# AGAROSE Molecular Biology Grade



IBI Molecular Biology agarose products are highly refined and highly purified. Each lot is physically tested and verified for performance in its' designated application. IBI applies strict testing parameters to insure lot to lot consistency. IBI agarose products are offered in a wide variety of package sizes to fit the needs of any research lab. Each bottle of IBI agarose comes packaged with a specification sheet, preparation instructions, and MSDS for your convenience. *If you require a quantity or specific size of agarose* that is not listed here, just give us a call at 1-800-253-4942 or send us an e-mail at info@ibisci.com.

## Ordering Information

| Catalog# | Description |
|---|---|
| IB70035 | Agarose, Molecular Biology Grade-25gm |
| IB70040 | Agarose, Molecular Biology Grade-100gm |
| IB70041 | Agarose, Molecular Biology Grade-250gm |
| IB70042 | Agarose, Molecular Biology Grade-500gm |
| IB70045 | Agarose, Molecular Biology Grade-1Kg |

Agarose Family

## Preparation of an Agarose Gel and Electrophoresis Buffer - DNA

1. Select the percentage gel necessary to effectively resolve your sample, using the following guideline:

Gel Concentrations and Resolving Ranges

| Concentration of Agarose in Gel (% w/v) | Efficient Range of Separations of Linear DNA (kb) |
|---|---|
| 0.3% | 5-60 |
| 0.6% | 1-20 |
| 0.7% | .8-10 |
| 0.9% | .5-7 |
| 1.2% | .4-6 |
| 1.5% | .2-3 |
| 2.0% | .1-2 |

2. Weigh an appropriate quantity of agarose and place it into a 250ml flask. **NOTE:** 0.3% equals 0.3gm of agarose per 100ml of gel volume.
3. Make 500ml of either 1X TAE or 1X TBE electrophoresis buffer.
4. Add ethidium bromide to the diluted electrophoresis buffer to a final concentration of 0.5µg/ml.
5. Add 6.6ml of the 1X electrophoresis buffer containing ethidium bromide (made in step 4) per millimeter of gel thickness desired, up to a maximum of 50ml to a flask containing the agarose.
6. Make note of the total solution volume, so that a degree of evaporation can be determined and corrected for.
7. Heat the agarose slurry in a microwave oven for approximately 90 seconds. Swirl the flask to ensure grains sticking to the walls enter into the solution, heat the solution again for 30-60 seconds if necessary. Swirl flask again to ensure all the agarose has dissolved into the solution.
8. Add deionized water to replace any volume lost through evaporation during the heating process. You are ready to pour your gel.

## Physical Specifications

**CAS#:** . . . . . 9012-36-6
**Moisture:** . . . . . ≦7%
**Ash:** . . . . . ≦0.4%
**EEO:** . . . . . .05-.13
**Sulfate:** . . . . . ≦.10%
**Clarity @ 1.5% (NTU):** . . . . . ≦3
**Gel Strength @ 1.0% (g/cm²):** . . . . . ≧1200
**Gel Strength @ 1.5% (g/cm²):** . . . . . ≧2500
**Gelling Temperature @ 1.5%:** . . . . . 36°C ± 1.5°C
**Melting Temperature @ 1.5%:** . . . . . 88°C ± 1.5°C

## Molecular Biology Specifications

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected
**Protease assay:** . . . . . None Detected
**Gel analysis assay:** . . . . . Pass
**DNA Resolution:** . . . . . 1000bp (Finely Resolved)
**DNA Extraction assay:** . . . . . Pass
**Gel Background:** . . . . . Very Low

## Storage

- Store at room temperature
- Protect from moisture
- Light Sensitive

## Features

- Extraordinary mechanical resistance insures safe and easy handling
- Pore size can be varied by modifying the gel concentration
- Exceptionally low absorption of staining reagents
- Excellent transparency allows for high visibility
- Greater thermal stability due to high hysteresis

## Applications

- Nucleic Acid, Analytical and Preparative Electrophoresis
- Blotting
- Protein Electrophoresis, such as Radial Immunodiffusion.

Base Pair Data

| 1X TAE Buffer | Gel Concentration | 1X TBE Buffer |
|---|---|---|
| 1500–50bp | 2.0 | 1000–50bp |
| 2500–100bp | 1.75 | 2000–100bp |
| 5000–200bp | 1.5 | 3000–150bp |
| 10,000–250bp | 1.25 | 4000–200bp |
| 16,000–300bp | 1.0 | 8000–300bp |
| 20,000–500bp | 0.75 | 12,000–500bp |

### Did You Know?

If you are not going to use your gel immediately after preparation, remove it from the casting fixture and place it into a plastic bag or container. Submerge the gel in 1X electrophoresis buffer containing 1mM NaN. Store at +4°C

# AGAROSE 3:1 / ULTRA SIEVE

**3:1 Super-Sieve Agarose** is designed to have a larger gel network than IBI Ultra Sieve and is recommended for use in the separation of DNA fragments smaller than 1500bp. Gels made with IBI 3:1 Super Sieve have a higher gel strength than competitive products. The gel is exceptionally firm, but still flexible when handled, thus minimizing cracking. IBI 3:1 Super Sieve has the same melting and gelling temperature as our regular molecular biology grade agarose, therefore allowing fast and easy preparation of gels. IBI 3:1 Super Sieve agarose is recommended for all analytical applications, especially when DNA is recovered for subsequent use in enzymatic procedures.

## Physical Specifications

**CAS#:** . . . . . 9012-36-6
**Moisture:** . . . . . ≦7%
**Ash:** . . . . . ≦0.35%
**EEO:** . . . . . ≦.12
**Sulfate:** . . . . . ≦.11%
**Clarity @ 1.5% (NTU):** . . . . . ≦5
**Gel Strength @ 4.0% (g/cm²):** . . . . . ≧2000-4200
**Gelling Temperature @ 1.5%:** . . . . . ≦40.5°C
**Melting Temperature @ 1.5%:** . . . . . ≦93.0°C

## Molecular Biology Specifications

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected
**Protease assay:** . . . . . None Detected
**Gel analysis assay:** . . . . . Pass
**DNA Extraction assay:** . . . . . Pass

## Features

- DNA Resolution: bands appear sharp and finely resolved
- DNase/RNase activity: None detected
- Gel Background: Very low after EtBr staining
- Blotting: Very good transference for DNA fragments 154-2176bp in 4% gels
- DNA Binding: Very low

## Storage

- Store at room temperature, Protect from moisture, Light Sensitive

## Ordering Information

| Catalog# | Description |
|---|---|
| IB70052 | Agarose, 3:1 Super Sieve-25gm |
| IB70053 | Agarose, 3:1 Super Sieve-250gm |

## Ranges of Separation

- 2.0% gel 500-1500bp
- 4.0% gel 150-600bp

**These ranges are approximate and have been calculated in 1X TAE buffer


**Ultra Sieve Agarose** is designed for molecular screening that improves resolution of small DNA fragments and PCR products. IBI Ultra Sieve agarose has excellent gel strength with clear, sharp, finely resolved bands. This makes IBI Ultra Sieve agarose the perfect choice for efficient separation of small DNA fragments and PCR products.

## Physical Specifications

**CAS#:** . . . . . 9012-36-6
**Moisture:** . . . . . ≦7%
**Ash:** . . . . . ≦0.35%
**EEO:** . . . . . ≦.12
**Sulfate:** . . . . . ≦.11%
**Gel Strength @ 1.5% (g/cm²):** . . . . . ≧600
**Gel Strength @ 3.0% (g/cm²):** . . . . . ≧1500
**Gelling Temperature @ 1.5%:** . . . . . ≦35.5°C
**Melting Temperature @ 1.5%:** . . . . . ≦80.0°C

## Molecular Biology Specifications

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected
**Protease assay:** . . . . . None Detected
**DNA Extraction assay:** . . . . . Pass

## Ranges of Separation

- 1.8% gel 400-1200bp
- 3.0% gel 150-800bp
- 4.5% gel 15-400bp

**These ranges are approximate and have been calculated in 1X TAE buffer. To achieve the best resolution of Ultra Sieve gels they should be stored at +4-8°C for 30 minutes prior to use

## Storage

- Store at room temperature, Protect from moisture, Light Sensitive

## Ordering Information

| Catalog# | Description |
|---|---|
| IB70054 | Agarose, Ultra Sieve-25gm |
| IB70055 | Agarose, Ultra Sieve-250gm |

## Features

- High resolution of short PCR products and DNA fragments
- Improved clarity enhancing visibility
- High gel strength allows use in blotting procedures
- Excellent gel strength, minimizing cracking or breaking during handling

# AGAROSE

## Low Melting Point / P.F.G.E.

**Low Melting Point Agarose** is commonly used as a gel matrix when fragment recovery is desired after electrophoresis. IBI low melt agarose is an excellent choice when paired with IBI PCR/Gel Extract Purification Products (see page 70). The properties of low melt agarose promote quick and thorough digestion of gel slices during extraction procedures. IBI low melt agarose is derived by organic synthesis, which generates methoxylate groups from the basic agarose structure. This produces low melting and gelling temperatures when compared to standard agarose. The lower gelling temperature ensures the agarose will be in a liquid state at a temperature range where "in-gel" manipulations can be performed without prior extraction of the DNA or RNA from the gel slice.

### Ordering Information

| Catalog# | Description |
|---|---|
| IB70051 | Agarose, Low Melting Point-25gm |
| IB70050 | Agarose, Low Melting Point-50gm |
| IB70056 | Agarose, Low Melting Point-100gm |
| IB70057 | Agarose, Low Melting Point-250gm |
| IB70058 | Agarose, Low Melting Point-500gm |
| IB70059 | Agarose, Low Melting Point-1Kg |

### Storage

- Store at room temperature, Protect from moisture, Light Sensitive


### Physical Specifications

**CAS#:** . . . . . 9012-36-6
**Moisture:** . . . . . ≦7%
**Ash:** . . . . . ≦0.4%
**EEO:** . . . . . ≦.12
**Sulfate:** . . . . . ≦.12%
**Clarity @ 1.5% (NTU):** . . . . . ≦4
**Gel Strength @ 1.5% (g/cm²):** . . . . . ≧500
**Gelling Temperature @ 1.5%:** . . . . . 24°C - 28°C
**Melting Temperature @ 1.5%:** . . . . . 65.5°C

### Molecular Biology Specifications

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected
**Protease assay:** . . . . . None Detected
**DNA Extraction assay:** . . . . . Pass

**LMP agarose will separate & finely resolve molecules >1000bp.

### Features

- Lower gel strength than standard agarose, gels are still handled very easily
- Higher clarity (gel transparency) compared to standard agarose
- Greater sieving capacity compared to standard agarose

### Applications

- Preparative DNA and RNA electrophoresis
- Cloning of tissue culture cells and viral plague assays

**Pulse Field Gel Electrophoresis Agarose** is a linear polymer with a high molecular weight, creating gel structures unlike those of standard agarose. This characteristic, along with its very low sulfate content produces a very strong intercatenary interaction, resulting in a gel with a very high gel strength and high exclusion limit.

### Ordering Information

| Catalog# | Description |
|---|---|
| IB70060 | Agarose, PFGE-25gm |
| IB70061 | Agarose, PFGE-50gm |
| IB70062 | Agarose, PFGE-100gm |
| IB70063 | Agarose, PFGE-250gm |
| IB70064 | Agarose, PFGE-500gm |
| IB70065 | Agarose, PFGE-1Kg |

### Storage

- Store at room temperature, Protect from moisture, Light Sensitive


### Physical Specifications

**CAS#:** . . . . . 9012-36-6
**Moisture:** . . . . . ≦7%
**Ash:** . . . . . ≦0.25%
**EEO:** . . . . . ≦.12
**Sulfate:** . . . . . ≦.12%
**Clarity @ 1.5% (NTU):** . . . . . ≦4
**Gel Strength @ 1.0% (g/cm²):** . . . . . ≧1800
**Gel Strength @ 1.5% (g/cm²):** . . . . . ≧3200
**Gelling Temperature @ 1.5%:** . . . . . 36°C ± 1.5°C
**Melting Temperature @ 1.5%:** . . . . . 88°C ± 1.5°C

### Molecular Biology Specifications

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected
**Protease assay:** . . . . . None Detected
**DNA Extraction assay:** . . . . . Pass

**PFGE agarose will separate & finely resolve molecules >1000bp.

### Features

- Extremely high gel strength
- Greater themal stability when compared to standard agarose
- Exceptionally low absorption of staining agents

### Applications

- Pulse field gel electrophoresis
- Conventional elctrophoresis and blotting
- Cell and enzyme immobilization

# ACRYLAMIDE 30% AND 40% SOLUTIONS

IBI InstaPAGE acrylamide solutions are available in 30% and 40% concentrations in the most popular ratios; 19:1, 29:1, and 37.5:1. These ready to use solutions make it fast and easy to prepare polyacrylamide electrophoresis gels. IBI also offers acrylamide and bisacrylamide in individual solution form, which allows the user to mix bisacrylamide solutions in multiple ratios, giving the user greater flexibility while only having to purchase two components.

## PHYSICAL SPECIFICATIONS

**CAS#:** . . . . . 79-06-1 / 110-26-9
**Conductivity:** . . . . . Max. 10µmho
**pH (Acryl: 10%, 0.1M NaCl):** . . . . . 5.5 - 6.5
**Purity (Acrylamide):** . . . . . Min. 98.5%
**Purity (Bisacrylamide):** . . . . . Min. 99.0%

## MOLECULAR BIOLOGY SPECIFICATIONS

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected
**Protease assay:** . . . . . None Detected
**Gel analysis assay:** . . . . . Pass
**Polymerization assay:** . . . . . Pass

## STORAGE

- Store at +4°C, Keep tightly sealed.

## APPLICATIONS

- Polyacrylamide gels for sequencing and protein electrophoresis.

## ORDERING INFORMATION

| CATALOG# | DESCRIPTION |
|---|---|
| IB70000 | INSTAPAGE ACRYLAMIDE 30% SOLUTION 19:1-500ML |
| IB70001 | INSTAPAGE ACRYLAMIDE 30% SOLUTION 19:1-1L |
| IB70002 | INSTAPAGE ACRYLAMIDE 30% SOLUTION 29:1-500ML |
| IB70003 | INSTAPAGE ACRYLAMIDE 30% SOLUTION 29:1-1L |
| IB70004 | INSTAPAGE ACRYLAMIDE 30% SOLUTION 37.5:1-500ML |
| IB70005 | INSTAPAGE ACRYLAMIDE 30% SOLUTION 37.5:1-1L |


INSTAPAGE™ 30% ACRYLAMIDE SOLUTIONS

## PHYSICAL SPECIFICATIONS

**CAS#:** . . . . . 79-06-1 / 110-26-9
**Conductivity:** . . . . . Max. 10µmho
**pH (Acryl: 10%, 0.1M NaCl):** . . . . . 5.5 - 6.5
**Purity (Acrylamide):** . . . . . Min. 98.5%
**Purity (Bisacrylamide):** . . . . . Min. 99.0%

## MOLECULAR BIOLOGY SPECIFICATIONS

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected
**Protease assay:** . . . . . None Detected
**Gel analysis assay:** . . . . . Pass
**Polymerization assay:** . . . . . Pass

## STORAGE

- Store at +4°C, Keep tightly sealed.

## APPLICATIONS

- Polyacrylamide gels for sequencing and protein electrophoresis. These solutions contain 38% (w/v) acrylamide and 2% (w/v) bisacrylamide for a monomer to crosslink your given ratio. Monomer content (MC) 0.95 and crosslinker 0.05CC.

Use the following formula to determine volume of InstaPAGE (ml) required for your concentration. . .

$$\frac{\text{(MC) X desired gel concentration X desire gel volume}}{40\%}$$

## ORDERING INFORMATION

| CATALOG# | DESCRIPTION |
|---|---|
| IB70014 | INSTAPAGE ACRYLAMIDE 40% SOLUTION 19:1-500ML |
| IB70015 | INSTAPAGE ACRYLAMIDE 40% SOLUTION 19:1-1L |
| IB70006 | INSTAPAGE ACRYLAMIDE 40% SOLUTION 29:1-500ML |
| IB70007 | INSTAPAGE ACRYLAMIDE 40% SOLUTION 29:1-1L |
| IB70008 | INSTAPAGE ACRYLAMIDE 40% SOLUTION 37.5:1-500ML |
| IB70009 | INSTAPAGE ACRYLAMIDE 40% SOLUTION 37.5:1-1L |


INSTAPAGE™ 40% ACRYLAMIDE SOLUTIONS

| | | |
|---|---|---|
| Snowflake | - | Frozen Storage Required |
| Thermometer | - | Refrigerated Storage Required |
| Diamond | - | Hazardous Materials |

# ACRYLAMIDE

## POWDERS / PREMIXED POWDERS

Polyacrylamide gels are commonly used in electrophoresis applications, formed by free radical polymerization of acrylamide and bis-acrylamide (crosslinker). IBI offers highly purified acrylamide products in a variety of configurations and sizes. IBI acrylamide and bis-acrylamide powders provide today's researcher with the flexibility of mixing any concentration or ratio of these components to meet their needs. IBI acrylamide and bis-acrylamide products have a purity level greater than 99.9%.

### ORDERING INFORMATION

| CATALOG# | DESCRIPTION |
|---|---|
| IB70020 | ACRYLAMIDE, SOLID-100GM |
| IB70024 | ACRYLAMIDE, SOLID-500GM |
| IB70026 | ACRYLAMIDE, SOLID-1.5KG |
| IB70028 | ACRYLAMIDE, SOLID-3.0KG |


### PHYSICAL SPECIFICATIONS

**CAS#:** 79-06-1
**Formula Weight:** 71.08
**Molecular Formula:** $C_3H_5NO$
**Purity:** Min. 99.9%
**Melting Point:** 85°C ± 1°C
**pH (10%, 0.1M NaCl):** 6.0 ± 0.5
**Acrylic Acid:** <0.001%
**Conductivity:** 5µmho
**Iron:** <0.0001%
**Lead:** <0.0001%

### MOLECULAR BIOLOGY SPECIFICATIONS

**DNase assay:** None Detected
**RNase assay:** None Detected
**Protease assay:** None Detected
**Gel analysis assay:** Pass
**Polymerization assay:** Pass

### STORAGE

- Store at room temperature, Protect from moisture, Keep tightly sealed.

### APPLICATIONS

- Polyacrylamide gels for sequencing and protein electrophoresis.

### ORDERING INFORMATION

| CATALOG# | DESCRIPTION |
|---|---|
| IB70100 | BISACRYLAMIDE, SOLID-25GM |
| IB70102 | BISACRYLAMIDE, SOLID-100GM |


### PHYSICAL SPECIFICATIONS

**CAS#:** 110-26-9
**Formula Weight:** 154.17
**Molecular Formula:** $C_7H_{10}O_2N_2$
**Purity:** Min. 99.9%
**$A_{290}$ (1% water)** Max. 0.2
**Conductivity (2 water)** <5µmho
**Acrylic Acid:** Max. 0.001%
**Identification:** Pass
**pH (1% 0.1M NaCl) @ 25°C:** Min. 5.0

### MOLECULAR BIOLOGY SPECIFICATIONS

**DNase assay:** None Detected
**RNase assay:** None Detected
**Protease assay:** None Detected

### STORAGE

- Store at room temperature, Protect from moisture, Keep tightly sealed.

### APPLICATIONS

- Polyacrylamide gels for sequencing and protein electrophoresis.

### ORDERING INFORMATION

| CATALOG# | DESCRIPTION |
|---|---|
| IB70022 | ACRYLAMIDE:BISACRYLAMIDE - 19:1-40GM |
| IB70023 | ACRYLAMIDE:BISACRYLAMIDE - 19:1-200GM |
| IB70016 | ACRYLAMIDE:BISACRYLAMIDE - 29:1-40GM |
| IB70017 | ACRYLAMIDE:BISACRYLAMIDE - 29:1-200GM |
| IB70018 | ACRYLAMIDE:BISACRYLAMIDE - 37.5:1-40GM |
| IB70019 | ACRYLAMIDE:BISACRYLAMIDE - 37.5:1-200GM |

### PHYSICAL SPECIFICATIONS

**See Acrylamide / Bisacrylamide (Above)**

### MOLECULAR BIOLOGY SPECIFICATIONS

**See Acrylamide / Bisacrylamide (Above)**

### STORAGE

- Store at +4°C, Protect from moisture, Keep tightly sealed, Light sensitive.

### APPLICATIONS

- Polyacrylamide gels for sequencing and protein electrophoresis.

**Acryliquid-40** and **InstaBIS-2** can be used to make 19:1, 29:1, and 37.5:1 bisacrylamide solutions. These products include MSDS, Specification Sheets, and Instructions for mixing different ratios.

## ORDERING INFORMATION

| CATALOG# | DESCRIPTION |
|---|---|
| IB70010 | ACRYLIQUID 40% SOLUTION-500ML |

### PHYSICAL SPECIFICATIONS

**CAS#:** 79-06-1
**Formula Weight:** 71.08
**Molecular Formula:** $C_3H_5NO$
**Conductivity:** Max. 5µmho
**Melting Point:** 85°C ± 1°C
**pH (@ 25°C):** 5.5 - 6.5
**Free Acrylic Acid:** <0.005%

### MOLECULAR BIOLOGY SPECIFICATIONS

**DNase assay:** None Detected
**RNase assay:** None Detected
**Protease assay:** None Detected
**Gel analysis assay:** Pass
**Polymerization assay:** Pass

### STORAGE

- Store at +4°C, Keep tightly sealed, Protect from moisture.

### APPLICATIONS

- Polyacrylamide gels for sequencing and protein electrophoresis. Use reference table below to determine the correct volume of Acryliquid-40 and InstaBIS-2 to make 100ml of X% gel. InstaBIS-2 is a 2% (w/v) solution of ultra-pure bisacrylamide in deionized water.

| (ml) Acryliquid-40 | | (ml) InstaBIS-2 | |
|---|---|---|---|
| =2.375 (X% gel) | 19:1 | =2.500 (X% gel) | 19:1 |
| =2.417 (X% gel) | 29:1 | =1.667 (X% gel) | 29:1 |
| =2.435 (X% gel) | 37.5:1 | =1.299 (X% gel) | 37.5:1 |

## ORDERING INFORMATION

| CATALOG# | DESCRIPTION |
|---|---|
| IB70012 | INSTABIS-2 (2%)-500ML |

### PHYSICAL SPECIFICATIONS

**CAS#:** 110-26-9
**Formula Weight:** 154.17
**Molecular Formula:** $C_7H_{10}O_2N_2$
**Conductivity:** <10µmho
**Purity:** >99.0%
**$A_{220}$ (2% water):** <0.4
**Acrylic Acid:** <0.001%

### MOLECULAR BIOLOGY SPECIFICATIONS

**DNase assay:** None Detected
**RNase assay:** None Detected
**Protease assay:** None Detected
**Gel analysis assay:** Pass
**Polymerization assay:** Pass

### STORAGE

- Store at +4°C, Keep tightly sealed.

### APPLICATIONS

- Polyacrylamide gels for sequencing and protein electrophoresis. Use reference table above to determine the correct volume of Acryliquid-40 and InstaBIS-2 to make 100ml of X% gel. InstaBIS-2 is a 2% (w/v) solution of ultra-pure bisacrylamide in deionized water.

## ORDERING INFORMATION

| CATALOG# | DESCRIPTION |
|---|---|
| IB70080 | AMMONIUM PERSULFATE-100GM |

### PHYSICAL SPECIFICATIONS

**CAS#:** 7727-54-0
**Formula Weight:** 228.19
**Molecular Formula:** $(NH_4)S_2O_8$
**Purity:** Min. 98.0%
**Insolubles:** Max. 0.005%
**Residue on Ignition:** Max. 0.05%
**Titratable Free Acid:** Max. 0.04meq/gm
**Chloride and Chlorate:** Max. 0.001%
**Heavy Metals (Pb):** Max. 0.005%
**Iron:** Max. 0.001%
**Manganese:** Max. 0.00005%

### MOLECULAR BIOLOGY SPECIFICATIONS

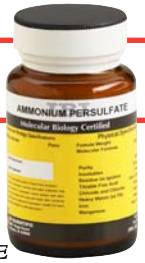
**Polymerization assay:** Pass

### STORAGE

- Store at room temperature, Protect from moisture.

### APPLICATIONS

- A potent oxidizer that promotes polymerization of acrylamide gels by scavenging dissolved oxygen in the gel solution, thereby accelerating the acrylamide/bisacrylamide reaction.




*AMMONIUM PERSULFATE*

## ORDERING INFORMATION

| CATALOG# | DESCRIPTION |
|---|---|
| IB70120 | TEMED-50ML |

### PHYSICAL SPECIFICATIONS

**CAS#:** 110-18-9
**Formula Weight:** 116.21
**Molecular Formula:** $C_4H_{16}N_2$
**Purity:** Min. 99.0%

### MOLECULAR BIOLOGY SPECIFICATIONS

**Polymerization assay:** Pass
**Gel analysis:** Pass
**Boiling Point:** 119 - 121°C
**Refractive Index:** 1.417 - 1.419

### STORAGE

- Store at room temperature, Hygroscopic, Keep tightly sealed.

### APPLICATIONS

- Used as a catalyst for polymerization of polyacrylamide gels.


*TEMED*

| | | |
|---|---|---|
| Snowflake | - | Frozen Storage Required |
| Thermometer | - | Refrigerated Storage Required |
| Diamond | - | Hazardous Materials |

IBI provides a variety of alcohols in several different sizes to fit the needs of the smaller research lab to the high throughput manufacturing facilities. IBI alcohols demonstrate excellent lot-to-lot consistency and purity; whether you require a high-quality ethanol for precipitating nucleic acids, or you need an excellent cleaning reagent, IBI has the product for your application.


## ORDERING INFORMATION

| CATALOG# | DESCRIPTION |
|---|---|
| IB15720 | ETHANOL (ANHYDROUS ALCOHOL)-500ML |
| IB15721 | ETHANOL (ANHYDROUS ALCOHOL)-1L |
| IB15724 | ETHANOL (ANHYDROUS ALCOHOL)-4L |

## PHYSICAL SPECIFICATIONS

**CAS#:** . . . . . 64-17-5
**Formula Weight:** . . . . . 46.07
**Molecular Formula:** . . . . . $C_2H_5N_4OH$
**Ethanol:** . . . . . 95%
**Methanol:** . . . . . 5%
**Moisture (KF):** . . . . . Max. 1.0%
**Identification (IR):** . . . . . Pass

## MOLECULAR BIOLOGY SPECIFICATIONS

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected

## APPLICATIONS

- Ethanol is widely used for precipitating nucleic acids. The nucleic acid precipitate, which is formed in the presence of moderate concentrations of monovalent actions, is recovered by centrifugation and redissolved in an appropriate buffer at the desired concentration.
- 200 Proof Ethanol is denatured with methyl alcohol.

## STORAGE

- Store at room temperature inside a flame proof cabinet.


## ORDERING INFORMATION

| CATALOG# | DESCRIPTION |
|---|---|
| IB05120 | ISOBUTANOL-500ML |

## PHYSICAL SPECIFICATIONS

**CAS#:** . . . . . 78-83-1
**Formula Weight:** . . . . . 74.12
**Molecular Formula:** . . . . . $C_4H_{10}O$
**Purity:** . . . . . >99%
**$A_{260}$:** . . . . . 0.782 - 0.788g/ml
**$A_{280}$:** . . . . . 0.02%
**Residue on evaporation:** . . . . . <0.005%
**Water:** . . . . . <0.005%

## MOLECULAR BIOLOGY SPECIFICATIONS

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected
**Ethidium Bromide Extraction assay:** . . . . . Pass

## STORAGE

- Store at room temperature inside a flame proof cabinet.

## APPLICATIONS

- Isobutanol is used to extract ethidium bromide from nucleic acid solutions and to concentrate DNA in aqueous solutions. It is also used to overlay polyacrylamide gels to prevent oxidation.

| | | |
|---|---|---|
| Snowflake | - | Frozen Storage Required |
| Thermometer | - | Refrigerated Storage Required |
| Diamond | - | Hazardous Materials |

## PHYSICAL SPECIFICATIONS

| | |
|---|---|
| **CAS#:** | 67-56-1 |
| **Formula Weight:** | 32.0 |
| **Molecular Formula:** | $CH_3OH$ |
| **Purity:** | Max. 99.8% |
| **ABS (@ 210nm):** | Min. 0.80 |
| **ABS (@ 220nm):** | Min. 0.40 |
| **ABS (@ 230nm):** | Min. 0.20 |
| **ABS (@ 240nm):** | Min. 0.10 |
| **ABS (@ 260nm):** | Min. 0.04 |
| **ABS (@ 280-400nm):** | Min. 0.01 |
| **Carbonyl Compounds:** | Max. 1.0% |
| **Color (APHA):** | Min. 10 |
| **Liquid Chromatography Suitability:** | Pass |
| **Residue after evaporation (%):** | Min. 0.001 |
| **Titratable acid (meg/gm):** | Min. 0.0003 |
| **Titratable base (meg/gm):** | Min. 0.0002 |
| **Water:** | Min. 0.1% |

*METHANOL, HPLC GRADE*

## ORDERING INFORMATION

| CATALOG# | DESCRIPTION |
|---|---|
| IB15750 | METHANOL, HPLC GRADE-1L |

## MOLECULAR BIOLOGY SPECIFICATIONS

| | |
|---|---|
| **DNase assay:** | None Detected |
| **RNase assay:** | None Detected |

## STORAGE

- Store at room temperature inside a flame proof cabinet.

## APPLICATIONS

- Methanol is a high purity, functionally tested reagent suitable for HPLC work. It has low UV absorption and low particulate count to reduce background.

## PHYSICAL SPECIFICATIONS

| | |
|---|---|
| **CAS#:** | 67-56-1 |
| **Formula Weight:** | 32.04 |
| **Molecular Formula:** | $CH_3OH$ |
| **Purity:** | Max. 99.8% |
| **Appearance:** | Clear, colorless liquid |
| **Specific Gravity:** | 0.783 - 0.791 |
| **Moisture (KF):** | Max. 0.1% |

## STORAGE

- Store at room temperature inside a flame proof cabinet.

## MOLECULAR BIOLOGY SPECIFICATIONS

| | |
|---|---|
| **DNase assay:** | None Detected |
| **RNase assay:** | None Detected |

## APPLICATIONS

- Ultra-Pure Grade Methanol is used extensively during western transfer procedures. It can also be used for histology and cytology applications.

## ORDERING INFORMATION

| CATALOG# | DESCRIPTION |
|---|---|
| IB15755 | METHANOL, ULTRA-PURE GRADE-500ML |
| IB15756 | METHANOL, ULTRA-PURE GRADE-1L |
| IB15757 | METHANOL, ULTRA-PURE GRADE-4L |


## PHYSICAL SPECIFICATIONS

| | |
|---|---|
| **CAS#:** | 67-63-0 |
| **Formula Weight:** | 60.09 |
| **Molecular Formula:** | $C_3H_7OH$ |
| **Purity:** | 99% |
| **Density:** | 0.782 - 0.788g/ml |
| **Moisture (KT):** | 0.02% |
| **Color (APHA):** | ≦10 |

## MOLECULAR BIOLOGY SPECIFICATIONS

| | |
|---|---|
| **DNase assay:** | None Detected |
| **RNase assay:** | None Detected |

## STORAGE

- Store at room temperature inside a flame proof cabinet.

## APPLICATIONS

- Isopropanol is widely used for precipitating nucleic acids. The nucleic acid precipitate; which is formed in the presence of moderate concentrations of monovalent cations, is recovered by centrifugation and redissolved in an appropriate buffer at the desired concentrations.

## ORDERING INFORMATION

| CATALOG# | DESCRIPTION |
|---|---|
| IB15730 | ISOPROPANOL-500ML |
| IB15735 | ISOPROPANOL-1L |

*In-Vitro* culturing of bacterial and animal cells is a routinely performed task in many of today's Life Science Research Laboratories. To ensure the successful growth of target cells it is essential to eliminate non-target bacterial strains and fungi. Antibiotics function in many ways to select against unwanted organisms while maintaining the health and vitality of the desired cells. IBI's antibiotics offer today's researcher excellent potency and lot-to-lot consistency at a price point that will stretch your research dollars!

## Ordering Information

| Catalog# | Description |
|---|---|
| IB02010 | Carbenicillin, DiSodium Salt-1gm |
| IB02020 | Carbenicillin, DiSodium Salt-5gm |

## Storage

- Store at +4°C, Keep tightly sealed, Warm to room temperature prior to use. Store carbenicillin solution in a light-tight container @ -20°C


## Physical Specifications

**CAS#:** . . . . . 4800-94-6
**Formula Weight:** . . . . . 422.4
**Molecular Formula:** . . . . . $C_{17}H_{16}N_2Na_2O_6$
**Appearance:** . . . . . White / Off-White Powder
**pH (10mg/ml in $H_2O$):** . . . . . 6.0 - 8.0
**Solubility:** . . . . . Clear (50mg/ml in $H_2O$) Solutions are stable for 24 hours at room temperature
**Water Content (K.F.):** . . . . . ≦6%

## Molecular Biology Specifications

**Antibiotic inhibition/sensitivity assay:** . . . . Pass

## Applications

- Carbenicillin is an antibiotic which inhibits bacterial cell wall synthesis activity against gram-positive and gram-negative bacteria, and for cell culture media applications. Recommended use is 100mg/ml

**Note:** Stock solution of antibiotics dissolved in $H_2O$ should be sterilized by filtration through a 0.22-micron filter.

## Ordering Information

| Catalog# | Description |
|---|---|
| IB02030 | Gentamycin Sulfate Solution - 20ml Tissue Culture Grade |

NEW

## Storage

- Store at +4°C, Keep tightly sealed.

## Physical Specifications

**CAS#:** . . . . . 69-52-3
**Potency:** . . . . . 50mg/ml
**pH (@ 25°C):** . . . . . 4.5 ± 1.0
**Moisture:** . . . . . Max. 2.0%

## Molecular Biology Specifications

**Antibiotic inhibition/sensitivity assay:** . . . . . Pass

## Applications

- Gentamycin Sulfate Solution is an inhibitor in the growth of gram-positive and gram-negative microorganisms. IBI Gentamycin Sulfate is a broad spectrum antibiotic that is a more effective *in-vitro* bacterial inhibitor than combined streptomycin-penicillin. Gentamycin is non-toxic to tissue culture monolayers, and does not inhibit virus replication. It inhibits the growth of a wide variety of gram-positive and gram-negative microorganisms, including strains resistant to tetracycline, chloramphenicol, kanamycin, and colistin; particularly the strains of Pseudomonas, Proteus, Staphylococcus, and Streptococcus. Gentamycin Sulfate inhibits bacterial protein biosynthesis by binding to the 30S subunit of ribosome.

The antibiotics found on pages 34 - 36 are *NOT* for human or veterinary use.

| | | |
|---|---|---|
| Snowflake | - | Frozen Storage Required |
| Thermometer | - | Refrigerated Storage Required |
| Diamond | - | Hazardous Materials |

## PHYSICAL SPECIFICATIONS

**CAS#:** . . . . . 69-52-3
**Formula Weight:** . . . . . 371.39
**Molecular Formula:** . . . . . $C_{16}H_{18}N_3NaO_4S$
**Potency:** . . . . . 845 - 988mcg/mg
**pH (1% water):** . . . . . 9.0 ± 1.0
**Moisture:** . . . . . Max. 2.0%

## MOLECULAR BIOLOGY SPECIFICATIONS

**Antibiotic inhibition/sensitivity assay:** . . . . . Pass

## APPLICATIONS

- Ampicillin inhibits cell wall biosynthesis (peptidoglycan cross-linking). Ampicillin is used at the following working conditions:

| | | Working Concentration | |
|---|---|---|---|
| | Stock Solution | Stringent Plasmids | Relaxed Plasmids |
| Ampicillin* | 50mg/ml in $H_2O$ | 20µg/ml | 60µg/ml |

**Note:** Stock solution of antibiotics dissolved in $H_2O$ should be sterilized by filtration through a 0.22 micron filter.

## ORDERING INFORMATION

| CATALOG# | DESCRIPTION |
|---|---|
| IB02040 | AMPICILLIN, SODIUM SALT-25GM |

## STORAGE

- Store at +4°C, Keep tightly sealed, Warm to room temperature prior to use. Store ampicillin solution in a light-tight container @ -20°C


## PHYSICAL SPECIFICATIONS

**CAS#:** . . . . . 56-75-7
**Formula Weight:** . . . . . 323.13
**Molecular Formula:** . . . . . $C_{11}H_{12}Cl_2N_2O_5$
**Melting Point:** . . . . . 149 - 153°C
**pH (2.5% water):** . . . . . 6.0 ± 1.5
**Purity:** . . . . . 97.0 - 103.0%

## MOLECULAR BIOLOGY SPECIFICATIONS

**Antibiotic inhibition/sensitivity assay:** . . . . . Pass
**Identification:** . . . . . Pass
**Crystallinity:** . . . . . Pass
**Chromatographic Purity:** . . . . . Pass

## APPLICATIONS

- Chloramphenicol is used in the amplification of plasmids and colony hybridizations

| | | Working Concentration | |
|---|---|---|---|
| | Stock Solution | Stringent Plasmids | Relaxed Plasmids |
| Chloramphenicol | 34mg/ml in ethanol | 25µg/ml | 170µg/ml |

**Note:** Antibiotics dissolved in ethanol need not be sterilized.

## ORDERING INFORMATION

| CATALOG# | DESCRIPTION |
|---|---|
| IB02080 | CHLORAMPHENICOL-25GM |

## STORAGE

- Store at +4°C, Keep tightly sealed, Warm to room temperature prior to use. Store Chloramphenicol solution in a light-tight container @ -20°C


## PHYSICAL SPECIFICATIONS

**CAS#:** . . . . . 25389-94-0
**Formula Weight:** . . . . . 582.58
**Molecular Formula:** . . . . . $C_{18}H_{36}N_4O_{11}H_2SO_4$
**Potency:** . . . . . >750meg/mg
**pH (1% water):** . . . . . 6.5 - 8.5
**Moisture:** . . . . . Max. 4.0%

## MOLECULAR BIOLOGY SPECIFICATIONS

**Antibiotic inhibition/sensitivity assay:** . . . . . Pass
**Crystallinity:** . . . . . Pass
**Chromatographic Purity:** . . . . . Pass

Kanamycin Sulfate is derived via microbial fermentation. No animal products or by-products are used in the manufacturing process or the fermentation media.

## STORAGE

- Store at +4°C, Keep tightly sealed, Warm to room temperature prior to use. Store Kanamycin Sulfate solution in a light-tight container @ -20°C

## ORDERING INFORMATION

| CATALOG# | DESCRIPTION |
|---|---|
| IB02120 | KANAMYCIN SULFATE-25GM |

## APPLICATIONS

- Kanamycin Sulfate is used to bind to 70S ribosomal subunit, inhibits translocation, elicits miscoding bactericidal

| | | Working Concentration | |
|---|---|---|---|
| | Stock Solution | Stringent Plasmids | Relaxed Plasmids |
| Kanamycin Sulfate | 10mg/ml in $H_2O$ | 10µg/ml | 50µg/ml |

**Note:** Stock solution of antibiotics dissolved in $H_2O$ should be sterilized by filtration through a 0.22 micron filter.

## ORDERING INFORMATION

| CATALOG# | DESCRIPTION |
|---|---|
| IB02180 | STREPTOMYCIN SULFATE-25GM |

## STORAGE

- Store at +4°C, Keep tightly sealed, Warm to room temperature prior to use. Store Streptomycin Sulfate solution in a light-tight container @ -20°C


## PHYSICAL SPECIFICATIONS

**CAS#:** . . . . . 3810-74-0
**Formula Weight:** . . . . . 1457.38
**Molecular Formula:** . . . . . $(C_{21}H_{39}N_7O_{12})_2\ 3H_2SO_4$
**Potency:** . . . . . >650meg/mg
**pH (1% water):** . . . . . 4.5 - 7.0
**Moisture:** . . . . . Max. 4.0%

## MOLECULAR BIOLOGY SPECIFICATIONS

**Antibiotic inhibition/sensitivity assay:** . . . . . Pass
**Crystallinity:** . . . . . Pass
**Chromatographic Purity:** . . . . . Pass

## APPLICATIONS

- Streptomycin Sulfate is used to bind to S12 protein and 30S ribosomal subunit, inhibits translocation, elicits miscoding bactericidal

| | | Working Concentration | |
|---|---|---|---|
| | Stock Solution | Stringent Plasmids | Relaxed Plasmids |
| Streptomycin Sulfate | 10mg/ml in $H_2O$ | 10µg/ml | 50µg/ml |

**Note:** Stock solution of antibiotics dissolved in $H_2O$ should be sterilized by filtration through a 0.22 micron filter.

## ORDERING INFORMATION

| CATALOG# | DESCRIPTION |
|---|---|
| IB02200 | TETRACYCLINE HCl-25GM |

## STORAGE

- Store at +4°C, Keep tightly sealed, Warm to room temperature prior to use. Store Tetracycline HCl solution in a light-tight container @ -20°C


## PHYSICAL SPECIFICATIONS

**CAS#:** . . . . . 64-75-5
**Formula Weight:** . . . . . 480.90
**Molecular Formula:** . . . . . $C_{22}H_{24}N_2O_8HCl$
**Potency:** . . . . . Min. 900µg/mg
**pH (1% water):** . . . . . 2.3 - 0.5
**Moisture:** . . . . . Max. 4.0%

## MOLECULAR BIOLOGY SPECIFICATIONS

**Antibiotic inhibition/sensitivity assay:** . . . . . Pass

## APPLICATIONS

- Tetracycline Hydrochloride inhibits protein synthesis (elongation) by preventing the binding of aminoacyl-tRNA to ribosome. Bacteriostatic.

| | | Working Concentration | |
|---|---|---|---|
| | Stock Solution | Stringent Plasmids | Relaxed Plasmids |
| Kanamycin Sulfate | 5mg/ml in $H_2O$ | 10µg/ml | 50µg/ml |

**Note:** Antibiotics dissolved in ethanol need not be sterilized. Magnesium ions are antagonists of tetracycline. Use media without magnesium salts (e.g. LB medium) for the selection of bacteria resistant to tetracycline.

The antibiotics found on pages 34 - 36 are *NOT* for human or veterinary use.

| | | |
|---|---|---|
| Snowflake | - | Frozen Storage Required |
| Thermometer | - | Refrigerated Storage Required |
| Diamond | - | Hazardous Materials |

# BUFFER COMPONENTS



IBI's buffer components, detergents, and denaturants have been satisfying the needs of Life Science researchers for many years. Excellent purity, convenient package sizes, and competitive pricing makes IBI the perfect choice for your basic Molecular Biology Reagent needs.

## Ordering Information

| Catalog# | Description |
|---|---|
| IB15620 | Ammonium Acetate-500gm |

## Applications

- Ammonium Acetate is a salt commonly used in the precipitation of nucleic acids. The presence of 2.5M $NH_4OAc$ in the precipitation reaction allows ionically bound contaminants to dissociate from the nucleic acids, allowing pure samples to be recovered. To make 10M Ammonium Acetate Stock Solution, dissolve 385gm of ammonium acetate into 400ml of ddi water. Adjust total volume to 500ml with ddi water. Sterile by filtration.

## Physical Specifications

**CAS#:** 631-61-8
**Molecular Formula:** $C_2H_7NO_2$
**Molecular Weight:** 77.08
**Purity:** Min. 97.0%
**Insoluble:** Max. 0.005%
**pH (5% water):** 6.7 - 7.3
**Heavy Metals:** <0.0005%
**Iron:** <0.0005%
**$A_{280}$:** Max. 0.01%
**$A_{354}$:** Max. 0.01%

## Molecular Biology Specifications

**DNase assay:** None Detected
**RNase assay:** None Detected
**Protease assay:** None Detected

## Storage

- Store at +4°C, Protect from moisture.

## Ordering Information

| Catalog# | Description |
|---|---|
| IB70096 | Boric Acid-2.5Kg |


## Physical Specifications

**CAS#:** 10043-35-3
**Molecular Formula:** $H_3BO_3$
**Molecular Weight:** 61.83
**Purity:** Min. 99.5%
**Calcium:** Max. 0.005%
**Chloride:** Max. 0.001%
**Phosphate:** Max. 0.001%
**Sulfate:** Max. 0.01%
**Heavy Metals:** Max. 0.001%

## Molecular Biology Specifications

**DNase assay:** None Detected
**RNase assay:** None Detected
**Protease assay:** None Detected

## Storage

- Store at room temperature, Protect from moisture.

## Applications

- Boric Acid is an ingredient in Tris-Borate buffer systems, used in high voltage electrophoresis.

## Ordering Information

| Catalog# | Description |
|---|---|
| IB70180 | EDTA-100gm |
| IB70182 | EDTA-500gm |

| Buffer | | Concentrated Stock Solution (1L) |
|---|---|---|
| Tris-acetate (TAE buffer) | 50X: | 242gm Tris base<br>57.1ml glacial acetic acid<br>100ml 0.5M EDTA (pH 8.0) |
| Tris-borate (TBE buffer) | 5X: | 54gm Tris base<br>27.5gm boric acid<br>20ml 0.5M EDTA (pH 8.0) |
| Tris-phosphate (TPE buffer) | 10X: | 108gm Tris base<br>15.5ml, 85% phosphoric acid (1.679g/ml)<br>40ml 0.5M EDTA (pH 8.0) |

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## Physical Specifications

**CAS#:** 6381-92-6
**Molecular Formula:** $C_{10}H_{14}N_2O_8Na_2\,2H_2O$
**Molecular Weight:** 61.83
**Purity:** Min. 99.5%
**Calcium:** Max. 0.005%
**Chloride:** Max. 0.001%
**Phosphate:** Max. 0.001%
**Sulfate:** Max. 0.01%
**Heavy Metals:** Max. 0.001%

## Molecular Biology Specifications

**DNase assay:** None Detected
**RNase assay:** None Detected
**Protease assay:** None Detected

## Storage

- Store at room temperature, Protect from moisture.

## Applications

- EDTA is commonly used in biological and electrophoresis buffer systems. Located in the table to the left are some of the commonly used electrophoresis buffers and their recipes as a concentrated solutions.

# BUFFER COMPONENTS



## Physical Specifications

**CAS#:** . . . . . 79-06-1
**Molecular Formula:** . . . . . $C_{10}H_{14}N_2O_8Na\ 2H_2O_2$
**Purity:** . . . . . Min. 99.0%
**Insolubles:** . . . . . Max. 0.01%
**Heavy Metals:** . . . . . <0.005%
**$A_{280*600}$ (0.5M water):** . . . . . <0.10%

## Molecular Biology Specifications

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected
**Protease assay:** . . . . . None Detected

## Storage

- Store at room temperature, Protect from moisture.

## Applications

- EDTA Solution is commonly used in biological and electrophoresis buffer systems. Located in the table to the right are some of the commonly used electrophoresis buffers and their recipe as a concentrated solution.

## Ordering Information

| Catalog# | Description |
|---|---|
| IB70184 | EDTA Solution-100ml |
| IB70185 | EDTA Solution-4x100ml |

| Buffer | | Concentrated Stock Solution (1L) |
|---|---|---|
| Tris-acetate (TAE buffer) | 50X: | 242gm Tris base<br>57.1ml glacial acetic acid<br>100ml 0.5M EDTA (pH 8.0) |
| Tris-borate (TBE buffer) | 5X: | 54gm Tris base<br>27.5gm boric acid<br>20ml 0.5M EDTA (pH 8.0) |
| Tris-phosphate (TPE buffer) | 10X: | 108gm Tris base<br>15.5ml, 85% phosphoric acid (1.679g/ml)<br>40ml 0.5M EDTA (pH 8.0) |

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## Physical Specifications

**CAS#:** . . . . . 56-40-6
**Molecular Formula:** . . . . . $C_2H_5NO_2$
**Molecular Weight:** . . . . . 75.07
**Purity:** . . . . . Min. 99.5%
**$A_{280}$ (1M water):** . . . . . <0.10
**Heavy Metals:** . . . . . <0.002%
**Solubility (10% water):** . . . . . Pass
**pH (10% water):** . . . . . 5.5 - 6.5
**Loss on Drying (%):** . . . . . ≦0.2
**Melting Point:** . . . . . 247 ± 2.5°C

## Molecular Biology Specifications

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected
**Protease assay:** . . . . . None Detected

## Storage

- Store at room temperature, Keep tightly sealed, Protect from moisture.

## Applications

- Glycine is a neutral amino acid. It is the primary component in polyacrylamide buffers. During the process of separation the glycine forms an electrical front which pulls the macromolecules along.

## Ordering Information

| Catalog# | Description |
|---|---|
| IB70194 | Glycine-2.5Kg |


## Physical Specifications

**CAS#:** . . . . . 7365-45-9
**Molecular Formula:** . . . . . $C_8H_{17}N_2O_4SNa$
**Molecular Weight:** . . . . . 260.30
**Appearance:** . . . . . White Powder
**Purity:** . . . . . Min. 99.0
**pKa (1X solution @ 25°C):** . . . . . 7.45 - 7.65
**Heavy Metals:** . . . . . <0.0005%

## Molecular Biology Specifications

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected
**Protease assay:** . . . . . None Detected

## Storage

- Store at room temperature, Protect from moisture.

## Ordering Information

| Catalog# | Description |
|---|---|
| IB01120 | HEPES, Sodium Salt-100gm |

## Applications

- HEPES, Sodium Salt is a zwitterionic buffer ideally suited for cell culture in a range of 10 to 25mM. HEPES has a buffering range from 6.8 to 8.2. HEPES is also a component of Tris-HEPES buffer for polyacrylamide electrophoresis of proteins.

| | | |
|---|---|---|
| Snowflake | - | Frozen Storage Required |
| Thermometer | - | Refrigerated Storage Required |
| Diamond | - | Hazardous Materials |

# BUFFER COMPONENTS



## Ordering Information

| Catalog# | Description |
|---|---|
| IB01130 | HEPES, Free Acid-50gm |
| IB01131 | HEPES, Free Acid-250gm |
| IB01132 | HEPES, Free Acid-500gm |
| IB01133 | HEPES, Free Acid-1Kg |


## Physical Specifications

**CAS#:** 7365-45-9
**Molecular Formula:** $C_8H_{18}N_2O_4S$
**Molecular Weight:** 238.31
**Appearance:** White Powder
**Purity:** Min. 99.0
**pH (0.5M solution in $H_20$):** 5.1 - 6.5
**Heavy Metals:** Max. 0.001%

## Molecular Biology Specifications

**DNase assay:** None Detected
**RNase assay:** None Detected
**Protease assay:** None Detected

## Storage

- Store at room temperature, Protect from moisture.

## Applications

- HEPES, Free Acid is a zwitterionic buffer ideally suited for cell culture in a range of 10 to 25mM. HEPES has a buffering range from 6.8 to 8.2. HEPES is also a component of Tris-HEPES buffer for polyacrylamide electrophoresis of proteins.

## Ordering Information

| Catalog# | Description |
|---|---|
| IB70142 | Tris-500gm |
| IB70144 | Tris-1Kg |
| IB70145 | Tris-5Kg |

## Molecular Biology Specifications

**DNase assay:** None Detected
**RNase assay:** None Detected
**Protease assay:** None Detected

## Storage

- Store at room temperature, Protect from moisture.


## Physical Specifications

**CAS#:** 77-86-1
**Molecular Formula:** $C_4H_{11}NO_3$
**Molecular Weight:** 121.14
**Purity:** Min. 99.8%
**Moisture:** Max. 1.0%
**Insolubles:** Max. 0.005%
**$A_{280}$ (1M water):** Max. 0.05
**Arsenic:** <0.0005%
**Lead:** <0.0001%
**Iron:** <0.0001%
**Copper:** <0.0001%
**Magnesium:** <0.0005%

## Applications

- Tris is commonly used in biological and electrophoresis buffer systems.

| Buffer | | Concentrated Stock Solution (1L) |
|---|---|---|
| Tris-acetate (TAE buffer) | 50X: | 242gm Tris base<br>57.1ml glacial acetic acid<br>100ml 0.5M EDTA (pH 8.0) |
| Tris-borate (TBE buffer) | 5X: | 54gm Tris base<br>27.5gm boric acid<br>20ml 0.5M EDTA (pH 8.0) |
| Tris-phosphate (TPE buffer) | 10X: | 0.08gm Tris base<br>15.5ml, 85% phosphoric acid (1.679g/ml)<br>40ml 0.5M EDTA (pH 8.0) |
| Tris-glycine (TG buffer) | 5X: | 15.1gm Tris base<br>94gm glycine (pH 8.3)<br>50ml 10% SDS |

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Snowflake - Frozen Storage Required
Thermometer - Refrigerated Storage Required
Diamond - Hazardous Materials

# BUFFER COMPONENTS



## Physical Specifications

**CAS#:** . . . . . 1185-53-1
**Molecular Formula:** . . . . . $C_4H_{11}NO_3HCl$
**Molecular Weight:** . . . . . 157.64
**Purity:** . . . . . Min. 99.5%
**Insolubles:** . . . . . Max. 0.001%
**pH (0.1M water @ 25°C):** . . . . . 4.2 - 4.9
**Calcium:** . . . . . <0.0001%
**Lead:** . . . . . <0.0001%
**Zinc:** . . . . . <0.0001%
**Copper:** . . . . . <0.0001%
**Magnesium:** . . . . . <0.0001%
**Magnese:** . . . . . <0.0001%

## Molecular Biology Specifications

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected
**Protease assay:** . . . . . None Detected

## Storage

- Store at room temperature, Protect from moisture.

## Applications

- Tris-HCl is commonly used in biological and electrophoresis buffer systems.

## Ordering Information

| Catalog# | Description |
|---|---|
| IB70162 | Tris-HCl-500gm |

**Stock Solutions: TE**

| | | |
|---|---|---|
| 7.4 | Tris-HCl (pH 7.4) 10mM | EDTA (pH 8.0) 1mM |
| 7.6 | Tris-HCl (pH 7.6) 10mM | EDTA (pH 8.0) 1mM |
| 8.0 | Tris-HCl (pH 8.0) 10mM | EDTA (pH 8.0) 1mM |
| STE | Tris-HCl (pH 8.0) 10mM | EDTA (pH 8.0 - NaCl) 1mM |

## Physical Specifications

**CAS#:** . . . . . 151-21-3
**Molecular Formula:** . . . . . $C_{12}H_{25}NaO_4S$
**Molecular Weight:** . . . . . 288.38
**Purity:** . . . . . Min. 99.0%
**$A_{260}$ (3% water):** . . . . . Max. 0.1
**$A_{280}$ (3% water):** . . . . . Max. 0.1
**Chloride:** . . . . . Max. 0.1%
**Phosphate:** . . . . . Max. 0.0005%
**Heavy Metals (Pb):** . . . . . Max. 0.0005%
**Copper:** . . . . . Max. 0.0005%
**% of Straight Chain C12 SDS:** . . . . . >98

## Molecular Biology Specifications

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected
**Protease assay:** . . . . . None Detected

## Storage

- Store at room temperature, Protect from moisture.

## Applications

- SDS is an ionic detergent used to denature proteins in hybridization, nucleic purification, and electrophoresis buffer systems. SDS is also used to dissociate nucleic acid protein complexes in DNA extraction protocols, to disrupt cell membranes and to prepare prehybridization and/or hybridization solutions.
- **10% SDS Solution:** Dissolve 100gm of SDS in 900ml of ddi water. Heat to 68C to assist dissolution. Adjust the pH to 7.2 by adding a few drops of HCl. Adjust the total volume to 1L with ddi water. Dispense into aliquots.

## Ordering Information

| Catalog# | Description |
|---|---|
| IB07060 | Sodium Dodecyl Sulfate (SDS)-100gm |
| IB07062 | Sodium Dodecyl Sulfate (SDS)-500gm |


## Physical Specifications

**CAS#:** . . . . . 151-21-3
**Molecular Formula:** . . . . . $C_{12}H_{25}NaO_4S$
**Molecular Weight:** . . . . . 288.38
**Conductivity:** . . . . . 22800 - 27600µmhos
**pH (@ 25°C):** . . . . . 5.0 - 8.0

## Molecular Biology Specifications

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected
**Protease assay:** . . . . . None Detected

## Storage

- Store at room temperature, Protect from moisture.

## Ordering Information

| Catalog# | Description |
|---|---|
| IB07064 | 20% SDS Solution-100ml |

## Applications

- SDS Solution is an ionic detergent used to denature proteins in hybridization, nucleic purification, and electrophoresis buffer systems. SDS Solution is also used to dissociate nucleic acid protein complexes in DNA extraction protocols, to disrupt cell membranes and to prepare prehybridization and/or hybridization solutions.

# BUFFER COMPONENTS

## Urea

### Ordering Information

| Catalog# | Description |
|---|---|
| IB72060 | Urea-500gm |
| IB72064 | Urea-2.5Kg |

### Storage

- Store at room temperature, Protect from moisture.

### Applications

- Urea is used as a nucleic acid and protein denaturant in polyacrylamide gel electrophoresis. It has a standard concentration of 6 to 8M.

### Physical Specifications

**CAS#:** . . . . . 57-13-6
**Molecular Formula:** . . . . . $CH_4N_2O$
**Molecular Weight:** . . . . . 60.06
**Purity:** . . . . . Min. 99.5%
**$A_{280}$ (8.0M water):** . . . . . Max. 0.05
**Conductivity (5.0M):** . . . . . Max. 15µmhos
**Chloride:** . . . . . Max. 0.0005%
**Iron:** . . . . . Max. 0.0001%
**Heavy Metals:** . . . . . Max. 0.0005%
**Cyanate:** . . . . . Max. 0.002%

### Molecular Biology Specifications

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected
**Protease assay:** . . . . . None Detected
**Sequencing Gel Analysis:** . . . . . Pass
**Biuret Test:** . . . . . Pass
**Solubility (5M water):** . . . . . Pass

## Triton X-100

### Ordering Information

| Catalog# | Description |
|---|---|
| IB07100 | Triton X-100-100ml |


### Physical Specifications

**CAS#:** . . . . . 9002-93-1
**Molecular Formula:** . . . . . $C_{34}H_{62}O_{12}$
**Molecular Weight:** . . . . . 647.00 (Avg.)
**pH (5% water):** . . . . . 7.0 ± 1.0
**Color APHA:** . . . . . Max. 100

### Molecular Biology Specifications

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected
**Protease assay:** . . . . . None Detected

### Storage

- Store at room temperature, Keep tightly sealed.

### Applications

- Triton X-100 is a non-ionic detergent used to denature cell membranes without denaturing the protein. Triton X-100 breaks up protein aggregates to promote enzymatic activity.

## NP-40

### Ordering Information

| Catalog# | Description |
|---|---|
| IB01140 | Nonidet P-40 Substitute-100ml |

### Applications

- NP-40 is a non-ionic detergent used to denature cell membranes without denaturing the protein. NP-40 detergent is used to solubilize cerbral GABA receptors and solubilization of proteins and lipids.


### Physical Specifications

**CAS#:** . . . . . 151-21-3
**Appearance:** . . . . . Colorless, viscous liquid
**Density (@ 20°C):** . . . . . 1.05 - 1.07gm/ml
**Refractive Index:** . . . . . 1.48 - 1.52

### Molecular Biology Specifications

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected
**Protease assay:** . . . . . None Detected

### Storage

- Store at room temperature, Protect from moisture. May become turbid after storage, heat to 40°C to clear product.

| | | |
|---|---|---|
| Snowflake | - | Frozen Storage Required |
| Thermometer | - | Refrigerated Storage Required |
| Diamond | - | Hazardous Materials |

# BUFFER COMPONENTS

## Physical Specifications

**CAS#:** . . . . . 50-01-1
**Molecular Formula:** . . . . . $CH_5N_3HCl$
**Molecular Weight:** . . . . . 95.53
**Purity:** . . . . . Max. 0.03
**$A_{260}$ (6M water):** . . . . . Max. 0.15
**$A_{230}$ (6M water:** . . . . . 4.2 - 4.9
**Iron:** . . . . . Max. 0.0005%
**Lead:** . . . . . Max. 0.0005%

## Molecular Biology Specifications

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected
**Protease assay:** . . . . . None Detected

## Ordering Information

| Catalog# | Description |
|---|---|
| IB05080 | Guanidine HCl-500gm |

## Storage

- Store at room temperature, Protect from moisture.

## Applications

- Guanidine Hydrochloride is an ionic denaturant that rapidly and effectively denatures most proteins. It is also used in the isolation of RNA.

## Physical Specifications

**CAS#:** . . . . . Blend
**Molecular Formula:** . . . . . $CH_5N_3HCl$
**Molecular Weight:** . . . . . 95.53
**Solution Components:** . . . . . Guanidine HCl - 6M
EDTA - 25mM
**Solution pH:** . . . . . Adjusted to 7.5

## Molecular Biology Specifications

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected
**Protease assay:** . . . . . None Detected

## Ordering Information

| Catalog# | Description |
|---|---|
| IB05085 | Guanidine HCl Solution-500ml |

## Storage

- Store at room temperature, Protect from moisture.

## Applications

- Guanidine Hydrochloride Solution is an ionic denaturant that rapidly and effectively denatures most proteins. It is also used in the isolation of RNA.

## Physical Specifications

**CAS#:** . . . . . 593-84-0
**Molecular Formula:** . . . . . $CH_5N_3CHNS$
**Molecular Weight:** . . . . . 118.16
**Purity:** . . . . . Min. 99.0%
**Melting Point:** . . . . . 118 - 121°C
**Solubility (70% water):** . . . . . Clear, haze-free
**$A_{280}$ (70% water):** . . . . . Max. 0.8
**$A_{300}$ (6M water):** . . . . . Max. 0.1
**$A_{410}$ (6M water):** . . . . . Max. 0.1

## Molecular Biology Specifications

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected
**Protease assay:** . . . . . None Detected

## Storage

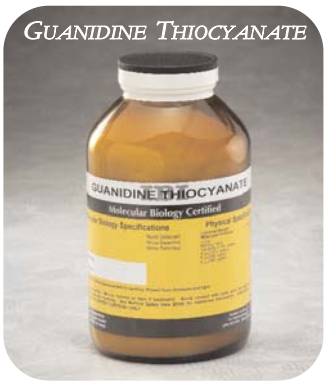
- Store at room temperature, Keep tightly sealed, Protect from moisture, Light sensitive.

## Applications

- Guanidine Thiocyanate is used in the isolation of RNA.

## Ordering Information

| Catalog# | Description |
|---|---|
| IB05100 | Guanidine Thiocyanate-500gm |




## Physical Specifications

**CAS#:** . . . . . 137-16-6
**Molecular Formula:** . . . . . $C_{15}H_{28}NNaO_3$
**Molecular Weight:** . . . . . 293.39
**Purity:** . . . . . Min. 95.0%
**pH (10% water):** . . . . . 7.5 - 8.5
**Sodium Laurate:** . . . . . Max. 4.0%

## Molecular Biology Specifications

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected
**Protease assay:** . . . . . None Detected

## Storage

- Store at room temperature, Protect from moisture.

## Ordering Information

| Catalog# | Description |
|---|---|
| IB07080 | Sarkosyl-100gm |

## Applications

- An ionic detergent used to denature proteins in hybridization, nucleic acid purification, and electrophoresis. It is used in concentrated salt solutions as a detergent because SDS is insoluble in concentrated salt solutions.

# BUFFER COMPONENTS

## Ordering Information

| Catalog# | Description |
|---|---|
| IB72020 | Formamide, Spectral Grade-100ml |
| IB72024 | Formamide, Spectral Grade-500ml |


## Physical Specifications

**CAS#:** . . . . . 75-12-7
**Molecular Formula:** . . . . . $CH_3NO$
**Molecular Weight:** . . . . . 45.04
**Purity:** . . . . . Min. 99.0%
**Conductivity:** . . . . . Max. 100µmhos
**$A_{280}$:** . . . . . Max. 0.08
**Iron:** . . . . . <0.0005%
**Copper:** . . . . . <0.00001%
**Lead:** . . . . . <0.00005%
**Zinc:** . . . . . <0.00005%

## Molecular Biology Specifications

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected
**Protease assay:** . . . . . None Detected

## Storage

- Store at +4C in the dark, Warm to room temperature prior to opening.
- Formamide is supplied distilled, deionized and packaged under nitrogen. When exposed to oxygen, formamide breaks down into formic acid and ammonia, which can degrade nucleic acid samples. Bottles that have been opened and stored should be deionized prior to use by mixing 1gm of mixed bed resign per 10ml of formamide for 30 minutes.

## Applications

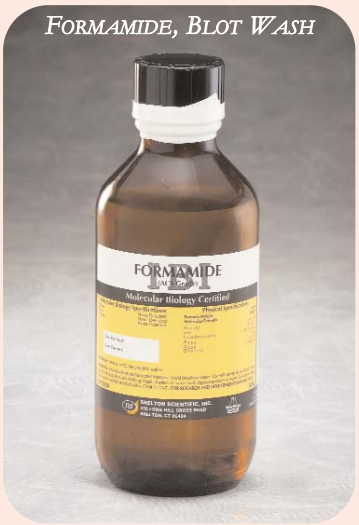
- Formamide is used as a denaturant in hybridization and electrophoresis applications. Formamide is used to denature DNA and RNA. It separates the two strands of the double helix.

## Purity

- The purity of IBI formamide is determined by way of gas chromatography.

## Ordering Information

| Catalog# | Description |
|---|---|
| IB72028 | Formamide, Blot Wash-500ml |




## Physical Specifications

**CAS#:** . . . . . 75-12-7
**Molecular Formula:** . . . . . $CH_3NO$
**Molecular Weight:** . . . . . 45.04
**Purity:** . . . . . Min. 99.0%
**pH:** . . . . . 7.1 ± 0.5
**Conductivity:** . . . . . Max. 350µmhos
**$A_{260}$:** . . . . . <2.5
**$A_{280}$:** . . . . . <0.5
**Density:** . . . . . 130g/ml

## Molecular Biology Specifications

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected
**Protease assay:** . . . . . None Detected

## Storage

- Store at +4C in the dark, Warm to room temperature prior to opening.
- Formamide is supplied distilled, deionized and packaged under nitrogen. When exposed to oxygen, formamide breaks down into formic acid and ammonia, which can degrade nucleic acid samples. Bottles that have been opened and stored should be deionized prior to use by mixing 1gm of mixed bed resin per 10ml of formamide for 30 minutes.

## Applications

- Blot Washing Formamide is suitable for blot washing procedures to remove background hybridization.

| | | |
|---|---|---|
| Snowflake | - | Frozen Storage Required |
| Thermometer | - | Refrigerated Storage Required |
| Diamond | - | Hazardous Materials |

# DYES & STAINS

IBI's ready-to-use 6X loading dye is ideally suited for agarose electrophoresis of DNA, RNA, or nucleic acids. Its ultra pure grade ensures quality and repeatibility every time you use it. The light blue, indigo, and magenta dyes will clearly show the migration of each run, and the dyes migrate independently from the samples allowing the estimation of nucleic acids.

## Physical Specifications

**CAS#:** . . . . . Blend
**Abs. @ 525nm (1:500 water):** . . . . . 0.3 - 0.6
**Abs. @ 588-594nm (1:500 water):** . . . . . 0.5 - 0.8
**Abs. @ 635-641nm (1:500 water):** . . . . . 0.5 - 0.7


## Molecular Biology Specifications

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected
**Protease assay:** . . . . . None Detected

## Storage

- Store at room temperature, Keep tightly sealed, Protect from moisture.

## Ordering Information

| Catalog# | Description |
|---|---|
| IB01010 | 6X Loading Dye-5ml |

## Applications

- IBI's 6X Loading Dye contains 15% Ficoll in a special Tris dye, it is ideal for DNA or RNA gels. The 6X Loading Dye contains three (3) tracking dyes that make estimating sample migration easy and reliable.
  - Dye #1 - Light blue dye is slightly slower than Xylene Cyanol, migrating at around 4 base pairs in a 1% agarose gel.
  - Dye #2 - Indigo dye migrates similar to Bromophenol Blue, at around 600 base pairs in a 1% agarose gel.
  - Dye #3 - Magenta dye migrates at around 150 base pairs in a 1% agarose gel.

## Physical Specifications

**CAS#:** . . . . . Blend

## Molecular Biology Specifications

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected
**Protease assay:** . . . . . None Detected

## Storage

- Store at +4°C, Keep tightly sealed, Protect from moisture.

## Ordering Information

| Catalog# | Description |
|---|---|
| IB01015 | 5X RNA Gel Loading Kit-100 Reactions |

## Applications

- IBI's 5X RNA Gel Loading Kit contains reagents for denaturing & loading RNA samples onto a formaldehyde gel, using MOPS as a buffer. The reagents are nuclease free and contain ultra pure deionized formamide & DEPC water.
- The RNA sample is dissolved in 10µl of DEPC water and mixed with 35µl of denaturing solution. Heat the sample to 65°C for 5 minutes. Once the solution has cooled, add 5µl of loading dye. The sample is now ready to load into the gel.

## Physical Specifications

**CAS#:** . . . . . Blend
**Abs. @ 525nm (1:250 water):** . . . . . 0.15 - 0.35
**Abs. @ 588-594nm (1:250 water):** . . . . . 0.32 - 0.47
**Abs. @ 635-641nm (1:250 water):** . . . . . 0.25 -0.40
*Contains 10% Glycerol / 2% SDS*

## Molecular Biology Specifications

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected
**Protease assay:** . . . . . None Detected

## Storage

- Store at room temperature, Keep tightly sealed, Protect from moisture.

## Ordering Information

| Catalog# | Description |
|---|---|
| IB01190 | 2X Protein Loading Dye-5ml |

## Applications

- IBI's 2X Protein Loading Dye helps track the migration progression of your sample during polyacrylamide electrophoresis. The loading dye not only gives color to the sample, but also increases the density to ensure efficient distribution in each well. IBI's loading dye migrates independently of the samples, making it easier to estimate the migration of proteins.
- *Use 5-10µl per well.*

## Physical Specifications

**CAS#:** . . . . . 2650-17-1
**Molecular Formula:** . . . . . $C_{25}H_{27}N_2O_6S_2Na$
**Molecular Weight:** . . . . . 538.6
**Dye Content:** . . . . . Min. 75.0%
**Moisture:** . . . . . <10%
**Solubility (1% water):** . . . . . Max. 10%
**Em (614nm, methanol):** . . . . . Min. 30,000

## Molecular Biology Specifications

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected
**Protease assay:** . . . . . None Detected

## Ordering Information

| Catalog# | Description |
|---|---|
| IB72120 | Xylene Cyanol FF-25gm |

## Storage

- Store at room temperature, Keep tightly sealed, Protect from moisture.

## Applications

- Xylene Cyanol FF is used as a tracking dye to monitor the progress of electrophoresis separations. The tracking dye typically migrates with the DNA molecules around 5kb. Therefore, if you are monitoring the progress of longer electrophoresis runs, Xylene Cyanol FF is the tracking dye of choice!

## Ordering Information

| Catalog# | Description |
|---|---|
| IB40060 | Ethidium Bromide-5gm |

### Applications

- Ethidium Bromide can be used to detect both single and double stranded nucleic acids (both DNA and RNA). However, Ethidium Bromide does not intercollate into single-stranded DNA very well; therefore, the fluorescence of single-stranded DNA is relatively poor in comparison to double-stranded DNA. The recommended final concentration of Ethidium Bromide in an agarose gel and/or electrophoresis buffers is 0.5µg/ml.

### Physical Specifications

**CAS#:** . . . . . 1239-45-8
**Molecular Formula:** . . . . . $C_{21}H_{20}BrN_3$
**Molecular Weight:** . . . . . 394.32
**Purity:** . . . . . >98.0%
**Moisture:** . . . . . Max. 5.0%
**Ammonium Bromide:** . . . . . Max. 0.1%
**Melting Point:** . . . . . 272.5 ± 2.5°C

### Molecular Biology Specifications

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected

### Storage

- Store at room temperature, Keep tightly sealed, Protect from moisture, Light sensitive.

## Ordering Information

| Catalog# | Description |
|---|---|
| IB40075 | Ethidium Bromide Solution-10ml |

*1 Drop = 0.25µl*

*Ethidium Bromide Solution*

### Physical Specifications

**CAS#:** . . . . . 1239-45-8
**Purity:** . . . . . Min. 98.0%
**Moisture:** . . . . . Max. 8.0%
**Solution Concentration:** . . . . . 10mg per ml

### Molecular Biology Specifications

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected

### Storage

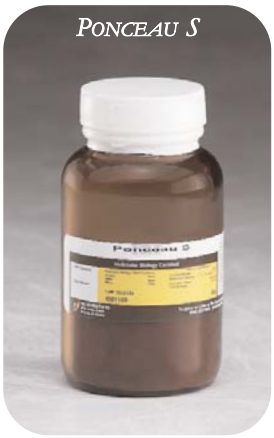
- Store at room temperature, Keep tightly sealed, Protect from moisture..

### Applications

- Ethidium Bromide can be used to detect both single and double stranded nucleic acids (both DNA and RNA). However, Ethidium Bromide does not intercollate into single-stranded DNA very well; therefore, the fluorescence of single-stranded DNA is relatively poor in comparison to double-stranded DNA. The recommended final concentration of Ethidium Bromide in an agarose gel and/or electrophoresis buffers is 0.5µg/ml.

## Ordering Information

| Catalog# | Description |
|---|---|
| IB01100 | Ponceau S-50gm |




### Physical Specifications

**CAS#:** . . . . . 6226-79-5
**Molecular Formula:** . . . . . $C_{22}H_{12}N_4Na_4O_{13}S_4$
**Molecular Weight:** . . . . . 760.61
**Loss on drying (%):** . . . . . ≦6%
**Em (520nm, methanol):** . . . . . ≧27,000

### Molecular Biology Specifications

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected
**Protease assay:** . . . . . None Detected

### Storage

- Store at room temperature, Keep tightly sealed, Protect from moisture.

### Applications

- Ponceau S is a stain used to visualize proteins on nitrocellulose or PVDF membranes. **To create Ponceau S solution**; dissolve 0.5gm of Ponceau S in 1ml of glacial acetic acid, and bring to 100ml with ddi water. **To stain with Ponceau S**; remove blot and rinse with ddi water, stain with Ponceau S solution for 1 to 2 minutes. Rinse for 3 to 5 minutes with ddi water. Red bands should appear against the white background. To reversal stain with Ponceau S Solution; place the nitrocellulose membrane in Ponceau S solution for 5 minutes at room temperature, destain in ddi water for 2 minutes and mark the molecular weight standard with indelible ink, finally to complete the destain soak in water for 10 minutes. Alternatively, use a 0.1N NaOH solution for 5 minutes if proteins of interest are not basic.

## Physical Specifications

**CAS#:** . . . . . Blend
**Appearance:** . . . . . Amber Solution
**pH @ 25°C:** . . . . . 0.4 - 0.8
**Abs. @ 465nm:** . . . . . 0.7 - 1.0

## Procedure

- 15min. Pre-Wash with Deionized Water (for denaturing gel)
- 60min. Staining with Blue-Clean Protein (completely submerged the gel)
- 30min. Safer Alternative, No more Methanol or Acetic Acid.

## Storage

- Store at room temperature, Keep tightly sealed, Protect from moisture, Light sensitive.

## Applications

- Hands off simple staining/destaining procedure
- High sensitivity. Below 20ng of protein per band
- Safer alternative, no methanol or acetic acid required

## Ordering Information

| Catalog# | Description |
|---|---|
| IB01034 | Blue-Clean Protein Stain-1L |


Coomassie Blue Staining of proteins in SDS-PAGE gels is a daily procedure in many laboratories. It is very popular among life science researchers due to its good sensitivity and relative ease of use. Traditionally, coomassie blue staining requires a methanol and acetic acid solution to achieve staining and destaining. This process increases the risk for hazardous exposure and produces an unpleasant pungent odor. Blue-Clean Stain is a convenient alternative to traditional coomassie blue staining procedures. Environmentally friendly, this ready-to-use stain does not contain methanol or acetic acid, and does not require hazardous solvents for destaining. This simple "hands-off" staining/destaining procedure saves valuable time while reducing the handling of hazardous materials and solvent waste in your lab. Blue-Clean staining exhibits sensitivity below 20ng of protein per band. Packaged as a 1X ready-to-use solution, Blue-Clean Stain only requires water for the prewashing and destaining procedures.

## Protocol

- Fix gels for 2 hours or overnight in the following:
  - 50ml Methanol
  - 12ml Acetic Acid
  - 37% Formaldehyde
  - Glacial Acetic Acid
  - Distilled/Deionized water
- Wash three times for 20 minutes in 35% Ethanol
- Add 10ml of sensitizer solution to 90ml of distilled or deionized water (1:10) and incubate for 2 minutes.
- Wash three times for 5 minutes in distilled or deionized water.
- Add 10ml of Silver Stain Solution to 90ml of water (1:10) and incubate for 20 minutes.
- Wash two times for one minute in distilled or deionized water.
- Add 20ml of Developer Solution to 80ml if distilled or deionized water (1:5) and incubate until bands appear (approximately 10 minutes).
- Stop reaction for 20 minutes in the following solution:
  - 50ml Methanol
  - 12ml Acetic Acid
  - 38ml distilled or deionized water
- Store gels in 1% acetic acid solution at +4°C.

| | | |
|---|---|---|
| Snowflake | - | Frozen Storage Required |
| Thermometer | - | Refrigerated Storage Required |
| Diamond | - | Hazardous Materials |

## Ordering Information

| Catalog# | Description |
|---|---|
| IB01037 | Silver Stain Kit |


Techniques involving staining of nucleic acids and proteins using ethidium bromide and coomassie blue stain are useful for a wide spectrum of applications, but both methods are limited in their sensitivity. When very low concentrations of nucleic acids or proteins need to be stained, silver staining methods still provide the most effective alternative. IBI's Silver Stain Kit is a rapid and easy-to-use method to achieve excellent silver staining of nucleic acids or proteins in polyacrylamide gels. This method requires only one hour after fixing the gel. Silver Stain has outstanding sensitivity with very low background. IBI's Silver Stain Kit also provides sufficient, pre-measured reagents for staining 20 gels, along with complete easy to follow directions for use. All reagents are room temperature stable for more than one year, reconstituted silver binding agent should be refrigerated for long term storage.

## Ordering Information

| Catalog# | Description |
|---|---|
| IB74020 | Acridine Orange-25gm |

### Applications

- Acridine Orange is a metochromatic stain that can be used to detect both single and double stranded nucleic acids. Acridine orange interacts with polynucleotides, either by intercalation between the stacked bases of dsDNA or RNA, or when the polynucleotide is predominantly single stranded by binding electrostatically to the phosphate backbone to produce a stacked array. If the stain intercalates between the stacked bases of the double stranded nucleic acid it will fluoresce green at 530nm. If acridine orange binds to the single stranded nucleic acid, it will fluoresce orange-red at 640nm. Therefore, acridine orange is a very informative reagent when denaturing the structure of the nucleic acids that have undergone electrophoresis. Acridine orange is also more sensitive than ethidium bromide if the electrophoresis system has been denatured by gloxylation. For a 1.5% agarose gel, stain with 30mg/ml of acridine orange in 10mM sodium phospate (pH 7.0) for 15 minutes at room temperature in the dark. To destain, run hot tap water over the gel for 15-20 minutes.

### Physical Specifications

**CAS#:** . . . . . 10127-02-3
**Molecular Formula:** . . . . . $C_{17}H_{20}ClN_3 * \frac{1}{2}ZnCl_2$
**Molecular Weight:** . . . . . 370.0
**Em (490nm water):** . . . . . Min. 36,500

### Storage

- Store at room temperature, Keep tightly sealed, Protect from moisture, Light sensitive.

## Ordering Information

| Catalog# | Description |
|---|---|
| IB74040 | Bromophenol Blue-25gm |

### Applications

- Bromophenol Blue is used as a tracking dye to monitor the progress of electrophoresis separations. Bromophenol Blue usually comigrates with DNA molecules around 0.5kb. Therefore, bromophenol blue provides an index of the mobility of the fastest fragments and is valuable in determining the length of the gel, over which the separation of DNA has occurred.

### Physical Specifications

**CAS#:** . . . . . 115-39-9
**Molecular Formula:** . . . . . $C_{19}H_{10}Br_4O_2S$
**Molecular Weight:** . . . . . 669.96
**Purity:** . . . . . >98.0%
**pH (1.0M water):** . . . . . 7.0 ± 0.4
**Insolubles:** . . . . . <0.01%

### Storage

- Store at room temperature, Keep tightly sealed, Protect from moisture, Light sensitive.

## Ordering Information

| Catalog# | Description |
|---|---|
| IB74050 | Methylene Blue-25gm |

### Applications

- Methylene Blue is a recommended stain for agarose gels when recovery of DNA is required. The benefit of using methylene blue (rather than ethidium bromide) is the ability to use a white light box for visualization and photography in place of a UV light box. Using a white light box eliminates mutations that may affect the integrity of the isolated DNA.


### Physical Specifications

**CAS#:** . . . . . 7220-79-3
**Molecular Formula:** . . . . . $C_{16}H_{18}ClN_3S * 3H_2O$
**Molecular Weight:** . . . . . 373.9
**Em (661nm water):** . . . . . >69,000
**Arsenic:** . . . . . 0.0008%
**Copper:** . . . . . <0.01%
**Moisture:** . . . . . Max. 15.0%
**Zinc:** . . . . . <0.001%
**Lead:** . . . . . <0.001%
**Dye Content (Dry Basis):** . . . . . 98 - 103%

### Storage

- Store at room temperature, Protect from moisture.

### Staining DNA Protocol

1.) Stain a 1% gel for 15 minutes with 0.02% Methylene Blue Solution in distilled water.
2.) Destain with distilled water for 15 minutes.

### Staining RNA Protocol *(bonded to nylon or nitrocellulose membranes)*

1.) Soak the dried filter in 5% acetic acid at room temperature for 15 minutes.
2.) Place the filter in 0.5M sodium acetate (pH 5.2) and 0.04% methylene blue for 5 -10 minutes at room temperature.
3.) Rinse the filter in water for 5 - 10 minutes.

## Storage

- Store at +4°C, Keep tightly sealed, Protect from moisture, Light sensitive.

## Applications

- Staining proteins in analytical work
- Staining 2-D gels
- Staining gels for long-term documentation

## Staining Procedure

- Remove stacking gel
- 10min. Rinse gel with 300ml of water(for denaturing gels) three (3) times
- 60min. Staining with See Band (completely submerge gel) 20ml-mini gel
- 30min. Destain in deionized water (Do not continue overnight)

**Note:** Longer destaining may be necessary for optimal results.

## Time to Remove SDS

- <14% 10min. in 300ml water, three (3) times
- 14%-16% 30min. in 300ml water, three (3) times
- >16% 60min. in 300ml water, three (3) times

## Recommended Use

- Clear and sharp bands
- High sensitivity below 10ng of protein per band
- Track staining intensity during staining
- Low background
- Washes with only water
- Stain does not interfere with Western Blottings
- Storage of 12 months @ +4°C

Seeband Protein Stain is a convenient alternative to traditional coomassie blue staining procedures. *Environmentally friendly*, this ready-to-use stain does not contain methanol or acetic acid, and does not require hazardous solvents for destaining. This simple "hands-off" staining/destaining procedure saves valuable time while reducing the handling of hazardous materials and solvent waste in your laboratory.

## Ordering Information

| Catalog# | Description |
|---|---|
| IB01033 | SeeBand Protein Stain (Analytical Grade)-500ml |

## Storage

- Store at +4°C, Keep tightly sealed, Protect from moisture, Light sensitive.

## Applications

- Staining proteins in extraction work
- Staining gel prior to Western Blotting
- Staining 2-D gels
- Staining gels for MALDI-MS

## Staining Procedure

- Remove stacking gel
- 10min. Rinse gel with 300ml of water(for denaturing gels) three (3) times
- 60min. Staining with See Band (completely submerge gel) 20ml-mini gel
- 30min. Destain in deionized water (Do not continue overnight)

**Note:** Longer destaining may be necessary for optimal results.

## Time to Remove SDS

- <14% 10min. in 300ml water, three (3) times
- 14%-16% 30min. in 300ml water, three (3) times
- >16% 60min. in 300ml water, three (3) times

## Recommended Use

- Clear and sharp bands
- High sensitivity below 10ng of protein per band
- Track staining intensity during staining
- Low background
- Washes with only water
- Stain does not interfere with Western Blottings
- Storage of 12 months @ +4°C

Seeband Protein Stain is a convenient alternative to traditional coomassie blue staining procedures. *Environmentally friendly*, this ready-to-use stain does not contain methanol or acetic acid, and does not require hazardous solvents for destaining. This simple "hands-off" staining/destaining procedure saves valuable time while reducing the handling of hazardous materials and solvent waste in your laboratory.

## Ordering Information

| Catalog# | Description |
|---|---|
| IB01035 | SeeBand Protein Stain (Extraction Grade)-500ml |

| | | |
|---|---|---|
| Snowflake | - | Frozen Storage Required |
| Thermometer | - | Refrigerated Storage Required |
| Diamond | - | Hazardous Materials |

## Physical Specifications

**CAS#:** . . . . . 3483-12-3
**Molecular Formula:** . . . . . $C_4H_{10}O_2S_2$
**Molecular Weight:** . . . . . 154.25
**-SH Content:** . . . . . Min. 99.4%
**$A_{283}$ (0.02M water):** . . . . . Max. 0.05
**-S-S Content:** . . . . . Max. 0.5%
**Melting Point:** . . . . . 41 ± 2°C
**IR:** . . . . . Pass
**Moisture:** . . . . . Max. 0.5%
**Solubility (5% water):** . . . . . Clear, Colorless

## Molecular Biology Specifications

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected
**Protease assay:** . . . . . None Detected

## Storage

- Store at -20°C, Keep tightly sealed, Warm to room temperature before opening. A DTT solution should be stored in small aliquots at -20°C. It is advisable that DTT solutions should be made fresh prior to use. **Note:** Do NOT autoclave DTT or solutions containing DTT.

## Ordering Information

| Catalog# | Description |
|---|---|
| IB21040 | DTT (Dithiothreitol-Cleland's Reagent)-5gm |
| IB21045 | DTT (Dithiothreitol-Cleland's Reagent)-25gm |

## Applications

- DTT is used in enzyme preparations to prevent formation of disulfides from sulfhydryl groups, thereby stabilizing the enzyme.


## Physical Specifications

**CAS#:** . . . . . 56-81-5
**Molecular Formula:** . . . . . $C_5H_8O_3$
**Molecular Weight:** . . . . . 92.09
**Purity:** . . . . . Min. 99.5%
**Sulfate:** . . . . . <0.0001%
**Arsenic:** . . . . . <0.0003%
**Chlorine:** . . . . . <0.0003%
**Iron:** . . . . . <0.0005%
**Residue on ignition:** . . . . . ≦0.01
**Density:** . . . . . 1.249 - 1.262gm/ml
**Specific Gravity:** . . . . . 1.2635 - 1.2615

## Molecular Biology Specifications

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected
**Protease assay:** . . . . . None Detected

## Applications

- Glycerol is used to prevent freezing during enzyme and bacterial preparations.

## Storage

- Store at room temperature, Protect from moisture, Keep tightly sealed.

## Ordering Information

| Catalog# | Description |
|---|---|
| IB15760 | Glycerol-500ml |
| IB15762 | Glycerol-1L |


## Physical Specifications

**CAS#:** . . . . . 39450-01-6
**Molecular Weight:** . . . . . ~18,000 Da
**Activity (@37°C U/mg):** . . . . . Min. 30U/mg

## Molecular Biology Specifications

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected

## Storage

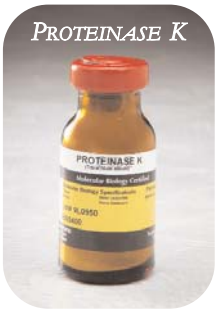
- Store at -20°C, Warm to room temperature before opening, Keep tightly sealed.

## Applications

- Proteinase K is a stable >50mg/ml (powder) highly active proteolytic enzyme that is purified from the mold tritirachium album. The enzyme has two binding sites for Ca++, which lie some distance from the active site, and is not directly involved in the catalytic mechanism. The high activity of the enzyme solution (0.6U/µl) means that you can expect more complete digestion of your sample.

## Ordering Information

| Catalog# | Description |
|---|---|
| IB05400 | Proteinase K-100mg |




**To make a 20mg/ml Proteinase K Solution (Conc.)**

| | |
|---|---|
| Tris | 10mM |
| Calcium Chloride | 1mM |
| Glycerol | 30% |

pH adjusted to 8.0 w/HCl

## Ordering Information

| Catalog# | Description |
|---|---|
| IB02100 | IPTG-1gm |
| IB02105 | IPTG-5gm |
| IB02125 | IPTG-25gm |

## Physical Specifications

**CAS#:** . . . . . 367-93-1
**Molecular Formula:** . . . . . $C_9H_{18}O_5S$
**Molecular Weight:** . . . . . 238.31
**Purity:** . . . . . Min. 99.0%
**Melting Point:** . . . . . 110 - 114°C
**IR (KBr):** . . . . . Conforming as Standard
**Dioxane (GLC):** . . . . . <1ppm

## Molecular Biology Specifications

**Colorimetric Transformation assay:** . . . . . Pass

## Storage

- Store dessicated at -20°C, Keep tightly sealed, Warm to room temperature before opening.

## Applications

- IPTG is an inducer of β-galactosidase activity in E. *coli*. It is commonly used in conjunction with X-GAL to detect lac gene expression in cloning applications, thus allowing detection of recombinant molecules.

## Protocol for Stock Solution

- Prepare a stock solution of IPTG at 0.1M (23.8mg/ml) in sterile distilled water and filter sterilize through a 0.22 micron disposable filter. Add 3ml per liter of IPTG stock solution and any of the solutions listed to the left. When pouring plates add 15gm bacto-agar per liter.

**10X M9 Salts Solution:**

| | |
|---|---|
| 60gm | $Ma_2HPO_4$ |
| 30gm | $KH_2PO_4$ |
| 5gm | NaCl |
| 10gm | $NH_4Cl$ |

Adjust the pH to 7.4, add water to a final volume of 1L, & autoclave.

**For M9 media add:**

| | |
|---|---|
| 100ml | 10X M9 Salt Solution |
| 1ml | 0.01M $CaCl_2$ |
| 2ml | 1.0M $MgSO_4$ |

Adjust to a final volume of 1L with distilled water.

**Supplement with (optional):**

| | |
|---|---|
| 0.2% | Casamino Acids |
| 0.4% | Glucose |
| 40mg/ml | Thiamine HCl |

**2X YT Media:**

| | |
|---|---|
| 16gm/L | Tryptone |
| 10gm/L | Yeast Extract |
| 5gm/L | NaCl |

IPTG

## Ordering Information

| Catalog# | Description |
|---|---|
| IB01090 | PMSF (Phenylmethyl Sulfonyl Fluoride)-5gm |

## Applications

- An irreversible serine protease inhibitor of trypsin, chymotrypsin, kallikrein, subtilisin, and thrombin, as well as cysteine protease papain.

**Working Range**
0.1 - 1.0mM
0.2 Soluble in Ethanol and Methanol

## Physical Specifications

**CAS#:** . . . . . 329-98-6
**Molecular Formula:** . . . . . $C_6H_5CH_2SO_2F$
**Molecular Weight:** . . . . . 174.02
**Purity:** . . . . . Min. 99.0%
**Melting Point:** . . . . . 91 - 95°C
**Solubility(5% EtOH):** . . . . . Pass
**Identification:** . . . . . Pass
**TLC:** . . . . . One spot

## Molecular Biology Specifications

**DNase assay:** . . . . . None Detected
**RNase assay:** . . . . . None Detected
**Protease assay:** . . . . . None Detected

## Storage

- Store at room temperature, Keep tightly sealed, Protect from moisture.

## Ordering Information

| Catalog# | Description |
|---|---|
| IB05406 | Proteinase K Solution-5ml |

## Storage

- Store at +4°C, Keep tightly sealed.


## Physical Specifications

**CAS#:** . . . . . Blend
**Solution Components**
**Tris:** . . . . . 10mM
**Calcium Chloride:** . . . . . 1mM
**Glycerol:** . . . . . 30%
**pH adjusted to 8.0 with HCl**

## Molecular Biology Specifications

**DNase assay (Endo & Exo):** . . . . . None Detected
**RNase assay:** . . . . . None Detected
**Proteinase activity on gel substrate:** . . . . Pass

## Applications

- IBI's Proteinase K Solution is a stable 20mg/ml highly active proteolytic enzyme that is purified from the mold Tritirachium album. The enzyme has two binding sites for Ca ++, which lie some distance from the active site and is not directly involved in the catalytic mechanism. The high activity of the enzyme solution (0.6U/µl) means that you can keep the reaction volumes low, as low as 200mg/ml. It also means that you can expect more complete digestion of your samples. Examples: For a final concentration of 200µg/ml, add 1ml of Proteinase K Solution to your sample.

## Physical Specifications

**CAS#:** . . . . . 7240-90-6
**Molecular Formula:** . . . . . $C_{14}H_{15}BrClNO_6$
**Molecular Weight:** . . . . . 408.64
**Purity:** . . . . . Min. 99%
**Solubility (2% in N,N' DMF):** . . . . . Clear, Colorless

## Molecular Biology Specifications

**Optical rotation (C=1):** . . . . . Pass

## Storage

- Store at -20°C, Keep tightly sealed, Warm to room temperature prior to opening.

## Applications

- X-GAL is histochemical substrate for β-galactosidase, allowing the detection of lac gene expression. To make a stock solution of X-GAL, dissolve the X-GAL in dimethylformamide to make a 20mg/ml solution. **Note:** Use either a glass or polypropylene tube. Add 4ml of this solution per liter of culture media. The tube containing the solution should be wrapped in aluminum foil to prevent damage from light, and should be stored at -20°C. **Note:** It is not necessary to sterilize X-GAL solutions by filtration.

## Ordering Information

| Catalog# | Description |
|---|---|
| IB02260 | X-GAL-1GM |
| IB02264 | X-GAL-100MG |


## Physical Specifications

**CAS#:** . . . . . Blend

## Molecular Biology Specifications

| Name | MW | Description |
|---|---|---|
| AEBSF | 239.5 | Irreversible serine protease inhibitor |
| Aprotinin | 6512.0 | Competitive reversible serine protease inhibitor |
| Bestatin | 308.4 | Competitive inhibitor of aminopeptidases |
| E64 | 357.4 | Irreversible inhibitor cysteine proteases |
| Leupeptin | 493.6 | Reversible inhibitor of cysteine proteases |

## Storage

- Store at room temperature, Keep tightly sealed, Protect from moisture, Freeze when reconstituted.

## Ordering Information

| Catalog# | Description |
|---|---|
| IB01070 | Protease Inhibitor Cocktail-1ML |

## Applications

- Protease Inhibitor Cocktail is an easy to use lyophilized power. Add 1ml of $ddH_2O$ to the vial and mix gently. The reconstituted protease cocktail should be aliquoted into multiple tubes and frozen. This material can be stored up to two weeks. A 1ml vial of protease cocktail is sufficient for 100ml of sample buffer. See components of protease cocktail listed below:

| Name | MW | Amt/1ml | Working Dilution |
|---|---|---|---|
| AEBSF | 239.5 | 50mM | 0.5mM |
| Aprotinin | 6512.0 | 30µM | 0.3µM |
| Bestatin | 308.4 | 1mM | 10.0µM |
| E64 | 357.4 | 1mM | 10.0µM |
| Leupeptin | 493.6 | 1mM | 10.0µM |

## Physical Specifications

**CAS#:** . . . . . Blend

## Molecular Biology Specifications

| Name | MW | Description |
|---|---|---|
| AEBSF | 239.5 | Irreversible serine protease inhibitor |
| Aprotinin | 6512.0 | Competitive reversible serine protease inhibitor |
| Bestatin | 308.4 | Competitive inhibitor of aminopeptidases |
| E64 | 357.4 | Irreversible inhibitor cysteine proteases |
| Leupeptin | 493.6 | Reversible inhibitor of cysteine proteases |
| EDTA | 372.24 | Reversible metalloprotease inhibitor |

## Storage

- Store at room temperature, Keep tightly sealed, Protect from moisture, Freeze when reconstituted.

## Ordering Information

| Catalog# | Description |
|---|---|
| IB01150 | Protease Inhibitor Cocktail w/EDTA-1ML |

## Applications

- Protease Inhibitor Cocktail w/EDTA is an easy to use lyophilized power. Add 1ml of $ddH_2O$ to the vial and mix gently. The reconstituted protease cocktail w/EDTA should be aliquoted into multiple tubes and frozen. This material can be stored up to two weeks. A 1ml vial of protease cocktail is sufficient for 100ml of sample buffer. See components of protease cocktail listed below:

| Name | MW | Amt/1ml | Working Dilution |
|---|---|---|---|
| AEBSF | 239.5 | 50mM | 0.5mM |
| Aprotinin | 6512.0 | 30µM | 0.3µM |
| Bestatin | 308.4 | 1mM | 10.0µM |
| E64 | 357.4 | 1mM | 10.0µM |
| Leupeptin | 493.6 | 1mM | 10.0µM |
| EDTA | 372.24 | 1mM | 1.0-10.0µM |

Snowflake - Frozen Storage Required
Thermometer - Refrigerated Storage Required
Diamond - Hazardous Materials