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Blotting Products:
Whether you are blotting for proteomics, testing for diseases, analyzing genetic mutations or profiling DNA, our blotting products are extensively used around the world.

Blotting Products

Whatman offers an extensive line of blotting products for all of your application requirements. This includes premium blotting membranes and blotting devices for screening many samples on one membrane.

Blotting Membranes

An extensive line of premium transfer membranes is available, used in a wide range of applications.

Colony and Plaque Lift Membranes

Circular membranes are offered in a variety of membrane types, ideal for colony hybridization and plaque lift applications.

Protran nitrocellulose, Optitran reinforced nitrocellulose and Nytran SPC and N nylon membranes are available in disc formats. These membranes provide high signal intensities and low backgrounds and are compatible with isotopic and non-isotopic detection methods. Nytran and Optitran membranes offer high strength for assays where multiple reprobings are required.

The 82 mm and 87 mm sizes are designed to fit 100 mm plates; 132 and 137 mm fit 150 mm plates.

Features and Benefits

- Wide variety of membranes available in circular format
- High signal and low backgrounds in colony and plaque lift applications
- Available in sizes to fit 100 and 150 mm plates
- Butterfly membranes have asymmetric notches (tabs) for easier handling, improved orientation and identification of colony and plaque lifts

Butterfly™ Membranes

Ordering Information - Colony and Plaque Lift Membranes

Catalog Number	Pore Size (µm)	Diameter (mm)	Quantity/Pack
Nytran SuPerCharge			
10 416 216	0.45	82	50
10 416 264	0.45	87	50
10 416 224	0.45	132	50
Nytran N			
10 416 116	0.45	82	50
10 416 124	0.45	132	50
10 416 147	0.45	137	50
Nytran SPC Nylon - Non-printed Butterfly membrane			
10 416 249	0.45	82	50
Optitran Supported Nitrocellulose - BA-S 83			
10 439 316	0.2	82	50
Optitran Supported Nitrocellulose - BA-S 85			
10 439 116	0.45	82	50
10 439 124	0.45	132	25
10 439 126	0.45	132	50
Protran Nitrocellulose - BA83			
10 401 316	0.2	82	50
10 402 426	0.2	132	50
Protran Nitrocellulose - BA85			
10 401 116	0.45	82	50
10 402 579	0.45	82.5	50
10 401 164	0.45	87	50
10 401 124	0.45	132	25
10 402 525	0.45	132	50
10 401 147	0.45	137	25
10 402 548	0.45	137	50
10 405 316	0.45 (5 mm grid)	82	50

Nytran® Nylon Membranes

Whatman Nytran nylon membranes are available in two formats. The Nytran N is moderately charged and the Nytran SuPerCharge (SPC) has a very high positive charge.

Nytran Nylon

The Whatman Nytran Nylon membrane is ideal for applications that require a lower charge. It is designed for Southern and Northern blotting as well as colony and plaque lifts and Dot-/Slot-Blots. Nytran N is compatible with isotopic and non-isotopic detection methods.

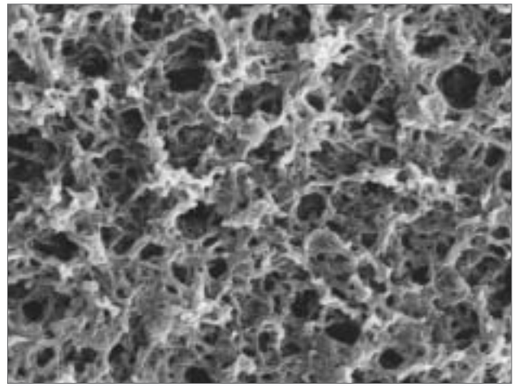
Nytran N membrane allows for excellent signal-to-noise ratios. The membrane is cast uniformly on both sides of a support matrix, demonstrating excellent symmetry. This gives the membrane the ability to lie flat without curling. Nytran N membrane is a highly consistent membrane with uniform pore size and distribution. It is available in 0.2 µm and 0.45 µm pore sizes for optimal retention of oligos and larger DNA fragments.

Nytran Nylon N Membranes

Nytran SuPerCharge (SPC)

Nytran SPC nylon membranes have a very high positive charge. Improvements in the manufacturing process result in a membrane with a higher density of nylon per unit area. The increased charge and greater nylon density provide increased binding sites for your samples.

Nytran SPC membranes show a very uniform pore size and pore distribution compared to typical nylon membranes. They are free of surface microvoids which are common in other membranes. These characteristics lead to greater reproducibility of results across a membrane and from blot to blot.



Nytran SuPerCharge nylon membrane (1250x magnification)

Nytran SPC membrane is cast uniformly on both sides of a support matrix, demonstrating excellent symmetry. This gives the membrane the ability to lie flat without curling.

With typical manufacturing techniques, increasing positive charge tends to increase background. Nytran SPC membranes are manufactured using a process that allows the combination of high positive charge with low background. Whether using radioactive or non-radioactive detection techniques, Nytran SPC consistently gives high signal with extremely low background.

Ordering Information - Nytran N Nylon Membranes*

Catalog Number	Pore Size (µm)	Dimensions	Quantity/Pack
Circles			
10 416 116	0.45	82	50
10 416 124	0.45	132	50
10 416 147	0.45	137	50
Sheets			
10 416 085	0.2	20 x 20 cm	10
10 416 063	0.2	25 x 25 cm	10
10 416 080	0.2	30 x 60 cm	5
10 416 185	0.45	20 x 20 cm	10
10 416 130	0.45	11 x 14 cm	10
10 416 163	0.45	25 x 25 cm	10
10 416 180	0.45	30 x 60 cm	5
10 416 188	0.45	10.2 x 13.3 cm[1]	10
Rolls			
10 416 094	0.2	20 cm x 3 m	1
10 416 096	0.2	30 cm x 3 m	1
10 416 194	0.45	20 cm x 3 m	1
10 416 196	0.45	30 cm x 3 m	1

Ordering Information - Nytran SuPerCharge (SPC) Nylon Membranes*

Catalog Number	Pore Size (µm)	Dimensions	Quantity/Pack
Circles			
10 416 216	0.45	82	50
10 416 264	0.45	87	50
10 416 224	0.45	132	50
10 416 249	0.45	82 (Butterfly format)	50
Sheets			
10 416 289	0.45	10 x 15 cm	10
10 416 287	0.45	15 x 20 cm	10
10 416 285	0.45	20 x 20 cm	10
10 416 230	0.45	11 x 14 cm	10
10 416 284	0.45	15 x 15 cm	10
10 416 263	0.45	25 x 25 cm	10
10 416 280	0.45	30 x 60 cm	5
10 416 288	0.45	10.2 x 13.3 cm[1]	10
10 416 293	0.45	6.3 x 22.8 cm[2]	10
10 416 291	0.45	22.2 x 22.2 cm[3]	48
Rolls			
10 416 294	0.45	20 cm x 3 m	1
10 416 296	0.45	30 cm x 3 m	1
Microwell Plate Format			
10 416 257	0.45	82 x 120 mm Black Grid	10

* Nytran binding capacity: >400 µg/cm²

[1] The corners are notched for use with the Minifold I System

[2] Cut to fit the Minifold II Slot-Blot System

[3] Macroarray membrane size

Optitran® Nitrocellulose Membranes

Reinforced Nitrocellulose Membranes

Optitran membranes consist of pure 100% nitrocellulose cast onto both sides of an inert polyester support material. The support in no way affects transfer conditions or results and gives the membrane exceptional handling characteristics, allowing it to be reprobed repeatedly.

The Optitran nitrocellulose membrane provides high sensitivity with very low non-specific binding. Using standard nitrocellulose protocols, stringent washing and blocking conditions are not necessary.

The combination of flexibility, strength and excellent signal-to-noise ratios makes the Optitran membrane ideal, especially when experiments involve repeated stripping and reprobing.

Optitran supported nitrocellulose membranes combine sensitivity, strength and savings.

Optitran Nitrocellulose Membranes

Ordering Information - Optitran Nitrocellulose Membranes*

Catalog Number	Pore Size (µm)	Dimensions	Quantity/Pack
Circles			
Optitran - BA-S 83			
10 439 316	0.2	82	50
Optitran - BA-S 85			
10 439 116	0.45	82	50
10 439 126	0.45	132	50
10 439 124	0.45	132	25
Sheets			
Optitran - BA-S 83			
10 439 388	0.2	10.2 x 13.3 cm[1]	10
10 439 351	0.2	15 x 15 cm	5
10 439 361	0.2	20 x 20 cm	5
10 439 391	0.2	20 x 20 cm	25
10 439 362	0.2	25 x 25 cm	5
10 439 380	0.2	30 x 60 cm	5
Optitran - BA-S 85			
10 439 188	0.45	10.2 x 13.3 cm[1]	10
10 439 251	0.45	15 x 15 cm	5
10 439 282	0.45	20 x 20 cm	5
10 439 191	0.45	20 x 20 cm	25
10 439 262	0.45	25 x 25 cm	5
10 439 180	0.45	30 x 60 cm	5

contd >

Catalog Number	Pore Size (µm)	Dimensions	Quantity/Pack
Rolls			
Optitran - BA-S 83			
10 439 394	0.2	20 cm x 3 m	1
10 439 396	0.2	30 cm x 3 m	1
Optitran - BA-S 85			
10 439 194	0.45	20 cm x 3 m	1
10 439 196	0.45	30 cm x 3 m	1

* Optitran binding capacity: 75-90 µg/cm^2; autoclavable (liquid cool cycle)
[1] The corners are notched for use with the Minifold I System

Protran® Nitrocellulose Membranes

100% Pure Nitrocellulose Membranes

Protran nitrocellulose membranes are the most frequently specified transfer media in the world for a wide range of applications. Protran membranes are manufactured using 100% pure nitrocellulose to ensure the highest binding capacity possible.

Protran Nitrocellulose Membrane

Other membranes referred to as 'nitrocellulose' may actually contain large amounts of cellulose acetate which will lower the protein binding capacity. Protran membranes have the best handling strength of all pure nitrocellulose membranes. They are compatible with a variety of detection methods, including isotopic, chemiluminescent (luminol-based), colorimetric and fluorescent.

Unlike PVDF membranes, Protran nitrocellulose does not require a methanol pre-wetting step. This makes Protran the membrane of choice for proteins which prefer aqueous environments. Prior to transfer, the membrane is simply wetted in water, and then placed in the transfer buffer. No other pre-treatment steps are necessary.

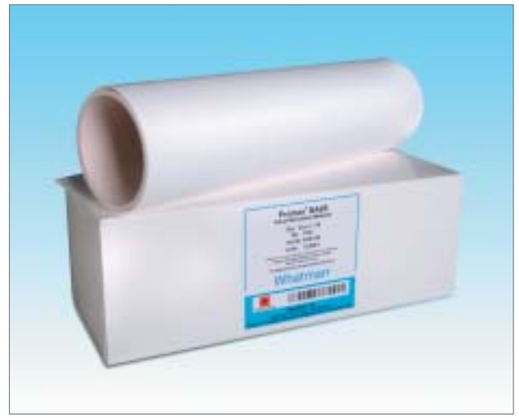
High Binding, Low Background

In addition to high binding capacity, Protran nitrocellulose membranes inherently have very low background. The superior surface properties of the membrane guarantee superior signal-to-noise ratios, without the need for stringent washing conditions.

High Retention of Small Proteins

The 0.2 µm pore size of the Protran (BA83) nitrocellulose membrane ensures high retention of small proteins below 20 kD by reducing 'blow-through'. The 0.45 µm pore size membrane (BA85) is ideal for larger molecular weight samples. BA79, with 0.1 µm pore size, is the membrane of choice for smaller proteins below 7 kD.

A unique benefit of the proprietary Protran nitrocellulose formula is the proven excellent shelf life of proteins. Empirical evidence shows that proteins maintain molecular recognition activity for five years on Protran.



Protran BA85 Nitrocellulose Membrane

Ordering Information - Protran Nitrocellulose Membranes*

Catalog Number	Pore Size (µm)	Dimensions	Quantity/Pack
Circles			
Protran - BA83			
10 401 316	0.2	82	50
10 402 426	0.2	132	50
Protran - BA85			
10 402 506	0.45	25	100
10 402 578	0.45	25	1000
10 401 116	0.45	82	50
10 402 579	0.45	82.5	50
10 401 164	0.45	87	50
10 401 124	0.45	132	25
10 402 525	0.45	132	50
10 401 147	0.45	137	25
10 402 548	0.45	137	50
10 405 316**	0.45 (5 mm grid)	82	50
Protran - BA85 Butterfly - Phosphor-printed			
10 401 166	0.45	82	50
Sheets			
Protran - BA79			
10 402 088	0.1	10.2 x 13.3 cm[1]	10
10 402 093	0.1	6.3 x 22.8 cm^2	10
10 402 062	0.1	20 x 20 cm	5

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Catalog Number	Pore Size (µm)	Dimensions	Quantity/Pack
10 402 091	0.1	20 x 20 cm	25
10 484 212	0.1	33 x 56 cm	5
Protran - BA83			
10 402 488	0.2	10.2 x 13.3 cm[1]	10
10 402 493	0.2	6.3 x 22.8 cm[2]	10
10 402 405	0.2	15 x 15 cm	5
10 401 465	0.2	15 x 20 cm	10
10 402 452	0.2	20 x 20 cm	5
10 401 391	0.2	20 x 20 cm	25
10 402 453	0.2	25 x 25 cm	5
10 401 380	0.2	30 x 60 cm	5
10 402 480	0.2	33 x 56 cm	5
Protran - BA85			
10 402 588	0.45	10.2 x 13.3 cm[1]	10
10 402 593	0.45	6.3 x 22.8 cm[2]	10
10 402 606	0.45	15 x 15 cm	5
10 401 261	0.45	15 x 15 cm	25
10 402 680	0.45	20 x 20 cm	5
10 401 191	0.45	20 x 20 cm	25
10 402 694	0.45	25 x 25 cm	5
10 401 180	0.45	30 x 60 cm	5
10 402 580	0.45	33 x 56 cm	5
Rolls			
Protran - BA79			
10 402 096	0.1	30 cm x 3 m	1
Protran - BA83			
10 402 468	0.2	15 cm x 3 m	1
10 402 495	0.2	20 cm x 3 m	1
10 401 396	0.2	30 cm x 3 m	1
Protran - BA85			
10 402 594	0.45	15 cm x 3 m	1
10 401 197	0.45	20 cm x 3 m	1
10 401 196	0.45	30 cm x 3 m	1

* Protran binding capacity: 75-110 µg/cm²; autoclavable (liquid cool cycle)
** 5 mm grid
[1] Fits Minifold® I System
[2] Fits Minifold® II System

Westran® PVDF Membranes

Whatman Westran PVDF membranes are available in two formats: the Westran S used for protein sequencing and the Westran Clear Signal used for Western blotting.

Westran S

Westran S PVDF is a 0.2 µm pore size hydrophobic membrane designed specifically for protein sequencing applications. The small pore size of this membrane eliminates 'blow-through' and increases protein retention over a wide range of molecular weights.

Westran PVDF Membranes

Features and Benefits

- Protein binding capacity (over 200 µg/cm²) for easy signal detection
- Chemical resistance needed for N-terminal sequencing
- High protein retention even after harsh wash steps
- Maximum capture of proteins during transfers minimizing sample loss
- 0.2 µm pore size for better retention of low molecular weight proteins
- Compatible for use with Western blotting applications
- Available in popular pre-cut sizes for your application

Westran Clear Signal

Westran Clear Signal PVDF is a 0.45 µm membrane specifically designed for Western blotting and protein dot-blotting applications.

Features and Benefits

- Protein binding ability 125 µg/cm²
- Extremely low backgrounds with chemiluminescent and colorimetric applications providing you with clear signals and sharp bands
- Excellent results with general protein stains such as Coomassie® Brilliant Blue, Amido Black, and Ponceau S Red
- Increased strength allows for multiple stripping and reprobing, which results in savings

Ordering Information - Westran PVDF Membranes

Catalog Number	Pore Size (µm)	Dimensions	Quantity/Pack
Westran S			
Sheets			
10 413 052	0.2	10 x 10 cm	10
10 485 290	0.2	15 x 15 cm	10
10 485 291	0.2	20 x 20 cm	10
Roll			
10 413 096	0.2	26 cm x 3 m	1
Westran Clear Signal			
Sheets			
10 485 286	0.45	10 x 10 cm	10
10 485 287	0.45	15 x 15 cm	10
10 485 288	0.45	20 x 20 cm	10
Roll			
10 485 289	0.45	30 cm x 3 m	1
Microwell Plate 96 Well Format			
10 413 054	0.2	74 x 116 mm	10

PVDF - polyvinylidene fluoride

Blotting Papers

Whatman 3MM Chr paper is the world's most widely used blotting paper.

This acceptance and usage reflect the high quality, purity and consistency that are relied upon by researchers doing Southern, Northern and Western transfers. 3MM Chr paper is now available in the most widely used sizes. A medium thickness paper (0.34 mm) used extensively in electrophoresis for lifting of sequencing gels.

3MM Chr

GB003
A general purpose blotting paper made from pure raw materials with a high absorbency used as a membrane gel support. A thick (0.8 mm) paper recommended for the lysis/denaturation of colony or plaque lifts and Western blots.

GB004
A thick gel blotting paper (1.0 mm) used for wicking purposes only. Provides higher absorbency and more consistent wicking than paper towels. Recommended for applications where fewer layers of gel blotting paper must still ensure a high capacity. Fewer layers of blotting paper reduce the risk of trapping air bubbles. Recommended for capillary blotting of nucleic acids.

GB005
A thick (1.2 mm) highly absorbent paper recommended for applications where fewer layers of blotting paper must still ensure a high capacity. Recommended for semi-dry blotting of proteins.

Gel Blot Paper

17 Chr
A thick (0.92 mm) and highly absorbent paper.

31 ET Chr
An extremely fast and thick paper (0.5 mm) with a fairly soft surface.

Features and Benefits

- Pure cellulose produced entirely from the highest quality cotton linters with no additives of any kind. Ensures that no contamination will occur during the transfer steps.
- Manufactured and tested specifically for chromatographic techniques. This ensures the wicking capability and uniformity of capillary action that is important in obtaining clean and even transfers during blotting.
- Whatman 3MM Chr is considered the industry standard for blotting procedures
- Convenient sizes available in sheets precisely cut to the most popular gel and transfer membrane sizes. Allows 'out-of-the-box' usage and eliminates sheet-to-sheet variations.

Ordering Information - Pure Cellulose Blotting Sheets

Size (cm)	Catalog Number	Quantity/Pack
3MM Chr Blotting Sheets		
11 x 14	3030-6185	100
12 x 14	3030-6132	100
15 x 17.5	3030-153	100

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Size (cm)	Catalog Number	Quantity/Pack
15 x 20	3030-6188	100
18 x 34	3030-221	100
20 x 20	3030-861	100
26 x 41	3030-6461	100
35 x 43	3030-347	100
35 x 45	3030-392	100
31.5 x 35.5	3030-335	100
46 x 57	3030-917	100
58 x 68	3030-931	100
4" x 5 ¼"	3030-6189	100
6" x 8"	3030-6187	100
8" x 10"	3030-866	100
GB003 Blotting Sheets		
10 x 10	10 426 880	50
10.2 x 13.3[1]	10 427 824	100
15 x 15	10 427 810	100
15 x 20	10 427 812	100
16 x 18	10 427 813	100
20 x 20	10 427 818	100
30 x 60	10 426 890	25
46 x 57	10 427 826	100
58 x 60	10 426 892	50
GB004 Blotting Sheets		
7 x 10	10 484 124	100
10 x 15	10 427 900	100
11 x 14	10 427 902	100
12 x 14	10 427 904	100
15 x 15	10 427 910	100
15 x 20	10 427 912	100
15 x 25	10 427 914	100
20 x 20	10 427 918	100
20 x 24	10 427 920	100
20 x 25	10 427 922	100
46 x 57	10 427 926	100
GB005 Blotting Sheets		
15 x 15	10 426 972	25
20 x 20	10 426 981	25
58 x 58	10 426 994	25
17 Chr Blotting Sheets		
2.5 x 22	3017-8793	100
46 x 57	3017-917	100
46 x 57	3017-915	25
31 ET Chr Blotting Sheets		
46 x 57	3031-915	25

Ordering Information - Pure Cellulose Blotting Rolls

Length (m) x Width (cm)	Catalog Number	Quantity/Pack
3MM Chr Blotting Rolls		
100 x 2	3030-614	1
100 x 7.5	3030-662	1
100 x 10	3030-672	1
100 x 12.5	3030-675	1
100 x 15	3030-681	1
100 x 19	3030-690	1
100 x 23	3030-700	1
100 x 27	3030-704	1

[1] Corners are notched for use with the Minifold® I Dot Blot System

Blotting Devices

Whatman offers a line of blotting devices to simplify your testing processes. These provide a method for screening many samples on one membrane.

The product line includes the TurboBlotter™ for rapid downward transfers and the Minifold Systems for Dot-, Spot- and Slot-Blot techniques.

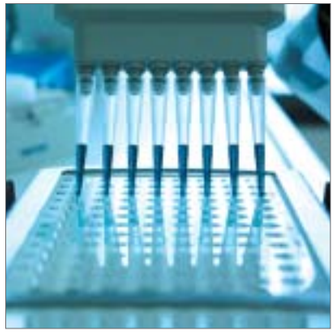
Minifold® I System

Superior 96 and 48 Well Manifolds for Proteins and Nucleic Acids: Dot-, Spot- and Slot-Blot Array Systems

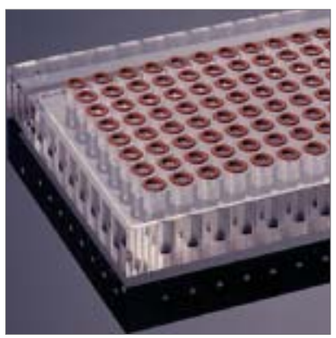
The Minifold I system consists of four basic components: sample well plate, filter support plate, vacuum plenum and metal clamping plate. The sample well plate is available in three configurations for producing spots, dots or slots.

The Minifold I System is compatible with multichannel pipettes. All three plates are interchangeable and can be purchased as an accessory plate or in conjunction with a complete system. The tension on the clamping is adjustable, permitting use of a variety of blotting and filtration media.

Minifold I Dot-Blot System - 96 Well
Unique O-ring design - ensures discrete dot formation without leakage of samples by cross lateral flow.



Minifold I System



Minifold I Dot-Blot System - 96 Well

Generates even, uniform dots that eliminates uneven test areas resulting from manual sample application.

Two materials available - standard acrylic or autoclavable Delrin®.

Minifold I Spot-Blot System - 96 Well

Small volume required - sample volumes as low as 25 µL can be applied using less of your precious sample.

Very high signal intensity - 2 mm² sample application area results in increased signal intensity.

Standard microtitration format - 96 samples on a single membrane, same as the standard Minifold Dot-Blot System.

Minifold I Spot-Blot System - 96 Well

Minifold I Slot-Blot System - 48 Well

Preferred format for densitometric scanning, since slots can be easily quantitated.

Concentrated signal - 6 mm² sample application area results in high signal intensity.

Easy to survey format - 48 samples on your membrane are easier to view than 96 samples.

Minifold I Slot-Blot System - 48 Well

Specifications - Minifold I System

Description	Material	Filter Area	Max Capacity	Pressure
96 Well Dot-Blot Plate	Acrylic or Delrin	12.5 mm² dot	500 µL/well, 96 wells	0.9 bar, vacuum
96 Well Spot-Blot Plate	Acrylic	2 mm² spot (1 x 2 mm)	200 µL/well, 96 wells	0.9 bar, vacuum
48 Well Slot-Blot Plate	Acrylic	6.24 mm² slot (7.8 x 0.8 mm)	1000 µL/well, 48 wells	0.9 bar, vacuum

Ordering Information - Minifold® I

Description	Quantity/Pack	Catalog Number
Complete Systems		
Minifold I Spot-Blot* System, complete 96 Well (Acrylic)	1	10 447 850
Minifold I Dot-Blot* System, complete 96 Well (Acrylic)	1	10 447 900
Minifold I Slot-Blot* System, complete 48 Well (Acrylic)	1	10 447 941
Minifold I Dot-Blot* System, complete 96 Well (Delrin)	1	10 447 910

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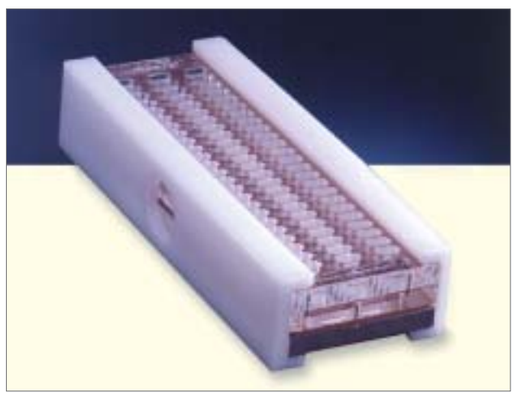
Description	Quantity/Pack	Catalog Number
Replacement Parts		
Minifold I Spot-Blot Plate	1	10 447 852
Minifold I Slot-Blot Plate	1	10 447 906
Minifold I Dot-Blot Plate	1	10 447 905
Minifold I Clamping Plate	1	10 447 960
Filter Support Plate	1	10 447 903
Vacuum Plenum	1	10 447 968
O-rings	50	10 447 902
Accessory Products		
Incubation Plate	1	10 447 909
Cutting Template	1	10 447 901
Membranes - 10.2 x 13.3 cm to fit Minifold I Systems		
Protran, BA79 0.1 µm	10	10 402 088
Protran, BA83 0.2 µm	10	10 402 488
Protran, BA85 0.45 µm	10	10 402 588
Optitran, BA-S 83 0.2 µm	10	10 439 388
Optitran, BA-S 85 0.45 µm	10	10 439 188
Nytran N, 0.45 µm	10	10 416 188
Nytran SuPerCharge, 0.45 µm	10	10 416 288
GB003 Blotting Paper	100	10 427 824

* Complete systems include: manifold apparatus, 5 sheets of Protran, 5 sheets of pre-cut 3MM Chr paper
Delrin is a registered trademark of DuPont

Minifold® II System

72 Well Slot-Blot Array System

The Minifold II System is designed for precise, quantitative solid-phase assays with three rows of 24 slots, spaced according to multi-tip pipette format. The smaller slot surface area results in higher signal intensity and requires less sample than standard dot-blot formats. The resulting blot can be read with a densitometer.



72 Well Slot-Blot Array System

Features and Benefits

- Higher signal intensity - smaller slot surface area results in increased signal
- Less sample - small slot dimensions require less sample than dot-blotters
- Faster results - more intense signal generated with the slot-blotter allows one to visualize results in less time

- Accepts all types of transfer membranes - allows for choice of membrane with the highest binding capacity
- Easy to assemble - beveled side rails assure rapid and accurate assembly

Specifications - Minifold II System

Material	Membrane Size	Filter Area	Capacity	Pressure
Acrylic	6.3 cm x 22.8 cm	6.0 mm²/well (0.75 mm x 8.0 mm slots)	600 µL/slot	0.9 bar, vacuum

Ordering Information - Minifold II System

Description	Quantity	Catalog Number
Minifold® II Slot-Blot System, Complete*	1	10 447 800
Replacement Parts		
Sample Well Plate	1	10 447 801
Vacuum Filter Support with ¼" Vacuum Tube Adapter	1	10 447 864
Silicone O-Ring	1	10 447 813
Silicone Sheet	5	10 447 805
Vacuum Connector	1	10 447 866
Membranes and Blotting Paper - 6.3 x 22.8 cm to fit Minifold II System		
Protran BA79, 0.1 µm	10	10 402 093
Protran BA83, 0.2 µm	10	10 402 493
Protran BA85, 0.45 µm	10	10 402 593
Nytran SPC, 0.45 µm	10	10 416 293

* Complete system includes manifold apparatus, five sheets of pre-cut Protran BA85 nitrocellulose and five sheets of pre-cut 3MM Chr paper

TurboBlotter™

Rapid Downward Transfer System

The TurboBlotter system is a rapid downward blotting device for high-resolution transfer of DNA and RNA.

The conventional Southern transfer stack has been turned upside down in order to take advantage of gravity. No heavy weights are required on the top of the transfer stack, eliminating the messy set-up of standard upward capillary transfers.

TurboBlotter

The TurboBlotter System offers greater speed, target resolution and convenience versus traditional blotting procedures. Alkaline DNA transfers can be performed in as little as one hour, while neutral (SSC) transfers of DNA and RNA take only three hours.

TurboBlotter Set-up

Features and Benefits

- Rapid - unique downward capillary transfer allows for alkaline buffer transfers in one hour and neutral (SSC) transfers in three hours
- Economical - reusable blotting device requires less buffer and blotting paper. Convenient refill packs available.
- Compact - has a smaller footprint than most homemade devices and is stackable. Up to five units can be stacked on top of each other during transfers
- Easy to use - very easy to set up and works without power or vacuum source

Each TurboBlotter System contains a transfer device, as well as the blotting paper and membranes for five transfers. The refill packs contain the blotting paper and membranes for five transfers.

Ordering Information - TurboBlotter System

Description	Size	Catalog Number
The TurboBlotter Systems below each include one 12 x 16 cm transfer device, which can accommodate gel sizes from 7 x 8 cm to 11 x 14 cm.		
Nytran SuPerCharge TurboBlotter Kits*	7 x 10 cm	10 416 328
	9 x 11 cm	10 416 336
	10 x 15 cm	10 416 300
	11 x 14 cm	10 416 304
Nytran SuPerCharge TurboBlotter Refill**	7 x 10 cm	10 416 330
	9 x 11 cm	10 416 338
	10 x 15 cm	10 416 302
	11 x 14 cm	10 416 306
The TurboBlotter Systems below each include one 21 x 26 cm transfer device, which can accommodate gel sizes from 12 x 21 cm to 20 x 25 cm.		
Nytran SuPerCharge TurboBlotter Kits*	12 x 21 cm	10 416 308
	15 x 15 cm	10 416 312
	15 x 20 cm	10 416 316
	20 x 20 cm	10 416 320
	20 x 25 cm	10 416 324

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Description	Size	Catalog Number
Nytran SuPerCharge TurboBlotter Refills**	12 x 21 cm	10 416 310
	15 x 15 cm	10 416 314
	15 x 20 cm	10 416 318
	20 x 20 cm	10 416 322
	20 x 25 cm	10 416 326

* Each TurboBlotter Kit includes: transfer device, 5 sheets of membrane, 40 sheets of 3MM Chr, 100 sheets of GB004 and 5 wicks of 3MM

** TurboBlotter Refills include: 5 sheets of membrane, 40 sheets of 3MM Chr, 100 sheets of GB004 and 5 wicks of 3MM

Blotting Accessories

Whatman offers a line of blotting accessories to simplify your testing processes. The product line includes membrane marking pens and reaction folders (sealable hybridization bags).

Membrane Marking Pen

For Marking Nitrocellulose and Nylon Transfers

The membrane marking pen is a high-xylene, felt-tipped marker that permanently writes on nitrocellulose and nylon membranes used in standard transfer procedures.

This indispensable tool ensures easy identification and orientation of gel transfers, colony and plaque lifts and Western blots, even when membrane is damp. It is compatible with hybridization and incubation buffers. An ideal marker for keeping records of transfers.

Membrane Marking Pen

Ordering Information - Membrane Marking Pen

Description	Quantity/Pack	Catalog Number
Membrane Marking Pen	10	10 499 001

Reaction Folders

Sealable Hybridization Bags

Whatman Reaction Folders are sealable bags for hybridization and incubation reactions.

The folders are open on three sides to allow easier insertion of a wet membrane when compared to standard hybridization bags. The folders can be sealed with a standard heat-sealer. Available in 8" x 10" size.

Sealable Hybridization Bags

Ordering Information - Reaction Folders

Description	Size	Quantity/Pack	Catalog Number
Reaction Folders	20.3 cm x 25.4 cm (8" x 10")	50	10 483 064

Waste Reduction

Whatman offers products to safely reduce waste and protect the laboratory environment. This includes the Extractor® System for removal of ethidium bromide from gel-staining solutions and Benchkote, an absorbent, impermeable material designed to protect laboratory surfaces.

Benchkote® and Benchkote Plus™

Benchkote

Benchkote is an absorbent, impermeable material designed to protect laboratory surfaces against hazardous spills. The material features a high-quality, smooth, absorbent Whatman paper which quickly absorbs liquid spills and a laminated polyethylene layer that prevents flow through to the working surface. After use the sheet is incinerated or disposed of according to local regulations.

Benchkote Plus

Benchkote Plus is a thicker, more absorbent material for more demanding applications and can absorb in excess of 0.75 liters of water per square meter.

Features and Benefits

- Material is very strong, making it tear resistant, wet or dry
- Smooth white surface can be written on with ink or pencil and lies flat
- Suitable for saturation with disinfectant to protect benches where pathogens and other bacteria are present
- Use polyethylene side up to collect deposits without absorption
- Paper side quickly absorbs liquids, preventing them from reaching the working surface
- Spillages are trapped in the absorbent paper
- Benchkote can be picked up and burnt very easily after use; the polyethylene layer does not melt or drip but is rapidly consumed in the flames
- Complies with OSHA Regulation 29CFR 1910.1030 for Occupational Exposure to Bloodborne Pathogens

Benchkote

Applications

- Containing radiochemical spillage and avoiding contamination
- Recovering spillage of expensive materials
- Protecting hard surfaces to lessen impact
- Water or solvent wick for humidity chambers
- Lining of chemical cabinets, laboratory bench drawers and laboratory hoods

Ordering Information - Benchkote and Benchkote Plus

Catalog Number	Description	Dimensions	Quantity/Pack
Benchkote			
2300-916	Sheets	46 cm x 57 cm	50
2300-594	Pads	46 cm x 57 cm	50
2300-731	Reel	46 cm x 50 m	1
2300-772	Reel	92 cm x 50 m	1
Benchkote Plus			
2301-6150	Sheets	50 cm x 60 cm	50
2301-6160	Reel	60 cm x 50 m	1

Extractor™ EtBr System

Ethidium Bromide (EtBr) Waste Reduction System

The Extractor System is a one-step filtration funnel device for the rapid removal of ethidium bromide from gel-staining solutions.

This disposable unit contains an activated carbon matrix, which removes >99% of ethidium bromide from electrophoretic buffer quickly and easily. Each device can decontaminate up to 10 liters of gel-staining solution. After filtration, the decontaminated solution can be safely poured down the laboratory drain.

The Extractor funnel device fits most standard laboratory flasks and bottles (neck size 33-45 mm), and the unit includes a cap for storage between uses. The polypropylene housing is chemically resistant to organics. Also included in the package are glass fiber pre-filters, which remove gel pieces and other debris to avoid premature clogging of the carbon filter.

Extractor EtBr System

Ordering Information - Extractor EtBr System

Description	Quantity/Pack	Catalog Number
Extractor - Starter Pack	2	10 448 030
Extractor - Standard Pack	6	10 448 031