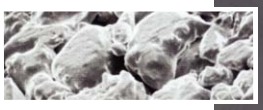
TIC Titanium Metal Powder Filter Cartridge

Cobetter **TIC**® Titanium Metal Powder Filter Cartridges 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.

As it is a low viscosity liquid filter, 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.



Features and Benefits

- High-purity titanium construction
- Anti-corrosive; high temperature and oxidation resistant
- Uniform structure with narrow pore size distribution and high filtration efficiency
- No free-falling particles
- High porosity, low filtration resistance and high filtration efficiency
- Good compatibility with human tissue and blood due to its non-toxic and non-magnetic nature

Materials of Construction(Five Layers)

Filter Layer	High-purity Titanium
End Cap	High-purity Titanium
Screw Cap	304 Stainless Steel
Reinforcing Layers	304/316 Stainless Steel

Configurations

Double Open-End (DOE)
Single Open-End (SOE)

Nominal Dimensions ❶

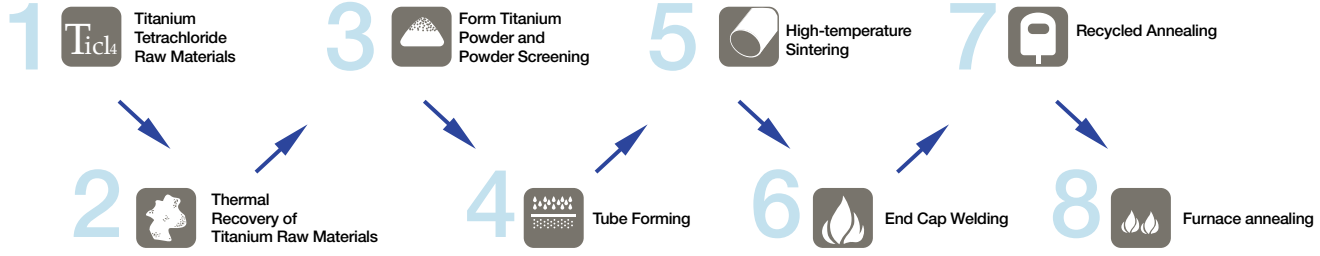
Diameters	60mm

❶ Additional Diameter Specifications Available Upon Request

Operating Conditions

Max. Differential Pressure	3.0 bar / 21°C (forward flow)
Max. Operating Temperature	280°C

Manufacturing Process of TIC Titanium Metal Powder Filter Cartridges



Parameters

Code	Liquid Pore Size (μm)	Removal Ratings(μm)	Pore Efficiency	Absolute Removal Rating (μm) ❷	Average Air Permeability (L/dm²min) ❸	Flow Rate (m³/h) ❹
1	0.45	32	30-50%	6	0.02	0.18
2	1.0	25		10	0.1	0.27
3	3.0	6.1		20	0.5	0.33
4	5.0	3.2		30	1.1	1.32
5	10	3.0		50	2.7	4.2
6	20	2.8		70	5.6	5.6
7	30	-		-	6.5	-
8	50	-		-	10.5	-
9	80	-		-	14.9	-
10	100	-		-	18	-
11	120	-		-	20	-

❷ Bubble Point Testing
❸ Tested according to GB/T8786; Differential Pressure of 200Pa (in air)
❹ Liquid Viscosity of 1 CP·S; diameter of 65mm; length of 10inches; pressure of 1.0bar

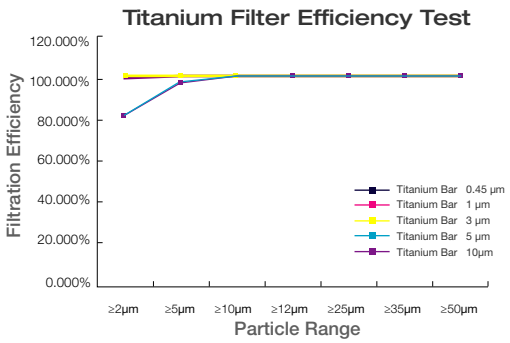
Length and Area❺

Length	Filtration Area ❻
5 in. (125 mm)	0.024 m²
10 in. (300 mm)	0.056 m²
20 in. (500 mm)	0.094 m²
30 in. (750 mm)	0.141 m²
40 in. (1000 mm)	0.188 m²

❺ Length and Other Sizes Are Customizable
❻ Tested Filter Diameter is 65mm

Particle Efficiency

Particle Range	0.45μm	1 μm	3 μm	5 μm	10 μm
≥2μm	99.916%	99.895%	99.769%	82.546%	82.371%
≥5μm	99.974%	99.965%	99.910%	96.283%	96.079%
≥10μm	99.990%	99.986%	99.973%	98.875%	98.902%
≥12μm	99.987%	99.987%	99.986%	98.998%	98.982%
≥25μm	100.000%	100.000%	100.000%	99.996%	99.916%
≥35μm	100.000%	100.000%	100.000%	100.000%	99.966%
≥50μm	100.000%	100.000%	100.000%	100.000%	100.000%



Ordering Information

TIC	Removal Ratings	End Cap	Nominal Length	Diameter	Seal Material	-F
	0045=0.45μm **0100**=1.0μm **0300**=3.0μm **0500**=5.0μm **1000**=10μm **2000**=20μm **3000**=30μm **5000**=50μm **8000**=80μm **100H**=100μm **120H**=120μm	**DOE**=Double open end **TC**=222/Flat **SC**=226/Flat **L**=Screw	**05**= 5" **10**=10" **20**=20" **30**=30" **40**=40"	**D22**=22mm **D30**=30mm **D40**=40mm **D50**=50mm **D60**=60mm **D70**=70mm **D75**=75mm **D80**=80mm **D120**=120mm	**S**=Silicon **E**=EPDM **V**=Viton **P**=PFA/Viton **F**=PTFE	

Cleaning Methods

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

Contamination Materials	General Cleaning Method Procedures
Decarburization in Pharmaceutical and Chemical Industries	Reverse-blow and reverse-flow used more frequently; ultrasonic wave cleaning used when necessary
Non -Water Soluble Salts and Oxides in the Pharmaceutical Industry	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; The Ultrasonic Wave Cleaning can be combined to use when necessary
Chemical Cleaning Methods	**Detailed Procedures**
Alkaline Cleaning	Alkaline Cleaning Soak filter in 3-5% Concentration of AR grade NaOH Solution for 30-60 minutes; solution temperature is 40°C. Flush the soaked filter inside, out with DI water or WFI water until the flushed solution turns neutral , and then test its conductivity. Dry with Pure Air ≥0.4Mpa
Acid Cleaning	Soak it in the 5% Concentration of Nitric Acid Solution for at least 8 hours; solution temperature is 40°C. Flush the soaked filter inside, out with DI water or WFI water until the flushed solution turns neutral, and then test its conductivity. Dry with Pure Air ≥ 0.4Mpa
Original Liquid Filtration	Clean filter with surfactant caused by contamination with Organic Pollution (high concentration of Citric Acid recommended for Food and Beverage Applications)