**Product Specifications**

DNA Molecular Weight Markers, Electrophoresis Reagents
Polymerase Chain Reaction Reagents
Custom Primers and Probes
Hybridization and Detection Reagents

# DNA & RNA Gel Loading Buffers

| | Catalog No. | Product | Size |
|---|---|---|---|
| ❑ | 40-3002-10 | Gel Loading Buffer 5X BPB/XC non-denaturing | 1 ml |
| ❑ | 40-3002-15 | Gel Loading Buffer 5X BPB/XC non-denaturing | 15 ml |
| ❑ | 40-3003-10 | Gel Loading Buffer 10X BPB/XC non-denaturing | 1 ml |
| ❑ | 40-3003-15 | Gel Loading Buffer 10X BPB/XC non-denaturing | 15 ml |

**Storage**
Store at room temperature or at +4°C up to 12 months.
For longer periods, store at -20°C.

**Product Description & Application**
Gel Loading Buffer 5X BPB/XC and 10X BPB/XC are concentrates that contain bromophenol blue and xylene cyanol as tracking dyes. The migration of the tracking dyes differs in different percentage gels. See table below for approximate co-migration of dyes with DNA base pair sizes. In agarose gels over a range of 0.7% to 1.4% (w/v), xylene cyanol co-migrates with ~4 kb linear double strand DNA and bromophenol blue co-migrates with ~300 bp double strand DNA. In a 12% polyacrylamide gel xylene cyanol co-migrates with approximately 70 bp DNA and bromophenol blue co-migrates with ~20 bp DNA.
Suitable for use in nucleic acid gel electrophoresis
DNase, RNase: None detected

**Application**
**Gel Loading Buffer 5X BPB/XC non-denaturing**
Add 1 volume of the Gel Loading Solution to 4-5 volumes of sample, mix well and load to gel.

**Gel Loading Buffer 10X BPB/XC non-denaturing**
Add 1 volume of the Gel Loading Solution to 9-10 volumes of sample, mix well and load to gel.

**10X Composition**
0.25%(w/v) Bromophenol blue
0.25%(w/v) Xylene cyanole FF
15%(w/v) Ficol in water

**Reference**
1. Sambrook, J., *et al*., Molecular Cloning, A Laboratory Manual, Cold Spring Harbor Laboratory, p. 6.13-6.62 (1989)

| Recommended Gel Percentages for Separation of Linear DNA* | | | |
|---|---|---|---|
| **Agarose gel, %** | **Range of separation, bp** | **Polyacrylamide gel, %** | **Range of separation, bp** |
| 0.5 | 1,000-30,000 | 3.5 | 100-1,000 |
| 0.7 | 800-12,000 | 5.0 | 80-500 |
| 1.0 | 500-10,000 | 8.0 | 60-400 |
| 1.2 | 400-7,000 | 12.0 | 40-200 |
| 1.4 | 200-4,000 | 20.0 | 5-100 |
| 2.0 | 50-2,000 | | |
| * Approximate electrophoretic resolution of DNA fragments sizes. | | | |

| Migration Rates of the Marker Dyes in Polyacrylamide Gels* | | |
|---|---|---|
| **Polyacrylamide gel, %** | **Bromophenol blue*** | **Xylene cyanol FF*** |
| **Non-denaturing gels** | | |
| 3.5 | 100 bp | 460 bp |
| 5.0 | 65 bp | 260 bp |
| 8.0 | 50 bp | 160 bp |
| 12.0 | 45 bp | 70 bp |
| 15.0 | 20 bp | 60 bp |
| 20.0 | 12 bp | 45 bp |
| **Denaturing gels** | | |
| 5.0 | 35 bases | 130 bases |
| 6.0 | 29 bases | 106 bases |
| 8.0 | 26 bases | 76 bases |
| 10.0 | 12 bases | 55 bases |
| 20.0 | 8 bases | 28 bases |
| * The approximate sizes of DNA fragments with which the indicated marker dye co-migrates. | | |

| Migration Rates of the Marker Dyes in Agarose Gels | | | |
|---|---|---|---|
| **Agarose concentration, %** | **Xylene cyanol FF** | **Bromophenol blue** | **Orange G** |
| 0.7-1.7 | ~4000bp | ~300bp | ~50bp |
| 2.5-3.0 | ~800bp | ~100bp | ~30bp |
| * The approximate sizes of DNA fragments with which the indicated marker dye co-migrates. | | | |

**Reference**
Sambrook, J., et al., Molecular Cloning. A Laboratory Manual, Cold Spring Harbor Laboratory, Cold Spring Harbor, N.Y., 12.89, 5.42, 2001

## Ordering Information

| Loading Buffers | | | |
|---|---|---|---|
| **Product** | **Catalog No.** | **Size** | **Price $** |
| Gel Loading Buffer 5X BPB/XC non-denaturing | 40-3002-10 | 1 ml | 10.00 |
| Gel Loading Buffer 5X BPB/XC non-denaturing | 40-3002-15 | 15 ml | 80.00 |
| Gel Loading Buffer 10X BPB/XC non-denaturing | 40-3003-10 | 1 ml | 16.00 |
| Gel Loading Buffer 10X BPB/XC non-denaturing | 40-3003-15 | 15 ml | 95.00 |
| Gel Loading Buffer 5X Orange G/XC non-denaturing | 40-3004-10 | 1 ml | 10.00 |
| Gel Loading Buffer 5X Orange G/XC non-denaturing | 40-3004-15 | 15 ml | 80.00 |
| Gel Loading Buffer 2X BPB/XC Denaturing for Sequencing | 40-5027-10 | 1 ml | 10.00 |
| Gel Loading Buffer 2X BPB/XC Denaturing for Sequencing | 40-5027-15 | 15 ml | 80.00 |
| DNA SDS Gel Loading Buffer 5X BPB/XC DNA binding protein denaturing buffer | 40-5028-10 | 1 ml | 10.00 |
| DNA SDS Gel Loading Buffer 5X BPB/XC DNA binding protein denaturing buffer | 40-5028-15 | 15 ml | 60.00 |
| RNA Gel Loading Buffer 2X BPB/XC with ethidium bromide | 40-5029-10 | 1 ml | 36.00 |
| RNA Gel Loading Buffer 2X BPB/XC with ethidium bromide | 40-5029-15 | 15 ml | 82.00 |
| RNA Gel Loading Buffer 2X BPB/XC without ethidium bromide | 40-5030-10 | 1 ml | 26.00 |
| RNA Gel Loading Buffer 2X BPB/XC without ethidium bromide | 40-5030-15 | 15 ml | 72.00 |

## Related Products Ordering Information

| Buffers& Reagents | | | |
|---|---|---|---|
| **Product** | **Catalog No.** | **Size** | **Price $** |
| Agarose LE Molecular Biology Grade; 100 gms | 40-3010-10 | 100 gms | 120.00 |
| Agarose LE Molecular Biology Grade; 500 gms | 40-3010-50 | 500 gms | 410.00 |
| Agarose Tablets, 0.5 gm each | 40-3011-10 | 100 tablets | 100.00 |
| TAE Buffer; 50 X Concentrate | 40-3007-01 | 100 ml | 32.00 |
| TBE Buffer; 5 X Concentrate | 40-3008-10 | 1000 ml | 35.00 |
| Hybwash A, Hybridization Wash Solution | 40-5020-20 | 200 ml | 65.00 |
| Hybwash B, Hybridization Wash Solution | 40-5021-10 | 100 ml | 50.00 |
| 10x Washing buffer | 40-5025-20 | 200 ml | 125.00 |
| 10% Blocking solution | 40-5026-10 | 100 ml | 75.00 |
| Seq. Loading buffer | 40-5027-00 | 1 ml | 10.00 |
| 10x AP Detection buffer | 40-5031-10 | 100 ml | 65.00 |
| Lumisol™ I Hybridization Solution; contains formamide | 40-5022-20 | 200 ml | 75.00 |
| Lumisol™ II Hybridization Solution; for non-toxic hybridizations | 40-5023-20 | 200 ml | 75.00 |
| Lumisol™ III Hybridization Solution; for oligo probes | 40-5024-20 | 200 ml | 75.00 |
| | | | |

| Omni-Marker™ | | | |
|---|---|---|---|
| **Product** | **Catalog No.** | **Size*** | **Price $** |
| Omni-Marker™ Universal unlabeled | 40-3005-10 | 1 ml | 90.00 |
| Omni- Marker™ Low unlabeled | 40-3006-10 | 1 ml | 90.00 |
| Omni-Marker™ GScan-2 Tamra labeled 50 bp - 600 bp | 40-3062-05 | 500 µl | 325.00 |

*Prices subject to change without notice.*

**All Gene Link products are for research use only**

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