T-Series tangential flow filtration (TFF) cassettes

WITH OMEGA™ MEMBRANE

The Omega PES membrane and T-Series cassettes are designed to support efficient and scalable bioprocessing applications across development and production.

T-Series TFF cassettes with Omega™ membrane offer the following key benefits:

- **Membrane performance:** Provides high flux, high selectivity, and low protein binding, with nominal molecular weight cut-offs ranging from 1 to 300 kDa.
- **Process scalability:** Available in formats suitable for smooth scale-up from development to production-scale purification.
- **Robust performance:** Cassettes are engineered for effective mass transfer and consistent process performance.
- **Regulatory compliance:** Meets current biopharmaceutical standards, including biological reactivity, extractables, and TOC, with validation documentation available on request.

Fig 1. T-Series TFF cassettes with Omega™ membrane.

Applications

T-Series cassettes with Omega membrane are designed for development, pilot, and production-scale TFF applications in diverse biological and biopharmaceutical processes.

They are particularly suited for:

- Vaccine and conjugate concentration and diafiltration
- Purification and recovery of monoclonal antibodies (mAbs) or recombinant proteins
- Blood plasma fractionation and purification

Proven Omega membrane

Our Omega polyethersulfone (PES) membranes offer high flux and selectivities. They have been specifically modified to minimize protein binding to the surface and the interstitial structure of the membrane.

Omega membranes are cast on a highly porous, non-woven polyolefin support. They have an anisotropic structure, a thin skin-like top layer with a highly porous underlying support. The structure of the skin determines the porosity and permeability characteristics of the membrane and can typically be cleaned more quickly and more easily than membranes with a uniform, sub-micron depth structure. This membrane is compatible with acids, bases, and a variety of other cleaning agents. Omega membranes are available in a wide range of NMWC from 1 to 300 kDa.

Transmembrane pressure (TMP) vs flux rate Centramate cassette 10 kDa Omega membrane

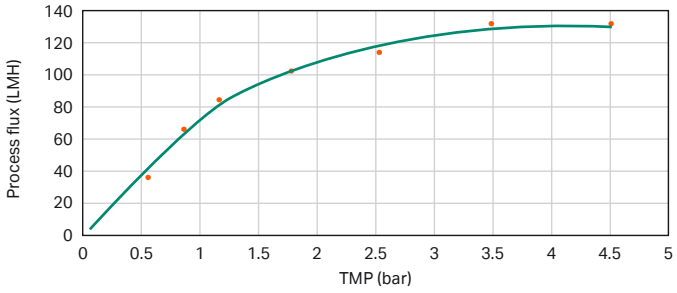

Fig 2. T-series Centramate cassettes with Omega 10 kDa membrane at a 5 L/min/m^2 cross flow rate.

Product platforms

T-Series cassettes for Centramate holders are offered in scalable membrane formats, with effective filtration areas (EFA) from as low as 93 cm^2 to 0.1 m^2. This makes them available for process development and small-scale production of 0.1 to 125 L. Centrasette T-Series cassettes formats, with (EFA) of 0.5 m^2 and 2.5 m^2, in combination with Centrasette holders, can process thousands of liters with installations incorporating hundreds of square meters of EFA.

Specifications

Materials of construction

Membrane	Omega polyethersulfone
Support	Polyolefin
Screens	Polypropylene
Encapsulent	Polyurethane with white pigment (TiO_2)
Permeate seals	Platinum cured silicone
Gaskets	Medical grade, platinum cured silicone

Operating limits

Maximum pressure [1]	6 barg (90 psig) at 23°C, 4 barg (60 psig) at 55°C
Maximum transmembrane pressure (TMP)	4 barg (60 psig) at 55°C
Temperature range [2]	-5°C to 55°C
pH range	2 to 14

[1] Pressure rating will be dependent on the rating of the lowest system component.
[2] Cassettes must not be allowed to freeze.

Typical operating parameters

Cross flow rate for processing	5 to 7 L/min/m^2
Cross flow rate for cleaning	8 to 10 L/min/m^2

Integrity test

Test pressure	2 barg (30 psig)
Maximum air forward flow	< 1600 sccm/m^2

Shelf life

When the cassettes are stored unopened in the original packaging at 4°C to 25°C and protected from direct light, the shelf life of cassettes packaged in 0.3 N sodium hydroxide is five years from the date of manufacture.

Biological safety

All the materials of construction in the T-Series cassettes have been tested and meet requirements for United States Pharmacopeia (USP) biological reactivity test, *in vivo* at 70°C.

Documentation

Each T-Series membrane cassette has a unique serial number for full traceability. Each cassette is supplied with:

- Certificate of quality
- Membrane cassette care and use procedures
- Material safety data sheet (MSDS) for cassette preservative
- Two platinum-cured silicone gaskets

The full validation guide is available on request from your local Cytiva contact. We also offer a comprehensive validation service for specific tests (such as compatibility) in your process fluid. As always, our downstream processing specialists are available to train and support you in the optimization of your TFF processes. To test T-Series cassettes in your process, contact us today.

Ordering information

Use the three boxes below to calculate the three-part product code for the specific product you need. Select a code from each of the three boxes to produce the unique product code.

Typical example of product code: **OS 010 T12** which is an Omega membrane, 10 kDa NMWC, 0.1 m^2 Centramate screen channel cassette.

OS ☐☐

OS - First part of product code

Description	Membrane	Product code
Low protein binding, modified polyethersulfone	Omega	OS

Second part of product code

NMWC	Product code
1 kDa	001
3 kDa	003
5 kDa	005
10 kDa	010
30 kDa	030
50 kDa	050
70 kDa	070
100 kDa	100
300 kDa	300

Third part of product code

Type and area screen channel	Product code
Centramate 93 cm^2	T01
Centramate 186 cm^2	T02
Centramate 0.1 m^2	T12
Centrasette 0.5 m^2	T06
Centrasette 2.5 m^2	T26

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For local office contact information, visit cytiva.com/contact

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