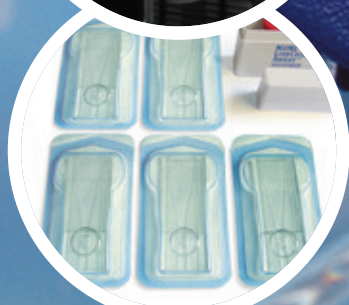
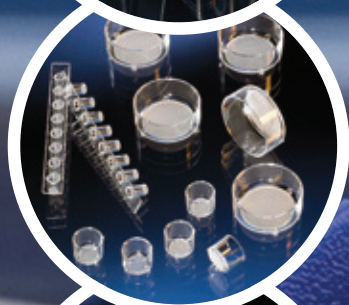


*The Art of
CellCulture*



Cell Culture Introduction

The products in this section are used in all kinds of basic and advanced cell culture research. The products are flasks, dishes, multidishes, slides and other products. Plates are found in the separate plate section of this catalog and products for large scale cell culture are found in the bio production section.

Most of Nunc brand's cell culture vessels are made of highly characterized, virgin polystyrene with a surface modified for adherent cell culture. The Nunclon trademark molded in the product indicates the item is manufactured from this special cell culture grade polystyrene and has undergone the Nunclon™Δ surface modification to facilitate cell attachment. The Nunclon™ treatment is limited to the intended growth area. Areas such as necks of flasks, sides of dishes and plates are not treated. This prevents cell attachment and growth in undesired areas.

The Nunclon™Δ polystyrene surface is certified for monolayer formation with two different cell lines and a primary cell culture. Cloning efficiency is performed with a specially selected cell line that has a high sensitivity to the presence of toxic compounds. The cell types used in the Nunclon™Δ certification procedure are as listed:

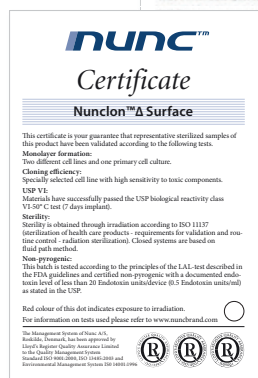
- **PCE:** Primary Chick Embryo cells. These cells are used to test for the Nunclon™Δ treated surface in support of primary cell growth.
- **F2002:** This line was derived from embryonic lung tissue of a human male. It is a diploid fibroblast-like cell line initially developed for use in vaccine development. It is used to test for monolayer formation.
- **HEL:** This line was derived from Human Embryonic Lung fibroblasts. It is used to test for monolayer formation.
- **V79-4 (ATCC CCL93):** This cell line was derived from the lung tissue of a male Chinese hamster. These cells are used to test for cloning efficiency.
- **L929 (ATCC CCL 1):** This fibroblast-like cell line was derived from a cloned strain. The parent L strain was derived from normal subcutaneous areolar and adipose tissue of a male C3H/An mouse. It is used for testing monolayer formation.

The raw material has successfully passed the USP biological reactivity class VI test -50°C (7 days implant). We observe the guidelines for sterility by irradiation as set out in the ISO documentation.

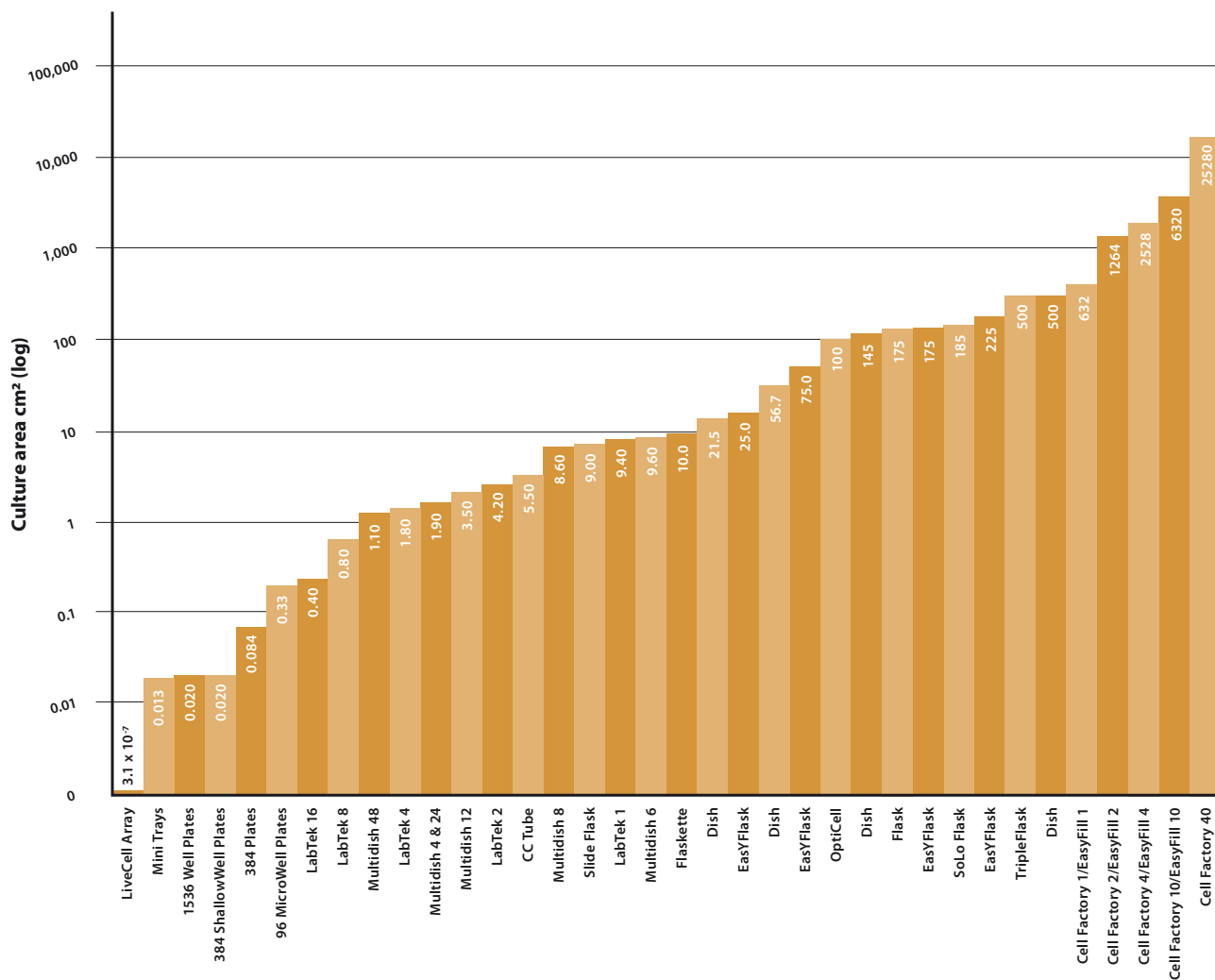
Pyrogens and endotoxins are biological compounds, which are heat stable and have a detrimental effect on cell growth and proliferation. As they are not destroyed by radiation a separate test is necessary to indicate their absence.

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Cell Culture Range



EasYFlasks™



- Nunclon™Δ certified or coated with Poly-D-Lysine or Collagen I (surface ensures cell attachment, facilitates growth)
- Allow full access to the growth surface
- Ergonomic closure, open or close in 1/3 turn
- "Y" - mark allows visual verification of vent position, even when stacked in incubators
- Volume graduations on both sides
- Vent/close and filter caps available
- Extra caps in every carton

Literature:

Bulletin Nos: 2, 3, 5, 13
Tech Note Nos: 2, 3, 25 Vol. 4: 34, 35, 36, 37

See Pages 195-196 for full reference list with titles and links

Accessories:

Caps for Flasks Nunclon™Δ Page 14
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Filter caps for continuous venting

The caps are fitted with a hydrophobic filter to ensure consistent gas exchange

"Y" mark indicating "vent" or "closed"

Any of the legs pointing vertically upwards indicates that the cap is in vent position

Any of the legs pointing vertically downwards indicates that the flask is closed

Nunc EasYFlasks™ Nunclon™Δ

Polystyrene. Sterile



Cat. No.	156340	156367	156472	156499	159920*	159910*	159933*	159934*
Culture area, cm ²	25	25	75	75	175	175	225	225
Neck style	Angled	Angled	Angled	Angled	Angled	Angled	Angled	Angled
Closure	Vent/close	Filter	Vent/close	Filter	Vent/close	Filter	Vent/close	Filter
Cap material	HDPE	HDPE	HDPE	HDPE	HDPE	HDPE	HDPE	HDPE
Suggested working volume, ml	7	7	25	25	55	55	70	70
Units per pack/case	10/200	10/200	5/100	5/100	5/30	5/30	5/30	5/30

HDPE=High Density Polyethylene * Batch No. and Cat. No. printed on each flask



Nunc EasYFlasks™ Poly-D-Lysine and Collagen I coated

Filter Cap. Sterile

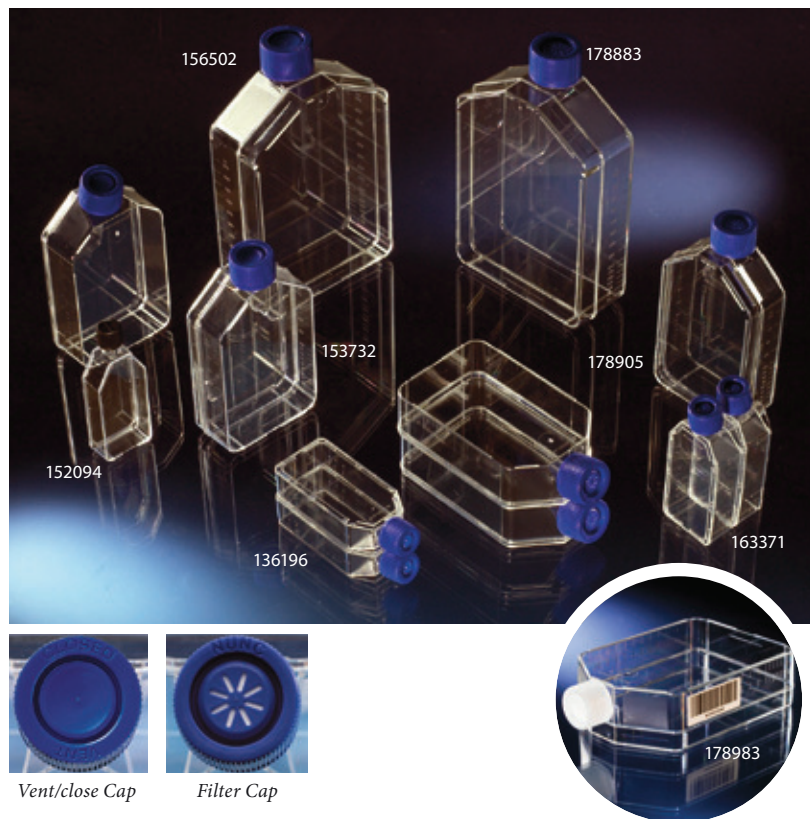
Cat. No.	132703	132704	132705	132706	132707	132708
Description	Poly-D-Lysine Coated 25cm ² EasYFlask	Poly-D-Lysine Coated 75cm ² EasYFlask	Poly-D-Lysine Coated 175cm ² EasYFlask	Collagen I Coated 25cm ² EasYFlask	Collagen I Coated 75cm ² EasYFlask	Collagen I Coated 175cm ² EasYFlask
Units per pack/case	10/60	5/30	5/30	10/60	5/30	5/30

Accessories

Loose Caps for Nunc EasyFlasks™ Nunclon™Δ. Sterile

Cat. No.	158892	158523	158240	157527	133001	133002
Closure	Vent/close	Filter	Vent/close	Filter	Vent/close	Filter
Use for flask size, cm ²	25	25	75	75	175/225	175/225
Units per pack/case	1/100	1/100	1/100	1/100	1/100	1/100

Flasks Nunclon[™]Δ Surface



- Cell culture flasks with surface areas from 25-175 cm²
- Filter caps or vent/close caps available for good gas exchange
- Extra caps included in every carton
- Short, wide neck for easy access
- Individually leak tested
- Excellent optical quality
- Nunclon[™]Δ certified
- Barcoded 175 cm² with large Code 128

Literature:

Bulletin Nos: 2, 3, 5
Tech Note Nos: 2, 3, 25 Vol. 4: 34, 35, 36, 37

See Pages 195-196 for full reference list with titles and links

Accessories:

Caps for Flasks Nunclon[™]Δ Page 14
Serological Pipettes Page 17
Cell Scrapers Page 17

Nunc Flasks Nunclon[™]Δ

with Filter Cap
Polystyrene. Sterile

Cat. No.	136196	178905	178883	178983*
Culture area, cm ²	25	80	175	175
Neck style	Angled	Straight	Straight	Straight
Closure	Filter	Filter	Filter	Filter
Cap material	HDPE	HDPE	HDPE	HDPE
Suggested working vol., ml	7	30	68	68
Units per pack/case	20/160	5/50	4/32	4/32

HDPE = High Density Polyethylene

*Barcoded with large Code 128

Nunc Flasks Nunclon[™]Δ

with Vent/Close Cap
Polystyrene. Sterile

Cat. No.	152094	163371	153732	156502
Culture area, cm ²	24	25	80	175
Neck style	Straight	Angled	Straight	Straight
Closure	Vent/close	Vent/close	Vent/close	Vent/close
Cap material	HIPS	HDPE	HDPE	HDPE
Suggested working vol., ml	7	7	30	68
Units per pack/case	20/200	20/160	5/50	4/32

HIPS = High Impact Polystyrene / HDPE = High Density Polyethylene

Flasks Non-treated



- Non-treated, sterile flasks for suspension cell cultures
- White caps for easy identification
- Extra cap in every carton
- Non-pyrogenic

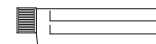
Accessories:

Caps for Flasks Nunclon™Δ
Serological Pipettes
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Nunc Flasks Non-treated

Polystyrene. Sterile



Cat. No.	169900	156800	159926	144903	132903
Flask type	EasYFlask	EasYFlask	EasYFlask	SoLoFlask	TripleFlask
Culture area, cm ²	25	75	175	185	500
Total volume, ml	70	260	645	600	800
Neck style	Angled	Angled	Angled	Angled	Straight
Closure	Filter	Filter	Filter	Filter	Filter
Cap material	HDPE	HDPE	HDPE	HDPE	HDPE
Suggested working vol., ml	7	30	55	75	200
Units per pack/case	10/200	5/100	5/30	5/50	4/32

Caps for Non-treated Flasks

White. High Density Polyethylene (HDPE).
Sterile



Cat. No.	178802	156753	159929
Closure	Filter	Filter	Filter
Use for flask size, ml	70	260	645
Units per pack/case	1/100	1/100	1/100



Filter Cap

SoLo Flasks Nunclon[™]Δ Surface



- Low profile design saves incubator space
- Four stacked SoLo Flasks occupy the same space as three conventional flasks
- Large bore angled neck facilitates pipette and cell scraper access
- Nunclon[™]Δ certified

Literature:

Bulletin Nos: 2, 3, 5

Tech Note Nos: 3, 25, Vol. 4: 34, 35, 36, 37

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Accessories:

Serological Pipettes

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Cell Scrapers

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Nunc SoLo Flasks Nunclon[™]Δ

Polystyrene. Sterile



Cat. No.	144881
Culture area, cm ²	185
Neck style	Angled
Closure	Vent/close
Cap material	HDPE
Suggested working volume, ml	75
Units per pack/case	5/50

HDPE = High Density Polyethylene

Caps for Flasks Nunclon[™]Δ

Caps for Barcoded Flasks

High Density Polyethylene (HDPE). Sterile

Cat. No.	146003
Closure	Filter
Color	White
Use for flask	Cat. No. 178983/132920
Units per pack/case	1/100

Caps for Flasks Nunclon[™]Δ

High Density Polyethylene (HDPE). Sterile

Cat. No.	151152	151209	144458	144652	147074	147104
Closure	Vent/close	Filter	Vent/close	Filter	Vent/close	Filter
Color	Blue	Blue	Blue	Blue	Blue	Blue
Use for flask size, cm ²	25	25	80	80	175/185/500	175/185/500
Units per pack/case	1/100	1/100	1/100	1/100	1/100	1/100



Filter Cap



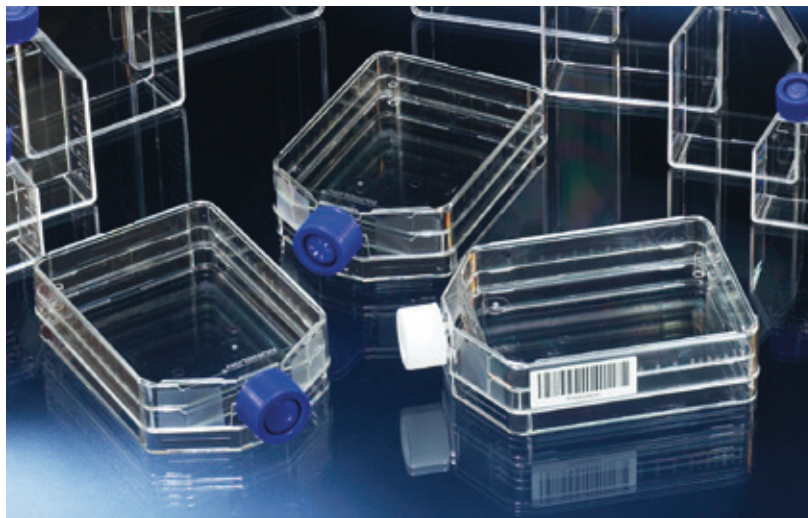
Vent/close Cap



Filter Cap

The caps for Nunc flasks are made of High Density Polyethylene (HDPE). This material is slightly flexible which means that a tight seal can be achieved without high torque. The caps should be turned by gripping the closed end as squeezing the open end makes removal more difficult.

TripleFlasks Nunclon™Δ Surface



- Three parallel growth surfaces provide a total culture area of 500 cm²
- External dimensions of a 175 cm² standard flask
- Ideal for scale-up
- Extra caps in every carton
- Nunclon™Δ certified
- Barcoded with large Code 128

Literature:

Bulletin Nos: 2, 3, 5

Tech Note Nos: 2, 3, 25, Vol. 4: 34, 35, 36, 37

See Pages 195-196 for full reference list with titles and links

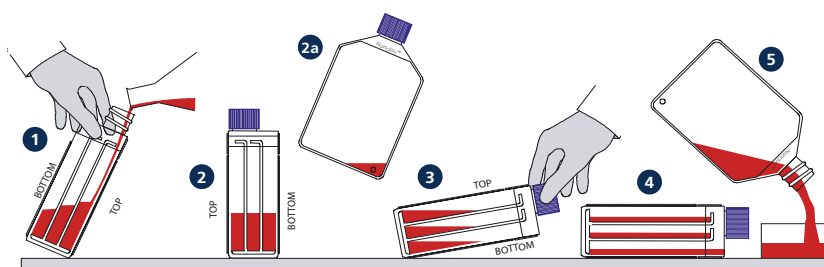
Accessories:

Caps for Flasks Nunclon™Δ

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Serological Pipettes

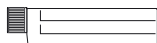
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1. Prepare homogeneous cell suspension. Pour into the TripleFlask, tilting flask slightly to avoid foam or bubbles. Recommended working volume is 100-200 ml
2. Leave the flask in the upright position for a short time to allow equilibration of liquid in each compartment
- 2a. The flask may be canted momentarily around the connecting channel corner for facilitating the equilibration of small volumes
3. Quickly but gently place the flask in the incubation position
4. The liquid is equally distributed over the three growth surfaces
5. The flask is emptied in the same way as a conventional flask. To harvest cells add 10-15 ml Trypsin

Nunc TripleFlasks Nunclon™Δ

Polystyrene. Sterile



Cat. No.	132867	132913	132920
Barcode	-	-	+
Culture area, cm ²	500	500	500
Neck style	Straight	Straight	Straight
Closure	Vent/close	Filter	Filter
Cap material	HDPE	HDPE	HDPE
Suggested working vol., ml	200	200	200
Units per pack/case	4/32	4/32	4/32

HDPE = High Density Polyethylene

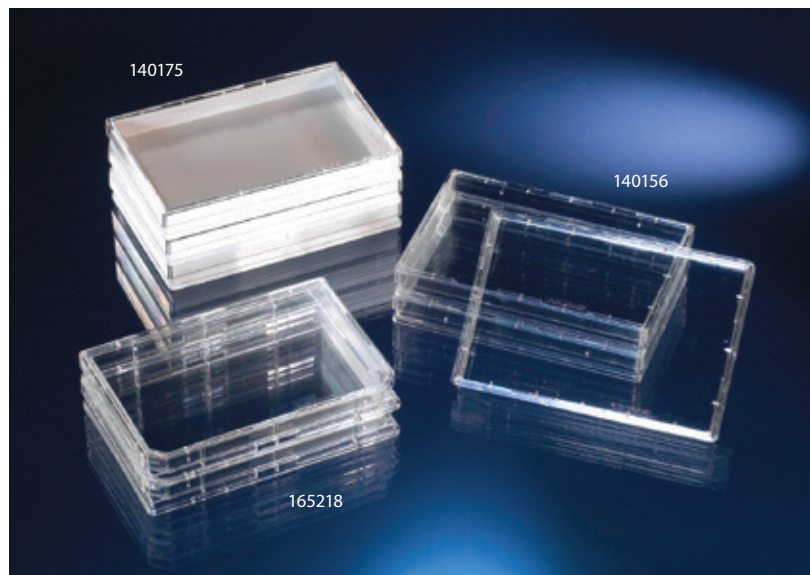


Vent/close Cap



Filter Cap

OmniTrays Nunclon[™]Δ Surface



- Single well OmniTray ideal for a multitude of uses
- Available both as a standard version with notched corners and as a rectangular version optimized for computerized imaging and spotting
- Nunclon[™]Δ certified

Literature:

Bulletin Nos: 2, 3

Tech Note Nos: Vol. 4: 34, 35, 36, 37

See Pages 195-196 for full reference list with titles and links

Accessories:

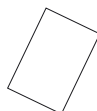
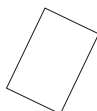
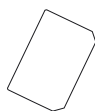
Lids for 96 and 384 Well Plates

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Nunc OmniTrays Nunclon[™]Δ

External dimensions 128 x 86 mm

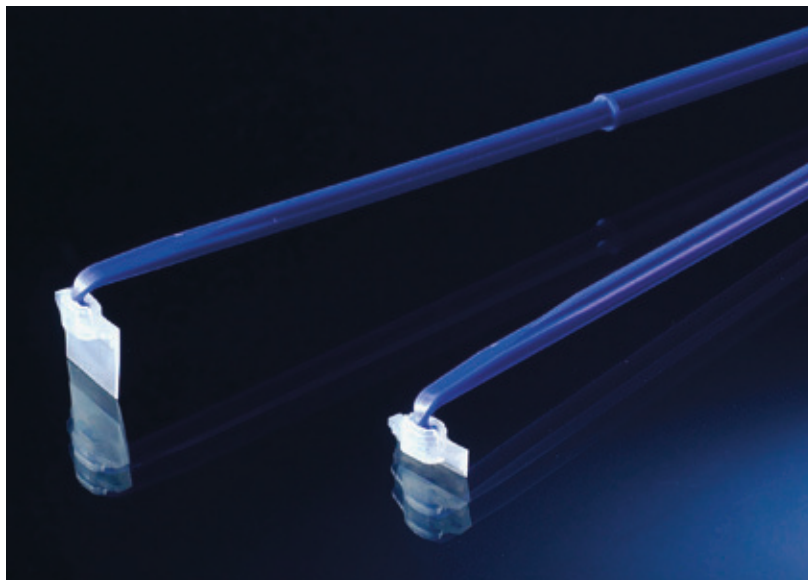
Polystyrene. Sterile



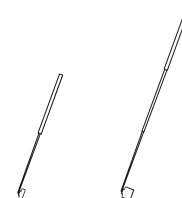
Cat. No.	165218	140156*	140175*
Color	Clear	Clear	White
Suggested working vol., ml	90	90	90
Culture area, cm ²	84	84	84
Units per pack/case	10/60	10/90	10/90

*Enhanced rectangular area ideal for automatic picking and viewing system

Cell Scrapers



- Available in two lengths
- Blade adjustable for optimal application flexibility
- Non-pyrogenic

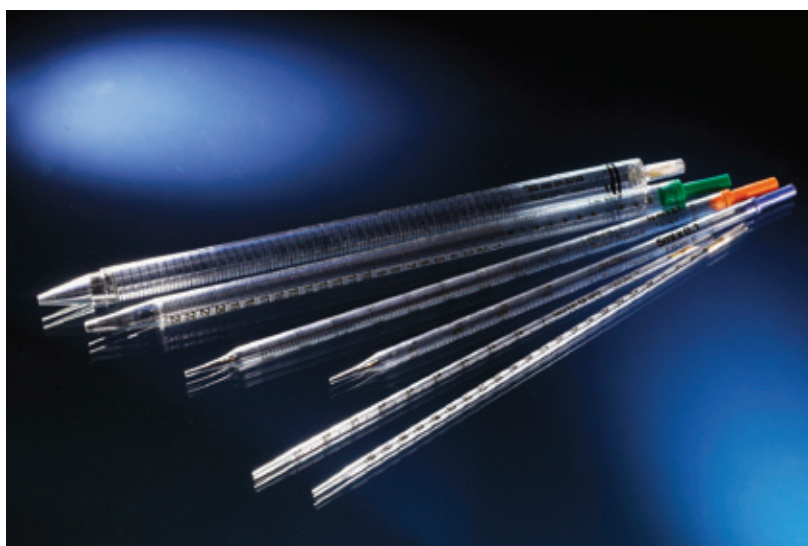


Nunc Cell Scrapers

Sterile

Cat. No.	179693	179707
Use for flask size, cm ²	25-80	75-175
Total length, cm	23	32
Blade offset, mm	7.5	16
Blade width, mm	15.5	17.5
Units per pack/case	1/250	1/250

Serological Pipettes



- Accurate, disposable plastic pipettes plugged and sterilized
- Sterility assurance level (SAL) of 10⁻⁶
- Bold clear graduations with easy-to-read scale markings
- Color-coded packaging for ease in sorting and selecting the correct size
- Individually wrapped in paper-peelable bags
- Convenient extra graduations to full pipette volume
- Printed with a black scale
- Non-pyrogenic

Nunc Serological Pipettes

Polystyrene. Sterile

Cat. No.	159609	159617	159625	159633	159641	159668
Total volume, ml	1	2	5	10	25	50
Sub division, ml	0.01	0.01	0.1	0.1	0.2	0.5
Extra grad., ml	0.3	0.3	2	3	10	10
Tolerance ±	0.02	0.04	0.10	0.20	0.50	0.75
Color code	Black	Black	Blue	Orange	Green	Purple
Units per pack/case	200/1000	125/500	50/200	50/200	50/200	25/100