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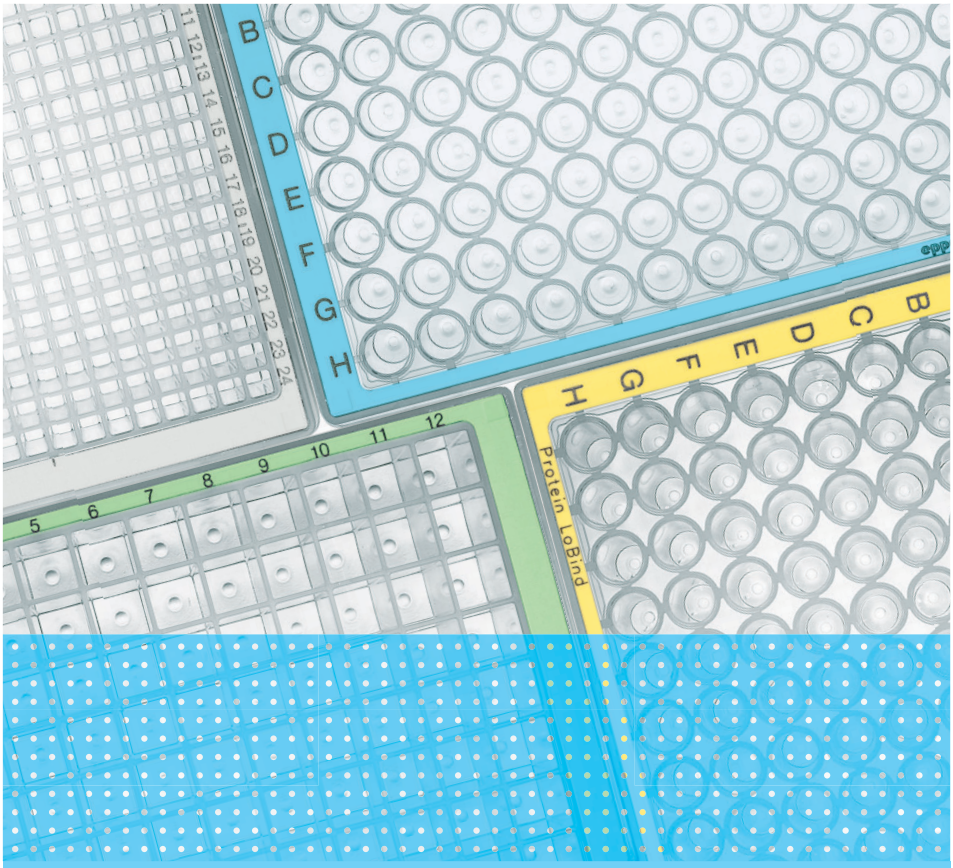

Deepwell Plates and Microplates

Instructions for Use

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1 About this manual

1.1 Notes on this manual

Pay attention to the corresponding operating manuals when using this product in combination with other products or devices. This document does not replace the instructions for use provided with other products or devices.

1. Before using the product, read this document in full.
2. Please ensure that you have this document available when using the product.

2 Safety

2.1 Intended use

Eppendorf Deepwell Plates and Microplates are uncoated polypropylene single-use items for the analysis, preparation, mixing, centrifugation, transport, and storage of solid and liquid samples and reagents. Eppendorf Deepwell Plates and Microplates are suitable for use in training, routine, and research laboratories in the chemical, industrial or Life Sciences sectors.

The product may only be used for research purposes. Eppendorf accepts no liability for the use of the product in other applications. It is not intended for use in diagnostic or therapeutic applications. Use of the Eppendorf Deepwell Plates and Microplates requires personnel who are trained and skilled in the areas mentioned above. Eppendorf Microplates are suitable for use in all standard plate readers.

2.2 Personal protective equipment

Personal protective equipment serves to ensure the safety and protection of the user when working with the product.

Personal protective equipment must comply with country-specific regulations and the regulations of the laboratory.

2.3 Residual risks when used as intended

If the product is not used as intended, the installed safety devices may not function correctly. To reduce the risk of personal injury and material damage and to avoid dangerous situations, please observe the general safety instructions.

2.3.1 Personal injury

2.3.1.1 Biological hazards

Pathogenic biological agents can harm your health and the environment.

- Observe the national regulations and the biosafety level of your laboratory.
- Wear suitable personal protective equipment.
- Observe the Safety Data Sheets and instructions for use for the accessories.
- For instructions regarding the handling of germs and biological material in risk group II or above, please refer to the "Laboratory Biosafety Manual" (source: World Health Organization, Laboratory Biosafety Manual, check the most current edition).

2.3.1.2 Chemical hazards

Leaking substances may present a risk to health.

- Only use the product when it appears to be undamaged and in perfect condition.
- Take note of the maximum filling volume.
- Remove seals carefully. When removing the selected sealing system, liquid may squirt out.
- Seal the plates before centrifugation. Observe the information in the operating manual provided with the device.
- Store and transport the product in such a way that ensures substances do not leak from the product.
- Do not use liquid nitrogen in combination with this product. The product and the seals may become damaged during the thawing process and burst.
- Do not use the product as a cryogenic tube.

Samples may become contaminated if the plates are used multiple times.

- Only use the plates once.
- Dispose of the plates after using them just once. Comply with the corresponding disposal regulations for the substances and samples used.
- Pay attention to the rules applicable for your laboratory.

Risk of contamination from damaged plates during centrifugation.

- During centrifugation, the plates are exposed to heavy loads. If used incorrectly, they may become damaged and release their substances.
- Take note of the maximum permitted centrifugation forces.
- Read the operating manual provided for the centrifuge used.
- Centrifuge stacked plates at a low speed only.
- Please note that organic solvents may reduce the mechanical strength of the plates.
- Carry out a test run to determine maximum centrifugation stability. Reduce the centrifugation forces for the test run.

2.3.2 Material damage

2.3.2.1 Incorrect handling

Use in incorrect temperature range

Extreme temperatures (e.g. when deep-freezing or autoclaving) influence the material. Mechanical strength, dimensions and the shape of the consumable change.

- Only use consumables that are suitable for the temperature range and procedure selected.

Sample loss due to incorrect equipment

Please note that the use of plates in incorrect equipment (e.g. incorrect rotor/adapter or mixer insert) may destroy the plates and lead to the plate contents leaking.

- Take note of the height and diameter of the plates. Only use suitable centrifuge inserts or mixer thermoblocks.
- Use the adapters intended for these plates.

3 Product description

Eppendorf Deepwell Plates and Microplates are uncoated polypropylene single-use items for the analysis, preparation, mixing, centrifugation, transport, and storage of solid and liquid samples and reagents. Eppendorf Microplates are suitable for use in all standard plate readers. Eppendorf Deepwell Plates and Microplates are characterized by a high chemical and temperature resistance and can be sealed when suitable sealing options are used. The plates meet the Microplate standard ANSI/SLAS 1-2004 to ANSI/ SLAS 4-2004.

3.1 Plate variants

LoBind

The LoBind Plates have been developed to facilitate an improved recovery rate. The material used for this purpose allows for a lower loss of target molecules. The outcome of the LoBind effect may vary greatly, depending on the specific application.

Forensic DNA Grade

The Forensic DNA Grade Plates have been designed to meet the strict requirements of forensic applications. They comply with ISO 18385. Testing is carried out by an external test laboratory (accredited according to ISO 17025). Lot-specific certificates record the purity criteria.

3.2 Barcoded plates

The Eppendorf twin.tec PCR Plates are also available with barcodes. Eppendorf SafeCode Plates are provided with barcodes and are available from stock. There is also the option of applying a customer-specific barcode.

Pre-barcoded plates (SafeCode)	**Customer-specific barcoded plates**
Pre-barcoded	Customer-specific barcodes
Available from stock	Production on request
Print	Label
ep-unique ID (serial number); unique for all Eppendorf SafeCode Consumable	Customer-specific ID (serial number)
Code 128 (2 letters + 10 digits)	Customer-specific choice of code 128 (8 or 10 digits), code 39, or Interleaved 2 of 5 Optional prefix

Pre-barcoded plates (SafeCode)	Customer-specific barcoded plates
2D DataMatrix Code on front side 1D barcode on both short sides and front side Plain text on front side	1D barcode and plain text as specified by customer possible on all four sides.
SafeCode Feature	No SafeCode Feature

3.3 SafeCode plates

The SafeCode plates comes with a code in the form of an ID. This ID corresponds to a serial number and is unique across all Eppendorf SafeCode Consumables, lots, Vials, tubes and plates. This facilitates a precise tracking of samples in the laboratory.

This ID links all the relevant production data and product-specific documents, such as lot number, technical data and certificate of conformity. This data can be accessed via the Eppendorf webpage at https://www.eppendorf.com/safecode-data (Service&Support > Quality and Certificates > Certificates).

Codes

The serial number is coded on the front with a 2D DataMatrix code and a 1D code. The 1D code is also located on the two short sides. The code is printed in black on a white background to ensure legibility and suitability for use in machinery, and is particularly resistant to scratching.

Eppendorf uses the Reed Solomon algorithm (ECC200 -Error Correcting Code) for the error correction of the DataMatrix code. The ECC200 DataMatrix symbology ensures that DataMatrix codes are still legible with surface damage of up to 25%. This code is unique within the Eppendorf SafeCode-Consumables portfolio and allows for the clear identification of samples. Use of the SafeCode-Consumables is also facilitated by the plain text (human readable code).

SafeCodes

The ep-unique ID SafeCode is a serial number issued by Eppendorf that is unique to every Eppendorf SafeCode Consumable. This also prevents any mix-up across lots or products (Eppendorf Vials, vessels and plates).

Characteristic	ep-unique ID SafeCode
DataMatrix format	14 × 14
Structure	ep-unique ID ep1234567890 ep + 10 digits
Availability	From stock
Code type	2D: Data Matrix, ECC200 1D: Code 128
Uniqueness	Unique for every Eppendorf SafeCode Consumable
DataMatrix format	14 × 14
ISO standard	Codes: ISO/IEC 16022, ISO/IEC 15417 Printed material: ISO/IEC 15416, ISO/IEC 29158

SafeCodes may become damaged and illegible due to scratching, fading, autoclaving and other influences.

SafeCode Consumables are not suitable for autoclaving. Autoclaving damages the SafeCode and can result in a loss of information.

Use

Check the compatibility of your system (reading device and software) before using the various SafeCode Consumables. Also check whether data is transmitted without error in your systems.

Multiple use of SafeCode Consumables can generate inconsistent data. This can lead to a loss of information and a mix-up of samples. Consider the consequences of losing information or mixing up the samples. Implement measures to reduce this risk where appropriate.

4 Technical data

	Deepwell Plates			
	96/2000 µL	**96/1000 µL**	**96/500 µL**	**384/200 µL**
Material	Polypropylene (colored, colorless)			
Chemical resistance	See Application No. 56: The best material for original Eppendorf Tubes® and Plates in our download center at www.eppendorf.com/manuals.			
Dimensions	In accordance with ANSI/SLAS 1-2004 to ANSI/SLAS 4-2004 (SLAS: Society for Laboratory Automation and Screening)			
Bottom shape	Conical	Round	Round	Conical
Total theoretical volume per well	2400 µL	1200 µL	700 µL	240 µL
Operating volume per well	50-2000 µL	30-1000 µL	30-550 µL	20-225 µL
Autoclavability	121 °C, 20 min, in unsealed state. The dimensional accuracy of the single-use items may be impaired. Autoclaving is not recommended for the SafeCode Consumables and customer-specific barcoded plates, as the durability of the marking may be impaired.			
Storage before use	Protect against sunlight and UV light. Store in a cool, dry place.			
Storage of samples	Store the plate with sample in an upright position only. The maximum filling volume at low temperatures may only reach 80% of the nominal volume.			
	1600 µL	800 µL	440 µL	180 µL
Operating temperature	-86 °C- 100 °C			

	Microplates				
	96/F	**96/U**	**96/V**	**384/F**	**384/V**
Material	Polypropylene (colored, colorless)				
Chemical resistance	See Application No. 56: The best material for original Eppendorf Tubes® and Plates in our download center at www.eppendorf.com/manuals.				
Dimensions	In accordance with ANSI/SLAS 1-2004 to ANSI/SLAS 4-2004 (SLAS: Society for Laboratory Automation and Screening)				
Bottom shape	Flat	Round	Conical	Flat	Conical
Total theoretical volume per well	400 µL	360 µL	350 µL	150 µL	140 µL
Working volume per well	50-350 µL	20-320 µL	20-300 µL	10-120 µL	5-120 µL
Autoclavability	121 °C, 20 min, in unsealed state. The dimensional accuracy of the single-use items may be impaired. Autoclaving is not recommended for the SafeCode Consumables and customer-specific barcoded plates, as the durability of the marking may be impaired.				
Storage before use	Protect against sunlight and UV light. Store in a cool, dry place.				
Storage of samples	Store the plate with sample in an upright position only. The maximum filling volume at low temperatures may only reach 80% of the nominal volume.				
	280 µL	256 µL	240 µL	96 µL	96 µL
Operating temperature	-86 °C- 100 °C				

Current certificates can be found at www.eppendorf.com.

4.1 Centrifugation stability

The centrifugation stability of consumables generally depends on the following conditions:

- Characteristics of the consumable (e.g. material, shape)
- Combination of centrifuge and rotor, and possibly adapter

- Fitting accuracy of consumable in rotor bore or adapter
- Centrifugation parameters (rotational speed/g-force, temperature, centrifugation time)
- Total weight of consumables and content
- Physical and chemical properties of centrifuged liquid

Check the integrity of the consumable after centrifugation.

In uncooled centrifuges, the temperature in the rotor chamber, rotor, and sample may exceed 40 °C, depending on run time, g-force (rcf)/rotational speed, and ambient temperature.

– Therefore, pay attention to decreasing centrifugation stability of the micro test tubes and plates.
– Take note of the temperature resistance of the samples.

The use of organic solvents will reduce the mechanical strength of the tubes.

– In order to determine the maximum centrifugation stability for your applications, carry out a test run with lower g-force.

Centrifugability at 4°C - 40°C

The plates can be centrifuged under the following conditions at the maximum g-forces (rcf) listed in the table below:

- in a swing-bucket rotor
- 40 °C sample temperature with diluted saline solution (density 1.0 g/mL)
- 90 min

	PCR clean **Protein LoBind** **DNA LoBind**	**Sterile**
Eppendorf Deepwell Plates	6 000 × g	5 000 × g
Eppendorf Microplates	6 000 × g	6 000 × g

The centrifugation stability of every plate type generally depends on the plate itself, on the centrifuge, rotor, rotor suspension, adapter, maximum revolution/maximum gravitational field, operating temperature, centrifugation time, density of centrifuged liquid, organic solvents, total cumulative weight, and correct operation.

4.2 Eppendorf purity grade

	PCR clean	Sterile
Batch testing (certified) for following purity criteria:		
Human DNA-free	■	
DNase-free	■	
RNase-free	■	
PCR inhibitor-free	■	
Pyrogen-free (endotoxin-free)		■
Sterile (Ph.Eur./USP)		■

In addition to the internal process controls, every product batch with purity grade Steril, Protein-free, PCR clean or Biopur is inspected and certified by an accredited external laboratory. Batch-related certificates are available online at: www.eppendorf.com/certificates.

5 Ordering information

Eppendorf Deepwell Plates and Microplates are also available with the following options:

- Deepwell Plates: additional border colors (yellow, green, or blue)
- Bulk packages
- With barcoding on request (www.eppendorf.com/barcode).

Ordering information for appropriate closure options you can find at www.eppendorf.com.

You can find further product information in our catalog, on our webpage www.eppendorf.com and at the Eppendorf Application Support.

Eppendorf Assay/Reader Microplates

Description	Order no.
Microplate 384/V	
wells white	
PCR clean, gray, 80 plates (5 bags × 16 plates)	0030 621 670
wells black	
PCR clean, white, 80 plates (5 bags × 16 plates)	0030 621 905
Microplate 96/F	
wells white	
PCR clean, gray, 80 plates (5 bags × 16 plates)	0030 601 475
wells black	
PCR clean, white, 80 plates (5 bags × 16 plates)	0030 601 700
Microplate 96/U	
wells white	
PCR clean, gray, 80 plates (5 bags × 16 plates)	0030 601 572
wells black	
PCR clean, white, 80 plates (5 bags × 16 plates)	0030 601 807
Microplate 96/V	
wells white	
PCR clean, gray, 80 plates (5 bags × 16 plates)	0030 601 670
wells black	
PCR clean, white, 80 plates (5 bags × 16 plates)	0030 601 904

Eppendorf Deepwell Plates

Description	Order no.
Deepwell Plate 384/200 µL	
wells clear, 200 µL	
PCR clean, white, 40 plates (5 bags × 8 plates)	0030 521 102
sterile, white, 40 plates (5 bags × 8 plates)	0030 522 109
PCR clean, white, 120 plates (10 bags × 12 plates)	0030 525 108
sterile, white, 120 plates (10 bags × 12 plates)	0030 526 104
Deepwell Plate 96/1000 µL	
wells clear, 1,000 µL	
PCR clean, white, 20 plates (5 bags × 4 plates)	0030 501 209
PCR clean, yellow, 20 plates (5 bags × 4 plates)	0030 501 217
PCR clean, green, 20 plates (5 bags × 4 plates)	0030 501 233
PCR clean, blue, 20 plates (5 bags × 4 plates)	0030 501 241
sterile, white, 20 plates (5 bags × 4 plates)	0030 502 205
sterile, yellow, 20 plates (5 bags × 4 plates)	0030 502 213
sterile, green, 20 plates (5 bags × 4 plates)	0030 502 230
sterile, blue, 20 plates (5 bags × 4 plates)	0030 502 248
PCR clean, white, 80 plates (10 bags × 8 plates)	0030 505 204
sterile, white, 80 plates (10 bags × 8 plates)	0030 506 200
Deepwell Plate 96/2000 µL	
wells clear, 2,000 µL	
PCR clean, white, 20 plates (5 bags × 4 plates)	0030 501 306
PCR clean, yellow, 20 plates (5 bags × 4 plates)	0030 501 314
PCR clean, green, 20 plates (5 bags × 4 plates)	0030 501 330
PCR clean, blue, 20 plates (5 bags × 4 plates)	0030 501 349
sterile, white, 20 plates (5 bags × 4 plates)	0030 502 302
sterile, yellow, 20 plates (5 bags × 4 plates)	0030 502 310
sterile, green, 20 plates (5 bags × 4 plates)	0030 502 337
sterile, blue, 20 plates (5 bags × 4 plates)	0030 502 345

Description	Order no.
PCR clean, white, 80 plates (10 bags × 8 plates)	0030 505 301
sterile, white, 80 plates (10 bags × 8 plates)	0030 506 308
Deepwell Plate 96/500 µL	
wells clear, 500 µL	
PCR clean, white, 40 plates (5 bags × 8 plates)	0030 501 101
PCR clean, yellow, 40 plates (5 bags × 8 plates)	0030 501 110
PCR clean, green, 40 plates (5 bags × 8 plates)	0030 501 136
PCR clean, blue, 40 plates (5 bags × 8 plates)	0030 501 144
sterile, white, 40 plates (5 bags × 8 plates)	0030 502 108
sterile, yellow, 40 plates (5 bags × 8 plates)	0030 502 116
sterile, green, 40 plates (5 bags × 8 plates)	0030 502 132
sterile, blue, 40 plates (5 bags × 8 plates)	0030 502 140
PCR clean, white, 120 plates (10 bags × 12 plates)	0030 505 107
sterile, white, 120 plates (10 bags × 12 plates)	0030 506 103

Eppendorf Microplates

Description	Order no.
Microplate 384/F	
wells clear, RecoverMax® well design	
PCR clean, white, 80 plates (5 bags × 16 plates)	0030 621 107
sterile, white, 80 plates (5 bags × 16 plates)	0030 622 103
Microplate 384/V	
wells clear, RecoverMax® well design	
PCR clean, white, 80 plates (5 bags × 16 plates)	0030 621 301
sterile, white, 80 plates (5 bags × 16 plates)	0030 622 308
Microplate 96/F	
wells clear, RecoverMax® well design	
PCR clean, white, 80 plates (5 bags × 16 plates)	0030 601 106
sterile, white, 80 plates (5 bags × 16 plates)	0030 602 102

Description	Order no.
Microplate 96/U	
wells clear, RecoverMax® well design	
PCR clean, white, 80 plates (5 bags × 16 plates)	0030 601 203
sterile, white, 80 plates (5 bags × 16 plates)	0030 602 200
Microplate 96/V	
wells clear, RecoverMax® well design	
PCR clean, white, 80 plates (5 bags × 16 plates)	0030 601 300
sterile, white, 80 plates (5 bags × 16 plates)	0030 602 307

Protein LoBind Plates

Description	Order no.
Deepwell Plate 384/200µL	
Protein LoBind®, wells colorless, 200 µL	
PCR clean, white, 40 plates (5 bags × 8 plates)	0030 524 101
PCR clean, white, 120 plates (10 bags × 12 plates)	0030 528 107
Deepwell Plate 96/1000 µL	
Protein LoBind®, wells colorless, 1,000 µL	
PCR clean, white, 20 plates (5 bags × 4 plates)	0030 504 208
PCR clean, yellow, 20 plates (5 bags × 4 plates)	0030 504 216
PCR clean, white, 80 plates (10 bags × 8 plates)	0030 508 203
Deepwell Plate 96/2000 µL	
Protein LoBind®, wells colorless, 2,000 µL	
PCR clean, white, 20 plates (5 bags × 4 plates)	0030 504 305
Deepwell Plate 96/500 µL	
Protein LoBind®, wells colorless, 500 µL	
PCR clean, white, 40 plates (5 bags × 8 plates)	0030 504 100
PCR clean, yellow, 40 plates (5 bags × 8 plates)	0030 504 119
PCR clean, white, 120 plates (10 bags × 12 plates)	0030 508 106

Description	Order no.
Microplate 384/V-PP	
Protein LoBind®, wells clear, 140 µL	
PCR clean, white, 80 plates (5 bags × 16 plates)	0030 624 300
PCR clean, white, 240 plates (10 bags × 24 plates)	0030 628 306

DNA LoBind Plates

Description	Order no.
Deepwell Plate 384/200µL	
DNA LoBind®, wells clear, 200 µL, LoBind®	
PCR clean, white, 40 plates (5 bags × 8 plates)	0030 523 105
PCR clean, white, 120 plates (10 bags × 12 plates)	0030 527 100
Deepwell Plate 96/1000µL	
DNA LoBind®, wells clear, 1,000 µL, LoBind®	
PCR clean, white, 20 plates (5 bags × 4 plates)	0030 503 201
PCR clean, blue, 20 plates (5 bags × 4 plates)	0030 503 244
PCR clean, white, 80 plates (10 bags × 8 plates)	0030 507 207
Deepwell Plate 96/500µL	
DNA LoBind®, wells clear, 500 µL, LoBind®	
PCR clean, white, 40 plates (5 bags × 8 plates)	0030 503 104
PCR clean, blue, 40 plates (5 bags × 8 plates)	0030 503 147
PCR clean, white, 120 plates (10 bags × 12 plates)	0030 507 100
Microplate 384/V-PP	
DNA LoBind®, wells clear, 140 µL, LoBind®	
PCR clean, white, 80 plates (5 bags × 16 plates)	0030 623 304
PCR clean, white, 240 plates (10 bags × 24 plates)	0030 627 300
Microplate 96/V-PP	
DNA LoBind®, wells clear, 350 µL, LoBind®	
PCR clean, white, 80 plates (5 bags × 16 plates)	0030 603 303

SafeCode Consumables

Description	Order no.
Deepwell Plate 384/200 µL wells clear, 200 µL, 2D SafeCode PCR clean, white, 40 plates (5 bags × 8 plates)	0030 113 551
Deepwell Plate 96/1000 µL wells clear, 1,000 µL, 2D SafeCode PCR clean, white, 20 plates (5 bags × 4 plates)	0030 113 535
Deepwell Plate 96/2000 µL wells clear, 2,000 µL, 2D SafeCode PCR clean, white, 20 plates (5 bags × 4 plates)	0030 113 527
Deepwell Plate 96/500 µL wells clear, 500 µL, 2D SafeCode PCR clean, white, 40 plates (5 bags × 8 plates)	0030 113 543

SafeCode Microplates

Description	Order no.
Microplate 384/V wells clear, 2D SafeCode, RecoverMax® well design PCR clean, white, 80 (5 × 16)	0030 113 594
Microplate 96/V wells clear, 2D SafeCode, RecoverMax® well design PCR clean, white, 80 plates (5 bags × 16 plates)	0030 113 586

www.eppendorf.com

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