Table 2. Characteristics of our Western blotting membranes.

Membrane type	Applications and uses	Reprobe characteristics	Binding interaction
Nitrocellulose membranes	Western, Southern and Northern blots, amino acid analysis, dot/slot blots	Can be stripped and reprobed	Hydrophobic and electrostatic
PVDF membranes (including Invitrogen™ Invitrolon™ membranes)	Western blots, protein sequencing, amino acid analysis, solid-phase assays	Can be stripped and reprobed	Hydrophobic
Nylon	Southern, Northern and Western blots	Can be stripped and reprobed	Ionic, hydrophobic and electrostatic
iBlot 2 Transfer Stack, Nitrocellulose Membrane	Western blots	Can be stripped and reprobed	Hydrophobic and electrostatic
iBlot 2 Transfer Stack, PVDF Membrane	Western blots	Can be stripped and reprobed	Hydrophobic

Nitrocellulose membranes

High protein-binding affinity, compatibility with a variety of detection methods, and binding affinity of proteins and glycoproteins make nitrocellulose a popular matrix. Protein immobilization on the membrane is thought to occur by hydrophobic interactions. Use of high salt and low methanol concentrations in transfer conditions improves protein immobilization on the membrane, especially with proteins of higher molecular weights.

Nitrocellulose membranes for Western blotting

We offer a variety of nitrocellulose membranes that fit most of your transfer needs, including transfer stacks, pre-cut and roll formats. A comparison of the various offerings can be found in Table 3.

Features:

- **High quality** — pure, 100% nitrocellulose membranes with high surface area and excellent uniformity
- **Selection** — available in 0.2µm and 0.45µm pore sizes for peptide and protein applications, respectively
- **Convenient** — available as ready-to-use, pre-assembled membrane/filter paper sandwiches, as several sizes of pre-cut sheets or as economically priced rolls for cutting to any dimension
- **High sensitivity** — provides high-affinity protein binding, blocks easily and exhibits very low background in chemiluminescent Western blotting

Learn more at thermofisher.com/membranes

For ordering information refer to page 42.

Table 3. Applications and specifications for our nitrocellulose membranes.

Specs	Pre-cut nitrocellulose						Nitro-cellulose roll	Ready-to-use sandwich		iBlot 2 Transfer Stacks	
Cat. No.	**77012**	**88013**	**88024**	**77010**	**88014**	**88025**	**88018**	**LC2009 LC2000**	**LC2006 LC2001**	**IB23002**	**IB23001**
Number of transfers	25	15	15	25	15	15	84 (7.9 × 10.5cm)	16	16	10	10
Quantity	25	15	15	25	15	15	1 roll	16	16	10	10
Pore size	0.2	0.2	0.2	0.45	0.45	0.45	0.45	0.2	0.45	0.2	0.2
Dimensions	8 x 12cm	7.9 x 10.5cm	8 x 8cm	8 x 12cm	7.9 x 10.5cm	8 x 8cm	30cm x 3.5m	8.5 x 13.5cm	8.5 x 13.5cm	8 x 8cm	8.3 x 13cm
Application	Western transfer of proteins <20kDa			Western transfer of proteins >20kDa				Western transfer of proteins <20kDa	Western transfer of proteins >20kDa	For use with iBlot 2 Gel Transfer Device	
Reprobe characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

PVDF membranes

PVDF membrane is ideal for Western blotting applications as well as for amino acid analysis and protein sequencing of small amounts of proteins (as little as 10pmol). PVDF membranes are highly hydrophobic and must be pre-wetted with methanol or ethanol prior to submersion in transfer buffer. PVDF membranes have a high binding affinity for proteins, with binding likely occurring via dipole and hydrophobic interactions, and offer better retention of adsorbed proteins than other supports. PVDF is also less brittle than nitrocellulose and can be stripped and reprobed without a loss of sensitivity or increased background.

PVDF membranes for Western blotting

We offer a variety of PVDF membranes that fit most of your transfer needs, including transfer stacks, pre-cut and roll formats. A comparison of the various offerings can be found in Table 4.

Features:

- **High quality** — PVDF transfer membranes manufactured especially for protein transfer and Western blot applications and more resistant to discoloration than other commercially available PVDF membranes
- **Durable** — PVDF is compatible with most organic solvents, acids and mild bases; doesn't tear or become brittle like nitrocellulose
- **Selection** — available in 0.2µm and 0.45µm pore sizes; available as ready-to-use, pre-assembled membrane/filter paper sandwiches, as pre-cut sheets or as economically-priced rolls for cutting to any dimension
- **Versatile** — compatible with chemiluminescent, chromogenic and fluorescent Western blot detection

While our 0.2µm PVDF membrane performs well for Western blotting, amino acid analysis and protein sequencing applications, our high-quality 0.45µm PVDF membrane is suited for high sensitivity and low background immunoblotting. For fluorescent blotting applications, choose the Thermo Scientific™ Pierce™ Low-Fluorescence PVDF Transfer Membranes. These membranes are made of high-quality polyvinylidene difluoride and provide high binding capacity for proteins and nucleic acids for Western, Southern and Northern blotting methods.

Blotting paper

Blotting (or filter) paper is an essential component for the transfer sandwich in wet and semi-dry electroblotting methods. The filter paper is first wetted in transfer buffer before building the transfer sandwich. The paper serves to aid wicking transfer buffer through the gel, helping the proteins move out of the gel onto the membrane. Dry electrotransfer conditions do not use filter paper.

Blotting paper should be made of high-quality materials so that it doesn't contribute to possible background issues during the Western blotting detection step. The paper thickness may also be of concern with some transfer systems.

Pierce Western Blotting Filter Papers

Thermo Scientific™ Pierce™ Western Blotting Filter Papers are pre-cut cotton sheets for wet or semi-dry, passive or electrophoretic transfer of proteins from polyacrylamide gels (SDS-PAGE) to PVDF, nitrocellulose or other membranes. Pierce Filter Papers are suitable for use with alcohol or other organic solvents commonly used in protein and nucleic acid blotting applications. Extra-thick paper is available for optimal wicking under certain transfer conditions.

Features:

- **High quality** — clean cotton cellulose fiber paper manufactured with additive-free ultrapure water to minimize sources of background signal and artifacts
- **Easy to use** — pre-cut filter paper sheets in several convenient sizes for use with most mini-gel sizes, tank transfer cassettes and semi-dry blotters
- **Validated** — tested for use with various protein methods, including wet and semi-dry transfer
- **Two thicknesses** — choose standard-thickness paper for traditional procedures; choose extra-thick filter paper for high-capacity blotting or as a replacement for multiple sheets

Learn more at thermofisher.com/filterpaper

For ordering information refer to page 42.

Table 4. Applications and specifications for our PVDF membranes.

Specs	Invitrolon PVDF	0.2µm PVDF	Pre-cut PVDF membrane		PVDF rolls		iBlot 2 Transfer Stacks		Tropifluor PVDF
Cat. No.	LC2005	LC2002	88585	22860	88518	88520	IB24001	IB24002	T2234
Number of transfers	20	20	10	10	111 (8 x 10cm)	111 (8 x 10cm)	10		5
Quantity	20 membrane/ filter paper sandwiches	20 membrane/ filter paper sandwiches	10 pre-cut PVDF sheets	10 pre-cut PVDF sheets	1 roll	1 roll	10 transfer stacks		5 precut sheets
Pore size	0.45µm	0.2µm	0.45µm	0.2µm	0.45µm	0.2µm	0.2µm	0.2µm	0.45µm
Dimensions	8.3 x 7.3cm	8.3 x 7.3cm	10 x 10cm	7 x 8.4cm	26.5cm x 3.75m roll	26.5cm x 3.75m roll	13 x 8.3cm	8 x 8cm	15 x 15cm
Binding capacity	Goat IgG: 294µg/cm^2 BSA: 131µg/cm^2 Insulin: 85µg/cm^2	50–150µg/cm^2 for large, globular proteins >150µg/cm^2 for smaller peptides	Goat IgG: 294µg/cm^2 BSA: 215µg/cm^2 Insulin: 160µg/cm^2	NT†	IgG: 294µg/cm^2 BSA: 215µg/cm^2 Insulin: 160µg/cm^2	Goat IgG: 448µg/cm^2 BSA: 340µg/cm^2 Insulin: 262µg/cm^2	240µg protein/cm^2		125µg protein/cm^2
Application	Optimal Western blot transfers for proteins >10kDa Protein sequencing Amino acid analysis	Western blot transfers Protein sequencing Amino acid analysis Solid-phase assay systems	Western blot transfers Protein sequencing Amino acid analysis	Fluorescence Western blotting	Western blot transfers Protein sequencing Amino acid analysis	Western blot transfers Protein sequencing Amino acid analysis	For use with the iBlot 2 Gel Transfer Device		Western blotting with dioxetane-based detection including Invitrogen™ CSPD™ or CDP-Star™ substrates
Reprobe characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes

†not tested

Ordering information

Pre-transfer

Product	Quantity	Cat. No.
Membranes		
Ready-to-use sandwiches		
Nitrocellulose/Filter Paper Sandwich, 0.2µm pore size, 8.5 x 13.5cm	16/pack	LC2009
Nitrocellulose/Filter Paper Sandwich, 0.45µm pore size, 8.5 x 13.5cm	16/pack	LC2006
iBlot 2 Transfer Stacks, Nitrocellulose, Mini	10 stacks	IB23002
iBlot 2 Transfer Stacks, Nitrocellulose, Regular	10 stacks	IB23001
iBlot 2 Transfer Stacks, PVDF, Mini	10 stacks	IB24002
iBlot 2 Transfer Stacks, PVDF, Regular	10 stacks	IB24001
Pre-cut nitrocellulose membranes		
Nitrocellulose Pre-Cut Blotting Membranes, 0.2µm pore size	20/pack	LC2000
Nitrocellulose Pre-Cut Blotting Membranes, 0.45µm pore size	20/pack	LC2001
Nitrocellulose Membrane, 0.2µm, 8 x 12cm	25 sheets	77012
Nitrocellulose Membrane, 0.2µm, 7.9 x 10.5cm	15 sheets	88013
Nitrocellulose Membrane, 0.2µm, 8 x 8cm	15 sheets	88024
Nitrocellulose Membrane, 0.45µm, 8 x 12cm	25 sheets	77010
Nitrocellulose Membrane, 0.45µm, 7.9 x 10.5cm	15 sheets	88014
Nitrocellulose Membrane, 0.45µm, 8 x 8cm	15 sheets	88025
Nitrocellulose rolls		
Nitrocellulose Membrane, 0.45µm, 30cm x 3.5m	1 roll	88018
Pre-cut PVDF membranes		
Invitrolon PVDF/Filter Paper Sandwich, 0.45µm pore size, 8.3 x 7.3cm (for mini gels)	20/pack	LC2005
Invitrolon PVDF/Filter Paper Sandwich, 0.45µm pore size, 8.5 x 13.5cm	16/pack	LC2007
Low-Fluorescence PVDF Transfer Membrane, 0.2µm, 7 x 8.4cm	10 sheets	22860
PVDF Pre-cut Blotting Membranes, 0.2µm pore size	20/pack	LC2002
PVDF Transfer Membrane, 0.45µm, 10 x 10cm	10 sheets	88585

Pre-transfer

Product	Quantity	Cat. No.
Tropifluor PVDF Membrane, 0.45µm pore size, 15 X 15cm	5 sheets	T2234
PVDF rolls		
PVDF Transfer Membrane, 0.2µm, 26.5cm x 3.75m	1 roll	88520
PVDF Transfer Membrane, 0.45µm, 26.5cm x 3.75m	1 roll	88518
Filter paper for blotting		
Western Blotting Filter Paper, 8 x 10.5cm	100 sheets	88600
Western Blotting Filter Paper, 7 x 8.4cm	100 sheets	84783
Western Blotting Filter Paper, 8 x 13.5cm	100 sheets	84784
Western Blotting Filter Paper, Extra Thick, 7 x 8.4cm	50 sheets	88605
Western Blotting Filter Paper, Extra Thick, 8.5 x 9cm	50 sheets	88610
Western Blotting Filter Paper, Extra Thick, 8 x 13.5cm	50 sheets	88615
Western Blotting Filter Paper, Extra Thick, 20 x 20cm	50 sheets	88620
Blotting Filter Papers, 2.5mm thickness, 8.6 x 13.5cm	50 each	LC2008
Blotting Filter Papers, 2.5mm thickness, 7.5 x 8.4cm	50 sheets	LC2010
Protein ladders		
PageRuler Plus Prestained Protein Ladder, 10 to 250kDa SDS-PAGE	2 x 250µL	26619
PageRuler Plus Prestained Protein Ladder, 10 to 250kDa SDS-PAGE	10 x 250µL	26620
PageRuler Prestained Protein Ladder, 10 to 180kDa SDS-PAGE	2 x 250µL	26616
PageRuler Prestained Protein Ladder, 10 to 180kDa SDS-PAGE	10 x 250µL	26617
HiMark Pre-stained Protein Standard, 30 to 460kDa, SDS-PAGE	250µL	LC5699
Spectra Multicolor Broad Range Protein Ladder, SDS-PAGE	10 x 250µL	26623
Spectra Multicolor Broad Range Protein Ladder, SDS-PAGE	2 x 250µL	26634
Spectra Multicolor High Range Protein Ladder, SDS-PAGE	2 x 250µL	26625