

VWR® PCR Enzymes and Reagents

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VWR® PCR Enzymes and Reagents

You will find a variety of high quality Avantor DNA Polymerases optimized for specific applications (Taq, glycerol-free Taq, Hot start and High-Fidelity enzymes) and ready to use master mixes. Complete your PCR reaction workflow needs with specific Avantor PCR reagents, such as dNTPs, PCR buffers, PCR clean-up, DNA loading buffer and DNA ladders.

PCR Enzymes



FAST HI-FI DNA POLYMERASE HIGH SPECIFICITY AND ROBUST AMPLIFICATION

- High fidelity: >60X Taq Fidelity
- Processes up to 18 kb (human gDNA) and 25 kb (λDNA)
- Good coverage on DNA templates with low to high GC content
- Fast extension rate: 10 s/kb

Description	Concentration	Size	Units	Cat. No.
Fast HiFi DNA Polymerase	2 U/μL	100 units	Each	76620-574
Fast HiFi DNA Polymerase	2 U/μL	500 units	Each	76620-576
Fast HiFi DNA Polymerase	2 U/μL	1000 units	Each	76620-578
Fast HiFi DNA Polymerase	2 U/μL	2500 units	Each	76620-580



TAQ DNA POLYMERASE IDEAL CHOICE FOR ROUTINE PCR APPLICATIONS

- High performance, thermostable DNA polymerase
- Optimal for TA cloning
- Processes up to 5 kb
- dUTP incorporation possible
- Use with Key Buffer for best PCR results and minimal optimization of PCR set-up

Description	Concentration	Size	Units	Cat. No.
Taq DNA Polymerase with 10x Key Buffer and 10x Extra Buffer	5 U/μL	250 units	Each	76620-434
Taq DNA Polymerase with 10x Key Buffer and 10x Extra Buffer	5 U/μL	500 units	Each	76620-436
Taq DNA Polymerase with 10x Key Buffer and 10x Extra Buffer	5 U/μL	1000 units	Each	76620-438
Taq DNA Polymerase with 10x Key Buffer and 10x Extra Buffer	5 U/μL	2500 units	Each	76620-440

More options available at vwr.com



RED TAQ DNA POLYMERASE
FOR VISUALIZATION OF REACTION SET-UP

- Ideal choice for routine applications
- High performance, thermostable DNA polymerase
- Optimal for TA cloning
- dUTP incorporation possible
- Processes up to 5 kb

Description	Concentration	Size	Units	Cat. No.
Red Taq DNA Polymerase with 10X Key Buffer and 10X Extra Buffer	5 U/μL	500 units	Each	76620-486
Red Taq DNA Polymerase with 10X Key Buffer and 10X Extra Buffer	5 U/μL	1000 units	Each	76620-488
Red Taq DNA Polymerase with 10X Key Buffer and 10X Extra Buffer	5 U/μL	2500 units	Each	76620-490
Red Taq DNA Polymerase with 10X Key Buffer and 10X Extra Buffer	5 U/μL	10000 units	Each	76620-492



GLYCEROL-FREE TAQ DNA POLYMERASE
FOR AUTOMATION AND LYOPHILIZATION

- Glycerol-free storage buffer
- Suitable for automated high-throughput testing and robot-aided pipetting
- Ideal for freeze drying protocols
- dUTP incorporation possible
- Processes up to 5 kb

Description	Concentration	Size	Units	Cat. No.
Taq DNA Polymerase, glycerol-free, with 10X Key Buffer and 10X Extra Buffer	5 U/μL	1000 units	Each	76620-422
Taq DNA Polymerase, glycerol-free	5 U/μL	5000 units	Each	76620-416
Taq DNA Polymerase, glycerol-free	5 U/μL	100,000 unit	Each	76620-418
Taq DNA Polymerase, glycerol-free	5 U/μL	200,000 units	Each	76620-420



TEMPASE HOT START DNA POLYMERASE
HIGH SPECIFICITY AND HIGH YIELD – FOR STANDARD PCR APPLICATIONS

- Chemically modified version of VWR® Taq DNA Polymerase
- Allows for reaction set-up at room temperature
- Increased sensitivity, specificity, and product yield
- Suitable for detection of low abundance targets, screening, multiplexing, direct colony PCR and real-time PCR applications
- dUTP incorporation possible
- Processes up to 4 kb
- Use with Key Buffer for best PCR results and minimal optimization of PCR set-up

Description	Concentration	Size	Units	Cat. No.
Tempase Hot Start DNA Polymerase with 10X Key Buffer and 10X Combination Buffer	5 U/μL	500 units	Each	76620-494
Tempase Hot Start DNA Polymerase with 10X Key Buffer and 10X Combination Buffer	5 U/μL	2500 units	Each	76620-496
Tempase Hot Start DNA Polymerase with 10X Key Buffer and 10X Combination Buffer	5 U/μL	10000 units	Each	76620-498

More options available at vwr.com

PCR Master Mixes



FAST HIFI DNA POLYMERASE 2X MASTER MIX

HIGH SPECIFICITY AND ROBUST AMPLIFICATION

- All-in-one 2X master mix for great convenience
- High fidelity: >60X Taq Fidelity
- Processes up to 11 kb from complex templates
- Good coverage on DNA templates with low to high GC content
- Fast extension rate: 10 s/kb

Description	Concentration	No. of reactions	Units	Cat. No.
Fast HiFi DNA Polymerase 2X Master Mix	2X	100 reactions (of 50 µL rxns)	Each	76620-582
Fast HiFi DNA Polymerase 2X Master Mix	2X	500 reactions (of 50 µL rxns)	Each	76620-584
Fast HiFi DNA Polymerase 2X Master Mix	2X	2500 reactions (of 50 µL rxns)	Each	76620-586
Fast HiFi DNA Polymerase 2X Master Mix	2X	5000 reactions (of 50 µL rxns)	Each	76620-588



TAQ DNA POLYMERASE MASTER MIX

CONVENIENT CHOICE FOR ROUTINE PCR APPLICATIONS

- Convenient all-in-one master mix
- For standard PCR applications
- Ideal for high throughput testing
- Minimal optimization of PCR set-up
- dUTP incorporation possible
- Processes up to 5 kb

Description	Concentration	No. of reactions	Units	Cat. No.
Taq DNA Polymerase 1.1X Master Mix (1.5 mM MgCl ₂)	1.1X	500 reactions (of 50 µL rxns)	Each	76620-450
Taq DNA Polymerase 2X Master Mix (1.5 mM MgCl ₂)	2X	500 reactions (of 50 µL rxns)	Each	76620-456
Taq DNA Polymerase 2X Master Mix (2 mM MgCl ₂)	2X	500 reactions (of 50 µL rxns)	Each	76620-460
Taq DNA Polymerase 2X Master Mix (1.5 mM MgCl ₂)	2X	2500 reactions (of 50 µL rxns)	Each	76620-458
Taq DNA Polymerase 1.1X master Mix (1.5 mM MgCl ₂)	1.1X	2500 reactions (of 50 µL rxns)	Each	76620-452
Taq DNA Polymerase 1.1X Master Mix (2 mM MgCl ₂)	1.1X	2500 reactions (of 50 µL rxns)	Each	76620-454
Taq DNA Polymerase 2X Master Mix (2 mM MgCl ₂)	2X	2500 reactions (of 50 µL rxns)	Each	76620-462



TAQ PLUS DNA POLYMERASE MASTER MIX

OPTIMIZED TAQ MASTER MIX FOR INCREASED SPECIFICITY

- Improved specificity
- For standard PCR applications
- Ideal for high throughput testing
- dUTP incorporation possible
- Processes up to 4 kb
- All-in-one master mix for great convenience

Description	Concentration	No. of reactions	Units	Cat. No.
Taq Plus 2X Master Mix (1.5 mM MgCl ₂)	2X	100 reactions (of 50 µL rxns)	Each	76620-534
Taq Plus 2X Master Mix (1.5 mM MgCl ₂)	2X	500 reactions (of 50 µL rxns)	Each	76620-536
Taq Plus 2X Master Mix (1.5 mM MgCl ₂)	2X	2500 reactions (of 50 µL rxns)	Each	76620-538
Taq Plus 2X Master Mix (1.5 mM MgCl ₂)	2X	5000 reactions (of 50 µL rxns)	Each	76620-540



RED TAQ DNA POLYMERASE MASTER MIX VISUALIZATION AND DIRECT LOADING AFTER PCR AMPLIFICATION

- Convenient all-in-one master mix
- For standard PCR applications
- Ideal for high throughput testing
- Direct loading onto agarose gel
- Red dye visualization of pipetting, mixing, and loading
- Minimal optimization of PCR set-up
- dUTP incorporation possible
- Processes up to 5 kb

Description	Concentration	No. of reactions	Units	Cat. No.
RED Taq DNA Polymerase 1.1X Master Mix (1.5 mM MgCl ₂)	1.1X	500 reactions (of 50 µL rxns)	Each	76620-464
RED Taq DNA Polymerase 1.1X Master Mix (2 mM MgCl ₂)	1.1X	500 reactions (of 50 µL rxns)	Each	76620-468
RED Taq DNA Polymerase 2X Master Mix (1.5 mM MgCl ₂)	2X	500 reactions (of 50 µL rxns)	Each	76620-472
RED Taq DNA Polymerase 2X Master Mix (2 mM MgCl ₂)	2X	500 reactions (of 50 µL rxns)	Each	76620-482

More options available at vwr.com



TEMPASE HOT START MASTER MIX HIGH SPECIFICITY AND HIGH YIELD – FOR STANDARD PCR APPLICATIONS

- Reaction set-up at room temperature
- Increased sensitivity, specificity, and product yield
- Ideal for high throughput testing
- Minimal optimization of PCR set-up
- dUTP incorporation possible
- Processes up to 4 kb
- All-in-one 2x master mix for great convenience

Description	Concentration	No. of reactions	Units	Cat. No.
Tempase Hot Start 2X Master Mix K (1.5 mM MgCl ₂)	2X	2500 reactions (of 50 µL rxns)	Each	76620-502
Tempase Hot Start 2X Master Mix C (1.5 mM MgCl ₂)	2X	2500 reactions (of 50 µL rxns)	Each	76620-504
BLUE Tempase Hot Start 2X Master Mix K (1.5 mM MgCl ₂)	2X	2500 reactions (of 50 µL rxns)	Each	76620-514
BLUE Tempase Hot Start 2X Master Mix C (1.5 mM MgCl ₂)	2X	2500 reactions (of 50 µL rxns)	Each	76620-516
Multiplex Tempase Hot Start 2X Master Mix (3 mM MgCl ₂)	2X	2500 reactions (of 50 µL rxns)	Each	76620-512



GC TEMPASE HOT START DNA POLYMERASE MASTER MIXES FOR AMPLIFICATION OF GC-RICH DNA SEQUENCES

- All-in-one 2x master mixes for great convenience
- Reaction set-up at room temperature
- Optimized buffer systems for successful amplification of GC-rich DNA targets

Description	Concentration	No. of reactions	Units	Cat. No.
GC Tempase Hot Start 2X Master Mix I	2X	500 reactions (of 50 µL rxns)	Each	76620-524
GC Tempase Hot Start 2X Master Mix I	2X	2500 reactions (of 50 µL rxns)	Each	76620-526
GC Tempase Hot Start 2X Master Mix II	2X	2500 reactions (of 50 µL rxns)	Each	76620-528
GC-Rich DNA Target Kit	Units	500 Units	Each	76620-500

PCR Reagents

**PCR BUFFERS****10X KEY BUFFER**

- Recommended for most PCR applications
- Based on ammonium (NH₄⁺)
- Highest tolerance towards annealing temperature and MgCl₂ concentration
- Provides highest yield
- Provides high specificity

Description	Size	Cat. No.
10X Key Buffer	3 x 1.5 mL	76620-518

More options available at vwr.com

**PCR GRADE WATER****ULTRAPURE WATER FOR PCR**

- Convenient 5 mL aliquots
- Free of endonuclease, nicking, and exonuclease activity
- Free of human DNA

Size	Pk	Cat. No.
6 x 5 ml	Plastic tube	76620-532

**DNTPS****HIGH QUALITY DNTPS**

- Available as:
 - dNTP mixes – 40 mM or 100 mM
 - dNTP sets – 100 mM
- Purity > 99%, estimated by HPLC

Description	Volume	Size	Units	Cat. No.
dNTP Mix 40 mM	2 x 0.5 ml	40 µmol	Each	76620-544
dNTP Mix 100 mM	2 x 1 ml	200 µmol	Each	76620-542
dNTP Set (100mM of each dATP, dCTP, dGTP, dTTP)	4 x 250 µl	25 µmol of each	Each	76620-546
dNTP Set (100mM of each dATP, dCTP, dGTP, dTTP)	16 x 250 µl	100 µmol of each	Each	76620-548

**BETAINE ENHANCER SOLUTION****ENHANCER FOR AMPLIFICATION OF GC-RICH DNA SEQUENCES**

- Performs better than DMSO, TMAC, BSA, and non-ionic detergent
- Lowers the melting temperature T_m
- Ideal for GC-rich amplification and amplification of highly structured DNA

Size	Pk	Cat. No.
5x1 ml	Each	76620-530



EXOCLEANUP FAST
ONE-STEP PCR CLEAN-UP

- Designed to clean-up PCR products in 5 minutes
- Improves downstream applications, such as Sanger DNA sequencing
- No need for spin columns or magnetic beads

Description	No. of reactions	Volume	Unit	Cat. No.
ExoCleanUp FAST	100 reactions	1 x 0.2 mL	Each	76620-568
ExoCleanUp FAST	500 reactions	1 x 1 mL	Each	76620-570
ExoCleanUp FAST	5000 reactions	10 x 1 mL	Each	76620-572



DNA LOADING BUFFERS
CHOOSE BETWEEN 3 TRACKING DYES

- Ready-to-use buffers with 5X formulation
- Three different tracking dyes and migration fronts

Description	Volume	Units	Cat. No.
5X Loading Buffer Red	5x1 ml	Each	76620-550
5X Loading Buffer Blue	5x1 ml	Each	76620-552
5X Loading Buffer Orange	5x1 ml	Each	76620-554



DNA LADDERS
FOR DIRECT GEL LOADING AND EASY VISUALIZATION

- Ready-to-use loading buffer
- Variety of molecular ranges available
- Blue dye front running at 100-300 bp at 1-1.6% agarose
- Clear and distinct bands
- Mass calibrated bands

Description	Volume	Lanes	Units	Cat. No.
High Range DNA Ladder, 200 to 12000 bp	1 x 0.5 mL	Sufficient for 250 lanes of 2 µL	Each	76620-556
Low Range DNA Ladder, 100 to 1000 bp	1 x 0.5 mL	Sufficient for 250 lanes of 2 µL	Each	76620-558
PCR DNA Ladder, 100 to 3000 bp	1 x 0.5 mL	Sufficient for 250 lanes of 2 µL	Each	76620-560

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Application guide

	Taq DNA Polymerase	Glycerol-free Taq DNA Polymerase	Red Taq DNA Polymerase	Taq Plus 2x Master Mix	Taq DNA Polymerase Master Mix	Red Taq DNA Polymerase Master Mix	TEMPase Hot-Start DNA Polymerase	Glycerol-free TEMPase Hot-Start DNA Polymerase	TEMPase Hot-Start Master Mix K+C	Blue TEMPase Hot-Start Master Mix K+C	GC-rich DNA Target Kit	GC TEMPase Master Mix I+II	Multiplex TEMPase Master Mix	Fast HiFi DNA Polymerase	Fast HiFi DNA Polymerase 2x Master Mix
Application	Standard PCR						Hot Start PCR				Special PCR			HIFI PCR	
Routine PCR	x		x	x	x	x	x		x	x					
High throughput Automation	x	x	x	x	x	x	x	x	x	x					
GC-rich DNA templates							x	x	x	x	x	x		x	x
Long range														x	x
Multiplex PCR							x	x					x		
Sequencing														x	x
Genotyping	x			x	x	x	x	x	x	x			x		
Cloning	x						x							x	x
Mutagenesis														x	x
Freeze-drying		x						x							
Low abundance targets							x	x	x	x	x	x	x		
Forensics														x	
DNA fingerprinting														x	
Colony PCR	x		x	x	x	x	x	x	x	x	x	x			
Gene expression							x	x	x	x	x	x			
Microbial/pathogen detection							x	x	x	x	x	x	x		
SNP analysis														x	x
NGS applications														x	x
Product Family Example	76620-434	76620-422	76620-486	76620-534	76620-450	76620-464	76620-494	76620-506	76620-502	76620-516	76620-500	76620-528	76620-512	76620-574	76620-582

x: Recommended +: Suitable

Technical guide

	Taq DNA Polymerase	Glycerol-free Taq DNA Polymerase	Red Taq DNA Polymerase	Red Taq DNA Polymerase Master Mix	Taq DNA Polymerase Master Mix	Taq Plus 2x Master Mix	TEMPase Hot-Start DNA Polymerase	Glycerol-free TEMPase Hot-Start DNA Polymerase	TEMPase Hot-Start Master Mix K+C	Blue TEMPase Hot-Start Master Mix K+C	GC-rich DNA Target Kit	GC TEMPase Master Mix I+II	Multiplex TEMPase Master Mix	Fast HiFi DNA Polymerase	Fast HiFi DNA Polymerase 2x Master Mix
Feature	Standard PCR						Hot Start PCR				Special PCR			HIFI PCR	
Direct gel loading			x												
Pipetting visualization			x	x											
Long range														x	x
Proof reading activity														x	x
dUTP incorporation	x	x	x	x	x	x	x	x	x	x	x	x	x		
3' - A overhang	x	x	x	x	x	x	x	x	x	x	x	x	x		
Technical data															
Fidelity vs Taq				1x				1x				>1x		>60x	
Amplicon size				≤5 kb		≤3 kb		≤5 kb				≤5 kb		18 kb	≤11 kb
Elongation speed				35-100 nt/s				35-100 nt/s				35-100 nt/s		100 nt/s	
Processivity				60 nt				60 nt				60 nt		200 nt	
5'-3' exonuclease activity				x				x				x			
Performance															
Specificity	+	+	+	++	+	+	++	++	++	++	++	++	++	++	++
Sensitivity	+	+	+	+	+	+	++	++	++	++	++	++	++	+	+
Yield	++	++	++	++	++	++	++	++	++	++	++	++	++	+	+

+: High ++: Very high



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