

GEMÜ TubeStar

Tube



Features

- The values from the dynamic leach out tests are well below the SEMI F57 standard (high purity version)
- Outstanding chemical and physical properties
 - High-purity design, Teflon® PFA 450 HP (Chemours)
- Excellent pressure resistance
- Good flexural fatigue strength
- High transparency

Description

TubeStar is a product range comprising ultra-pure and standard PFA tubing. The tubes are particularly suitable for applications with high-purity media and other chemicals.

Technical specifications

- **Media temperature** : -70 to 250 °C
- **Operating pressure** : 2 to 20 bar
- **Tube sizes**: 1/4" to 1 1/4"
- **Materials** : PFA

Technical data depends on the respective configuration

Order data

The order data provide an overview of standard configurations.

Please check the availability before ordering. Other configurations available on request.

Order codes

1 Type	Code
Tube	TU

2 Tube size	Code
1/4" (6.35 mm)	4
3/8" (9.52 mm)	6
1/2" (12.70 mm)	8
3/4" (19.05 mm)	12
1" (25.40 mm)	16
1 1/4" (31.75 mm)	20

3 Wall thickness	Code
0.047" (1.19 mm)	047
0.062" (1.57 mm)	062
0.075" (1.9 mm)	075

4 Material	Code
PFA, perfluoroalkoxy	30

5 Raw material	Code
450 HP CHEMOURS	U

5 Raw material	Code
PFA M620, Dyneon 6502T or Daikin AP-230	-

6 Delivery form	Code
Straight tube length	S
Coil	C
Spool	R

7 Tube length	Code
3 m	3M
10 m	10M
20 m	20M
50 m	50M
100 m	100M
200 m	200M
300 m	300M
400 m	400M

8 High Purity version	Code
High Purity	HP
Smart Line	HPS

Order example

Ordering option	Code	Description
1 Type	TU	Tube
2 Tube size	16	1" (25.40 mm)
3 Wall thickness	062	0.062" (1.57 mm)
4 Material	30	PFA, perfluoroalkoxy
5 Raw material	U	450 HP CHEMOURS
6 Delivery form	C	Coil
7 Tube length	50M	50 m
8 High Purity version	HP	High Purity

Technical data

Medium

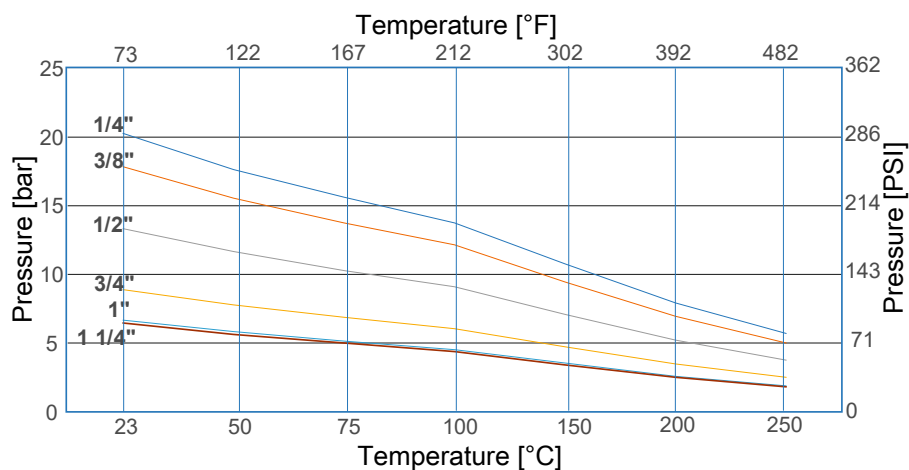
Working medium: Corrosive, inert, gaseous and liquid media and vapours which have no negative impact on the physical and chemical properties of the tube material.

Temperature

Media temperature: -70 – 250 °C

Pressure

Pressure/temperature diagram:



Size	Temperature [°C]						
	23	50	75	100	150	200	250
Operating pressure							
1/4"	20.24	17.61	15.58	13.76	10.73	7.89	5.67
3/8"	17.81	15.5	13.71	12.11	9.44	6.95	4.99
1/2"	13.35	11.62	10.28	9.08	7.08	5.21	3.74
3/4"	8.9	7.74	6.85	6.05	4.72	3.47	2.49
1"	6.68	5.81	5.14	4.54	3.54	2.6	1.87
1 1/4"	6.46	5.62	4.98	4.39	3.43	2.52	1.81

Pressures in bar

Mechanical data

Material:

- Standard version**
Depending on availability PFA M620, Dyneon 6502T or Daikin MP-230
- High-purity version**
Teflon® PFA 450 HP (Chemours)
Other raw material types on request

Dimensions

Extraction from PFA tubing (acc. to SEMI F 57):

Element	Maximum values [$\mu\text{g}/\text{m}^2$]	
	Semi 57	GEMÜ TubeStar®
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

Tolerances:

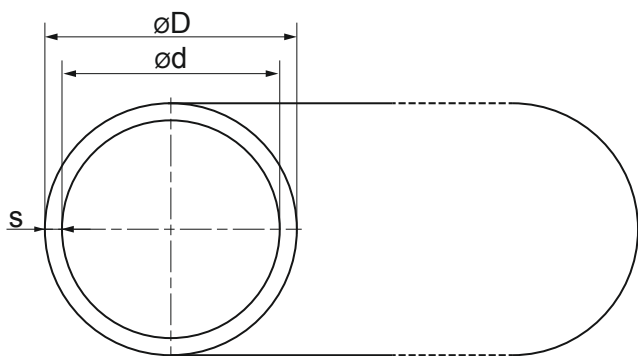
Size	OD* tolerance		Wall thickness tolerance	
	Inch	mm	Inch	mm
1/4"	+/- 0.004	+/- 0.10	+/- 0.004	+/- 0.10
3/8"	+/- 0.004	+/- 0.10	+/- 0.005	+/- 0.12
1/2"	+/- 0.005	+/- 0.12	+/- 0.005	+/- 0.12
3/4"	+/- 0.005	+/- 0.12	+/- 0.005	+/- 0.12
1"	+/- 0.008	+/- 0.20	+/- 0.005	+/- 0.12
1 1/4"	+/- 0.008	+/- 0.20	+/- 0.008	+/- 0.20

* OD = outside diameter

Packaging units:

3 m as straight tube lengths
 10 to 400 m in coils (for 200 to 400 m with additional plastic spool)
 Customised lengths (metric or inch) on request

Dimensions



Size	Code	$\phi d - \text{ID}^*$		$\phi D - \text{AD}^*$		s		Bend radius	
		Inch	mm	Inch	mm	Inch	mm	Inch	mm
1/4"	4	0.156	3.97	0.25	6.35	0.047	1.19	1.34	34.0
3/8"	6	0.251	6.38	0.375	9.52	0.062	1.57	2.28	58.0
1/2"	8	0.376	9.55	0.5	12.70	0.062	1.57	4.06	103.0
3/4"	12	0.626	15.90	0.75	19.05	0.062	1.57	9.13	232.0
1"	16	0.876	22.25	1.000	25.40	0.062	1.57	16.18	411.0
1 1/4"	20	1.126	27.95	1.250	31.75	0.075	1.90	20.91	531.0

* ID = inside diameter, AD = outside diameter

Assembly tool



GEMÜ 1098

Flaring mandrel

The GEMÜ 1098 flaring mandrel is an assembly tool for flare connections.

Ordering information

Tube size	DN	Order no.
1/4"	4	1098 4Z 01
3/8"	6	1098 6Z 01
1/2"	10	1098 8Z 01
3/4"	15	1098 12Z 01
1"	20	1098 16Z 01
1 1/4"	25	1098 20Z 01



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