

**PRIMESURFACE®**  
ULTRA LOW ATTACHMENT  
3D CELL CULTURE PLATES  
AND DISHES

Developed for 3D Cell Culture Applications  
in SBS Footprint

Stem Cell Research | Drug Discovery  
and Development | Tissue Engineering |  
Regenerative Medicine

# PrimeSurface

PHC provides superior quality three-dimensional cell culture platforms with a variety of well shapes to enable spheroid culturing of your specific cell type.

PrimeSurface cell culture labware are ultra low attachment (ULA) dishes and plates that promote scaffold free, self assembly of spheroid formation. The plates are pre-coated with unique ultra hydrophilic polymer that enables spontaneous spheroid formation of uniform size and shape. The ULA plates have high optical clarity making them highly suitable for bright field imaging and confocal microscopy. In addition to the widely used 96 well U bottom plate, 96 well plates are also available in V and M bottom, giving scientists a choice to form tighter spheroids that are needed for specific cell types. For high throughput screening (HTS) needs, 384 well plates are available in clear and white.

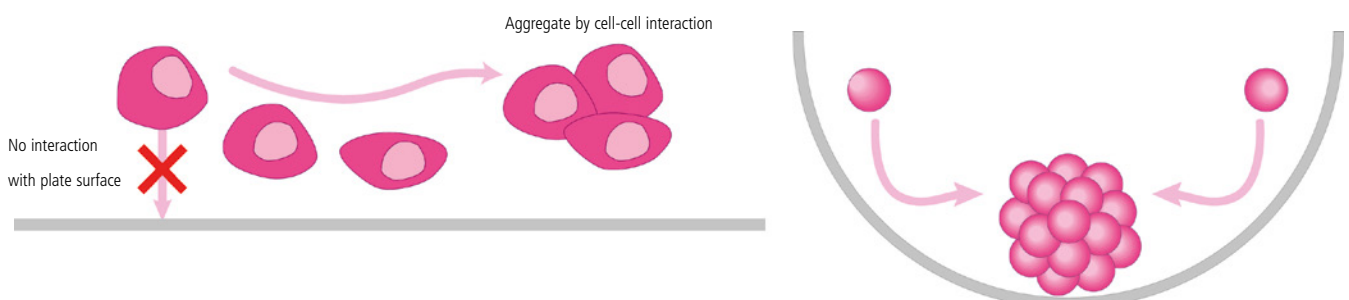
## Key benefits

- Non-binding surface for cells to facilitate natural spheroid formation
- Uniform single spheroid/EB formation in each well
- Spheroid assay formation and analysis in the same plate
- A variety of well bottom shapes: U-bottom, Spindle-bottom and V-bottom in 96 well format
- High optical clarity plates for imaging
- Stable, non-cytotoxic and cell non-adhesion surface
- Easy handling, compatible with liquid robotic system
- 384 well formats for high throughput assay
- Compatible with bright-field and fluorescence imaging systems
- White plates compatible with luminescent assays


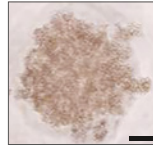
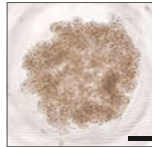

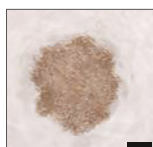
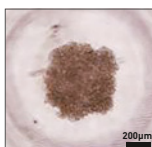


## Feature

PrimeSurface series are coated with a unique ultra-hydrophilic polymer that covalently bound to plastic surface, and effectively inhibits cell attachment without cytotoxic and material degradation. The superior coating technologies and manufacturing processes offer uniform spheroid/EB formation and smooth surface to obtain clear cell images.



Three different well bottom shapes of PrimeSurface 96 well plate

	MS-9096UZ	MS-9096MZ	MS-9096VZ
MDA-MB-453			
MDA-MB-468			

**Seeding Density:**  $2 \times 10^3$  cells/well  
**Culture Medium:** RPMI + 10%FBS  
**Incubation:** 37°, 5%CO<sub>2</sub>  
**Culture Period:** 7 Days  
**MDA-MB-453, MDA-MB-468:** human breast cancer

Data are provided by NishioLab.,  
 Dept. of Genome Bio. Kinki Univ. Faculty of Medicine

Retinal tissue formation from Human ES Cells using PrimeSurface 96 well V-bottom plate



a. Plate cut section



b. After 18 Hrs culture



c. After 6 days culture

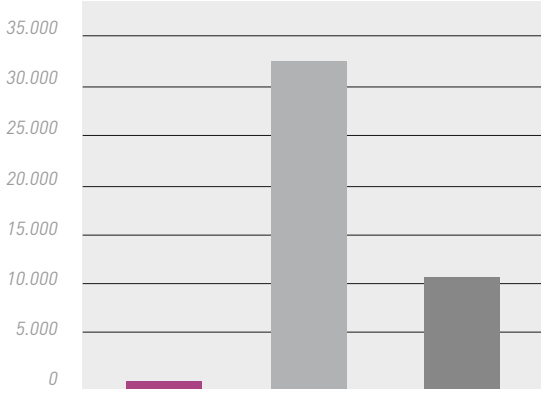


d. Self-formation of retinal tissue from the aggregate of hESCs

Data (b-d) were provided by Division of Human Stem Cell Technology, RIKEN Center for Developmental Biology

Cell Culture from Human Caucasian hepatocyte carcinoma using PrimeSurface 350 Dish

### Adhesive performance of cells

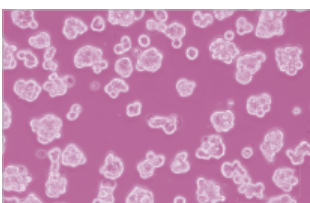


Dish Type	Adhesive Performance (Approx. Count)
PrimeSurface	~1,000
Cell culture dish for adherent cells	~32,000
Cell culture dish for suspension cell culture	~10,000

**Culture conditions:**  
 Number of seeding cells:  $1 \times 10^4$  cell/mL 2mL/350 Dish  
 Medium: EMEM, FCS 10%  
 Culture Period: 3 days with adherent cells were counted

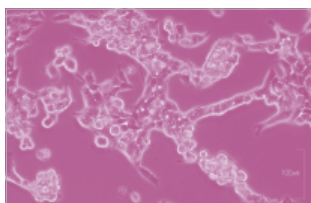
### Result of HepG2 cell culture

**PrimeSurface® Dish**



No cell adhesion was observed. The fully suspended cells formed natural cell aggregates by the interaction between cells

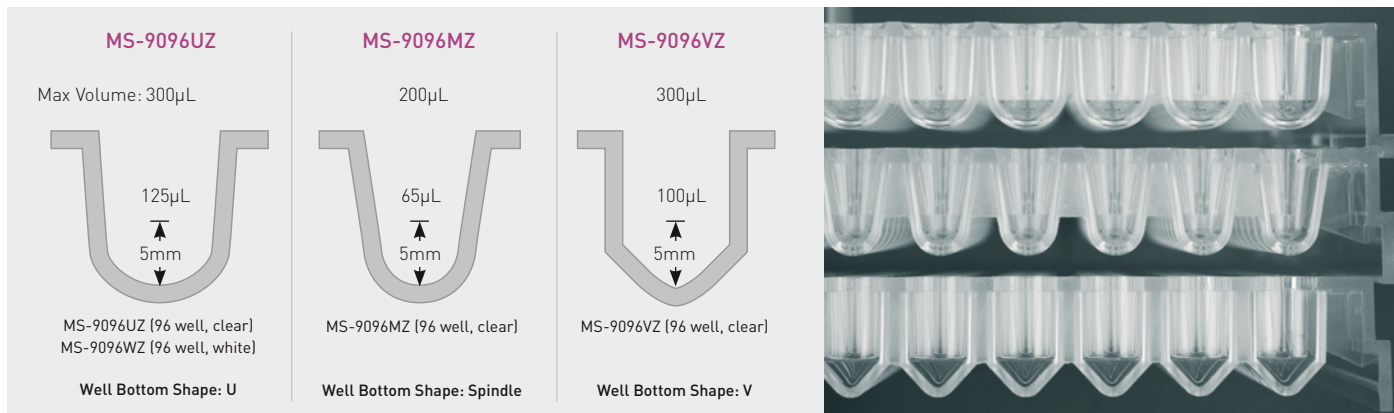
**General dish for cell culture**



General polystyrene perti-dish  
 Cells adhered on the plate and started the morphological changes

**Culture conditions:**  
 Cells:  $1 \times 10^4$  cell/mL 2mL/350 Dish  
 Medium: EMEM, FBS 10%  
 Culture Period: 3 days

Three different well bottom shapes of PrimeSurface 96 well plate



	Cat. No.	Product Name	Number of wells	Color	Well bottom	Maximum volume in each well	Package (radiation sterilized)
Microplates	MS-90240Z	PrimeSurface 24 well	24	Clear	Flat	3.4 ml	Individually packed, 10 plates/case
	MS-9096UZ*	PrimeSurface 96U	96	Clear	U	300 µL	Individually packed, 20 plates/case
	MS-9096WZ*	PrimeSurface 96W	96	White	U	300 µL	Individually packed, 20 plates/case
	MS-9096MZ*	PrimeSurface 96M	96	Clear	Spindle	200 µL	Individually packed, 20 plates/case
	MS-9096VZ*	PrimeSurface 96V	96	Clear	V	300 µL	Individually packed, 20 plates/case
	MS-9384UZ*	PrimeSurface 384U	384	Clear	U	106 µL	Individually packed, 20 plates/case
	MS-9384WZ*	PrimeSurface 384W	384	White	U	106 µL	Individually packed, 20 plates/case
Dishes	MS-90350Z	PrimeSurface dish 35 mm	-	Clear	Flat [9 cm <sup>2</sup> ]	-	5 dishes/package, 50 dishes/case
	MS-90600Z	PrimeSurface dish 60 mm	-	Clear	Flat [21 cm <sup>2</sup> ]	-	10 dishes/package, 120 dishes/case
	MS-90900Z	PrimeSurface dish 90 mm	-	Clear	Flat [57 cm <sup>2</sup> ]	-	10 dishes/package, 50 dishes/case

\* For research / laboratory use only

# PrimeSurface 96 Slit-Well Plate

PHC is offering a new slit-well, ultra-low attachment 3D plate to facilitate easy handling of media exchange without disrupting spheroid formation.

Cell culturing involves frequent media replacement to provide nutrition to growing cells. In a standard 96 well ultra low cell attachment plate, media aspiration or dispensing has to be done extremely carefully to avoid disturbing the unattached spheroid, making this a time consuming operation.

With the introduction of PrimeSurface 96 Slit-Well Plate, media exchange for 96 well plates can be efficiently handled with one step dispensing or aspiration for all 96 wells. This product can decrease pipetting time by over 80% while minimizing the risk of spheroid damage.

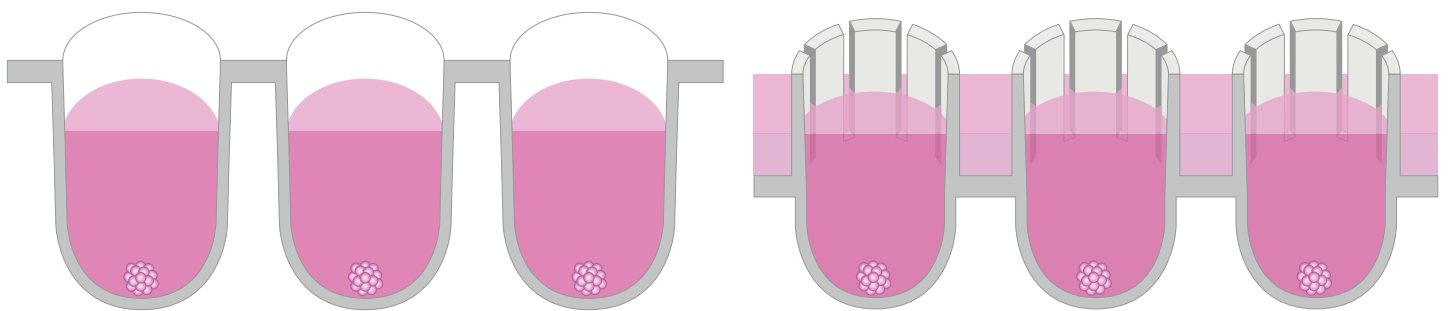
## Key benefits

- Generate and maintain uniform spheroids
- Exchange media without disturbing spheroid formation
- Minimize media exchange time by simultaneous delivery of cell culture media to all 96 wells
- Use up to 1.5 times more media than in conventional plates, less media changes and more nutrients for the culture



## Time Saving Design

Slit-Well structure allows simultaneous delivery of cell culture medium to all 96 wells



Conventional product: medium is independent in each well

Slit-Well plate: medium is shared between wells

**Grow larger spheroids in the same well for long-term cultures.** Growing larger spheroids needs more media. Slit-Well plates allow 1.5 times more media volume compared to conventional plates providing more nutrients for larger spheroids.

## Specifications

Catalog Number	Product Name	Well Type	Color	Well Bottom Shape	Maximum Well Volume	Package
MS-9096SZ*	PrimeSurface 96 Slit-Well Plate	96	Clear	Spindle	0.3 ml	Individually packed, 20 plates/case

\* For research / laboratory use only

**Head Office**

Nijverheidsweg 120  
4879 AZ Etten Leur  
The Netherlands  
Tel: +31 (0)76 543 38 33  
Fax: +31 (0)76 541 37 32  
[biomedical.nl@eu.phchd.com](mailto:biomedical.nl@eu.phchd.com)  
[www.phchd.com/eu/biomedical](http://www.phchd.com/eu/biomedical)

**UK Office**

9 The Office Village  
North Road, Loughborough  
Leicestershire LE11 1QJ  
United Kingdom  
Tel. +44(0)1509 265265  
Fax. +44(0)1509 269770  
[biomedical.uk@eu.phchd.com](mailto:biomedical.uk@eu.phchd.com)  
[www.phchd.com/eu/biomedical](http://www.phchd.com/eu/biomedical)

**France Office**

44, avenue de Valvins, BP 44  
F-77212 Avon Cedex  
France  
Tel. +33 1 60719911  
Fax. +33 1 60711693  
[biomedical.fr@eu.phchd.com](mailto:biomedical.fr@eu.phchd.com)  
[www.phchd.com/eu/biomedical](http://www.phchd.com/eu/biomedical)