AMPLIQON
PCR ENZYMES & REAGENTS

5x DNA Loading Buffer Red

Cat. No.: A608104

Cat. No.	Product	ID No.	Cap colour	Volume
A608104	DNA Loading Buffer Red	5400100	Red	5 x 1 ml

Features

- Suitable for agarose and SDS DNA gels
- Suitable for TAE, TBE, SB and LB electrophoresis buffers
- 5x ready-to-use formulation
- Ficoll-based for convenient storage on RT

General Description

DNA loading buffers are used to load DNA samples to agarose or SDS DNA gels for gel electrophoresis.

DNA loading buffers serve three main purposes:

Firstly, they add density to the DNA samples, so the DNA sinks down into the well instead of floating up and mixing with the running buffer. To achieve this, high density reagents like glycerol, sucrose or Ficoll are added.

Secondly, loading buffers add visibility to the DNA sample. Loading buffers contain a coloured tracking dye to allow control of proper DNA sample loading.

And thirdly, loading buffers provide one or more tracking dyes to monitor the progress of DNA migration on the gel (figure 1). Commonly used tracking dyes are xylene cyanol FF, cresol red, bromophenol blue, and orange G, each migrating at a characteristic size (table 1).

Ampliqon offers 4 different loading buffers to allow the customer to choose the optimal system for a specific task. The loading buffers are formulated as a 5x solutions containing Ficoll, Tris-buffer, EDTA and either Xylene cyanol FF, Cresol Red, Bromophenol Blue or Orange G as tracking dye. For a 10 µl loading volume, add 2 µl 5x Loading Dye to 8 µl of your DNA sample, mix well and load on a gel.

Kit Components

5x Loading Buffer Red

15 % Ficoll 400, 10 mM Tris-HCl pH 8.0, 50 mM EDTA, 0.05 % Cresol Red.

Recommended Storage and Stability

Long term storage at -20 °C. Product expiry at -20 °C is stated on the label.
Option: Store at +4 °C for up to 6 months.

Quality Control

Each lot of Loading Buffer is functionally tested on an agarose gel.

How to choose the right loading buffer

Tracking dyes

The choice of the tracking dye is dependent on the size of the DNA fragments one wants to run. In general, the front of the tracking dye should not run at the size of the DNA fragments because especially dark dyes obscure the DNA bands.
It is best to choose a tracking dye that runs in front of the DNA fragments to analyze.

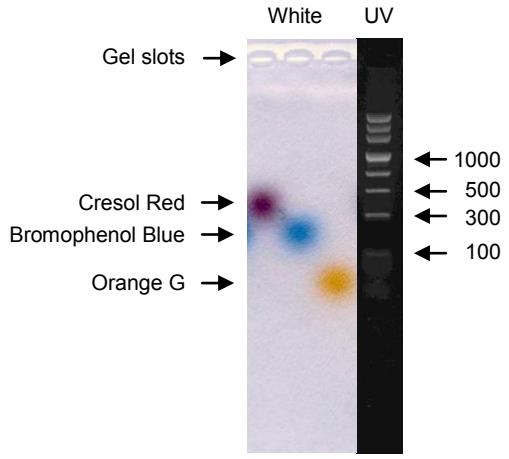

Figure 1: The three Ampliqon Loading Buffers were run on a 1 % agarose gel along with a DNA marker. The gel was pictured on white light and UV light and the dyes were correlated to the marker.

Table 1: Position of dye front of some tracking dyes on a 1 % agarose gel:

Dye:	Front at*:	Color:
Xylene cyanol FF	4000 – 5000 bp	Cyan
Cresol red	1000 – 2000 bp	Red
Bromphenol blue	300 – 500 bp	Blue
Orange G	50 – 150 bp	Orange

* The position of the dyes is dependent on the type of agarose, the percentage of the gel and the buffer used.

Related Accessories

Accessories	Cat. No.
PCR Grade Water, 6 x 5 ml	**A360056**
5x DNA Loading Buffer Red, 5 x 1 ml	**A608104**
5x DNA Loading Buffer Blue, 5 x 1 ml	**A608204**
5x DNA Loading Buffer Orange, 5 x 1 ml	**A608304**
High Range DNA Ladder, 200-12000 bp 100 lanes	**A610141**
Low Range DNA Ladder, 100-1000 bp 100 lanes	**A610241**
PCR DNA Ladder, 100-3000 bp 100 lanes	**A610341**

Related Products

Taq Polymerase (500 units) *	Cat. No.
Taq DNA Polymerase 5 U/µl	**A110003**
• with 10x Ammonium Buffer	**A111103**
• 5x PCR Buffer RED	**A111803**
Taq DNA Polymerase 5 U/µl, RED	**A200003**
• with 10x Ammonium Buffer	**A201103**
Taq DNA Polymerase 5 U/µl, glycerol free	**A100003**
• with 10x Ammonium Buffer	**A101103**

Hot Start Polymerase (500 units) *	Cat. No.
TEMPase Hot Start DNA Polymerase, 5 U/µl	**A220003**
• with 10x Ammonium Buffer	**A221103**
• 5x PCR Buffer RED	**A221803**
TEMPase Hot Start DNA Polymerase, glycerol free 5 U/µl	**A240003**
• with 10x Ammonium Buffer	**A241103**

High Fidelity - Proof reading (500 units) **	Cat. No.
AccuPOL DNA Polymerase 2.5 U/µl	**A210003**
• with 10x Ammonium Buffer	**A211103**

*Available in kits including one or two buffers (Ammonium Buffer, Standard Buffer or Combination Buffer). **AccuPOL only available in kits with Ammonium Buffer. All kits include extra 25 mM $MgCl_2$.

Buffers for DNA polymerases *	Cat. No.
10x Ammonium Buffer, 3 x 1.5 ml	**A301103**
10x Standard Buffer, 3 x 1.5 ml	**A302103**
10x Combination Buffer, 3 x 1.5 ml	**A303103**
5x PCR Buffer RED, 6 x 1,5 ml **	**A301810**

*Ammonium Buffer, Standard Buffer and Combination Buffer are also available as Mg^{2+} free buffers, detergent free buffers and Mg^{2+} and detergent free buffers. **For direct gel loading and visualisation.

Taq Master Mixes (500 x 50 µl reactions) *	Cat. No.
2x Master Mix, 1.5 mM $MgCl_2$ final concentration	**A140303**
2x Master Mix RED, 1.5 mM $MgCl_2$ final concentration	**A180303**

TEMPase Hot Start Master Mixes (500 x 50 µl reactions) *	Cat. No.
2x Master Mix A**, 1.5 mM $MgCl_2$ final concentration	**A230303**
2x Master Mix A**BLUE, 1.5 mM $MgCl_2$ final concentration	**A290403**

*Master mixes available also in 1.1x variants as well as 2 mM $MgCl_2$ variants, **Mix A is Ammonium Buffer based, also available as Mix C based on Combination Buffer.

Special Master Mixes (500 x 50 µl reactions)	Cat. No.
Multiplex 2x Master Mix, 3 mM $MgCl_2$ final concentration	**A260303**
GC TEMPase 2x Master Mix I – for GC-rich templates	**A331703**
GC TEMPase 2x Master Mix II – for GC-rich templates	**A332703**

Real-time PCR Master Mixes (400 x 25 µl reactions)	Cat. No.
RealQ Plus 2x Master Mix for probe,	
• without ROX™	**A313402**
• with low ROX™	**A314402**
• with high ROX™	**A315402**
RealQ Plus 2x Master Mix Green	
• without ROX™	**A323402**
• with low ROX™	**A324402**
• with high ROX™	**A325402**

Ultrapure dNTPs*	Cat. No.
dNTP Mix 40 mM (2 x 500 µl): 10 mM each dA, dC, dG, dT	**A502004**
dNTP Set, 100 mM each: 250 µl of each dA, dC, dG and dT	**A511104**

*Other concentrations and Single dNTPs are available.

Loading Buffers and Ladders	Cat. No.
5x Loading Buffer Red *, 5 x 1 ml	**A608104**
PCR DNA Ladder **, 100 – 3000 bp, 1 x 0.5 ml	**A610341**

* Also available with Blue, Orange or Cyan. ** Available in different size ranges.

Reagents for *in vitro* laboratory use only.

Other product sizes, combinations and customized solutions are available. Please look at www.ampliqon.com or ask for our complete product list for PCR Enzymes. For customized solutions please contact us.

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