



Thermo Scientific Immunoassay Plate Guide

- Passive binding of biomacromolecules
- Covalent coupling of smaller biomolecules
- Capture of affinity-tagged biomolecules

the right surface
for your assay

Thermo
SCIENTIFIC



the right surface for your assay

Advanced Immunoassay Surface Technology

The functionality of Thermo Scientific immunoassay products lies in the surface and design

This Guide provides information about passive binding surfaces for biomacromolecules, covalent coupling surfaces for smaller biomolecules and affinity capture surface for affinity-tagged biomolecules.

Immunoassay techniques are extremely sensitive and contain detection limits in the range of 10 fmol. In order to obtain accurate, reproducible, and positive results, it is essential that you choose the appropriate surface with optimized conditions. By choosing a Thermo Scientific plate, you benefit from more than 30 years of industry leading experience in immunoassay plate technology, and a broad range of surfaces and formats to optimize your assay.

When selecting a plate

A number of points need to be taken into consideration when selecting your assay plate: the type of biomolecule, surface and plate format (strip or solid), color (clear, black or white), well volume, and instrument compatibility (pinchbar or regular flange).

To find the best immunoassay plate for your application, please visit our online plate selection tool.

www.thermoscientific.com/plateguide

Well Configuration



Compatible with monochromatic reading
• F-well (Flat bottom)



For easier washing
• C-well (Modified F-bottom)

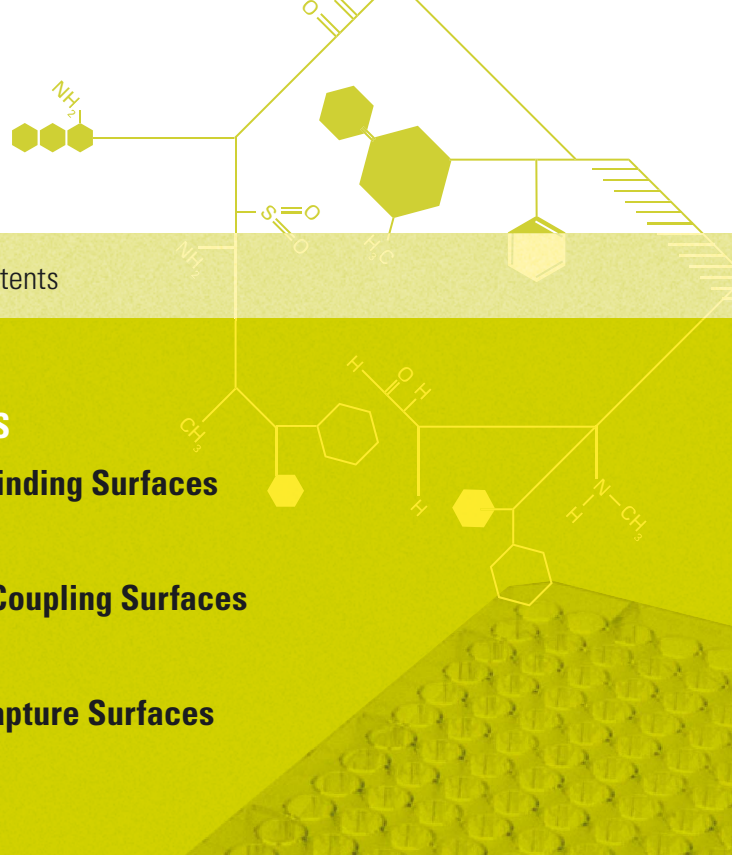


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For protocols and technical notes, please visit
www.thermoscientific.com/oemdiagnostics



For optimal washing
 (use dual beam reader)
 • U-well (Round bottom)



For increased surface/volume ratio
 and increased sensitivity
 • StarWell bottom

Passive Binding Surfaces

Passive surfaces have a broad range of applications as they can bind to a variety of biomolecules. Passive binding is primarily suited for the immobilization of medium to large sized molecules, such as antibodies, which are capable of establishing several contact points. The exact molecular interaction sites are dependent on the specific matching of the biomolecule's structure with the polymer surface structure. A large variety of biomolecules can be immobilized on passive surfaces with good residual activity.

The family of Thermo Scientific passive surfaces vary in their degree of hydrophilicity and are organized into four different sub-groups: hydrophobic, slightly hydrophilic, hydrophilic, and very hydrophilic. A hydrophobic surface functions predominately via hydrophobic binding. As the surface is made more hydrophilic by the incorporation of oxygen containing functional groups, electrostatic interactions can play a greater role in binding, thus influencing which types of biomolecules will bind strongly to the surface (see Table on Page 5).

A wide variety of surfaces are available
for performance optimization

This table provides general guidelines for the selection of passive surfaces for the immobilization of particular biomolecules.

Passive Category

Hydrophobic

These surfaces are typically used for the adsorption of hydrophobic molecules such as lipid rich biomolecules.

Slightly hydrophilic

The slight hydrophilicity of these plates enhances their ability to bind a diverse range of biomolecules, including glycoproteins, serum containing samples and amphoteric molecules such as lipopolysaccharides. With these plates non-specific adsorption of serum containing samples are reduced and this will improve the signal to noise (S/N) ratio and consequently, sensitivity levels.

Hydrophilic

Optimized to bind high amounts of IgG (polyclonal), these plates are ideal for antibody sandwich assays (e.g., ELISAs). In addition, they show increased binding of many other proteins and biomolecules that possess hydrophilic/hydrophobic characteristics.

Very hydrophilic

The most hydrophilic in our portfolio, many hydrophilic proteins will bind with a high affinity to these plates. Binding does, however, tend to be more pH sensitive.



▶▶▶ PASSIVE BINDING SURFACE CHARACTERISTICS

- **Adsorb larger biomolecules**
- **A large number of molecular orientations is possible**

BIOMOLECULE

The likelihood of effectively immobilizing a biomolecule on a particular surface is indicated in the table below.

Surface	Immunoglobulins	Proteins (water soluble)	Proteins (less water soluble)	Glycans
PolySorp	Fair	Fair	Very Good	Low
Immulon 1 B	Fair	Fair	Very Good	Low
Universal Binding (UB)	Fair	Fair	Very Good	Low
Microlite 1+	Fair	Fair	Very Good	Low
Microfluor 1	Fair	Fair	Very Good	Low
Immulon 2 HB	Good	Good	Good	Fair
Microlite 2+	Good	Good	Good	Fair
Microfluor 2	Good	Good	Good	Fair
MediSorp	Good	Good	Good	Fair
MaxiSorp*	Very Good	Very Good	Fair	Good
Immulon 4 HBX	Very Good	Very Good	Fair	Good
Enhanced Binding (EB)	Very Good	Very Good	Fair	Good
MultiSorp	Low	Good	Fair	Good

* Optimized for IgG binding

Passive Binding Surfaces

Hydrophobic

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Slightly hydrophilic

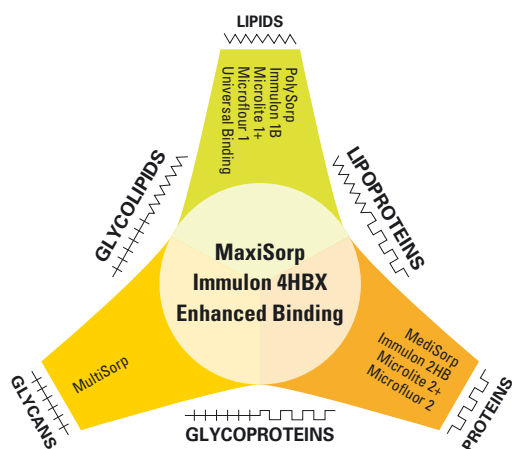
The slight hydrophilicity of these plates enhances their ability to bind a diverse range of biomolecules, including glycoproteins, serum containing samples and amphoteric molecules such as lipopolysaccharides. With these plates, non-specific adsorption of serum containing samples are reduced and this will improve the signal to noise (S/N) ratio and consequently, sensitivity levels.

Hydrophilic

Optimized to bind high amounts of IgG (polyclonal), these plates are ideal for antibody sandwich assays (e.g., ELISAs). In addition, they show increased binding of many other proteins and biomolecules that possess hydrophilic/hydrophobic characteristics.

Very hydrophilic

The most hydrophilic in our portfolio, many hydrophilic proteins will bind with a high affinity to these plates. Binding does, however, tend to be more pH sensitive.



Surfaces for passive binding

Schematic to the left is a representation of the types of biomacromolecules which can be bound to the available modified surfaces. E.g. if a lipid is to be bound the hydrophobic surface PolySorp is most suitable. Based on the physicochemical characteristics of the biomolecule to be immobilized, a surface can be chosen which is appropriate for robust binding. As is indicated in the diagram, MaxiSorp has the widest breadth applications as it is capable of binding the greatest range of molecules.

Passive binding surfaces

Name	Base Polymer	Hydrophilicity	Binding Preference
<ul style="list-style-type: none"> ○ PolySorp △ Immulon 1 B* △ Microlite 1+* △ Microfluor 1* △ Universal Binding (UB) 	Polystyrene	Low	Biomolecules that have hydrophobic domains, e.g. lipids, lipoproteins, large proteins
<ul style="list-style-type: none"> ○ MediSorp* △ Immulon 2 HB* △ Microlite 2+* △ Microfluor 2* 	Polystyrene	Fair	Biomolecules with hydrophilic/hydrophobic properties, e.g. medium to large proteins such as albumin. Amphiphilic biomolecules such as LPS
<ul style="list-style-type: none"> ○ MaxiSorp* △ Immulon 4 HBX* △ Enhanced Binding (EB)* 	Polystyrene	Good	Biomolecules with hydrophilic/hydrophobic properties. Designed for high binding of IgG. Also high binding for many other proteins and biomolecules that have hydrophilic/hydrophobic character
○ MultiSorp	Polystyrene	Very good	Hydrophilic biomolecules, e.g. glycoproteins
○ TopYield	Polycarbonate	Fair	Proteins with mixed hydrophobic/hydrophilic regions. e.g. immunoglobulins

○ Thermo Scientific Nunc
△ Thermo Scientific Microtiter

* Release tested for binding reproducibility. See Approval Criteria Chart on page 12.



Key Applications	Features
Coated antigen ELISA, FIA, LIA	- Lower binding of immunoglobulins: approx. 200-250 ng IgG/cm ²
Antibody sandwich ELISA, coated antigen ELISA	<ul style="list-style-type: none"> - Binds proteins - Moderate binding of immunoglobulin: MediSorp 500-600 ng IgG/cm² Immulon 2 HB 350-450 ng IgG/cm² - Lower non-specific binding with samples containing serum or plasma vs. high binding plates
Antibody sandwich ELISA, FIA, LIA Coated antigen ELISA, FIA, LIA	<ul style="list-style-type: none"> - Effectively binds a broad range of proteins and biomolecules (broadest range) - High binding plate. Immunoglobulin capacity: approx. 600-650 ng IgG/cm²
Coated antigen ELISA	- Protein binding is significantly influenced by pH over the range of 4-10. The pH profile should be examined
Immuno PCR	<ul style="list-style-type: none"> - Excellent heat transmission properties - Excellent stability at the elevated temperatures used for PCR - Designed to facilitate Immuno PCR assays

Abbreviations:

FIA - Fluorescent Immunoassay
LIA - Luminescent Immunoassay
NA - Nucleic Acid

ELISA - Enzyme Linked Immuno Sorbent Assay
PCR - Polymerase Chain Reaction
LPS - Lipopolysaccharide

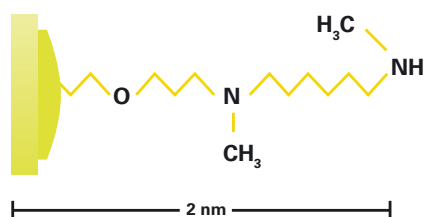
EDC - 1-ethyl-3-(3-dimethylaminopropyl) carbodiimide
CV - Correlation of variation

Covalent Surfaces

Covalent coupling is based on the formation of a single covalent bond between the polymer surface and the biomolecule. Small biomolecules can be immobilized using this technique, as can medium and large molecules that possess the appropriate functional group(s). Since coupling occurs via specific functional groups, biomolecular orientation can also be manipulated by the user.

Thermo Scientific Nunc CovaLink

The CovaLink™ surface is designed to facilitate the coupling of molecules bearing a free carboxyl or phosphate group. Therefore, peptides, haptens and DNA can be coupled. The surface uses a spacer arm to increase accessibility, thereby enhancing overall surface reactivity.

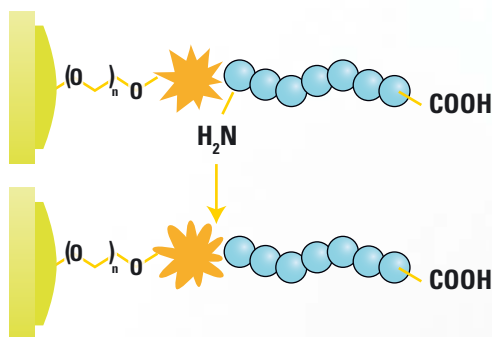


Schematic chemical and physical configuration of the CovaLink NH surface. The NH groups are spaced from the polystyrene surface by 2 nm long (approximately), chemically defined spacer arms, covalently anchored to the surface using a patented method.

Binds biomolecules that have specific functional groups

Thermo Scientific Nunc Immobilizer Amino

The Immobilizer™ Amino surface forms stable covalent bonds between its electrophilic groups and the biomolecule's free amino acids or sulfhydryl groups. Using its unique spacer arm chemistry, the surface provides extremely low non-specific binding to improve assay sensitivity. With no need for an ancillary coupling agent, this surface can simplify your assay development by eliminating the need for a time-consuming blocking step.



Covalent coupling of a peptide to the Immobilizer Amino plate. During a short incubation step, the peptide will bind to the electrophilic group.

The Immobilizer Amino surface is ideal

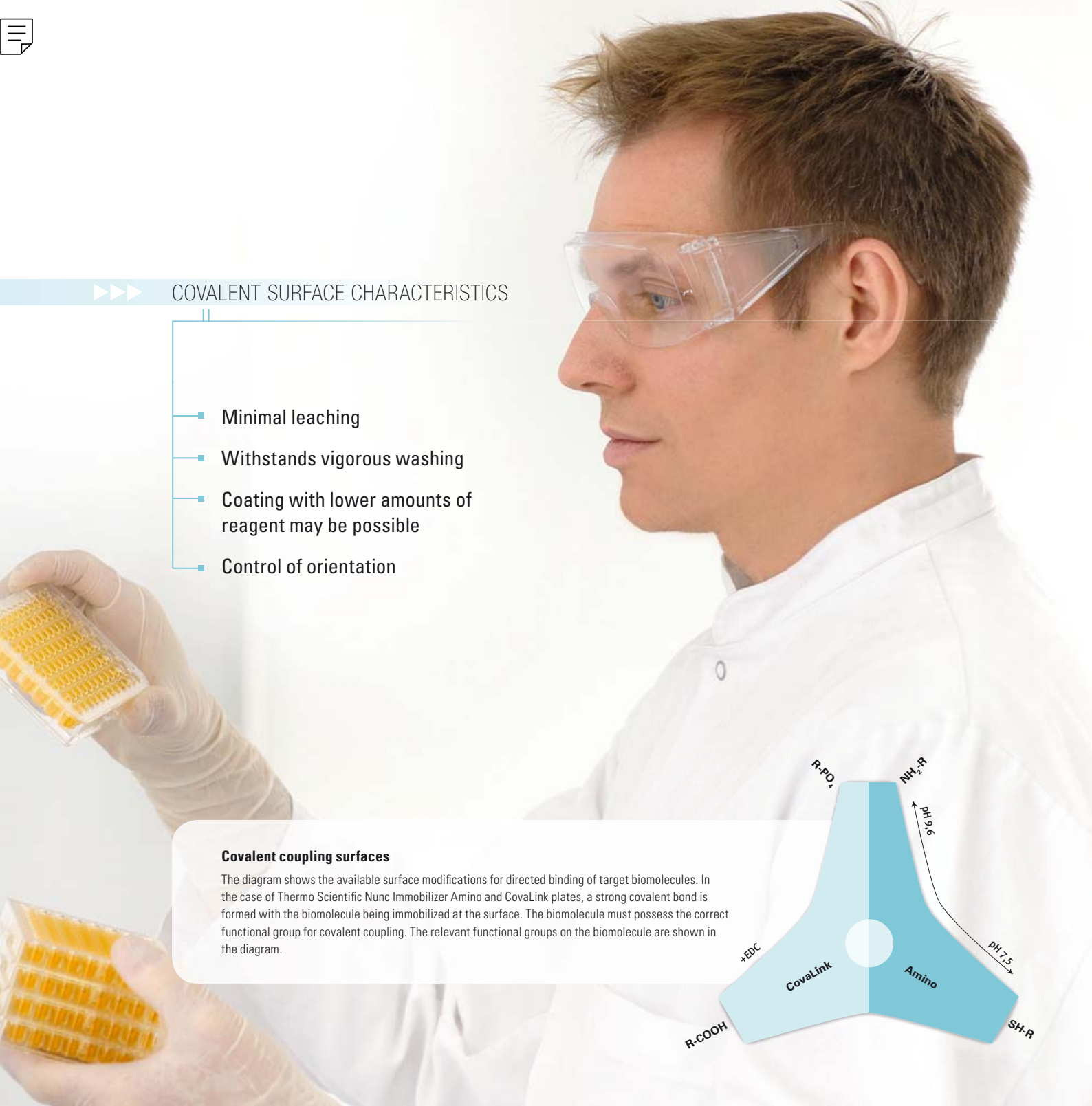
- If your biomolecule does not bind well to a passive surface and it possesses one or more free primary amino or sulfhydryl groups (peptides, oligonucleotides, proteins, proteoglycans)
- To obtain a highly sensitive assay with excellent reproducibility and low background
- To minimize the use of a coating reagent
- To reduce the number of steps required to prepare plates
- To avoid unwanted reactivity associated with a blocking reagent

Covalent Coupling Surfaces

Name	Base Polymer	Structure	Binding Preference
○ Immobilizer Amino*	Polystyrene	Reactive electrophilic group tethered on a spacer arm	Covalent coupling of biomolecules with free NH ₂ and/or SH groups e.g. proteins, peptides, aminated oligos
○ CovaLink	Polystyrene	Secondary Amine on a 2 nm spacer arm	Covalent coupling of biomolecules with -COOH or -PO ₄ -groups EDC used for activation of -COOH, PO ₄ -groups
○ NucleoLink	Proprietary Polymer	Proprietary surface chemistry provides functional groups for covalent binding	Covalent binding of 5' phosphorylated or 5' aminated oligonucleotides and nucleic acids using EDC

○ Thermo Scientific Nunc
 △ Thermo Scientific Microtiter

* Release tested for binding reproducibility. See Approval Criteria Chart on page 12.

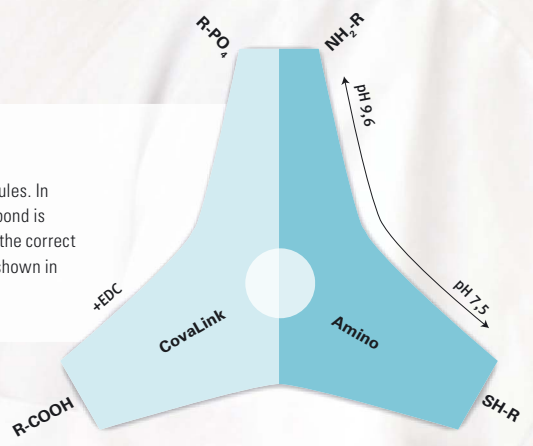


▶▶▶ COVALENT SURFACE CHARACTERISTICS

- Minimal leaching
- Withstands vigorous washing
- Coating with lower amounts of reagent may be possible
- Control of orientation

Covalent coupling surfaces

The diagram shows the available surface modifications for directed binding of target biomolecules. In the case of Thermo Scientific Nunc Immobilizer Amino and CovaLink plates, a strong covalent bond is formed with the biomolecule being immobilized at the surface. The biomolecule must possess the correct functional group for covalent coupling. The relevant functional groups on the biomolecule are shown in the diagram.



Key Applications	Features
Coated antigen ELISA, FIA, LIA NA Hybridization assays Antibody sandwich ELISA, FIA, LIA	<ul style="list-style-type: none"> - Immobilize proteins and peptides that do not bind to passive surfaces - Stable covalent bond formation with free NH₂ or SH groups via spacer arm technology - NO BLOCKING REQUIRED - Simple one step protocol. Add coating solution and incubate - Can frequently reduce the amount of biomolecule needed for coating vs passive plate - High signal-to-noise ratio
Coated antigen ELISA, LIA, FIA	<ul style="list-style-type: none"> - Can link biomolecules via the COOH group (enables the detection of peptides that bind to an antibody via the NH₂ end) - Spacer arm technology for optimal orientation
Solid Phase PCR, DIAPOPS (Detection of Immobilized Amplified Products), PCR ELISA, NA Hybridization assays	<ul style="list-style-type: none"> - Heat-stable wells (120°C) with excellent thermal transfer properties - Simplifies PCR assisted hybridization assays; perform the PCR amplification and detection steps in the same well. No need for special real-time PCR equipment - Read in spectrophotometers

Abbreviations: FIA - Fluorescent Immunoassay ELISA - Enzyme Linked Immuno Sorbent Assay EDC - 1-ethyl-3-(3-dimethylaminopropyl) carbodiimide
LIA - Luminescent Immunoassay PCR - Polymerase Chain Reaction CV - Correlation of variation
NA - Nucleic Acid LPS - Lipopolysaccharide

Affinity Capture Surfaces

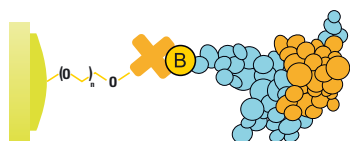
Affinity capture is based on the specific binding of a tagged biomolecule to its receptor. The plate surface is therefore developed with one of the binding pair (the receptor) immobilized on its surface, while the tag is linked to a biomolecule either by chemical coupling or genetic engineering. The tagged biomolecule can then be captured on the plate surface with a high degree of specificity.

Thermo Scientific Nunc Passive Streptavidin

Streptavidin is passively coated on the plate with a biotin binding capacity of at least 13-20 pmol per well.

Thermo Scientific Nunc Immobilizer Streptavidin

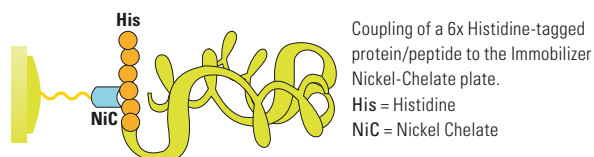
The streptavidin protein molecules are covalently bound to the surface via a spacer arm to reduce leaching and enhance precision. The surface is also modified to minimize non-specific binding. As a result, a high S/N ratio is produced, for increased sensitivity. A biotin binding capacity of 20 pmol per well produces excellent analytical results.



Coupling of a biotinylated protein to the covalently bound streptavidin. After a pre-wash, simply add the biotinylated target molecule in an appropriate buffer. In a short incubation step, the biotinylated molecule will bind to the streptavidin molecule.

Thermo Scientific Nunc Immobilizer Nickel Chelate

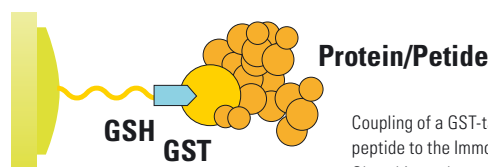
A nickel chelate group is attached to the polymer surface via a spacer arm and will bind polyhistidine, which is typical genetically engineered into a fusion protein. The spacer arm design maximizes the reactivity of the surface, while minimizing non-specific binding, and covalent linkage significantly reduces leaching. The surface does not need to be blocked and therefore produces a high S/N ratio.



Coupling of a 6x Histidine-tagged protein/peptide to the Immobilizer Nickel-Chelate plate.
His = Histidine
NiC = Nickel Chelate

Thermo Scientific Nunc Immobilizer Glutathione

A GST peptide, attached to the polymer surface via a spacer arm, will bind glutathione, which is typical genetically engineered into a fusion protein. The spacer arm maximizes surface reactivity while minimizing non-specific binding, and the covalent linkage reduces the occurrence of leaching. The surface does not need to be blocked and therefore a high S/N ratio is obtained.



Coupling of a GST-tagged protein/peptide to the Immobilizer Glutathione plates.
GSH = Glutathione
GST = Glutathione-S-transferase

All covalent and affinity capture surface plates are room temperature stable and are ready to use.

Affinity Capture Surfaces

Name	Base Polymer	Structure	Binding Preference
○ Immobilizer Streptavidin*	Polystyrene	Streptavidin covalently coupled to polystyrene surface via a spacer arm	Biotinylated biomolecules
○ Immobilizer Ni Chelate*	Polystyrene	Ni Chelate covalently coupled to polystyrene surface via a spacer arm	6-His tagged fusion proteins
○ Immobilizer Glutathione*	Polystyrene	Glutathione covalently coupled to polystyrene surface via a spacer arm	Glutathione-S-transferase tagged fusion proteins
○ Passively coated Streptavidin	Polystyrene	Streptavidin passively coated	Biotinylated biomolecules

○ Thermo Scientific Nunc
△ Thermo Scientific Microtiter

* Release tested for binding reproducibility. See Approval Criteria Chart on page 12.

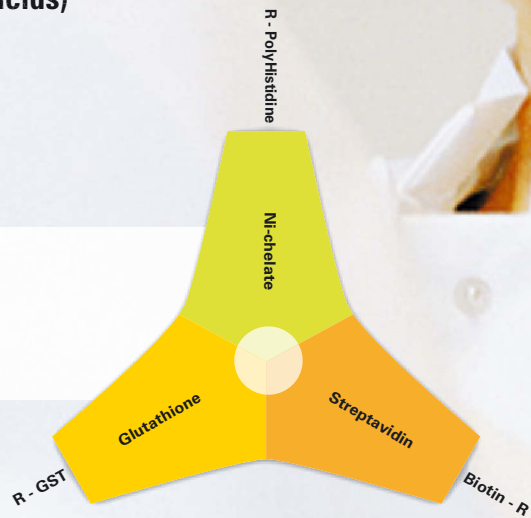


▶▶ AFFINITY CAPTURE SURFACE CHARACTERISTICS

- **Highly specific binding**
- **Reduced variability in molecular orientation**
- **Immobilizer surfaces improve signal to noise ratios**
- **Streptavidin biotin interaction can be exploited to immobilize a wide range of biomolecules (proteins, peptides, haptens, nucleic acids)**

Affinity capture surfaces

The diagram shows the available surface modifications for directed binding of target biomolecules.



Key Applications

Features

Immunoassays, protein-protein binding assays, PCR ELISA, NA Hybridization assays	<ul style="list-style-type: none"> - NO BLOCKING REQUIRED due to unique surface chemistry - High sensitivity; very high signal-to-noise ratio - Stable at room temperature - Biotin capacity (20 pMol/well provides large dynamic range for analytical assays)
Protein-protein and protein-nucleic acid binding assays, immunoassays	<ul style="list-style-type: none"> - High sensitivity; very high signal-to-noise ratio - NO BLOCKING REQUIRED due to unique surface chemistry - Stable at room temperature
Protein-protein and protein-nucleic acid binding assays, immunoassays	<ul style="list-style-type: none"> - High sensitivity; very high signal-to-noise ratio - NO BLOCKING REQUIRED due to unique surface chemistry - Stable at room temperature
Immunoassays, protein-protein binding assays, PCR ELISA, NA Hybridization assays	- Nunc passively coated Streptavidin - Biotin capacity: ≥13 pMol biotin per well, stable at room temperature

Abbreviations:

FIA - Fluorescent Immunoassay
LIA - Luminescent Immunoassay
NA - Nucleic Acid

ELISA - Enzyme Linked Immuno Sorbent Assay
PCR - Polymerase Chain Reaction
LPS - Lipopolysaccharide

EDC - 1-ethyl-3-(3-dimethylaminopropyl) carbodiimide
CV - Correlation of variation



Approval Criteria

Thermo Scientific Nunc and Microtiter plate surfaces are release tested using a binding assay that employs IgG or other appropriate biomolecule (for 96 well solid and module/strip plates).

Name	Surface	Specification
Nunc	MaxiSorp	Clear wells Well-to-well % CV of less than 5% for IgG binding: all results are $\pm 10\%$ from the mean for the lot Black and White wells Well-to-well % CV of less than 10% for IgG binding
	MediSorp	Well-to-well % CV of less than 5% for IgG binding: all results $\pm 10\%$ from the mean for the lot
	Immobilizer Amino	Well-to-well % CV of less than 5% for clear plates Well-to-well % CV of less than 10% for white and black plates
	Immobilizer Streptavidin	Well-to-well % CV of less than 10% for clear plates Well-to-well % CV of less than 7.5% for white and black plates
	Immobilizer Glutathione	Well-to-well % CV of less than 5% for clear plates Well-to-well % CV of less than 10% for white and black plate
	Immobilizer Ni Chelate	Well-to-well % CV of less than 5% for clear plates Well-to-well % CV of less than 10% for white and black plates
	Passively coated Streptavidin	Capacity ≥ 13 pMol Biotin/well (Biotin-HRP)
	CovaLink NH Modules	Well-to-well % CV of less than 10% (clear 96 and strip plate) using a peptide binding assay: results $\pm 15\%$ from the mean for the lot
	NucleoLink	Well-to-well % CV of less than 10% using an oligonucleotide binding assay
Microtiter	Immulon 1B Immulon 2HB Microlite 1+, Microlite 2+ Microfluor 1, Microfluor 2	Well-to-well % CV $\leq 8.5\%$ for IgG binding
	Immulon 4HBX	Well-to-well % CV $\leq 5.5\%$ for IgG binding
	Enhanced Binding (EB)	Well-to-well % CV less than 5% for IgG binding

Immunoassay Products



Solid plates



Framed modules/strips



Loose modules/strips



Tubes



Immuno Sticks



ACCESSORIES



Sealing tapes



Lids



Strip caps



Frames



Push-out tool



Immuno Washers



Color coding



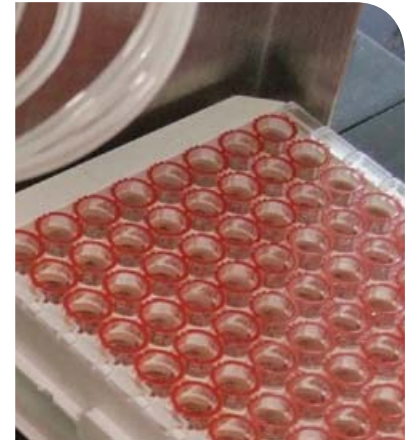
Reservoirs

For additional information on Immunoassay products and accessories, please visit: www.thermoscientific.com/oemdiagnostics



Custom Coating of MicroWell™ Plates

Decrease your time to market with proven development and manufacturing



Optimize Your Opportunities

Increase production capacity

- Global manufacturing enables regional fulfilment and shorter lead times
- Use an independent coating facility
- Avoid backorders

Leverage resources

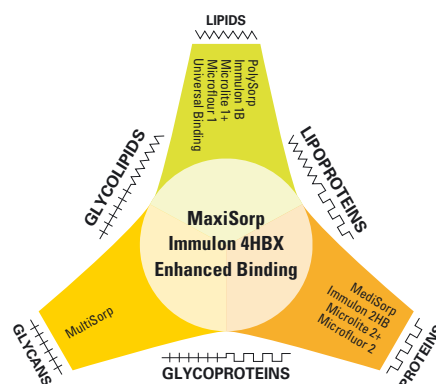
- Reduce investments
- Focus on value-added projects
- Allocate assets effectively

Mimimize time to market

- Leverage our proven strengths in:
 - Surface treatments
 - Surface capabilities
 - Production
- Improve output

Surfaces for passive binding

Schematic representation of the types of biomacromolecules, which can be bound to the available modified surfaces. E.g. if a lipid is to be bound the hydrophobic surface PolySorp plates is most suitable. Based on the physicochemical characteristics of the biomolecule to be immobilized, a surface can be chosen, which is appropriate for robust binding. As is indicated in the diagram, MaxiSorp has the widest breadth applications as it is capable of binding the greatest range of molecules.





For more information on custom coatings, please visit:
www.thermoscientific.com/oemdiagnostics

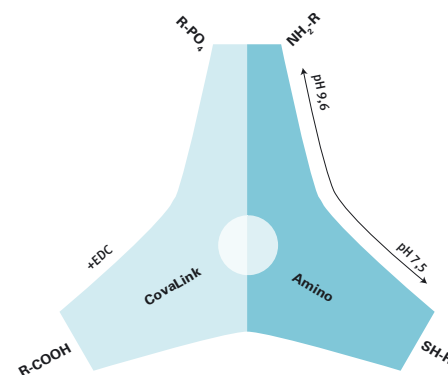
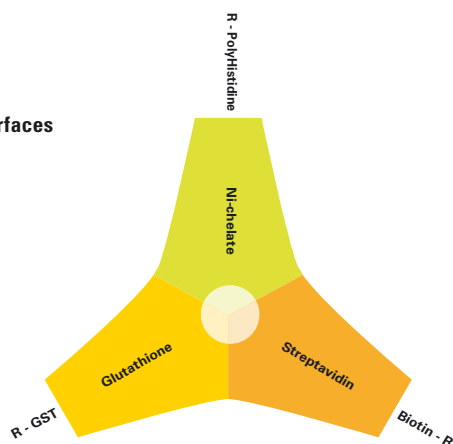
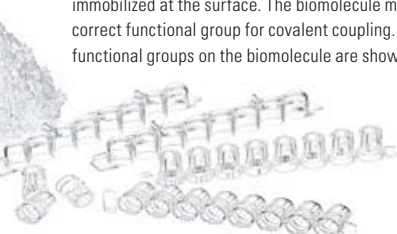
Quality Control

Our highly skilled QC and QA technicians are available to provide documentation necessary to fulfil your requirements. Our certified facilities assures a high consistency and quality throughout the entire process.



Covalent coupling surfaces and affinity capture surfaces

The diagram shows the available surface modifications for directed binding of target biomolecules. In the case of Thermo Scientific Nunc Immobilizer Amino and CovaLink plates, a strong covalent bond is formed with the biomolecule being immobilized at the surface. The biomolecule must possess the correct functional group for covalent coupling. The relevant functional groups on the biomolecule are shown in the diagram.



Product Overview

Passive Binding Surface Products

	Surface	Cat. No.	Configuration	Design	Product Line	Color	Total volume, μ l/well	Units per pack/case	
Hydrophobic	Solid 96 Well Plates	PolySorp	456529	F96	High Flange	Nunc	Clear	400	10/180
		PolySorp	475094	F96	Pinchbar	Nunc	Clear	400	5/60
		PolySorp	446140	C96	Pinchbar	Nunc	Clear	350	5/60
		PolySorp	475434	U96	High Flange	Nunc	Clear	300	5/60
		PolySorp	437869	C96	Pinchbar	Nunc	Clear	350	5/60
		PolySorp	437112	F96	Pinchbar	Nunc	Black	400	10/80
		PolySorp	437842	C96	Pinchbar	Nunc	White	350	5/60
		PolySorp	436111	F96	Pinchbar	Nunc	White	400	10/80
		Immulon 1 B	3355	F96	Regular Flange	Microtiter	Clear	330	10/50
		Immulon 1 B	3555	U96	Regular Flange	Microtiter	Clear	280	10/50
		Universal Binding	9502227	F96	Regular Flange	Microtiter	Clear	450	25/50
		Universal Binding	95029780	F96	Regular Flange	Microtiter	Clear	450	1/40
		Universal Binding	9502887	F96	Regular Flange	Microtiter	White	450	50
		Universal Binding	9502867	F96	Regular Flange	Microtiter	Black	450	50
		Microfluor 1	7605	F96	Regular Flange	Microtiter	Black	330	50
		Microfluor 1	7705	F96	Regular Flange	Microtiter	White	330	50
		Microfluor 1	7005	U96	Regular Flange	Microtiter	Black	330	50
		Microfluor 1	6905	U96	Regular Flange	Microtiter	White	330	50
		Microlite 1+	7571 / 7416	F96	Regular Flange	Microtiter	White	330	50
	Assembled Strip/Module Plates 96 Wells	PolySorp	467679	F16	Non Breakable	Nunc	Clear	400	10/60
		PolySorp	466966	U16	Non Breakable	Nunc	Clear	300	10/60
		PolySorp	473717	C12	Non Breakable	Nunc	Clear	350	10/60
		PolySorp	469078	F8	Non Breakable	Nunc	Clear	400	10/60
		PolySorp	444865	C8	Non Breakable	Nunc	Clear	350	10/60
		PolySorp	475086	U8	Non Breakable	Nunc	Clear	300	10/60
		PolySorp	441254	C8 Star	Non Breakable	Nunc	Clear	380	10/60
		PolySorp	446442	C8	Breakable	Nunc	Clear	350	10/60
		PolySorp	446477	U8	Breakable	Nunc	Clear	320	10/60
		PolySorp	448496	C8 Star	Breakable	Nunc	Clear	330	10/60
		PolySorp	473539	C8	Breakable	Nunc	Clear	350	10/60
		PolySorp	463200	C8	Breakable	Nunc	White	350	10/60
		PolySorp	446473	C8	Breakable	Nunc	Black	350	10/60
		PolySorp	475523	F16	Non Breakable	Nunc	Black	400	10/60
		PolySorp	437702	C8	Non Breakable	Nunc	White	350	10/60
Immulon 1 B		6310	F12	Non Breakable	Microtiter	Clear	350	100/100	
Immulon 1 B		6505	F16	Non Breakable	Microtiter	Clear	330	25/100	
Universal Binding		95029390	F8	Breakable	Microtiter	Clear	400	25/50	
Universal Binding		95029350	F8	Non Breakable	Microtiter	Clear	330	25/50	
Universal Binding		95029510	F8	Non Breakable	Microtiter	White	330	25/50	
Universal Binding		95029450	F8	Non Breakable	Microtiter	Black	330	25/50	
Microlite 1+		7561	F12	Non Breakable	Microtiter	White	380	100/100	
384 Well Plates		Immulon 1 B	8555	RS384	Regular Flange	Microtiter	Clear	120	10/50
		Immulon 1 B	8755	RS384	Regular Flange	Microtiter	Clear	120	10/50
Slightly hydrophilic		Solid 96 Well Plates	MediSorp	467320	F96	High Flange	Nunc	Clear	400
	Immulon 2 HB		3455	F96	Regular Flange	Nunc	Clear	330	10/50
	Immulon 2 HB		3655	U96	Regular Flange	Microtiter	Clear	280	10/50
	Assembled Strip/Module Plates 96 Wells	MediSorp	467120	F8	Non Breakable	Nunc	Clear	400	10/60
		MediSorp	446470	C8	Breakable	Nunc	Clear	350	10/60
		Immulon 2 HB	6309	F12	Non Breakable	Microtiter	Clear	350	100/100
		Immulon 2 HB	6506	F16	Non Breakable	Microtiter	Clear	330	25/100

Please check with your local sales representative whether the product you are interested in is available in your country



	Surface	Cat. No.	Configuration	Design	Product Line	Color	Total volume, µl/well	Units per pack/case		
Hydrophilic	Solid 96 Well Plates	MaxiSorp	430341	C96	Pinchbar	Nunc	Clear	350	5/60	
		MaxiSorp	446612	C96	Pinchbar	Nunc	Clear	350	5/60	
		MaxiSorp	437958	C96	Pinchbar	Nunc	Clear	350	5/60	
		MaxiSorp	437796	C96	Pinchbar	Nunc	White	350	5/60	
		MaxiSorp	456537	F96	High Flange	Nunc	Clear	400	10/180	
		MaxiSorp	460984	F96	High Flange	Nunc	Clear	400	10/180	
		MaxiSorp	439454	F96	Pinchbar	Nunc	Clear	400	5/60	
		MaxiSorp	442404	F96	Pinchbar	Nunc	Clear	400	5/60	
		MaxiSorp	449824	U96	High Flange	Nunc	Clear	300	5/60	
		MaxiSorp	437111	F96	Pinchbar	Nunc	Black	400	10/80	
		MaxiSorp	437796	C96	Pinchbar	Nunc	White	350	5/60	
		MaxiSorp	436110	F96	Pinchbar	Nunc	White	400	10/80	
		Immulon 4 HBX	3855	F96	Regular Flange	Microtiter	Clear	330	10/50	
		Enhanced Binding	95029330	F96	Regular Flange	Microtiter	Clear	450	25/50	
		Microflour 2	7805	F96	Regular Flange	Microtiter	Black	330	50	
		Microflour 2	7905	F96	Regular Flange	Microtiter	White	330	50	
		Microflour 2	7205	U96	Regular Flange	Microtiter	Black	330	50	
		Microflour 2	7105	U96	Regular Flange	Microtiter	White	330	50	
		Microlite 2+	7572 / 7417	F96	Regular Flange	Microtiter	White	330	50	
		Hydrophilic	Assembled Strip/Module Plates 96 Wells	MaxiSorp	469914	F16	Non Breakable	Nunc	Clear	400
MaxiSorp	469264			U16	Non Breakable	Nunc	Clear	300	80/320	
MaxiSorp	469949			F8	Non Breakable	Nunc	Clear	400	160/640	
MaxiSorp	467466			F16	Non Breakable	Nunc	Clear	400	10/60	
MaxiSorp	464394			U16	Non Breakable	Nunc	Clear	300	10/60	
MaxiSorp	473709			C12	Non Breakable	Nunc	Clear	350	10/60	
MaxiSorp	468667			F8	Non Breakable	Nunc	Clear	400	10/60	
MaxiSorp	434797			F8	Non Breakable	Nunc	Clear	400	20/120	
MaxiSorp	445101			C8	Non Breakable	Nunc	Clear	350	10/60	
MaxiSorp	475078			U8	Non Breakable	Nunc	Clear	300	10/60	
MaxiSorp	441653			C8 Star	Non Breakable	Nunc	Clear	380	10/60	
MaxiSorp	446469			C8	Breakable	Nunc	Clear	350	10/60	
MaxiSorp	446639			U8	Breakable	Nunc	Clear	320	10/60	
MaxiSorp	448526			C8 Star	Breakable	Nunc	Clear	330	10/60	
MaxiSorp	473768			C8	Breakable	Nunc	Clear	350	10/60	
MaxiSorp	437915			C12	Non Breakable	Nunc	Clear	350	10/60	
MaxiSorp	475515			F16	Non Breakable	Nunc	Black	400	10/60	
MaxiSorp	437591			C8	Non Breakable	Nunc	White	350	10/60	
MaxiSorp	463201			C8	Breakable	Nunc	White	350	10/60	
MaxiSorp	446471			C8	Breakable	Nunc	Black	350	10/60	
Immulon 4 HBX	6405			F12	Non Breakable	Microtiter	Clear	350	100/100	
Immulon 4 HBX	6508			F16	Non Breakable	Microtiter	Clear	330	25/100	
Enhanced Binding	95029100			F8	Non Breakable	Microtiter	Clear	330	5/50	
Enhanced Binding	95029180			F8	Breakable	Microtiter	Clear	400	25/50	
Microlite 2+	7562			F12	Non Breakable	Microtiter	White	380	100/100	
384 Well Plates	Maxisorp			460518	F384	Pinchbar	Nunc	Black	120	10/30
	Maxisorp			464718	F384	Pinchbar	Nunc	Clear	120	10/30
	Maxisorp			460372	F384	Pinchbar	Nunc	White	120	10/30
Highly hydrophilic	Solid 96 Well Plates	MultiSorp	467340	F96	High Flange	Nunc	Clear	400	5/60	
		Assembled Strip/Module Plates 96 Wells	MultiSorp	467140	F8	Non Breakable	Nunc	Clear	400	10/60
			MultiSorp	446490	C8	Breakable	Nunc	Clear	350	10/60

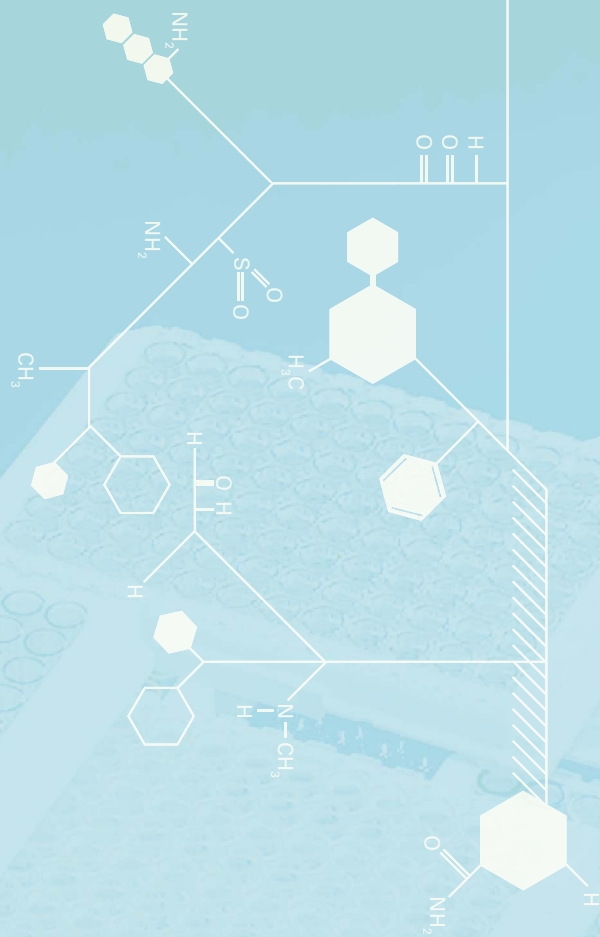
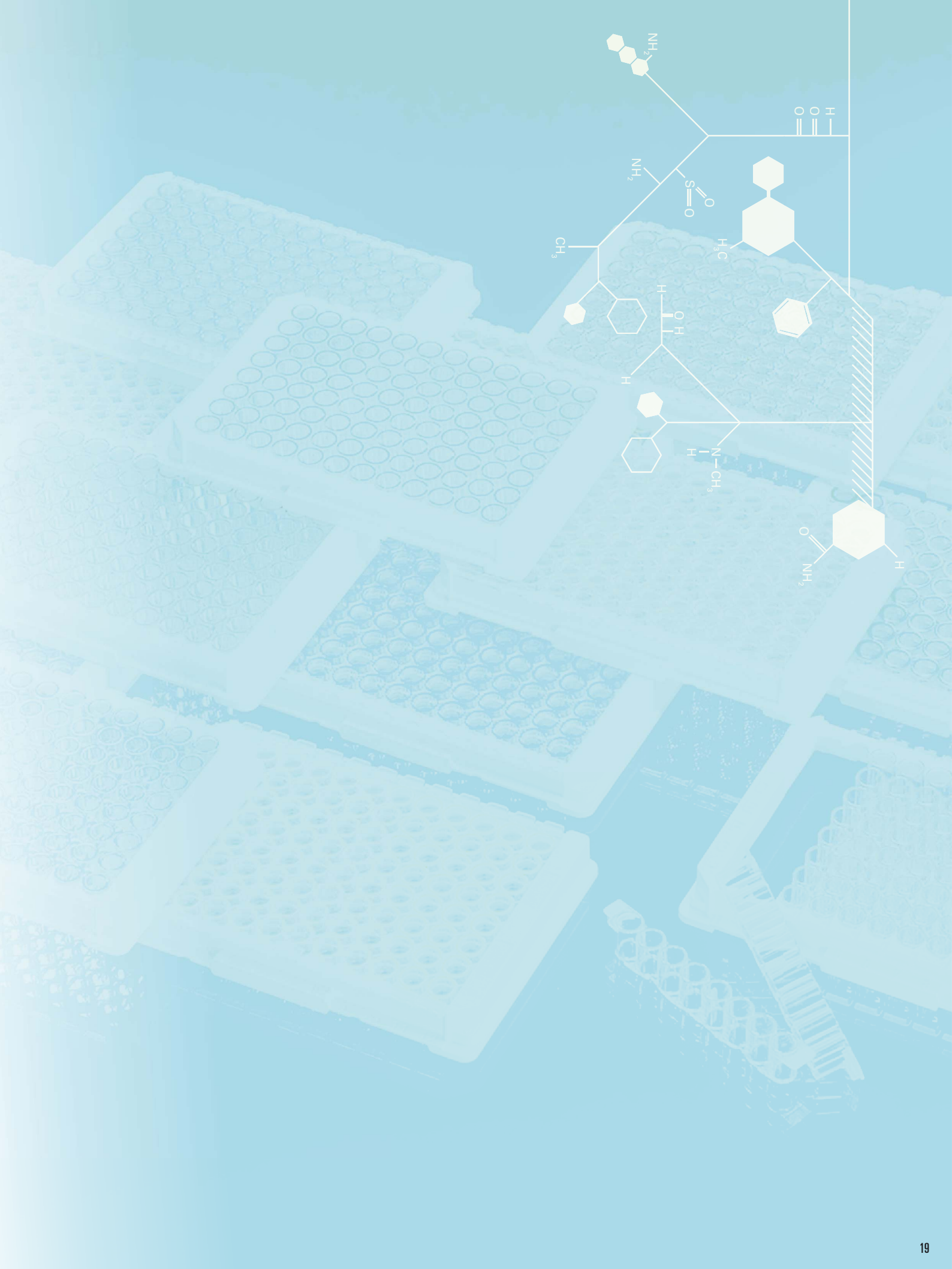
Product Overview

Covalent Surface Products

	Surface	Cat. No.	Configuration	Design	Product Line	Color	Total volume, μ l/well	Units per pack/case	
Covalent	Solid 96 Well Plates – Clear, Black and White	Immobilizer Amino	436006	F96	Pinchbar	Nunc	Clear	400	5/30
		Immobilizer Amino	436007	F96	Pinchbar	Nunc	White	400	5/30
		Immobilizer Amino	436008	F96	Pinchbar	Nunc	Black	400	5/30
	Assembled Strip/Module Plates 96 Wells Clear, Black and White	Immobilizer Amino	436013	F8	Non Breakable	Nunc	Clear	400	5/30
		Immobilizer Amino	436023	C8	Breakable	Nunc	Clear	350	5/30
		Immobilizer CovaLink	478042	F8	Non Breakable	Nunc	Clear	400	5/30

Affinity Capture Surface Products

	Surface	Cat. No.	Configuration	Design	Product Line	Color	Total volume, μ l/well	Units per pack/case	
Affinity Capture	Solid 96 Well Plates – Clear, Black and White	Immobilizer Streptavidin	436015	F96	Pinchbar	Nunc	White	400	1/15
		Immobilizer Streptavidin	436016	F96	Pinchbar	Nunc	Black	400	1/15
		Immobilizer Streptavidin	436014	F96	Pinchbar	Nunc	Clear	400	1/15
		Immobilizer Nickel-Chelate	436024	F96	Pinchbar	Nunc	Clear	400	1/15
		Immobilizer Nickel-Chelate	436027	F96	Pinchbar	Nunc	Black	400	1/15
		Immobilizer Glutathione	436032	F96	Pinchbar	Nunc	Clear	400	1/15
		Immobilizer Glutathione	436033	F96	Pinchbar	Nunc	White	400	1/15
		Immobilizer Glutathione	436034	F96	Pinchbar	Nunc	Black	400	1/15
		Passively coated Streptavidin	236001	C96	Pinchbar	Nunc	Clear	350	1/15
	Assembled Strip/Module Plates 96 Wells – Clear	Immobilizer Streptavidin	436020	F8	Pinchbar	Nunc	Clear	400	1/15
		Immobilizer Streptavidin	436022	C8	Breakable	Nunc	Clear	350	1/15
		Passively coated Streptavidin	236004	C8	Non Breakable	Nunc	Clear	350	1/15
		BioBind-Streptavidin	95029263	F8	Non Breakable	Microtiter	Clear	330	1/5
		BioBind-Streptavidin	95029293	F8	Breakable	Microtiter	Clear	400	1/5



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