

# Vapour Diffusion Applications

## 96 Well CrystalQuick™ Plates for Sitting Drop Applications

In cooperation with the Genomics Institute of the Novartis Research Foundation (GNF) in San Diego (USA), the Max-Planck Institute (MPI) and the Protein Structure Factory (PSF) in Berlin, Greiner Bio-One has developed a family of 96 well crystallisation plates for sitting drop applications. Each of the 96 reservoirs contains an elevated platform with one or three crystallisation wells. The plates are optimised for sealing with VIEWseal™ adhesive film. In combination with the CrystalDrop™ lid, simultaneous experiments are possible with the sitting drop and hanging drop method. The external dimensions and tolerances of the CrystalQuick™ plates are suitable for automated applications. All CrystalQuick™ plates are available in an LBR version for the use of polarised light. Plates with a hydrophobic surface can be found in the table under CrystalQuick™ Plus plates.

### CrystalQuick™ SW (Square Wells Fig. 1, Fig. 2)

With three crystallisation wells per reservoir, CrystalQuick™ SW makes it possible to test 288 samples per plate. The flat bottom of the wells provides for good optical properties. The maximum volume of the crystallisation drops is 4 µl (US Patent No. 7005008 B2).

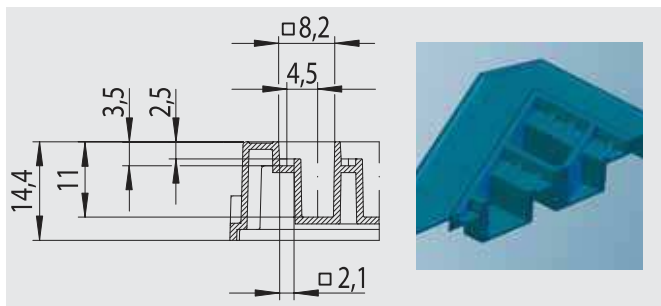


Figure 1: Well profile, CrystalQuick™ SW



Figure 2: Crystallisation of lysozyme in CrystalQuick™ SW

### CrystalQuick™ RW (Round Wells Fig. 3, Fig. 4)

With three round crystallisation wells per reservoir, CrystalQuick™ RW makes it possible to test 288 samples per plate. The bottom of the crystallisation wells is concave. The maximum volume of the crystallisation drops is 1.9 µl.

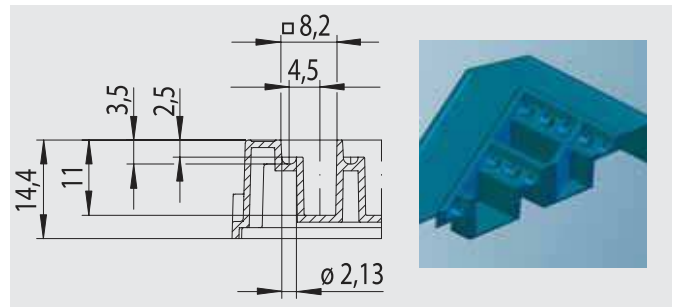


Figure 3: Well profile, CrystalQuick™ RW



Figure 4: Protein crystal in CrystalQuick™ RW, the image was kindly supplied by B. Blattmann, NCCR Structural Biology, Switzerland

### CrystalQuick™ LP (Low Profile Fig. 5, Fig. 6)

CrystalQuick™ LP (low profile) crystallisation plates are characterised by excellent optical properties. Crystal harvesting is made easier by the angled walls of the crystallisation wells. The low profile reduces space requirements for storage.

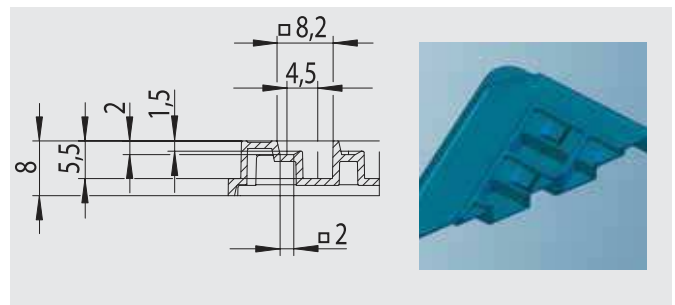


Figure 5: Well profile, CrystalQuick™ LP

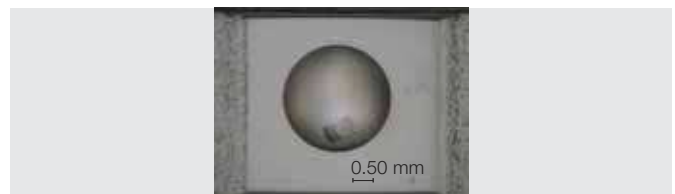
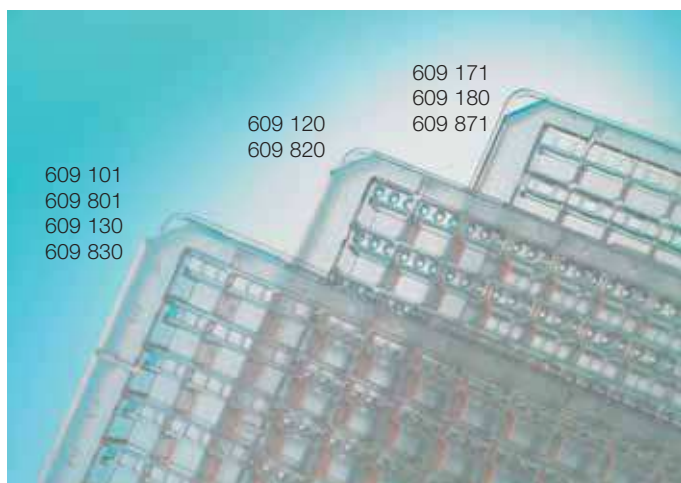


Figure 6: Crystallisation of lysozyme in CrystalQuick™ LP, RoboDesign International Inc., Carlsbad (USA)

1 Cell/Tissue Culture  
2 HTS-Microplates  
3 Immunology/HLA  
4 Microbiology/Bacteriology  
5 Tubes/Multi-Purpose Beakers  
6 Liquid Handling  
7 Molecular Biology  
8 Protein Crystallisation  
9 Separation  
10 Biochips/Microfluidics  
11 Cryo-Technics  
12 Lids/Sealers/Cap Mats  
13 Reaction Tubes/Analyser Cups  
14 Accessories



609 101  
609 801  
609 130  
609 830

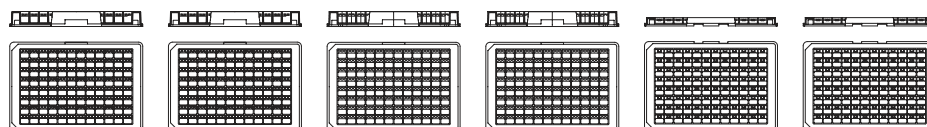
609 120  
609 820

609 171  
609 180  
609 871

## 96 Well CrystalQuick™ 96 Well CrystalQuick™ Plus

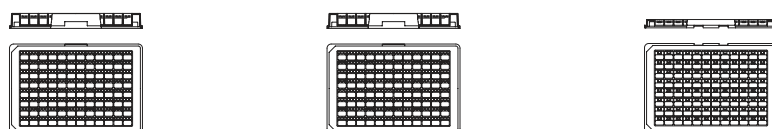
- ▶ Lids and Sealers p. 12 | 2 ff.
- ▶ CrystalDrop™ lid for hanging drop applications p. 8 | 6
- Crystallisation plates for sitting drop applications with different well profiles and material properties

### CrystalQuick™



Cat.-No.	609 101	609 801	609 120	609 820	609 171	609 871
Description	CrystalQuick™	CrystalQuick™	CrystalQuick™	CrystalQuick™	CrystalQuick™	CrystalQuick™
Material properties	standard	LBR	standard	LBR	standard	LBR
Well profile	square (SW)	square (SW)	round (RW)	round (RW)	square (LP)	square (LP)
Well bottom	flat	flat	concave	concave	flat	flat
Well per reservoir	3	3	3	3	1	1
Max. well volume [µl]	4.1	4.1	1.9	1.9	3.9	3.9
Volume per reservoir [µl]	320	320	320	320	140	140
Height [mm]	14.4	14.4	14.4	14.4	8.0 (low profile)	8.0 (low profile)
Quantity per bag/case	10/40	10/40	10/40	10/40	20/80	20/80

### CrystalQuick™ Plus



▶ New

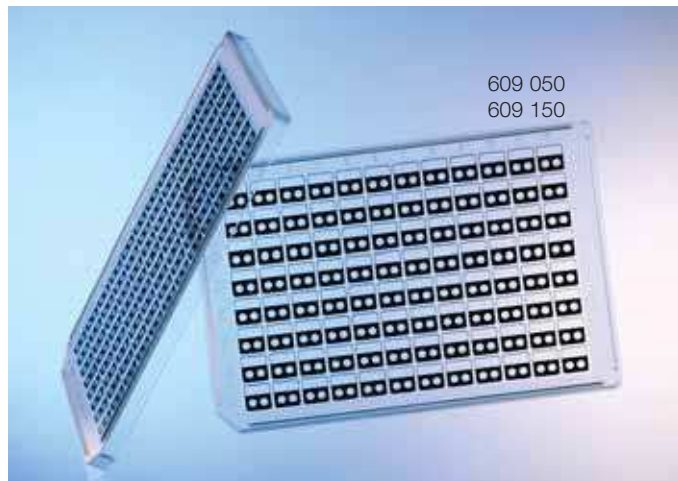
Cat.-No.	609 130	609 830	609 180
Description	CrystalQuick™ Plus	CrystalQuick™ Plus	CrystalQuick™ Plus
Material properties	hydrophobic	LBR, hydrophobic	hydrophobic
Well profile	square (SW)	square (SW)	square (LP)
Well bottom	flat	flat	flat
Well per reservoir	3	3	1
Max. well volume [µl]	4.1	4.1	3.9
Volume per reservoir [µl]	320	320	140
Height [mm]	14.4	14.4	8.0 (low profile)
Quantity per bag/case	10/40	10/40	20/80

▶ New

▶ New

▶ New

## CrystalDrop™ Lid for Hanging Drop Applications



### CrystalDrop™ Lid

▶ Further Lids and Sealers p. 12 | 2 ff.

▶ CrystalQuick™ Plates p. 8 | 5

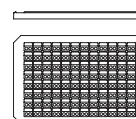
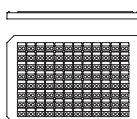
■ Lid for CrystalQuick™ microplates      ■ New: Pre-greased lids

■ Enables individual sealing of the 96 wells

The CrystalDrop™ lid was developed in cooperation with the Max-Planck Institute (MPI) and the Protein Structure Factory (PSF) in Berlin specifically for use in high-throughput crystallisation. The 192 wells of CrystalDrop™ make it possible to place the sample drops at predefined positions. The printed grid facilitates the automated monitoring of the crystallisation drops. Channels around each of the 96 positions enable the individual sealing of each well by the application of silicone grease. The combination of CrystalDrop™ and CrystalQuick™ makes it possible to conduct up to 288 sitting and 192 hanging drop experiments in parallel (a total of 480 crystallisation drops per plate). CrystalDrop™ is suitable for the application of crystallisation drops and the attachment to CrystalQuick™ plates by robots. CrystalDrop™ is also available pre-greased (Fig. 7).



Figure 7: Pre-greasing of CrystalDrop™ lid

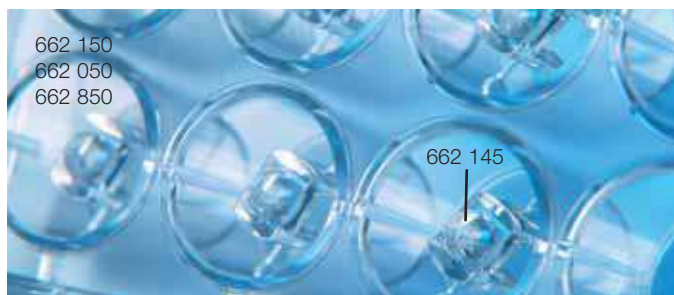


Cat.-No.	609 150	609 050
Description	CrystalDrop™ lid for CrystalQuick™ plates	CrystalDrop™ lid for CrystalQuick™ plates
Material properties	-	pre-greased
Format	96 well	96 well
Well per reservoir	2	2
ø Well [mm]	2.7	2.7
Length [mm] x width [mm] x height [mm]	127.35 x 84.8 x 6.0	127.35 x 84.8 x 6.0
Quantity per bag/case	5/80	5/40

▶ New

1 Cell/ Tissue Culture  
2 HTS- Microplates  
3 Immunology/ HLA  
4 Microbiology/ Bacteriology  
5 Tubes/Multi- Purpose Beakers  
6 Liquid Handling  
7 Molecular Biology  
8 Protein Crystallisation  
9 Separation  
10 Biochips/ Microfluidics  
11 Cryo- Technics  
12 Lids/Sealers/ Cap/Mats  
13 Reaction Tubes/ Analyser Cups  
14 Accessories

## 24 Well ComboPlate™ and CrystalBridge™



### 24 Well ComboPlate™ CrystalBridge™

Lids and Sealers p. 12 | 2 ff.

- Universal 24 well crystallisation plate
- New: Pre-greased plates
- New: Siliconised coverslips

#### ComboPlate™

The ComboPlate™ was developed as universal platform for crystallisation in the 24 well format in cooperation with Hampton Research (Fig. 8). Clear polystyrene in combination with a flat, distortion-free bottom offers excellent optical properties. A flattened, raised ring around each well reduces the risk of cross-contamination and makes it possible to seal the wells with silicone grease and coverslips (ø 18 mm) or VIEWseal™ sealer (Cat.-No. 676 070). A slightly raised lid protects the coverslips and sealer during transportation and storage.

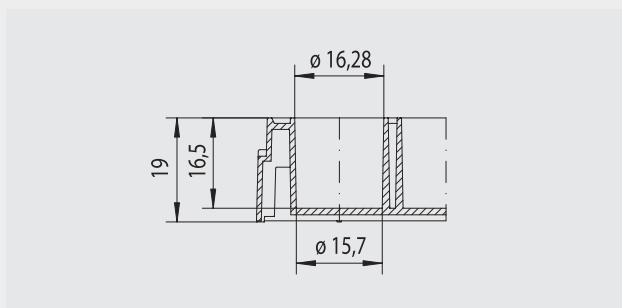


Figure 8: Well profile, 24 well ComboPlate™



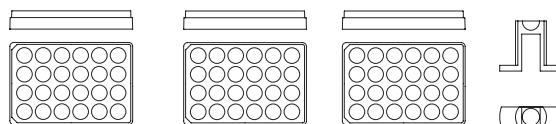
The ComboPlate™ is also available pre-greased or in an LBR version for use with polarised light now. As an accessory for the ComboPlate™ Greiner Bio-One offers siliconised coverslips (round, ø 18 mm, Cat.-No. 501 870) (Fig. 9). Siliconised coverslips for Linbro plates (round, ø 22 mm, Cat.-No. 503 870) can also be found in our product line.



Figure 9: ComboPlate™ sealed with coverslips

#### CrystalBridge™

Sitting drop experiments are possible using the CrystalBridge™ inserts which fit exactly into the wells of the ComboPlate™. The well with a concave bottom integrated into the CrystalBridge™ has a volume of 45 µl. If necessary, CrystalBridge™ inserts can be transferred to another well during the course of an experiment.



Cat.-No.	662 150	662 050	662 850	662 145
Description	ComboPlate™	ComboPlate™	ComboPlate™	CrystalBridge™
Material properties	-	pre-greased	LBR	-
Format	24 well	24 well	24 well	1 well
Well bottom	flat	flat	flat	concave
ø Well [mm]	16.3	16.3	16.3	4.6
Max. well volume [µl]	3300	3300	3300	45
Lid	+	+	+	-
Quantity per bag/case	6/24	6/24	6/24	100

➔ New

➔ New

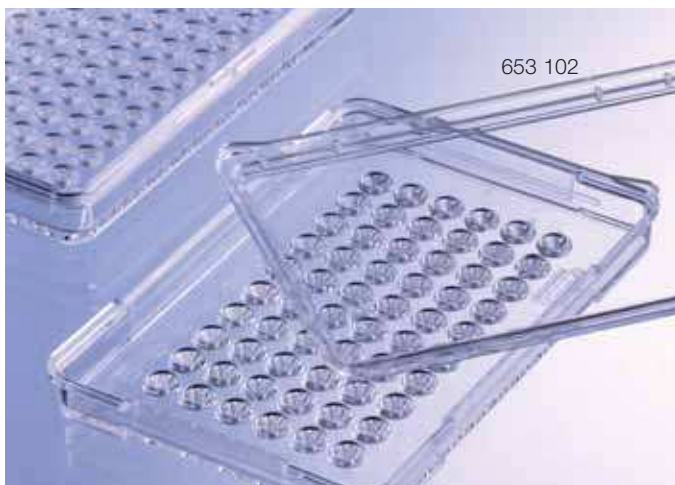
Cat.-No.	501 870	503 870
Description	round coverslips	round coverslips
Material properties	siliconised glass	siliconised glass
ø [mm]	18	22
Quantity per box/case	100/1000	100/1000

➔ New

➔ New

# Microbatch under Oil Applications

## 60 Well and 72 Well Terasaki Plates



### 60 Well / 72 Well Terasaki Plates

Surface-treated Terasaki Plates p. 3 | 13

#### 60 Well and 72 Well Terasaki Plates

Terasaki plates are widely used for microbatch crystallisation. The crystallisation drop is localised centrally as a result of the conical well geometry, and the flat well bottom makes for optimal monitoring (Fig. 10). The rim of the Terasaki plates makes it possible to fill all of the wells with oil at the same time. As a result of the small external dimensions and the low profile of the Terasaki plates, the space required for storage is relatively small. Terasaki plates are supplied with a fitting lid.

The plates are also supplied with surface treatment (→ p. 3 | 13). The treatment of the plates influences the sticking of the crystallisation drop to the bottom of the well.

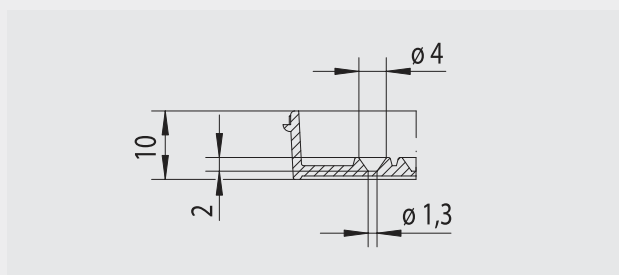


Figure 10: Well profile, Terasaki plate



Cat.-No.	653 102	654 102
Description	Terasaki plate	Terasaki plate
Format	60 well	72 well
Well profile	conical	conical
Well bottom	flat	flat
∅ Well bottom [mm]	1.3	1.3
Max. well volume [µl]	11.5	11.5
Length [mm] x width [mm] x height [mm]	83.3 x 58 x 10	83.3 x 58 x 10
Surface treatment	-	-
Quantity per bag/case	10/580	10/270

1 Cell/ Tissue Culture  
2 HTS- Microplates  
3 Immunology/ HLA  
4 Microbiology/ Bacteriology  
5 Tubes/Multi- Purpose Beakers  
6 Liquid Handling  
7 Molecular Biology  
8 Protein Crystallisation  
9 Separation  
10 Biochips/ Microfluidics  
11 Cryo-Technics  
12 Lids/Sealers/ Cap Mats  
13 Reaction Tubes/ Analyser Cups  
14 Accessories

## 96 Well and 1536 Well IMP@CT™ Plate

### IMP@CT™ Plates

IMP@CT™ plates are microplates for high-throughput crystallisation, specially designed for microbatch applications under oil. The IMP@CT™ crystallisation plates are characterised by conical wells with a flat bottom. The conical form of the wells has the effect of centrally localising the crystallisation drops, even when small sample volumes are used. The flat well bottom makes for optimal monitoring of the crystallisation samples. An appropriate lid is available.

### 96 Well IMP@CT™ Plate (Fig. 11)

The new 96 well IMP@CT™ plate was developed by Greiner Bio-One in cooperation with Hampton Research (USA) and Allan D'Arcy. The double rim of the plates means that the wells can be filled separately or together with oil. Filling the double rim of the IMP@CT™ plates with an aqueous gel makes it possible to control water evaporation from the crystallisation drops. The 96 well IMP@CT™ plate is also available as a black  $\mu$ Clear® version with a film bottom. This plate is characterised by extremely low light scattering between individual wells and by a low birefringence.

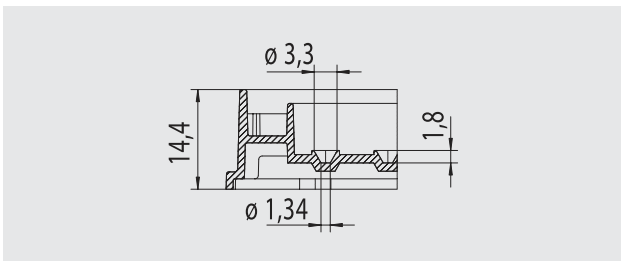


Figure 11: Well profile, 96 Well IMP@CT™ plate

### 1536 Well IMP@CT™ LBR Plate (Fig. 12)

The new 1536 well IMP@CT™ plate was developed in cooperation with the Hauptman-Woodward Medical Research Institute in Buffalo (USA) for use in automated high-throughput systems. The optimised well geometry means that even crystallisation drops with a very small volume are localised at the centre of the wells. Smooth, flat well bottoms provide optimum conditions for monitoring and evaluating crystallisation samples. The 1536 well IMP@CT™ LBR plate is suitable for use in polarised light.

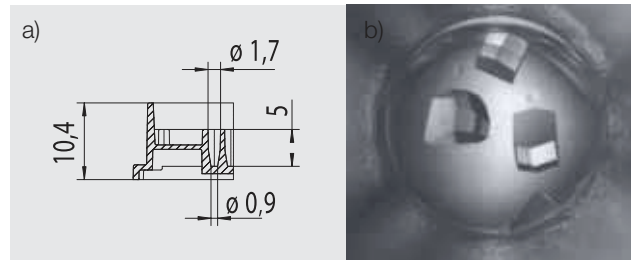


Figure 12a: Well profile, 1536 Well IMP@CT™ plate

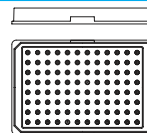
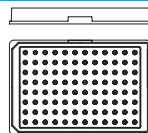
Figure 12b: Crystallisation of lysozyme in the 1536 well IMP@CT™ plate, with the kind approval of the Hauptman-Woodward Medical Research Institute, Buffalo (USA).



## 96 Well / 1536 Well IMP@CT™ Plate

↳ Lids and Sealers p. 12 | 2 ff.

■ Plate for crystallisation under oil



Cat.-No.	673 170	673 096	790 801
Description	IMP@CT™	IMP@CT™	IMP@CT™
Material properties	clear	black, $\mu$ Clear® bottom	clear, LBR
Format	96 well	96 well	1536 well
Max. well volume [ $\mu$ l]	8.0	8.0	10.1
$\phi$ Well bottom [mm]	1.33	1.33	0.9
Height [mm]	14.4	14.4	10.4
Quantity per bag/case	10/40	10/40	15/60

↳ New

↳ New