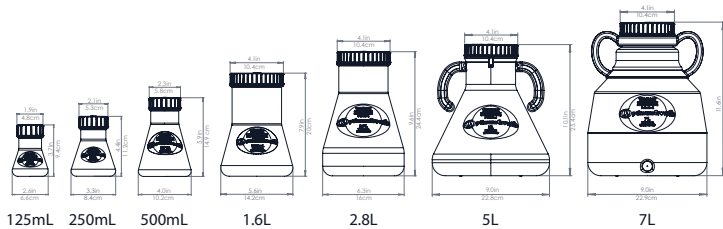


Optimum Growth® Flask Technical Data Sheet

Product Description	Part #
Optimum Growth® Flask 125mL	931110
Optimum Growth® Flask 250mL	931111
Optimum Growth® Flask 500mL	931112
Optimum Growth® Flask 1.6L	931113
Optimum Growth® Flask 2.8L	931114
Optimum Growth® Flask 5L	931116
Optimum Growth® Flask 7L	931117

Optimum Growth®



Introduction

Designed for mammalian and insect cell culture. Maximized fill volume increases versatility and efficiency of shaker cabinet space.

Specifications

Top Style	Threaded Vent Cap, 0.2 um PTFE Membrane
Flask Material	Polystyrene, proprietary copolymer blend
Flask Bottom	low-shear baffled
Sterility (SAL)	10 ⁻⁶
Packaging	Single or double bagged. 7L - Only double bagged

FAQ's

How to successfully change vessels from spinner flasks & roller bottles to Optimum Growth® Flasks?

Cells adapted to Spinner Flasks and Roller Bottles can be easily transitioned to Optimum Growth® Flasks. Adjusting existing cultures

from different formats to Optimum Growth® Flasks requires reducing the volume and shake speeds of the first 1-2 passages. The addition of up to 1% of surfactant* to the media may be needed due to spinner flasks and roller bottles having lower shear than shake flasks. Once the cells have adjusted to the Optimum Growth® shake flasks utilize the recommended shake speeds.

Fill Volume & Shake Speeds

Mammalian & Hybridoma Cells

Flask Size	Fill Volume	Working RPM Range ¹	Vol./Size Ratio
125mL	50-63mL	140-150 110	40-50%
250mL	100-125mL	140-150 110	40-50%
500mL	200-250mL	140-150 110	40-50%
1.6L	400-900mL	140-150 110	40-56%
2.8L	1.0-1.4L	140-150 110	40-50%
5L	2.0-2.5L	140-150 110	40-50%
7L	2.8L - 5L	140-150 110	40-70%

¹ 140-150 (1" | 2.54cm) / 110 (2" | 5.08cm)

Insect Cells

Flask Size	Fill Volume	Working RPM Range*	Vol./Size Ratio
125mL	50-63mL	140-150 110	40-50%
250mL	100-125mL	140-150 110	40-50%
500mL	200-250mL	140-150 110	40-50%
1.6L	400-900mL	140-150 110	25-56%
2.8L	1.0-1.4L	140-150 110	40-50%
5L	2.0-2.5L	140-150 110	40-50%
7L	2.8-5L	140-150 110	40-70%

Why do Optimum Growth® Flasks perform better than other disposable flasks for mammalian cell lines (CHO, HEK293, etc.) & insect cell lines (SF-9, SF-21, High Fives, Trichoplusia ni)?

Optimum Growth® Flasks are designed for high aeration and low shear. Optimum Growth® Flasks achieve high aeration due to a unique baffle design that has been optimized for mammalian and insect cell lines. They provide enhanced gas exchange with low shear mixing, which can increase yields significantly when combined with both nutrient enriched media and proper pH balance.

Are the Optimum Growth® Flasks single-use?

Yes, the Optimum Growth® Flasks are designed for single-use and are not autoclavable.

High cell death and a large amount of foam and/or cell clumping issues?

Experiencing high cell death and foaming in the Optimum Growth® Flasks is usually due to cell shearing. Adding up to 1% surfactant will reduce foaming and increase cell viability without stressing the cells.

What can I do if the doubling time for my cell culture is longer than expected when using the Optimum Growth® Flasks?

This varies between cell types and strains, as well as with environmental conditions. If the doubling time for your culture is taking longer than expected or desired in the Optimum Growth® Flasks, we recommend increasing the shake speed beyond our recommended speeds by 10 to

20 RPM. The reason for the increased doubling time is that the oxygen transfer rate (OTR) may be lower with higher fill volumes, and the increase in speed will increase the OTR.

What clamps and shakers work best with the Optimum Growth® Flasks?

Optimum Growth® Flasks are designed to shake in 1" or 2" orbit shakers. Recommended shakers include, Eppendorf®, INFORS HT®, Kuhner®, Fisher Scientific®, and VWR®. Utilizing a sticky mat or rug gripper pad is recommended for the 7L Flask and for under 170 RPM. Clamps made for 5L Flasks may fit, please check with the shaker manufacturer.

Flask Size	Eppendorf®	INFORS HT®	Kuhner®	Fisher Scientific®	VWR®
125mL	M1190-9001	12202	SM310125	11-676-013	57019-676
250mL	M1190-9002	12203	SM310250	11-676-014	57019-678
500mL	M1190-9003	12204	SM310500	11-676-015	57019-682
1.6L	n/a	12205	SM311600	n/a	n/a
2.8L	ACE-2000S	12251	SM312800T	11-676-018	57019-686
5L	ACE-5000S	12209	SM313000F	236028	57019-696
7L	ACE-6000S	31282	101420 U5000	TBD	TBD

Experiencing difficulty removing the shake flasks from the sticky mat?

We recommend:

1. Spray ethanol on the sticky mat until you reach the desired stickiness. Ethanol will lower the bonding strength, as will any alcohol.
2. Use a rug gripper pad on top of the sticky pad.

*Thermo Fisher Scientific, P/N 24040032, or Sigma Aldrich®, P/N 59920C

Thomson Instrument Company is not affiliated with Thermo Fisher Scientific, Sigma Aldrich®, Eppendorf®, INFORS HT®, Kuhner®, Fisher Scientific®, VWR®, or their products.