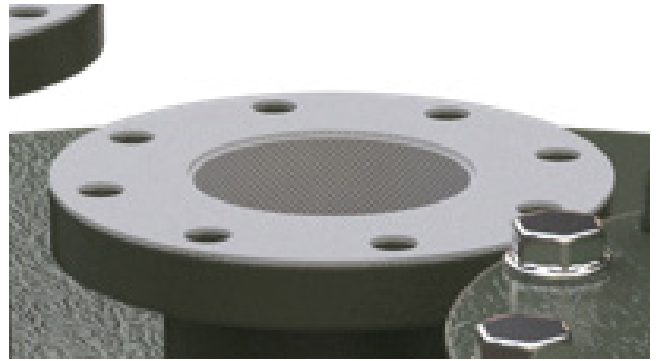


Anchor point lining of a chimney flue made of SIMONA® PFA

SIMONA® PFA-HP

SIMONA® PFA-HP is the preferred choice for applications involving prolonged contact with aggressive media.

The material is mainly used in semiconductor components and fluid handling components. In addition, SIMONA® PFA-HP is ideally suited to high-performance chemical transport systems where purity within the ppb range is essential.



GRP-reinforced cover with SIMONA® PFA inliner for a steel reactor

SIMONA® liner materials


When it comes to composite structures and linings, SIMONA® liner materials made of fluoroplastics are engineered to deliver a high degree of safety for the storage and transport of chemically aggressive media.

The backing used in this area provides a perfect mechanical bridge between the liner material and the supporting material that needs to be protected against corrosion.


Product range

	SIMONA® PFA	SIMONA® PFA-AK SIMONA® PFA-GK	SIMONA® PFA-HP	SIMONA® PFA-HP-GK
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Extruded sheets (size/thickness in mm)

	1.500 x 1.500	5 - 8	0,8	4 - 8	-
	3.000 x 1.500	1,5 - 2,3	2,3 - 3,8	-	2,3
	10.000 x 1.500 ¹	0,8 - 3,8	0,8 - 3,8	-	2,3
	15.000 x 1.500 ¹	0,8 - 2,8	1,5 - 2,8	-	-
	20.000 x 1.500 ¹	0,8 - 2,3	-	-	-
	Colour	natural	natural (backed)	natural	natural (backed)

Welding rods (thickness in mm)

	2,0 kg reel, round rod	-	-	3,0 - 4,0	-
	2,0 kg reel, round rod	3,5	-	-	-
	5,0 kg reel, round rod	3,5 - 4,0	-	-	-
	Colour	natural	-	natural	-

All dimensions specified are standard dimensions. Other sizes, thicknesses and colours available on request.

¹ Rolled goods

SIMONA® PFA – Material specifications

Material specifications

	SIMONA® PFA	SIMONA® PFA-HP
Density, g/cm ³ , DIN EN ISO 1183	2,15	2,15
Yield stress, MPa, DIN EN ISO 527	15	15
Tensile modulus of elasticity, MPa, DIN EN ISO 527	450	450
Notched impact strenght, kJ/m ² , DIN EN ISO 179	without break	without break
Dielectric strength, kV/mm, DIN IEC 60243-1	33	33
Shorehardness D (15 s), DIN EN ISO 868	55	55
Elongation at break, %, DIN EN ISO 527	250	250
Mean coefficient of linear thermal expansion, K ⁻¹ , ISO 11359-2	1,4 x 10 ⁻⁴	1,4 x 10 ⁻⁴
Specific surface resistance, Ohm, DIN IEC 60093	10 ¹⁵	10 ¹⁵
Temperature range, °C	-190 bis +260	-190 bis +260
Fire behaviour, DIN 4102	B1 low flammability (self-assessment without test certificate)	B1 low flammability (self-assessment without test certificate)
Food compliance FDA	yes	yes

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.

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