

High-purity, high-strength, temperature-resistant filters ideally suited for prefiltration and final filtration of gas and liquids

TIC® TITANIUM METAL POWDER FILTER CARTRIDGES

HIGH-STRENGTH, TEMPERATURE-RESISTANT FILTERS IDEALLY SUITED FOR PRE AND FINAL GAS AND LIQUID FILTRATION

TIC® Titanium Metal Powder Filter Cartridges are composed of high-purity industrial-grade titanium powder (99.4%) with all elements sintered at high temperatures. Its features include anti-chemical corrosion, oxidation and high temperature resistance, and long service life. Designed for low viscosity liquid filtration, this filter results in good solid-liquid separation efficiency. This filter is mainly used as a chemical filter to remove ozone-depleting substance and for the removal of carbon dioxide in food, pharmaceutical, and water treatment applications.

FEATURE	BENEFIT
High purity titanium construction	Anti-corrosive
	High temperature and oxidation resistant
Even-sintered construction	Narrow pore distribution with high separation efficiency
	Non-shedding
	Controlled shape to withstand high reverse-flow
Non-toxic, non-magnetic nature	Good fluid compatibility and cleanliness

SPECIFICATIONS

Filter medium	High-purity Titanium
End cap	High-purity Titanium
Thread cap option	304 stainless steel
Reinforcing layers	316 stainless steel
Seal material	Silicone, EPDM, FKM, E-FKM (FEP/PFA encapsulated FKM), PTFE
Max. fwd differential pressure	0.3 MPa (3.0 bar, 43.5 psi) at 21°C
Max. operating temperature	280°C [536°F]



APPLICATIONS

- Food & Beverage
- Water Treatment
- Bulk Filtration
- High Temperature Processes
- High Pressure Processes

CLEANING METHODS

Physical Cleaning Methods: Reverse-Flow by Clean Water; Reverse-Blow by Clear Air and Ultrasonic Bath
 Chemical Cleaning Methods: Use Cleaning Agent Such As Diluted Acid, Diluted Alkalis, Oxidizer, and Surfactant

Contaminants	Methods
Decarburization	Gas reverse-blow and liquid reverse-flow used more frequently; ultrasonic bath cleaning when necessary
Non -Water Soluble Salts and Oxides	Soak in 5% Concentration of Nitric Acid Solution
Original Liquid Filtration	Choose the correct cleaning methods as per the chemical properties of the contamination material; addition cleaning with ultrasonic bath may be necessary

Chemical Cleaning Methods	Detailed Procedures
Alkaline Cleaning	Soak filter in 3-5% Concentration of NaOH Solution for 30-60 minutes at a solution temperature of 40°C. Flush the soaked filter inside, out with DI water or WFI water until the flushed solution turns clear, and then test its conductivity. Dry with clean air at 0.4 Mpa (58 psi)
Acid Cleaning	Soak in 5% concentration of Nitric Acid Solution for at least 8 hours at a solution temperature of 40°C. Flush the soaked filter inside, out with DI water or WFI water until the flushed solution turns clear, and then test its conductivity. Dry with clean air at 0.4 Mpa (58 psi)
Original Liquid Filtration	Clean filter with surfactant caused by contamination with organic substance (high concentration of Citric Acid recommended for Food and Beverage Applications)

PARAMETERS

Filter Code	Removal Rating (µm)	Porosity	Absolute Removal Rating (µm)	Average Air Permeability (L/dm ² min) ¹	Flow Rate ²
0045	0.45	30-50	6	0.02	0.18 m ³ /h (0.79 gpm)
0100	1.0		10	0.1	0.27 m ³ /h (1.2 gpm)
0300	3.0		20	0.5	0.33 m ³ /h (1.45 gpm)
0500	5.0		30	1.1	1.32 m ³ /h (5.8 gpm)
1000	10		50	2.7	4.2 m ³ /h (18.5 gpm)
2000	20		70	5.6	5.6 m ³ /h (24.7 gpm)
3000	30		-	6.5	-
5000	50		-	10.5	-
8000	80		-	14.9	-
100H	100		-	18	-
120H	120		-	20	-

LENGTH AND AREA

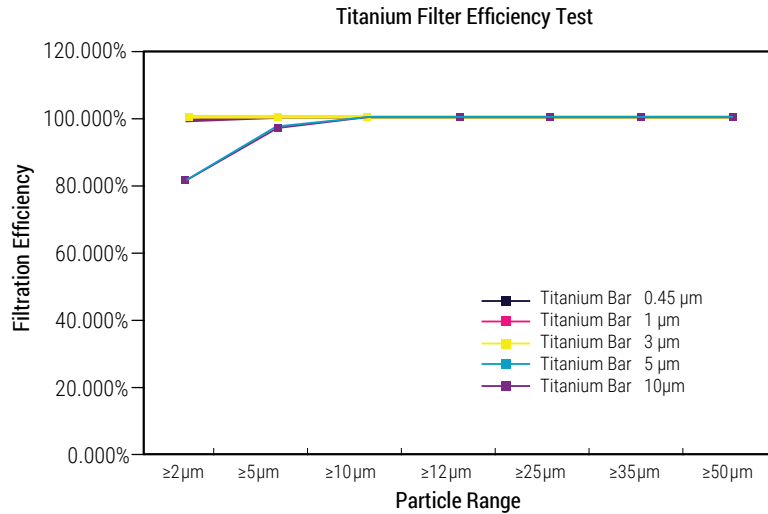
Length	Area
5 in. (125 mm)	0.024 m ² (0.25 ft ²)
10 in. (300 mm)	0.056 m ² (0.6 ft ²)
20 in. (500 mm)	0.094 m ² (1.0 ft ²)
30 in. (750 mm)	0.141 m ² (1.5 ft ²)
40 in. (1000 mm)	0.1888 m ² (2.0 ft ²)

¹Testing performed according to GB/T5453; Testing DP is 200 Pa (0.03 psi). Testing medium is air.

²Testing liquid viscosity is 1 cP. Filter tested with 65 mm (2.6") diameter and 10" length; Testing pressure is 1.0 bar (14.5 psi)

RETENTION

Particle Range	Filter Code				
	0045 (0.45 µm)	0100 (1 µm)	0300 (3 µm)	0500 (5 µm)	1000 (10 µm)
≥2 µm	99.916%	99.895%	99.679%	82.546%	82.371%
≥5 µm	99.974%	99.965%	99.910%	96.283%	96.079%
≥10 µm	99.990%	99.986%	99.973%	98.875%	98.902%
≥12 µm	99.987%	99.987%	99.986%	98.998%	99.982%
≥25 µm	100.000%	100.000%	100.000%	99.966%	99.916%
≥35 µm	100.000%	100.000%	100.000%	100.000%	99.966%
≥50 µm	100.000%	100.000%	100.000%	100.000%	100.000%



ORDERING INFORMATION

EXAMPLE: **TIC3000SC10D70S-F** 30 µm, 226/Flat, 10", 70 mm dia, with Silicone seal

TIC



Removal Rating

0045 = 0.45 µm 3000 = 30 µm
 0100 = 1.0 µm 5000 = 50 µm
 0300 = 3.0 µm 8000 = 80 µm
 0500 = 5.0 µm 100H = 100 µm
 1000 = 10 µm 120H = 120 µm
 2000 = 20 µm



End Cap

DOE = Double open end
 TC = 222/Flat
 SC = 226/Flat
 1M = 1" MNPT/Flat
 1F = 1" FNPT/Flat
 15M = 1.5" MNPT/Flat
 15F = 1.5" FNPT/Flat



Nominal Length

05 = 5"
 10A = 9.8"
 10 = 10"
 19 = 19.5"
 20 = 20"
 29 = 29.25"
 30 = 30"
 40 = 40"
 (additional specific lengths are available)



Diameter

D22 = 22 mm (0.87")
 D30 = 30 mm (1.18")
 D40 = 40 mm (1.58")
 D50 = 50 mm (1.97")
 D60 = 60 mm (2.4")
 D70 = 70 mm (2.76")
 D75 = 75 mm (2.95")
 D80 = 80 mm (3.15")
 D120 = 120 mm (4.72")



Seal Material

S = Silicone
 E = EPDM
 V = FKM
 P = E-FKM (FEP/PFA encapsulated FKM)
 F = PTFE

-F



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CBBPP1071 Rev. 01022020
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