

## Isoelectric Focusing

Isoelectric Focusing (IEF) is an ingenious process for simultaneous concentration and separation of proteins. IEF employs a pH gradient formed by small amphoteric molecules (ampholytes) to resolve proteins according to their different pI (isoelectric point) values. IEF is an end-point method; when the electrophoresis run is completed proteins will appear as separate sharp zones, in the order of their isoelectric point.

Scie-Plas offer the following SERVA products for IEF: -

### SERVALYT™ Carrier Ampholytes

SERVALYT™ Carrier Ampholytes are low molecular weight molecules of zwitterionic character. They are a mixture of synthetically derived species of average molecular weight distribution of 400 to 1000 Da and comprise a multitude of varying pI values. In agarose and polyacrylamide gels containing ampholytes, a linear pH gradient is generated when an electric field is applied. The ampholyte molecules carry a net charge and thus migrate in the electric field between the electrodes until they reach the position of their corresponding pI, when they stop moving and form small plateaus (stationary stacks).

### BENEFITS INCLUDE

- **High resolution due to multimeric composition**
- **Fast staining and destaining times**
- **Clear background associated with very low unspecific binding of dyes and stains**
- **High solubility in trichloroacetic acid (fast removal of ampholytes during fixation)**
- **Virtually no interaction with metal ions**



### SERVALYT™ Carrier Ampholytes: Overview & Ordering Information

pH range	Cat. No.	Quantity	Cat. No.	Quantity
2-4	42902.01	10 ml	42902.02	25 ml
2-9 Seed Mix	42935.01 42935.03	10 ml 100 ml	42935.02	25 ml
2-11	42900.01	10 ml	42900.02	25 ml
3-4	42922.01	10 ml	42922.02	25 ml
3-5	42903.01	10 ml	42903.02	25 ml
3-6	42944.01	10 ml	42944.01	25 ml
3-7	42945.01	10 ml	42945.01	25 ml
3-10	42940.01	10 ml	42940.02	25 ml
3-10 Iso-Dalt *	42951.01	10 ml	42951.01	25 ml
4-5	42923.01	10 ml	42923.02	25 ml
4-6	42904.01	10 ml	42904.02	25 ml
4-7	42948.01	10 ml	42948.02	25 ml
4-9 T **	42910.01 42910.03	10 ml 100 ml	42910.02	25 ml
5-6	42924.01	10 ml	42924.02	25 ml
5-7	42905.01	10 ml	42905.02	25 ml
5-7 PGM	42936.01	10 ml	42936.02	25 ml
5-8	42949.01	10 ml	42949.02	25 ml
5-9	42950.01	10 ml	42950.02	25 ml
6-7	42925.01	10 ml	42925.02	25 ml
6-8	42906.01	10 ml	42906.02	25 ml
6-9	42913.01	10 ml	42913.02	25 ml
7-9	42907.01	10 ml	42907.02	25 ml
9-11	42909.01	10 ml	42909.02	25 ml

\* Iso-Dalt quality; special 2-D grade to be used in 2-D electrophoresis

\*\* Technical grade quality for preparative work

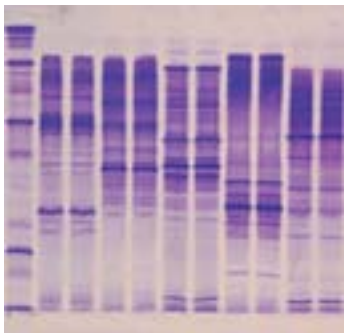
## SERVA Precast Gels for Isoelectric Focusing

With SERVALYT™ PRECOTES™ precast gels, the days of elaborate, inconvenient casting of gels are gone. SERVA offers ready-to-use polyacrylamide gels for horizontal IEF that are simple to handle and reliable in performance.

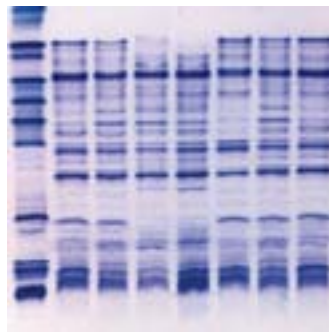
The polyacrylamide layer is bonded to a sturdy, inert polyester support film and protected from damage and drying out by a thin cover sheet. The polymer concentration is 5% and cross-linking is 3%.

### BENEFITS INCLUDE

- **Reliable, reproducible results**
- **Easy to use**
- **Thin (0.3mm) and Ultra-thin (0.15mm) gels**
- **3 Gel formats, Large - 245 x 125mm, Standard - 125 x 125mm, Mini - 45 x 50mm (width x height)**
- **Mini gels, compatible with automated electrophoresis units**
- **Long shelf life: over 12 months**



Meat



Potato

### Blank SERVALYT™ PRECOTES™ Precast IEF Gels

Blank PRECOTES™ were developed to provide a versatile solution to perform isoelectric focusing of any pH range. The Blank PRECOTES™ are equilibrated in the ampholyte mixture of choice for 30 minutes prior to electrophoresis.

Blank PRECOTES™, Gel size 125 x 125 x 0.3mm, 5 gels	42759.01
Blank PRECOTES™, Gel size 245 x 125 x 0.3mm, 5 gels	42710.01

### SERVALYT™ PRECOTES™ - Precast IEF Gels

SERVALYT™ PRECOTES™ pH 3 - 10 0.15mm thick, Size 125 x 125mm	5 gels	42965.03
SERVALYT™ PRECOTES™ pH 3 - 6 0.15mm thick, Size 125 x 125mm	5 gels	42974.02
SERVALYT™ PRECOTES™ pH 4 - 6 0.15mm thick, Size 125 x 125mm	5 gels	42975.02
SERVALYT™ PRECOTES™ pH 5 - 7 0.15mm thick, Size 125 x 125mm	5 gels	42979.02
SERVALYT™ PRECOTES™ pH 6 - 9 0.15mm thick, Size 125 x 125mm	5 gels	42978.02
SERVALYT™ PRECOTES™ pH 3 - 10 0.3mm thick, Size 125 x 125mm	5 gels	42866.02
SERVALYT™ PRECOTES™ pH 3 - 6 0.3mm thick, Size 125 x 125mm	5 gels	42874.02
SERVALYT™ PRECOTES™ pH 4 - 6 0.3mm thick, Size 125 x 125mm	5 gels	42875.02
SERVALYT™ PRECOTES™ pH 5 - 7 0.3mm thick, Size 125 x 125mm	5 gels	42879.02
SERVALYT™ PRECOTES™ pH 6 - 9 0.3mm thick, Size 125 x 125mm,	5 gels	42878.02
SERVALYT™ PRECOTES™ pH 3 - 10 0.15mm thick, Size 245 x 125mm	5 gels	42967.02
SERVALYT™ PRECOTES™ pH 3 - 6 0.15mm thick, Size 245 x 125mm	5 gels	42919.03
SERVALYT™ PRECOTES™ pH 4 - 6 0.15mm thick, Size 245 x 125mm	5 gels	42942.03
SERVALYT™ PRECOTES™ pH 6 - 9 0.15mm thick, Size 245 x 125mm	5 gels	42954.02
SERVALYT™ PRECOTES™ pH 3 - 10 0.3mm thick, Size 245 x 125mm	5 gels	42867.02



### SERVALYT™ PRECOTES™ STARTER KIT

The SERVALYT™ PRECOTES™ STARTER KIT contains 3 x SERVALYT™ PRECOTES™ pH 3 - 10 precast gels, electrode wicks, applicator strips, anode and cathode solutions, Bayol F, SERVA Blue W tablets, lyophilised IEF marker 3 - 10 and instructions for IEF and staining.

SERVALYT™ PRECOTES™ Starter Kit	EACH	39060.01
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## PROTEIN MARKER FOR ISOELECTRIC FOCUSING

The SERVA Liquid Mix IEF Marker pH 3 - 10 is a ready-to-use protein marker especially developed for IEF applications. The marker is applicable to all horizontal and vertical IEF gels and can be used in both native and denaturing conditions [e.g. containing 8M]. The marker is an ideal tool for the determination of the pI (isoelectric point) of unknown protein samples, but also for monitoring separation performance of IEF gels. The marker is supplied in 10% glycerol containing Bromophenol Blue (0.01%) and Methyl Red (0.01%).

### BENEFITS INCLUDE

- Ready-to-use or lyophilised protein marker for isoelectric focusing
- For pI determination of unknown protein samples
- For monitoring the separation performance of IEF gels
- One standard applicable to all IEF gels (vertical/horizontal)
- No need for extra "High pI range" or "Low pI range" markers
- Purified protein components, salt-free
- 13 isoforms, featuring a characteristic pattern

SERVA Liquid IEF Marker pH 3 - 10 Ready-to-use	5mg	39212.01
SERVA Lyophilised IEF Marker pH 3 - 10	10mg	39211.01

## ACCESSORIES FOR ISOELECTRIC FOCUSING

### Applicator Strips

Four different applicator strips are available for dispensing samples.

Applicator Strips 2 x 3.5 19 slots, 100mm long	6 strips	42914.01
Applicator Strips 3.5 x 2 15 slots, 100mm long	6 strip	42915.01
Applicator Strips 7 x 1 24 slots, 260mm long	3 strips	42989.01
Applicator Strips 3.5 x 2 43 slots, 240mm long	3 strips	42899.01
Applicator Strip Kit One of each: 42914, 42915, 42989, 42899	4 strips	42937.01
Sample Application Pieces 10 x 5mm	200 pieces	42880.01

### Electrode Wicks

Available in three sizes: Standard - 120 x 6 x 1mm, Long - 240 x 6 x 1mm and Extra - 300 x 6 x 1mm.

Electrode Wicks, Standard Size 120 x 6 x 1mm	100 pieces	42988.01
Electrode Wicks, Long Size 240 x 6 x 1mm	100 pieces	42987.03
Electrode Wicks, Extra Size 300 x 6 x 1mm	100 pieces	42972.03

### Anode Fluid

0.17g L-aspartic acid / 0.18g L-glutamic acid in water.

Anode Fluid 3,	50ml	42984.03
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### Cathode Fluid

0.22g L-arginine, 0.18g L-lysine, 6.0ml ethylenediamine in water.

Cathode Fluid 10	50ml	42986.03
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## Other Reagents

### Bayol F

Bayol F	100ml	14500.01
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### Kerosene Pure

Kerosene	1 L	26940.01
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## Serva IPG BlueStrips - Dried gel strips with immobilised pH gradient

SERVA IPG BlueStrips are dried gel strips, incorporating an immobilised pH gradient, used in high resolution 2-D gel electrophoresis of proteins.

### BENEFITS INCLUDE

- Stored at -20°C the gel strips are stable for at least 18 months
- Each package contains 12 gel strips, 3.0mm wide
- Consistent performance - 12 strips per package, all derived from the same production lot
- Reliability - accurate casting procedures ensures lot-to-lot reproducibility of pH gradients
- GMP/GLP conformity - each strip has its individual lot number

### IPG Strips

SERVA IPG BlueStrip pH 3 - 10	7cm	12 strips	43001.01
SERVA IPG BlueStrip pH 3 - 10	18cm	12 strips	43011.01
SERVA IPG BlueStrip pH 3 - 10	24cm	12 strips	43021.01
SERVA IPG BlueStrip pH 3 - 10 NL*	7cm	12 strips	43002.01
SERVA IPG BlueStrip pH 3 - 10 NL*	18cm	12 strips	43012.01
SERVA IPG BlueStrip pH 3 - 10 NL*	24cm	12 strips	43022.01
SERVA IPG BlueStrip pH 4 - 7	7cm	12 strips	43003.01
SERVA IPG BlueStrip pH 4 - 7	18cm	12 strips	43013.01
SERVA IPG BlueStrip pH 4 - 7	24cm	12 strips	43023.01
SERVA IPG BlueStrip pH 6 - 10	7cm	12 strips	43004.01
SERVA IPG BlueStrip pH 6 - 10	18cm	12 strips	43014.01
SERVA IPG BlueStrip pH 6 - 10	24cm	12 strips	43024.01

\* NL Non-Linear Gradient

### Rehydration tray for IPG Strips

To rehydrate up to 12 IPG strips in lengths up to 24cm. The rehydration tray maintains its shape and is resistant against chemicals normally used to rehydrate IPG strips.

Rehydration Tray	Each	43091.01
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