

# Corning® Ultra-Low Attachment Products

New Products  
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## CORNING

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## Introduction

The Corning Ultra-Low Attachment surface is a covalently bound hydrogel layer that is hydrophilic and neutrally charged. Since proteins and other biomolecules passively adsorb to surfaces through hydrophobic and ionic interactions, this hydrogel surface naturally inhibits nonspecific immobilization via these forces, thus inhibiting subsequent cell attachment. This Ultra-Low Attachment surface has been shown to successfully inhibit attachment of anchorage dependent MDCK, VERO, and C6 cells grown for a period of time equal to that necessary to obtain confluent cell growth on the control surface (standard tissue culture treated polystyrene). This surface has also been successfully evaluated as one that inhibits the attachment and activation of macrophages and neutrophils.

The Ultra-Low Attachment products may be useful for:

- Maintaining cells in a suspended, unattached state
- Preventing stem cells from attachment-mediated differentiation
- Preventing anchorage-dependent cells from dividing
- Reducing binding of attachment and serum proteins to the substrate



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## Surface Preparation

1. For best results, the medium temperature should be consistent with the application or cell growth requirements. (37°C is typically used for most eukaryotic cell procedures.)
2. The cells and medium may be added directly to the vessel. Rehydration is not necessary but, as an option, the surface may be rehydrated 15 minutes to one hour prior to use. The volume of medium used to rehydrate the surface should be consistent with the normal working volume for the particular well or dish size being employed.

Suggested working volumes:

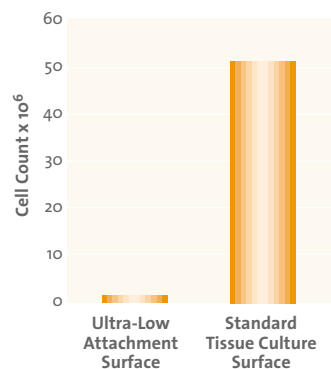
- ▶ 96 well microplate: 0.1 to 0.2 mL/well
- ▶ 24 well microplate: 0.4 to 0.8 mL/well
- ▶ 6 well microplate: 1.9 to 3.8 mL/well
- ▶ 60 mm dish: 4.2 to 6.3 mL/dish
- ▶ 100 mm dish: 11.0 to 16.5 mL/dish
- ▶ 25 cm<sup>2</sup> flask: 5 to 7.5 mL/flask
- ▶ 75 cm<sup>2</sup> flask: 15 to 22.5 mL/flask
- ▶ CellSTACK® Chamber, 1-STACK: 127 to 190 mL/stack

3. There are no special procedures that need to be followed in order to use this surface.

## Performance Criteria

Each lot of Ultra-Low Attachment products is tested for the successful inhibition of the attachment of anchorage-dependent cells.

The following graph depicts the cell attachment characteristics of the Ultra-Low Attachment surface as compared to a standard tissue culture treated surface. VERO cells were seeded at a density of  $2.6 \times 10^5$  cells per well of 6 well plates and incubated at 37°C in a 5% CO<sub>2</sub> environment. After 4 days, the media from each plate was removed, and the remaining attached cells were trypsinized from the surface. Cells from each plate were pooled and counted with a hemocytometer. Cell attachment on the two surfaces was compared and the cell attachment inhibition on the Ultra-Low Attachment surface was calculated as percent reduction using the standard tissue culture treated surface as the reference point.



The results indicate that there is a 99.8% reduction in cell attachment of Vero cells on the Ultra-Low Attachment plate as compared to the standard tissue culture plate.

## References

1. Andrade, Joseph D. (ed.) Surface and Interfacial Aspects of Biomedical Polymers, Vol. 2. New York, Plenum Press; 1985.
2. Matlin, K.S. and J.D. Valentich (ed.) Functional Epithelial Cells in Culture, New York, Alan R. Liss, Inc.; 1989.
3. Ratner, B.D. (ed.) Surface Characterization of Biomaterials, Vol. 6, New York, Elsevier; 1988.
4. Shalaby, S.W., A.S. Hoffman, B.D. Ratner, and T.A. Horbett (ed.) Polymers as Biomaterials, New York, Plenum Press; 1984.
5. Shen, M. and T.A. Horbett. The Effects of Surface Chemistry and Adsorbed Proteins on Monocyte/Macrophage Adhesion to Chemically Modified Polystyrene Surfaces. J. Biomedical Material Research, 2001, December 5, Vol. 57(3):336-345.

Additional references are available at [www.corning.com/lifesciences](http://www.corning.com/lifesciences).

## Corning® Ultra-Low Attachment Products Ordering Information

Cat. No.	Description	Qty/Pk	Qty/Cs
3471	6 well plate coated with Ultra-Low Attachment Surface	1	24
3473	24 well plate coated with Ultra-Low Attachment Surface	1	24
3474	96 well plate coated with Ultra-Low Attachment Surface, flat bottom	1	24
3261	60 x 15 mm style dish coated with Ultra-Low Attachment Surface	5	20
3262	100 x 20 mm style dish coated with Ultra-Low Attachment Surface	5	20

## New Products!

Cat. No.	Description	Qty/Pk	Qty/Cs
3815	25 cm <sup>2</sup> flask, canted neck, vent cap, coated with Ultra-Low Attachment Surface	6	24
3814	75 cm <sup>2</sup> flask, canted neck, vent cap, coated with Ultra-Low Attachment Surface	4	24
3303	CellSTACK® Chamber, 1-STACK, coated with Ultra-Low Attachment Surface	1	8
7007	96 well plate coated with Ultra-Low Attachment Surface, round bottom	1	24