

POLYFLURON® PTFE lined columns/vessels and internals

SGL Carbon has more than 40 years of manufacturing experience resulting in hundreds of installations in operation with POLYFLURON lined steel columns, vessels and internals. POLYFLURON is a PTFE polymer which provides highest chemical resistance and is therefore the material of choice for corrosion protection.

Our unique range of offerings comprises the design and manufacturing of both, POLYFLURON lined equipment and parts as well as complete packages including process internals. Internals are available from our broad material base made of PFA/PTFE, graphite or carbon fiber-reinforced carbon (CFRC). This allows us to offer our customers cost-effective solutions that take advantage of extraordinary material properties.



↑ POLYFLURON bottom section of a column

Customer benefits

- **Extreme corrosion resistance:** meets extreme demands for corrosion resistance, e.g. mixed corrosive media by use of highest grades of raw materials available on market
- **Reliability and safety:** very high level of operational reliability and safety by e.g. lowest permeation and diffusion rates, by active permeation management with an advanced venting system and long section lengths (less flanges)
- **Convenience:** cost-effective package solutions including high performance internals like distributors, grids, bubble cup/tunnel trays, raschig rings, packings etc. made of PTFE, PFA, graphite or innovative carbon fiber based materials
- **Robustness:** insensitive to thermal shock and mechanical stresses (significant better than e.g. glass lined equipment)
- **Cleanness:** minimized accumulation of fouling by anti-adhesive properties; no back diffusion of metal ions into the process media, e.g. for high purity sulfuric acid applications
- **Flexibility:** most advanced PTFE welding technologies on market by SGL Carbon for e.g. complex geometries, on-site repairs, large dimensions etc.

Example applications

- Mass transfer equipment and transport/storage in e.g.
- chemical and pharmaceutical industry
 - ultra-high-purity electronic applications

By the way: POLYFLURON PTFE is certified by FDA (Food and Drug Administration)

Data of POLYFLURON® PTFE columns and vessels

Typical properties	Units	POLYFLURON® columns and vessels
Main application		Ultra-corrosive and/or high purity applications
Typical design		Steel shell with loose lining made of PTFE
Lining material options		Skived foil or paste extruded (manufactured by proprietary technology at Dr. Schnabel GmbH)
Available liner thickness	mm	2, 4, 6 or 8
Liner base materials		White or antistatic PTFE
Typical section diameter*	mm	up to 3000 (seamless up to 600 mm)
Typical section lengths	mm	up to 3500 (depending on diameter)
Special features		Complex geometries possible Robust designs with thick linings of up to 8 mm Ease of repair (e. g. patch repair options; re-lining on site etc.) Antistatic PTFE option Advanced welding technologies (automated and hand-welding technologies)
Typical temperature range	°C	up to 250
Typical design pressure	barg	0/16
Active permeation management		Proprietary vent system applied
Vacuum resistance		Vacuum support necessary – options are: support rings and cylinders, counter-vacuum, glueing
Internals options		Full set of high performance internals available made of PTFE, graphite, CFRC e. g. feed pipes, liquid (re-) distributors, structured packings, bubble cap or tunnel trays, support grids etc.
Internals support		Internals are fitted via PTFE lined support rings that are bolted to the upper section. This special design allows dismantling without the need to remove the packing above or the distributor
Cover options		Flat, conical or dished
Standard connections		DIN/ANSI/JIS
Shell materials		Carbon steel, stainless steel, exotic metals
Typical pressure codes		PED 97/AD-Merkblatt; ASME (U-stamp)

* larger diameter on request

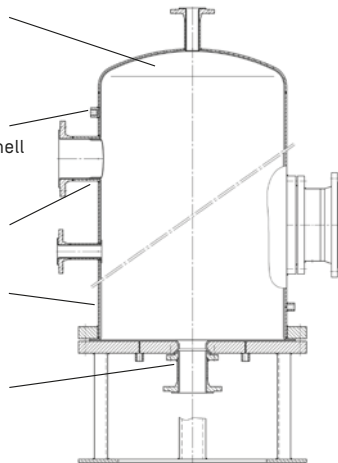
Complex geometries, e. g. PTFE lined dished heads possible

Advanced permeation management
Benefit: no corrosive attack of steel shell

Welded nozzle technology available

2, 4, 6 or 8 mm PTFE liner thickness available

Clamped nozzle technology available



↑ Features of a POLYFLURON vessel



↑ SIGRABOND (CFRC) support grid for packed columns



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