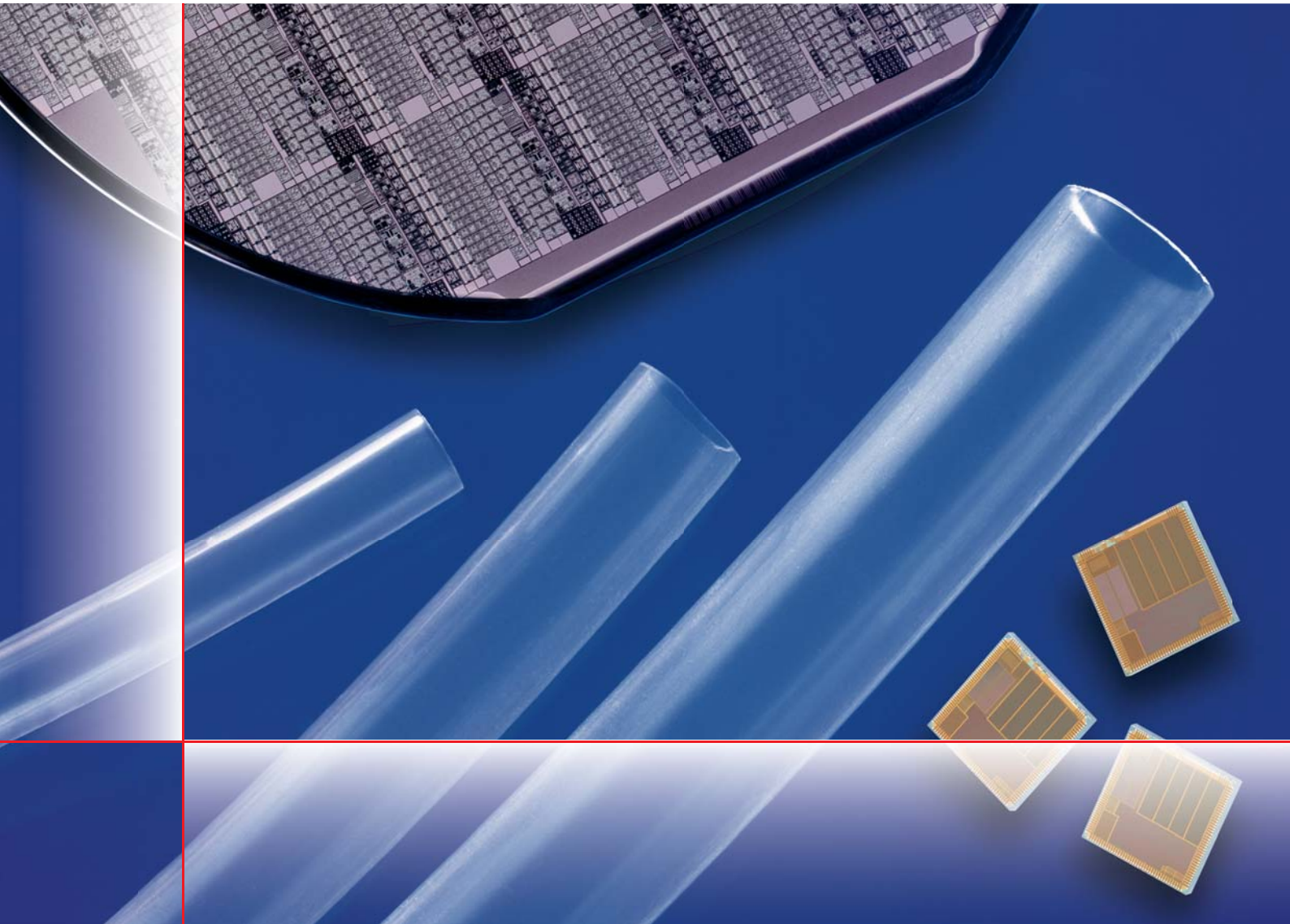


TubeStar®

High Purity and Standard PFA Tubing



GEMÜ® VALVES, MEASUREMENT
AND CONTROL SYSTEMS

Synergy effects used and translated into practice - *TubeStar®*

GEMÜ has combined many years of experience in the manufacture of High Purity PFA Valves, with the expertise of a leading producer of Fluoropolymer tubing and the result is **TubeStar®**.



Your applications

- Chemical distribution systems
- Process equipment
- Wet benches
- Cleaning and etching installations

Our solution

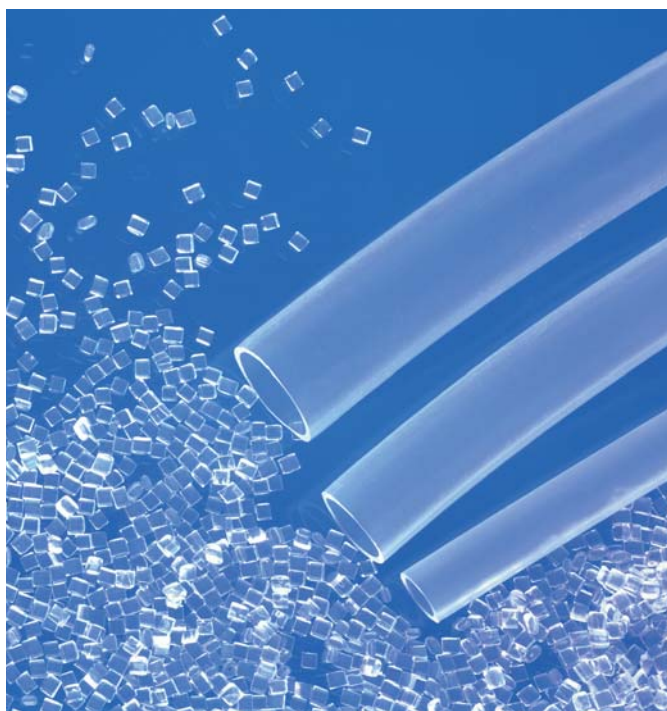
A product range of High Purity and standard PFA tubing for the transport of ultra high purity and other chemicals - **TubeStar®**.

A further addition to the GEMÜ High Purity range:
TubeStar® PFA tubing.



- Excellent chemical and physical properties
- High Purity or standard materials
- Temperature resistant -70°C to 260°C (-158°F to 500°F)
- Very good pressure resistance
- Values of dynamic leach out tests for High Purity tubing are below "SEMI 57"
- High transparency
- Good flexural fatigue strength

Range and dimensions



Tube types

- Tube in HP or standard quality
- Other tube types on request

Tube sizes

- ¼", ⅜", ½", ¾", 1", 1¼"
- Tubes with metric dimensions and inch tubes with thin wall thickness are available on request

Raw material types

- **High Purity**
Teflon® PFA 450 HP (DuPont)
- **Standard**
PFA M620, Dyneon 6502T, Daikin MP-230 dependent on availability
- Other raw material types on request.

Packing units

- All tube sizes are available as **20m and 50m spools**
- **Straight tube lengths (6m)** available
- Other lengths (e.g. 3m, 5m) on request

PFA tube with standard wall thickness

Size	ID		OD		Nominal sizes Code	Wall thickness		Bend radius	
	Inch	mm	Inch	mm		Inch	mm	Inch	mm
¼"	0.156	3.97	0.250	6.35	4	0.047	1.19	1.5	40
⅜"	0.251	6.38	0.375	9.52	6	0.062	1.57	2.0	50
½"	0.376	9.55	0.500	12.7	8	0.062	1.57	2.3	60
¾"	0.626	15.9	0.750	19.05	12	0.062	1.57	9.0	230
1"	0.876	22.25	1.000	25.4	16	0.062	1.57	11.0	280
1¼"	1.126	28.61	1.250	31.75	20	0.075	1.90	16.0	400

Tolerances

Size	OD		Tolerances		Wall thickness		Tolerances	
	Inch	mm	Inch	mm	Inch	mm	Inch	mm
¼"	0.250	6.35	±0.004	±0.102	0.047	1.19	±0.004	±0.102
⅜"	0.375	9.52	±0.004	±0.102	0.062	1.57	±0.005	±0.127
½"	0.500	12.7	±0.005	±0.127	0.062	1.57	±0.005	±0.127
¾"	0.750	19.05	±0.005	±0.127	0.062	1.57	±0.005	±0.127
1"	1.000	25.4	±0.005	±0.127	0.062	1.57	±0.005	±0.127
1¼"	1.250	31.75	±0.007	±0.20	0.075	1.90	±0.007	±0.200

Order data

Outside diameter	Code
¼" (6.35 mm)	4
⅜" (9.52 mm)	6
½" (12.70 mm)	8
¾" (19.05 mm)	12
1" (25.40 mm)	16
1¼" (31.75 mm)	20

Wall thickness	Code
1.19 mm	047
1.57 mm	062
1.90 mm	075

Material	Code
PFA, Perfluoralkoxy	30

Raw material	Code
450 HP DuPont*	U

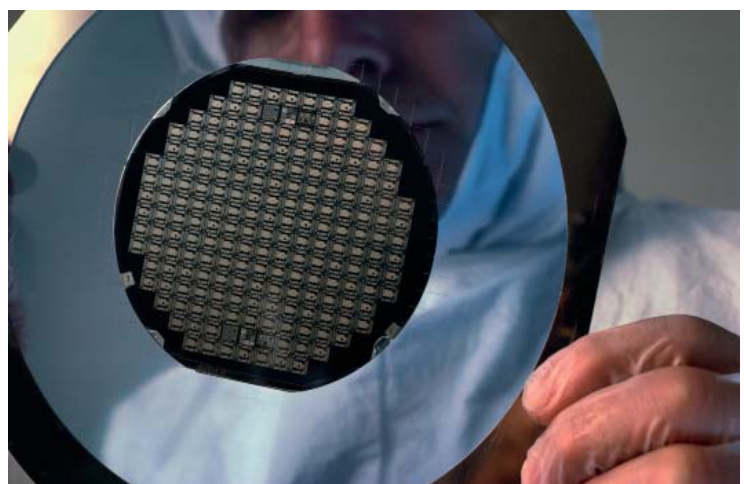
*Raw material only for High Purity version, for standard version various raw materials are possible.

Delivery form	Code
Spool	C
6M lengths	S

Tube length	Code
6 m (in straight lengths only Code S)	6M
20 m	20M
50 m	50M

High Purity Design	Code
High Purity	HP
Standard	HPS

Order example	TU	16	062	30	U	C	50M	HP
Tube type	TU							
Outside diameter (Code)		16						
Wall thickness (Code)			062					
Material (Code)				30				
Raw material (Code)					U			
Delivery form (Code)						C		
Tube length (Code)							50M	
High Purity Design (Code)								HP

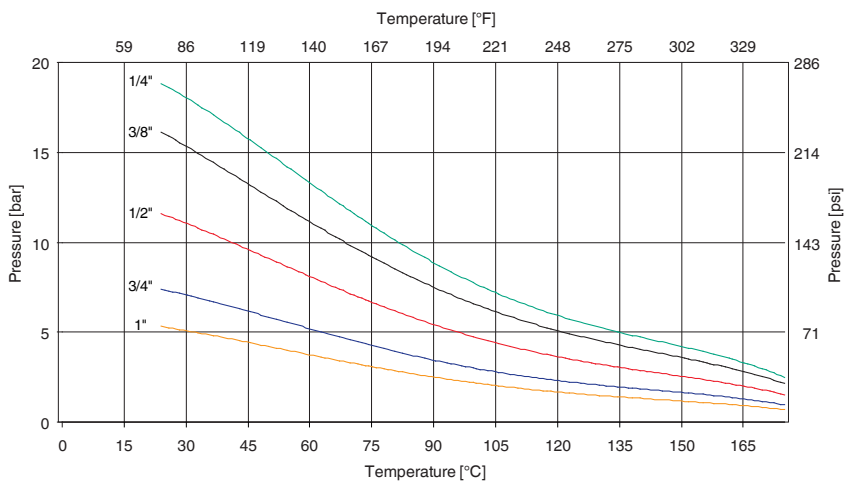


Examinations, test procedures, results

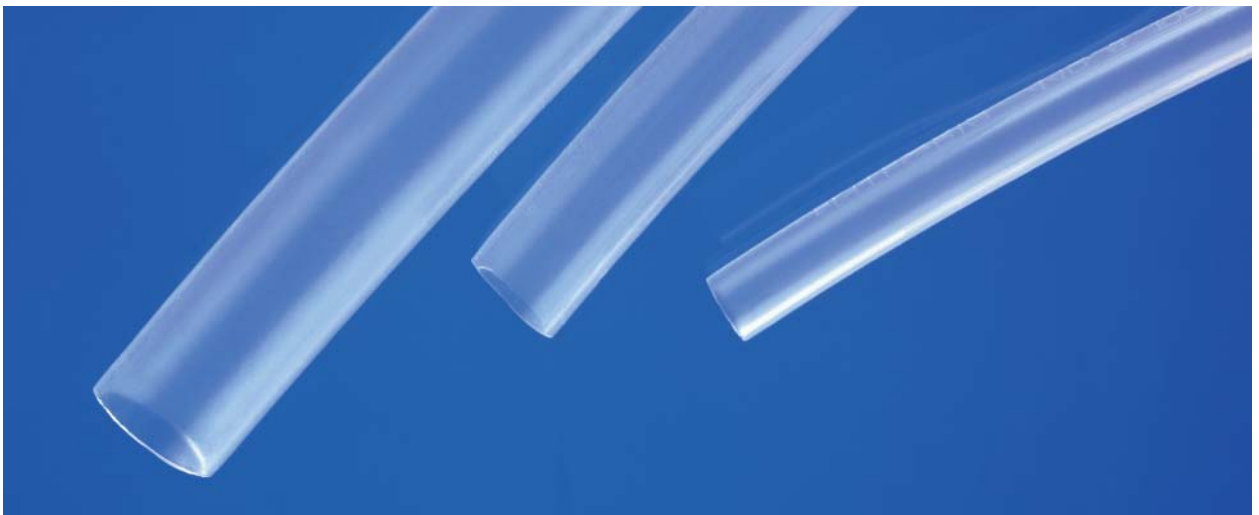
Extraction of PFA tubes according to SEMI F 57

Examination results		
Element	Semi 57 Maximum values ($\mu\text{g}/\text{m}^2$)	GEMÜ <i>TubeStar</i> ® ($\mu\text{g}/\text{m}^2$)
Ca	30	0
Cr	1	0.53
Cu	15	0.34
Fe	5	0.17
K	15	0.18
Na	15	0.43
Zn	10	9.25
Al	10	0.36

Pressure/Temperature diagram



The values of 1" and 1¼" (not shown) only deviate slightly. Specified values on request.





Subject to alteration · 07/2011 · 88262940

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AND CONTROL SYSTEMS

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