



## 12. Buffers & Reagents

*Photo: Light micrograph showing the golgi apparatus in neurons of dorsal root ganglion cajal s-formol*

## PBS (pH 7.4)



### Tablets format:

Cat No.	Size
BR0001	8 L= 8 Tablets
BR0002	16 L= 16 T
BR0095	50 L= 50 T
BR0096	100 L= 100 T

### Includes:

· Exactly pre-weighed tablets (1,000 mL/Tablet)



### Aqueous solution format:

Cat No.	Size
BR0003	1 L (1x)
BR0004	1 L (10x)

### Includes for 1 unit:

· 1,000 mL PBS solutions

### Specifications:

**Chemicals:** analytical grade.

**Composition:** 0.14 M NaCl, 0.0027 M KCl, 0.010 M  $\text{PO}_4^{3-}$ .

**pH:** 7.4 ± 0.05 at 25° C

### Description:

Phosphate-Buffered Saline (PBS) is a high quality, reliable and convenient water-based salt solution containing sodium phosphate, sodium chloride, potassium chloride and potassium phosphate. PBS is used in cell biology to maintain the osmolarity, in immunoassays (ELISA, immuno-histochemical), to maintain the protein pH, to dissolve proteins and peptides samples.

### Advantages & Features:

- ✓ **Reliable:** rigorous quality control standards to guarantee lot-to-lot consistency.
- ✓ **High Quality:** free of DNase, RNase or protease contamination.
- ✓ **Flexible format:** available in tablets and time-saving ready-to-use solution.
- ✓ **Convenient:** ideal for standardizing laboratory work.

### Applications:

- ✓ Dilute substances.
- ✓ Immobilize a substance, as a protein, in a solid surface.
- ✓ Immuno-histochemical, ELISA and Western blot assays.
- ✓ Cell cultures procedures.
- ✓ Microbiological procedures.

### Quality Control:

- ✓ Strict quality controls in every phase of manufacturing to guarantee the highest quality and reproducibility.

### Related Products:

· Custom solutions (p.147)



## PBS with Tween™ 20 (pH 7.4)



### Tablets format:

Cat No.	Size
BR0005	8 L= 8 Tablets
BR0006	16 L= 16 T
BR0007	50 L= 50 T
BR0092	100 L= 100 T

### Includes:

· Exactly pre-weighed tablets and (1,000 mL/Tablet)



### Aqueous solution format:

Cat No.	Size
BR0008	1 L (1x)
BR0009	1 L (10x)

### Specifications:

**Chemicals:** analytical grade.

**Composition:** 0.14 M NaCl, 0.0027 M KCl, 0.05% Tween™ 20, 0.010 M  $\text{PO}_4^{3-}$ .

**pH:** 7.4 ± 0.05 at 25°C

### Description:

Phosphate-Buffered Saline with Tween™ 20 (PBS-T) is a high quality, reliable and convenient water-based salt solution ideal for use in sample preparation and as a wash buffer in general immunoassay applications.

It includes Tween™ 20, a non-ionic detergent additive that reduces non-specific binding and protein-protein interaction during the wash step in protein and immunoassay procedures such as ELISA and Western blotting. Decreasing the non-specific binding and staining makes ELISA results and blots easier to interpret.

### Advantages & Features:

- ✓ **Reliable:** rigorous quality control standards to guarantee lot-to-lot consistency.
- ✓ **High Quality:** free of DNase, RNase or protease contamination.
- ✓ **Convenient:** available in tablets and time-saving ready-to-use solution.
- ✓ **Complete solution:** includes a non-ionic detergent.
- ✓ **Proven performance** for general immunoassay applications.

### Applications:

- ✓ Wash buffer in immunolabelling techniques, such as ELISA and Western blotting.
- ✓ Blocking buffer for plate based assays.
- ✓ Protein-plate coating.

### Quality control:

- ✓ Strict quality controls in every phase of manufacturing to guarantee the highest quality and reproducibility.

### Related Products:

· Custom solutions (p.147)

## TBS (pH 7.6)



### Tablets format:

Cat No.	Size
BR0040	4 L= 8 Tablets
BR0041	8 L= 16 T
BR0042	25 L= 50 T
BR0093	50 L= 100 T

### Includes:

- Exactly pre-weighed tablets (500 mL/Tablet)



### Related Products:

- Custom solutions (p.147)

### Specifications:

**Chemicals:** analytical grade.

**Composition:** 0.050 M Tris-HCl, 0.15 M KCl.

**pH:** 7.6 ± 0.05 at 25°C.

### Description:

Tris Buffered saline (TBS) is a high quality, reliable and reproducible buffer to maintain the pH without large variations. TBS is isotonic and non-toxic to cells thereby emulating the physiological conditions. It is used to dilute sample and wash buffer in immunoassays as ELISA or immuno-histochemistry when the background is high. In Western blot, it is used for diluting phosphatase or peroxidase-conjugated antibodies.

### Advantages & Features:

- ✓ **Reliable:** rigorous quality control standards to guarantee lot-to-lot consistency.
- ✓ **Reproducibility Assured.**
- ✓ **High Quality:** free of DNase, RNase or protease contamination.
- ✓ **Really fast and easy procedure:** results in few seconds with minimal handling steps.
- ✓ **Safe:** isotonic and non-toxic to cells.

### Applications:

- ✓ Dilute substances.
- ✓ Wash buffer in ELISA.
- ✓ Dilute phosphatase and peroxidase conjugated antibodies in Western Blot.
- ✓ Immuno-histochemistry staining, to clean the background.
- ✓ Wash buffer *in situ* hybridization.

### Quality control:

- ✓ Strict quality controls in every phase of manufacturing to guarantee the highest quality and reproducibility.

## TBS with Tween™ 20 (pH 7.6)



### Tablets format:

Cat No.	Size
BR0043	4 L= 8 Tablets
BR0044	8 L= 16 T
BR0045	25 L= 50 T
BR0094	50 L= 100 T

### Includes:

- Exactly pre-weighed tablets (500 mL/Tablet)



### Related Products:

- Custom solutions (p.147)

### Specifications:

**Chemicals:** analytical grade.

**Composition:** 0.15 M NaCl, 0.050 M Tris-HCl, 0.05% Tween™ 20.

**pH:** 7.6 ± 0.05 at 25°C.

### Description:

TBS Tween™ 20 (TBS-T) is a high quality, reliable and non-toxic buffer ideal to remove excess material, decreasing non-specific background staining. It is preferably used with alkaline phosphatase or peroxidase-conjugated antibodies.

### Advantages & Features:

- ✓ **Reliable:** rigorous quality control standards to guarantee lot-to-lot consistency.
- ✓ **High Quality:** free of DNase, RNase or protease contamination.
- ✓ **Really fast and easy procedure:** results in few seconds with minimal handling steps.
- ✓ **Safe:** non-toxic to cells.
- ✓ **Accurate:** eliminates variables in laboratory work flow.

### Applications:

- ✓ Washing nitrocellulose membrane in Western Blot and microtiter plate wells in ELISA assays.
- ✓ Blocking buffer for plate based assays.

### Quality control:

- ✓ Strict quality controls in every phase of manufacturing to guarantee the highest quality and reproducibility.

## Tris-Glycine Buffer (pH 8.3)



### Pouch format:

Cat No.	Size
BR0050	1 pouch
BR0051	5 pouch

### Includes for 1 pouch:

- Exactly pre-weighed pouches (1,000 mL/pouch)

### Aqueous solution format:

Cat No.	Size
BR0055	1 L (10x)

### Includes for 1 unit:

- 1,000 mL of Tris-Glycine Buffer (10x)



### Specifications:

**Chemicals:** Analytical grade.

**Composition:** 0.025 M Tris, 0.192 M glycine.

**pH:** 8.3 ± 0.2 at 25° C.

### Description:

Tris-Glycine buffer (TG) is high quality, reliable and consistent running buffer in native (non-denaturing) homogeneous and gradient poly-acrylamide gel electrophoresis (PAGE) of proteins. Tris-glycine gels resolve proteins by size. However, very small proteins and peptides do not resolve well due to interference from the glycine/pH discontinuity front.

It is also used to make Tris-glycine/20% methanol Western transfer buffer, which is the most frequently used protein transfer buffer for wet blot transfers.

### Advantages & Features:

- ✓ **Reliable:** rigorous quality control standards to guarantee lot-to-lot consistency.
- ✓ **High Quality:** free of DNase, RNase or protease contamination.
- ✓ **Proven performance:** for protein electrophoresis.
- ✓ **Consistency guaranteed.**

### Applications:

- ✓ Protein electrophoresis.
- ✓ Denatured protein electrophoresis.
- ✓ Polyacrylamide gel electrophoresis.
- ✓ Western blotting.

### Quality control:

- ✓ Strict quality controls in every phase of manufacturing to guarantee the highest quality and reproducibility.

### Related Products:

- Custom solutions (p.147)

## Tris-Glycine SDS Buffer (pH 8.3)



### Pouch format:

Cat No.	Size
BR0052	1 pouch

### Includes for pouch:

- Exactly pre-weighed powder (1,000 mL/Pouch)

### Aqueous solution format:

Cat No.	Size
BR0053	1 L (10x)

### Includes for 1 unit:

- 1,000 mL of Tris-Glycine SDS (10x)



### Specifications:

**Chemicals:** analytical grade.

**Composition:** 0.025 M Tris, 0.192 M glycine, 0.10% SDS.

**pH:** 8.3 ± 0.2 at 25° C.

### Description:

Tris-glycine-SDS (TG-SDS) is high quality, reliable and consistent buffer that incorporates the denaturing agent sodium dodecyl sulphate (SDS). Protein electrophoresis under denaturing conditions (SDS-PAGE) involves separating proteins based on their size. By treating the sample under denaturing and reducing conditions with SDS, proteins unfold and become coated with SDS detergent molecules.

### Advantages & Features:

- ✓ **Reliable:** rigorous quality control standards to guarantee lot-to-lot consistency.
- ✓ **High Quality:** free of DNase, RNase or protease contamination.
- ✓ **Convenient:** available in pouches and time-saving ready-to-use solution.
- ✓ **Complete solution:** includes the denaturing agent SDS.
- ✓ **Proven performance:** for protein electrophoresis.
- ✓ **Consistency guaranteed.**

### Applications:

- ✓ Protein electrophoresis.
- ✓ Denatured protein electrophoresis.
- ✓ Polyacrylamide gel electrophoresis.
- ✓ Western blotting.

### Quality control:

- ✓ Strict quality controls in every phase of manufacturing to guarantee the highest quality and reproducibility.

### Related Products:

- Custom solutions (p.147)

## 0.5M EDTA Solution (pH 8.0)



### Pouch format:

Cat No.	Size
BR0060	1 pouch

### Includes:

· Exactly pre-weighed powder (500 mL/pouch)



### Aqueous solution format:

Cat No.	Size
BR0061	100 mL

### Includes:

· 100 mL of 0.5M EDTA Solution

### Specifications:

**Chemicals:** analytical grade.

**Concentration:** 0.5 M EDTA.

**pH:** 8.0 ± 0.05 at 25 °C.

### Description:

Ethylene-diamine-tetra acetic acid (EDTA) is a high quality, reliable and safe solution that sequesters a variety of polyvalent cations such as Ca<sup>2+</sup> and Mg<sup>2+</sup>. EDTA is usually used like inactivator of metal-dependent enzymes, preventing damage to DNA and RNA.

In cell cultures is used to avoid cumping of cells in liquid suspensions, as EDTA binds to calcium and prevents joining of cadherins between cells.

### Advantages & Features:

- ✓ **Reliable:** rigorous quality control standards to guarantee lot-to-lot consistency.
- ✓ **High Quality:** free of DNase, RNase or protease contamination.
- ✓ **Time-saving** due its ready-to-use format that avoids experiment preparation time.
- ✓ **Safe:** prevents damage to DNA and RNA.

### Applications:

- ✓ Anticoagulant for blood samples and its storage.
- ✓ Abduct the metal required to metal-dependent enzyme, inactivating the reactions.
- ✓ Avoid junctions between cells by cadherins, usually used to cell culture procedures.
- ✓ Used in TAE and TBE buffers because it inhibits metal-dependent nucleases by chelating the divalent cations (Ca<sup>2+</sup> Mg<sup>2+</sup>), protecting the DNA from nucleases during the run.
- ✓ Added to TE buffer, used to solubilize DNA and RNA, inactivating nucleases by binding to metals cations required by these enzymes.

### Quality control:

- ✓ Strict quality controls in every phase of manufacturing to guarantee the highest quality and reproducibility.

## TE (10x) (pH 7.4)



### Pouch format:

Cat No.	Size
BR0011	1 pouch
BR0012	5 x 1 pouch

### Includes:

· Exactly pre-weighed powder (1,000 mL/pouch)

### Aqueous solution format:

Cat No.	Size
BR0013	1 L (10x)

### Includes:

· TE Ready-to-use Solution (10x)



### Related Products:

· Custom solutions (p.147)

### Specifications:

**Chemicals:** analytical grade.

**Composition:** 0.1 M Tris-HCl, 0.010 M EDTA (10x).

**pH:** 7.4 ± 0.05 at 25 °C.

### Description:

Tris-EDTA (TE) is a high quality, reliable and convenient solution which incorporates a buffer, Tris and chelating agent, EDTA. EDTA avoids the degradation of DNA and RNA by kidnapping of magnesium or other divalent metal ions.

Generally, TE is used to solubilize DNA and RNA, protecting it from degradation. Moreover, in immunohistochemical, formalin and other aldehyde fixation produce protein cross-link that masks the antigenic sites giving weak or false negative. With TE buffer breaks the protein cross-link, unmasks the antigenics and epitopes and therefore enhances staining intensity of antibodies.

### Advantages & Features:

- ✓ **Reliable:** rigorous quality control standards to guarantee lot-to-lot consistency.
- ✓ **High Quality:** free of DNase, RNase or protease activities.
- ✓ **Complete solution:** includes chelating agent.
- ✓ **Versatile and convenient:** pH adjusted for DNA/RNA work.
- ✓ **Sterile:** by autoclaving or filtration.

### Applications:

- ✓ DNA and RNA procedures, as electrophoresis, storage, extraction and others.
- ✓ Immuno-histochemistry procedures.

### Quality control:

- ✓ Strict quality controls in every phase of manufacturing to guarantee the highest quality and reproducibility.

## TAE (10x) (pH 8.3)



Cat No.	Size
BR0020	1 L

### Includes for 1 L:

- 1,000 mL TAE (10x)



### Related Products:

- Custom solutions (p.147)

### Specifications:

**Chemicals:** analytical grade.

**Format:** 10x solution.

**Concentration:** 40 mM Tris, 20 mM Acetic Acid and 1mM EDTA (1x).

**pH:** 8.3± 0.05 at 25° C.

### Description:

TAE is a high quality, reliable and versatile buffer. It is useful due its basic pH that allows migrations of the DNA through the gel toward the positive anode. TAE buffers are used for the analyses of DNA products resulting from PCR amplification, DNA purification, or DNA cloning experiments.

TAE has a low ionic strength and buffering ability, it used to separating DNA larger than 1,500 bp and easily recovers the DNA from gel.

### Advantages & Features:

- ✓ **Reliable:** rigorous quality control standards to guarantee lot-to-lot consistency.
- ✓ **High Quality:** free of DNase, RNase or protease activities.
- ✓ **Time-saving** due its ready-to-use format that avoids experiment preparation time.
- ✓ **Complete solution:** includes chelating agent.
- ✓ **Versatile:** pH adjusted for DNA/RNA work.
- ✓ **Sterile:** by autoclaving or filtration.

### Applications:

- ✓ Running buffer and gels for RNA analysis native and denaturing.
- ✓ Polyacrylamide and agarose gels.
- ✓ Nucleic acid electrophoresis.
- ✓ Transfer buffer in Northern Blotting.

### Quality control:

- ✓ Exempt of DNase, RNase or protease activities guaranteed by appropriate quality tests.

## TBE (10x) (pH 8.3)



Cat No.	Size
BR0030	1 L

### Includes for 1 unit:

- 1,000 mL TBE (10x)



### Related Products:

- Custom solutions (p.147)

### Specifications:

**Chemicals:** analytical grade.

**Format:** 10x solution.

**Composition:** 0.89 M Tris-Borate, 0.02M EDTA (10x).

**pH:** 8.3 ± 0.15 at 25° C.

### Description:

TBE is a high quality, reliable and versatile buffer for DNA and RNA polyacrilamide gel electrophoresis. It is useful due its basic pH, which allows migrations of the DNA through the gel toward the positive anode. TBE buffers are used for the analysis of DNA products resulting from PCR amplification, DNA purification, or DNA cloning experiments.

TBE has high resolution for separating smaller DNA fragments but it is complicated recovery DNA from gel.

### Advantages & Features:

- ✓ **Reliable:** rigorous quality control standards to guarantee lot-to-lot consistency.
- ✓ **High Quality:** free of DNase, RNase or protease activities.
- ✓ **Time-saving** due its ready-to-use format that avoids experiment preparation time.
- ✓ **High purity of components used.**

### Applications:

- ✓ Nucleic acid electrophoresis.
- ✓ Running buffer and gels for RNA analysis native and denaturing.
- ✓ Polyacrylamide and agarose gels.
- ✓ Transfer buffer in Northern Blotting.

### Quality control:

- ✓ Exempt of DNase, RNase or protease activities guaranteed by appropriate quality tests.

# 1M Tris Buffer (pH 7.4)

## Ready-to-use format:

Cat No.	Size
BR0070	1 L

## Includes for 1 units:

· 1,000 mL Tris-HCl



## Related Products:

· Custom solutions (p.147)

## Specifications:

**Chemicals:** analytical grade.

**Concentration:** 1M Tris-HCl.

**pH:** 7.4 ± 0.05 at 25° C.

## Description:

Tris-HCl or Tris (hydroxymethyl)-aminomethane hydrochloride is a high quality, reliable and rapid solution used in a variety of biological systems. Their uses include pH control *in vitro* and *in vivo*, being that coincides with the typical pH of most living organism. In Molecular Biology laboratories are used buffering system for electrophoresis assays (TAE and TBE).

## Advantages & Features:

- ✓ **Reliable:** rigorous quality control standards to guarantee lot-to-lot consistency.
- ✓ **High Quality and purity:** free of DNase, RNase or protease contamination.
- ✓ **Time-saving** due its ready-to-use format that avoids experiment preparation time.
- ✓ **High purity** of components used.

## Applications:

- ✓ Several techniques in Molecular Biology and biochemistry.
- ✓ Electrophoresis buffer running.
- ✓ Cell cultures assays.

## Quality control:

- ✓ Exempt of DNase, RNase or protease activities guaranteed by appropriate quality tests.