

## Combination Buffer (Mg<sup>2+</sup> free, Tween free)

MADE IN DENMARK



Cat. No.: A303556

A303556

-	10x Combination Buffer, Mg <sup>2+</sup> free, Tween free
ID No.	5600420
Cap color	Clear
Content	6 x 5 ml

### Features and General Description

10x Combination Buffer are usually supplied in 10x formulations with 15 mM MgCl<sub>2</sub> included but are also available as Mg<sup>2+</sup> free buffer, detergent free buffer as well as Mg<sup>2+</sup> and detergent free buffer.

### Combination Buffer

Combination Buffer is a proprietary mixture of K<sup>+</sup> and NH<sub>4</sub><sup>+</sup>. This buffer combines high specificity with good product yield and high tolerance to optimization of primer annealing temperatures and Mg<sup>2+</sup> concentrations due to its balanced ammonium-potassium formulation.

### Magnesium

Mg<sup>2+</sup> is required for polymerase activity. Low Mg<sup>2+</sup> concentrations increase the fidelity but with too low Mg<sup>2+</sup> concentrations the polymerase will not work. The Mg<sup>2+</sup> concentration available in the reaction is dependent on several parameters e.g. the presence of chelators or the dNTP concentration. Therefore, the Mg<sup>2+</sup> concentration should be optimized.

### Tween, Triton

Non-ionic detergents are used to prevent the polymerase to stick to the walls of the tube, to stabilize the polymerase and increase yield. However, these agents might increase non-specific amplification or interfere with downstream reactions. Tween can be used to neutralize SDS contaminations in the DNA template.

### 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 buffer is functionally tested in PCR.

### Kit Components

10x Combination Buffer, Mg<sup>2+</sup> free, Tween free  
Tris-HCl, pH 8.7, KCl, (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>.

## Determining the optimal buffer system for your application

Ampliqon offers several PCR buffers to allow the customer to choose the optimal buffer system for a specific amplification process.

For your specific application the optimal reaction condition can be determined by comparing PCR reactions containing the different Ampliqon buffers.

The final concentration of the buffer in the reaction should be 1x.

### Related Products

Taq DNA 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, glycerol free	A100003
• with 10x Ammonium Buffer	A101103

Hot Start DNA Polymerase (500 units) *	Cat. No.
TEMPase Hot Start DNA Polymerase, 5 U/μl	A220003
• with 10x Ammonium Buffer	A221103

\*Available in kits including one or two buffers (Ammonium Buffer, Standard Buffer or Combination Buffer). All kits include extra 25 mM MgCl<sub>2</sub>.

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
4x GC Buffer I, 3 x 1.5 ml	A301703
4x GC Buffer II, 3 x 1.5 ml	A302703

\*Ammonium Buffer, Standard Buffer and Combination Buffer are also available as Mg<sup>2+</sup> free buffers, detergent free buffers and Mg<sup>2+</sup> and detergent free buffers.

\*\*For direct gel loading and visualisation.

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, PCR Water and Ladders	Cat. No.
5x Loading Buffer Red *, 5 x 1 ml	A608104
lqon PCR Ladder **, 100 – 3000 bp, 1 x 0.5 ml	A610341
PCR Grade Water, 6 x 5 ml	A360056

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

For Research Use Only. Not for use in diagnostics procedures.

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

**Made in Denmark**  
Issued 08/2021