

Innovation in every Detail, Inspired Design!



# BRAND *plates*<sup>®</sup> Insert System

H I G H - T E C H   D I S P O S A B L E S

**Innovative cell culture plates and inserts from BRAND** for manual and automated cell and tissue culture work!

- Standard 24-well plate and the special 6-well model to use with up to six strips of 4 inserts
- Side feed ports in the well for changing media with minimal disruption – without moving inserts
- Perfect for use with pipetting robots
- Especially for tissue culture: inserts with inlet channels (the Inlet Opening System)





**The cells remain undisturbed!**

Media can be changed simply and with minimal disruption using the plate's feed ports, without moving or shifting inserts – perfect for working with pipetting robots!

## BRANDplates® Insert System

The BRAND Insert System includes two different cell culture plates and two types of cell culture inserts, which can also be used in combination.

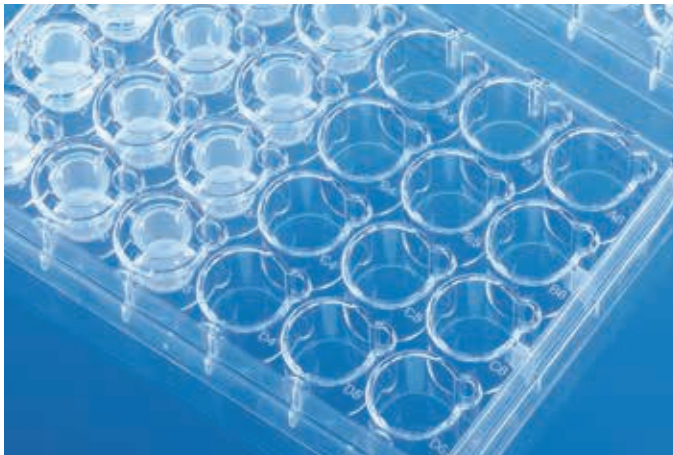
The BRANDplates® Insert System, co-developed with the Fraunhofer Society, offers an innovative expansion of the BRAND cell culture product line.

The cell culture plates and the associated inserts are available in both a standard and a special model. These can be used in a wide variety of applications. The standard model is used in such applications as co-culture, secretion studies, and chemotaxis tests, and the special model finds application in the automated in vitro preparation of human tissues (3D tissue culture). Skin, epidermis, and corneal models, etc., have taken on greater importance due to legislation that restricts animal experimentation to a minimum. These tissues are now employed on a daily basis for tolerance studies, toxicity tests, and irritation tests in the pharmaceutical and cosmetics industries.



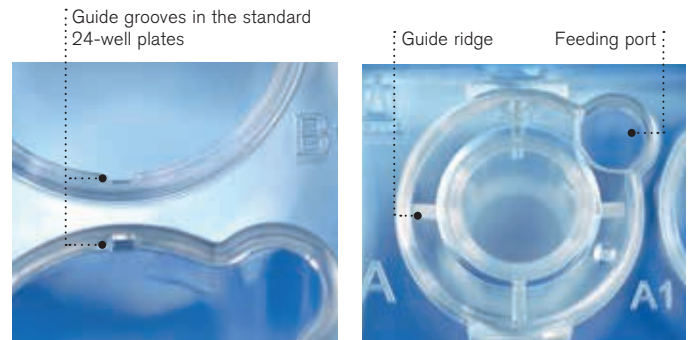
For efficient operations!

## Two plates



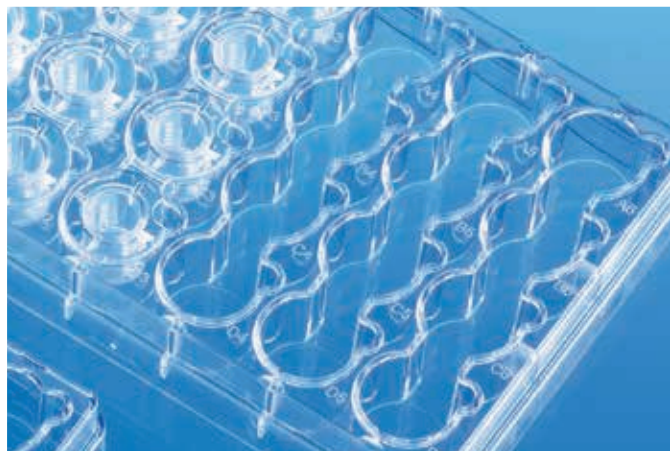
### Standard 24-well plate

The plate includes 24 individually fillable wells that can be fitted with strips of 4 inserts and/or individual inserts.



### The well and insert are perfectly coordinated:

The guide grooves in the support collars of the wells in the standard 24-well plate hold the guide ridges of the insert in position. This prevents the individual inserts from rotating – the feed ports on the wells remain open. At the same time, the guide ridges center the insert in the well.



### Special 6-well model

The 4 wells are all connected as one large, elongated well. This well can be fitted with a strip of 4 inserts so that all 4 of the inserts in the strip can be supplied with medium at the same time. Particularly well suited to the use of insert strips with inlet channels.



Automated filling of the wells for tissue culture

(Photo © Fraunhofer/Rafael Krötz)

### Automated in vitro preparation of human tissues



### Plate specifications

- Manufactured according to the requirements in ANSI/SBS Standards 1 and 4
- The standard 24-well plate and special 6-well model both have lids with condensation rings
- pureGrade™ S (untreated) and cellGrade™ plus (hydrophilic cell culture) surfaces

# Two insert strips



## Inserts, smooth-walled

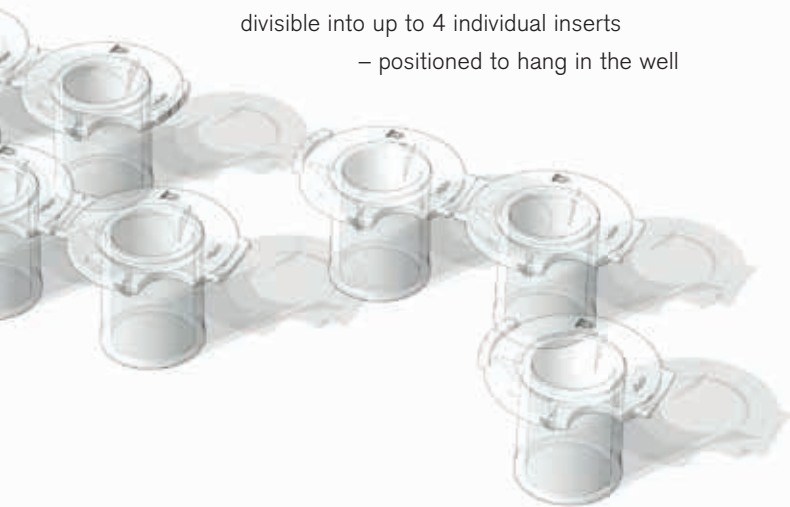
For standard applications such as secretion studies, co-culture, chemotaxis tests, etc.

Tissue growth in an insert with the Inlet Opening System

(Photo © Fraunhofer IPA)



4-insert strips,  
divisible into up to 4 individual inserts  
– positioned to hang in the well



## Inserts with special inlet channels (the Inlet Opening System\*)

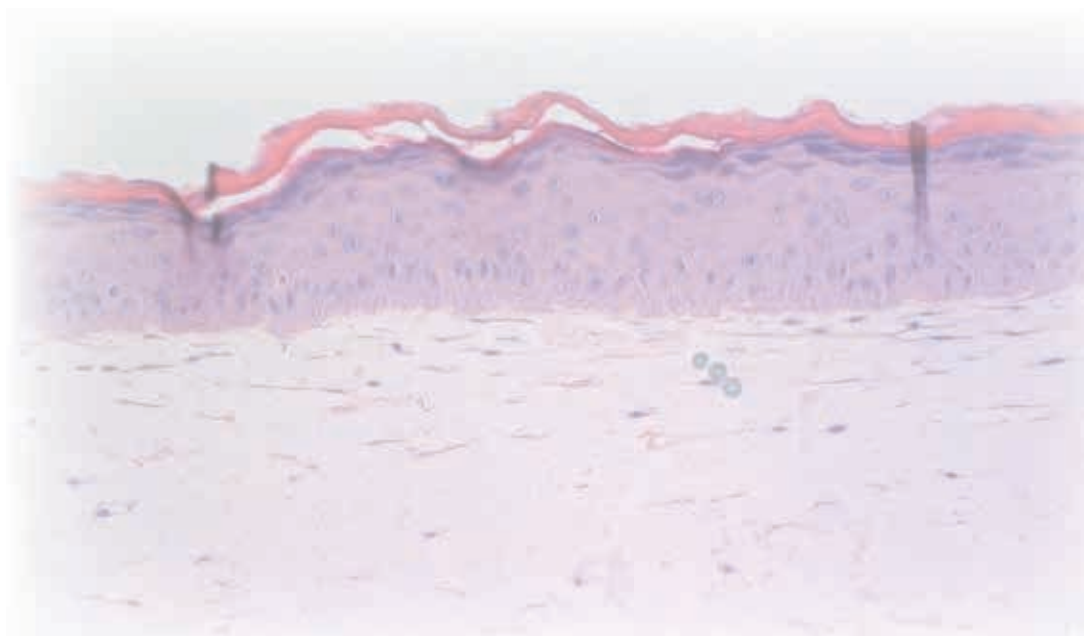
For automated in vitro preparation of human tissues.

The Inlet Opening System\* enables rapid, consistent changing of media, from submersion culture to air-lift culture. The special inlet channels enable adjustment of the medium level without damage to the skin model.

\* Patent pending

## Insert specifications

- Hanging inserts – distance from the well bottom to the insert membrane is 4 mm
- Individually packaged strips in deep-drawn cups or as a combination with 6 strips each inserted into the 6-well cell culture plate
- cellGrade™ plus (hydrophilic cell culture) surface



# Four pore sizes

- Track-etched PC and PET membranes
- Four different pore sizes



## Membrane / pore size application examples

Pore size	Application range
0.4 $\mu\text{m}$	Co-culture, transport studies, secretion studies, cell polarity studies, etc.
1 $\mu\text{m}$	Co-culture, transport studies, secretion studies, etc.
3 $\mu\text{m}$	Migration studies, chemotaxis studies, metastasis experiments, etc.
8 $\mu\text{m}$	Migration studies, chemotaxis studies, metastasis experiments, etc. See also the construction of full-thickness skin models by the Fraunhofer IGB ( <a href="http://www.tissue-factory.com">www.tissue-factory.com</a> )

## Membrane pore size and density

Properties	PC	PET
Optical properties	translucent	transparent
Cell visibility under LM	-	+

### Membrane thickness

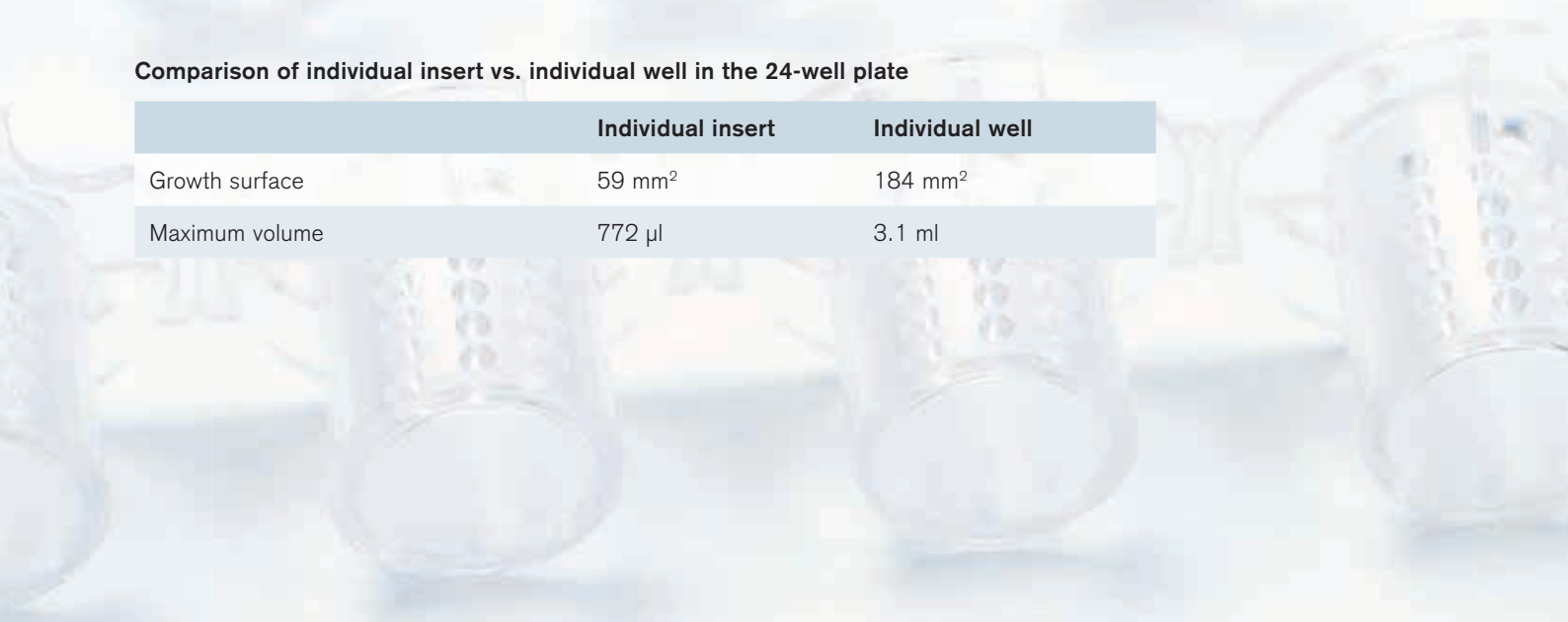
Pore size 0.4 $\mu\text{m}$	10 $\mu\text{m}$	12 $\mu\text{m}$
Pore size 1 $\mu\text{m}$	11 $\mu\text{m}$	12 $\mu\text{m}$
Pore size 3 $\mu\text{m}$	9 $\mu\text{m}$	15 $\mu\text{m}$
Pore size 8 $\mu\text{m}$	7 $\mu\text{m}$	23 $\mu\text{m}$

### Pore density (pores per $\text{cm}^2$ )

Pore size 0.4 $\mu\text{m}$	$1 \times 10^8$	$2 \times 10^6$
Pore size 1 $\mu\text{m}$	$2 \times 10^7$	$2 \times 10^6$
Pore size 3 $\mu\text{m}$	$2 \times 10^6$	$6 \times 10^5$
Pore size 8 $\mu\text{m}$	$1 \times 10^5$	$6 \times 10^4$

## Comparison of individual insert vs. individual well in the 24-well plate

	Individual insert	Individual well
Growth surface	59 $\text{mm}^2$	184 $\text{mm}^2$
Maximum volume	772 $\mu\text{l}$	3.1 ml



# Ordering information

■ Non-cytotoxic according to ISO 10993-5, endotoxins-free (< 0.01 EU/mL), free from DNA, DNase, and RNase.

■ Sterile according to ISO 11137 and AAMI Guidelines, SAL 10<sup>-6</sup>

## BRANDplates® microplates

### Standard plates or 6-well plates

PS. pureGrade™ S or cellGrade™ plus surface, sterile, includes lid with condensation rings.

Description	Surface	Pack of	Cat. No.
Standard 24-well plate	pureGrade™ S	10 (individually packed, with lids)	7828 80
6-well plate	pureGrade™ S	10 (individually packed, with lids)	7828 81
Standard 24-well plate	cellGrade™ plus	10 (individually packed, with lids)	7828 90
6-well plate	cellGrade™ plus	10 (individually packed, with lids)	7828 91

## BRANDplates® insert strips

### Insert strips, smooth-walled or with inlet channels (the Inlet Opening System\*)

PS. cellGrade™ plus surface, sterile. strips of 4 inserts (divisible).

Description	Pore size µm	Pack of	PC-membrane Cat. No.	PET-membrane Cat. No.
Smooth walled	0.4	12 (individually packed)	7828 00	7828 10
	1	12 (individually packed)	7828 20	7828 30
	3	12 (individually packed)	7828 40	7828 50
	8	12 (individually packed)	7828 60	7828 70
with the Inlet Opening System	0.4	12 (individually packed)	7828 01	7828 11
	1	12 (individually packed)	7828 21	7828 31
	3	12 (individually packed)	7828 41	7828 51
	8	12 (individually packed)	7828 61	7828 71

\* Patent pending

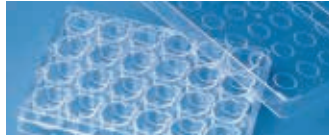
## BRANDplates® Insert System

### 6-well plates filled with 6 insert strips

PS. cellGrade™ plus surface, sterile. Insert strips, smooth-walled or with inlet channels (the Inlet Opening System\*) includes lid with condensation rings.

Description	Pore size µm	Pack of Plates with lids	PC membrane Cat. No.	PET membrane Cat. No.
Smooth walled	0.4	5 (30 insert strips)	7828 02	7828 12
	1	5 (30 insert strips)	7828 22	7828 32
	3	5 (30 insert strips)	7828 42	7828 52
	8	5 (30 insert strips)	7828 62	7828 72
with the Inlet Opening System	0.4	5 (30 insert strips)	7828 03	7828 13
	1	5 (30 insert strips)	7828 23	7828 33
	3	5 (30 insert strips)	7828 43	7828 53
	8	5 (30 insert strips)	7828 63	7828 73

\* Patent pending



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