

SYGEF® Plus – Product Specification

Material	High Purity Polyvinylidene fluoride (PVDF HP)
Colour	Virgin material, translucent
Density	~1.78g/cm ³ (ISO 1183 / ASTM D 792)
Surface tension	30–35mJ/m ²
Linear expansion coefficient	0.12–0.18mm/mK (DIN 53752)
E-module (tensile strength)	2100N/mm ² (EN ISO 527/ASTM D 790)
Thermal conductivity	0.19W/mK (DIN 52612)
Surface resistivity	5x 10 ¹⁴ Ωcm (IEC 60093)
Dimension	d 20 (½")–d 315 (12") in accordance to ISO 10931
Pressure rating	Pipes/fittings: PN 16 (d 20–d 225), PN 10 (d 90–d 315) Valves: separate specification
Temperature rating	from –20 °C to 140 °C (–4 °F–284 °F)
Production⁽¹⁾	Fittings/diaphragm valves: injection moulded Pipes: extruded Produced under clean room ISO 14644-1 Class 7 (U.S.Fed.Std.209E Class 10'000) conditions. Subsequent assembling, quality inspection and cleaning is carried out using 18 MΩ pure water under clean room ISO 14644-1 Class 5-6 (U.S.Fed.Std.209E Class 100-1000) conditions.
Surface finish	Inner surface ≤d 225 Ra ≤0.2µm (9µin) / > d 225 Ra ≤0.3µm (12µin) for injection moulded and extruded components
Marking	All components are embossed with a permanent identification during the production process to ensure full traceability. Lot No Material Dimension Pressure Rating
Testing and inspection (ISO 10931)	Inclusions Visual inspection Surface finish Dimension tolerance Pressure testing Periodic leachout per SEMI F40/F57
Approvals/conformance	ASME BPE FDA CFR 21 177.2510 USP 25 class VI (physiological non-toxic) SEMI F57
Welding technology	BCF® Plus, bead and crevice free fusion, size d 20 (½")–d 110 (4") IR® Plus, infrared fusion (DVS 2207-6), size d 20 (½")–d 315 (12")
Documentation⁽¹⁾	Certificate of Conformance with FDA, USP EN 10204 2.2 EN 10204 3.1b
Packing⁽²⁾	Pipes capped and each component double bagged in an specified inner bag and an outer bag under clean room ISO 14644-1 Class 6 (U.S.Fed.Std.209E Class 1000) conditions.
Labeling	Brand Name Product Description Code Number Material Dimension CE-labeling
Main applications	Uses include delivery of ultrapure water in the semiconductor/electronic industry, pharmaceutical grade water (WFI/PW) and analytical DI water to highest purity requirements. A wide range of sanitisation methods is suitable such as Ozone, hot water or steam.

⁽¹⁾ on request

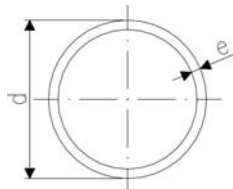
⁽²⁾ Excluding pressure regulating valves. Products are cleaned and double bagged after production assuring controlled process and highest product standards.

Pipes

75 48 12

Pipe, PN 16, PVDF-HP

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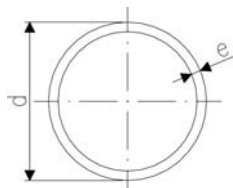
PF 2 37 202

d [mm]	PN	Code	e [mm]	Weight [kg/m]	Length [m]	
16	16	175 481 202	1.9	0.132	5.00	
20	16	175 481 203	1.9	0.209	5.00	
25	16	175 481 204	1.9	0.278	5.00	
32	16	175 481 205	2.4	0.425	5.00	
40	16	175 481 206	2.4	0.550	5.00	
50	16	175 481 207	3.0	0.835	5.00	
63	16	175 481 208	3.0	1.080	5.00	
75	16	175 481 209	3.6	1.519	5.00	
90	16	175 481 210	4.3	2.210	5.00	
110	16	175 481 211	5.3	3.336	5.00	
125	16	175 481 212	6.0	4.424	5.00	
160	16	175 481 214	7.7	6.960	5.00	
140	16	175 481 213	6.7	5.310	5.00	
200	16	175 481 216	9.6	10.800	5.00	
225	16	175 481 217	10.8	13.700	5.00	

75 48 16

Pipe, PN 10, PVDF-HP

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PF 2 37 202

d [mm]	PN	Code	e [mm]	Weight [kg/m]	Length [m]	
90	10	175 481 665	2.8	1.565	5.00	
110	10	175 481 666	3.4	2.140	5.00	
125	10	175 481 667	3.9	2.800	5.00	
140	10	175 481 673	4.3	3.710	5.00	
160	10	175 481 668	4.9	4.657	5.00	
200	10	175 481 669	6.2	6.916	5.00	
225	10	175 481 670	6.9	9.162	5.00	
250	10	175 481 671	7.7	11.100	5.00	
280	10	175 481 656	8.6	13.900	5.00	
315	10	175 481 674	9.7	17.600	5.00	