

POLYCERA[®]

PolyCera[®] Titan

Organic Metal Membranes



PolyCera® Titan

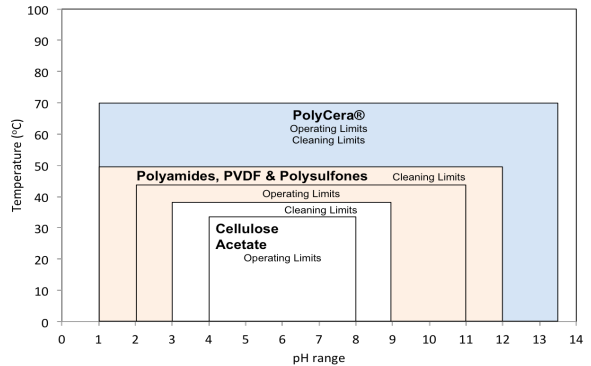
PolyCera Titan is designed for OEMs, integrators and owner/operators who need to apply membrane filtration to treat challenging industrial wastewaters. PolyCera Titan is available in a highly differentiated portfolio of ultrafiltration products engineered for specific applications, and also as a nanofiltration membrane designed for chemical free color removal in the textile industry, PolyCera Titan delivers next-level oil, hydrocarbon, pH and temperature stability with high sustainable flux operation and ease of cleaning.

What Makes PolyCera Better?

Designed for challenging wastewaters, PolyCera Titan membranes offer robust performance comparable to that of ceramic membranes but at a price similar to that of polymeric membranes.

Derived from proprietary nano-structured organic metal materials, PolyCera Titan ultrafiltration membranes effectively remove solid particles, pathogens and dispersed and emulsified oils found in many wastewater streams.

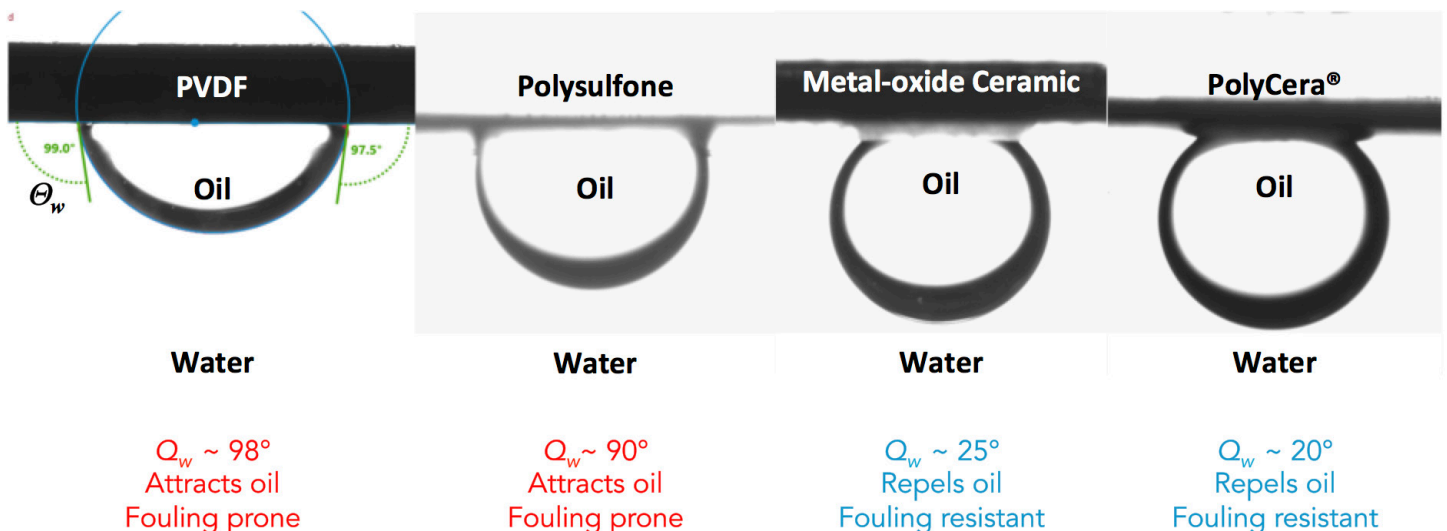
They are **intrinsically oleophobic** with high tolerance for oil, COD/BOD, NOM and other solvents. Their **extreme hydrophilicity** results in improved fouling resistance and ease of cleaning – and ultimately, more water at less cost.



PolyCera Titan membranes' superior fouling resistance is also a result of surface properties that inhibit biofilm formation, cross-flow modules that minimize accumulation of fouling materials, and backwashability that removes deposited fouling materials.

The result is **minimized process downtime** and **reduced chemical demand**, which along with lower energy requirements, delivers the lowest available operating cost.

Oleophobic & Hydrophilic



PolyCera Material Platform

PolyCera membranes are setting new standards of membrane performance. A totally different type of membrane – neither conventional polymer nor traditional ceramic – PolyCera is engineered with an organic metal coating derived from Nobel Prize-winning chemistry. PolyCera delivers on a goal that has never before been achieved – a membrane that provides the performance of a ceramic membrane for difficult-to-treat applications but at a competitive price point that is more reflective of traditional polymeric membranes.

PolyCera's patented material is robust and durable, with an oleophobic and hydrophilic surface that delivers rejection with a higher permeability, fouling tolerance and improved cleanability. The exceptional performance and economic benefits of PolyCera membranes are proven in more than 100 installations around the world including applications in the oil & gas, food & beverage and process separation markets.

PolyCera Titan

Applications

- Produced Water
- Mining
- Refineries
- Automotive
- Oily wastewater
- Anaerobic digestate
- Power generation
- Chemicals
- Textiles



Benefits

- Oleophobic
- Lowers operating cost
- Low energy demand
- Less process down-time
- Maintains high flux
- Low irreversible fouling
- Handles challenging waters
- Reduces chemical demand
- Minimizes waste

PolyCera 8-inch Spiral Monolith™

PolyCera® Membrane Products

	Pure Water Permeability*	MWCO	Max Feed Pressure	Max Backwash Pressure	Max Operating Temperature	Max pH Range	Max Oil & Grease
	gfd/psi (lmh/bar)	kDa	psi (bar)	psi (bar)	°F (°C)		mg/L
PolyCera Titan UF	8 (200)	70	120 (8.3)	25 (1.7)	158 (70)	1 – 13.5	500
Conventional PAN	5.7 (140)	70	116 (8.0)	5 (0.3)	131 (55)	3 – 10	100
Conventional Ceramic	4 (100)	70	116 (8.0)	25 (1.7)	203 (95)	0 – 14	100

* Pure water permeability performed on flat sheet product

Case Study: PolyCera Titan vs. Ceramic

A field pilot demonstrates the superior performance of PolyCera Titan relative to a leading competitor's ceramic UF membrane used in a centralized produced water treatment facility. PolyCera exhibited 11% increase in water recovery while providing a 72% decrease in specific energy consumption leading to a total operating expenditure savings of 70%.



POLYCERA®

PolyCera, Inc.
721 S Glasgow Ave.
Unit D
Los Angeles, CA 90301

T +1.424.331.7700
W www.polyceramembranes.com
E info@polyceramembranes.com

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