

# Thermo Scientific PCR Reagents Selection Guide

## Standard PCR

General PCR applications requiring consistent and reliable DNA polymerase performance.

Routine performance	Enhanced performance	Long targets
<i>Taq</i> DNA polymerase	Thermo Scientific™ DreamTaq™ DNA Polymerase	Long PCR Enzyme Mix <sup>1</sup>

### CHARACTERISTICS

5'-3' exonuclease activity	Yes	Yes	Moderate
Proofreading activity	No	No	Moderate
Fidelity vs. <i>Taq</i>	1x	1x	3x
dUTP incorporation	Yes	No	No
Blunt or 3'A ends	3'A	3'A	3'A/Blunt
Target length genomic/phage DNA	≤5/10 kb	≤6/20 kb	≤20/47 kb
Extension times	60 s/kb	60 s/kb	45-60 s/kb

### PERFORMANCE

Accuracy (fidelity)	*	*	**
Specificity	*	*	*
Sensitivity	*	**	**
Yield	*	**	**
Difficult (GC rich) templates	*	*	**
Inhibitor tolerance	*	**	*

### FORMATS

Enzyme	Yes	Yes	Yes
Master mix	Yes	Yes	No
Green buffer <sup>2</sup>	No	Yes	No

<sup>1</sup> Not available in US

<sup>2</sup> Includes density reagent and electrophoresis tracking dyes for direct loading of PCR products on gels.

## Hot Start PCR

Challenging PCR applications requiring maximum specificity and sensitivity, to detect rare or complex DNA targets.

Routine performance	Enhanced performance
Thermo Scientific™ Maxima™ Hot Start <i>Taq</i> DNA Polymerase	Thermo Scientific™ Phire™ Hot Start II DNA Polymerase

Yes	No
No	Moderate
1x	2x
Yes	No
3'A	Blunt
≤3/5 kb	≤7.5/20 kb
60 s/kb	10-15 s/kb

*	**
***	***
***	***
*	***
*	**
*	***

Yes	Yes
Yes	Yes
Yes	Yes

## High-Fidelity PCR

PCR applications requiring highly accurate amplification, to produce PCR product with minimal sequence errors including cloning, sequencing and mutagenesis.

Non-hot start	Hot start		Fast
Thermo Scientific™ Phusion™ High-Fidelity DNA Polymerase	Thermo Scientific™ Phusion™ Hot Start II High-Fidelity DNA Polymerase	Thermo Scientific™ Phusion™ U Hot Start DNA Polymerase	Thermo Scientific™ Phusion™ Flash High-Fidelity PCR Master Mix

No	No	No	No
Yes	Yes	Yes	Yes
52x	52x	25x	25x
No	No	Yes	No
Blunt	Blunt	Blunt	Blunt
≤16/20 kb	≤16/20 kb	≤16/20 kb	≤16/20 kb
15-30 s/kb	15-30 s/kb	15-30 s/kb	15 s/kb

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Yes	Yes	Yes	No
Yes	Yes	Yes	Yes
Yes	Yes	Yes	No

# Thermo Scientific PCR Reagents Ordering Guide

## Standard PCR

	Description	Size	Cat. No.
ROUTINE PERFORMANCE	Taq DNA Polymerase (recombinant), 5 U/μL	100 U	EP0401
		500 U	EP0402
		5 x 500 U	EP0405
		10 x 500 U	EP0406
	Taq DNA Polymerase (recombinant), 1 U/μL	100 U	EP0403
		500 U	EP0404
PCR Master Mix	200 x 50 μL rxns	K0171	
	1000 x 50 μL rxns	K0172	
ENHANCED PERFORMANCE	DreamTaq DNA Polymerase	200 U	EP0701
		500 U	EP0702
		5 x 500 U	EP0703
		20 x 500 U	EP0704
		10 x 500 U	EP0705
	DreamTaq PCR Master Mix	200 x 50 μL rxns	K1071
		1000 x 50 μL rxns	K1072
	DreamTaq <b>Green</b> DNA Polymerase	200 U	EP0711
		500 U	EP0712
		5 x 500 U	EP0713
DreamTaq <b>Green</b> PCR Master Mix	20 x 500 U	EP0714	
	200 x 50 μL rxns	K1081	
1000 x 50 μL rxns	K1082		
	LONG TARGETS	100 U	K0181
500 U		K0182	

## Hot Start PCR

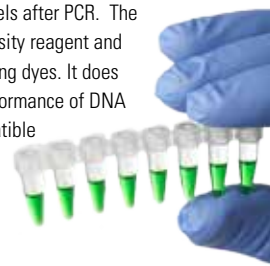
	Description	Size	Cat. No.
ROUTINE PERFORMANCE	Maxima Hot Start <i>Taq</i> DNA Polymerase	100 U	EP0601
		500 U	EP0602
		5 x 500 U	EP0603
ROUTINE PERFORMANCE	Maxima Hot Start PCR Master Mix	100 x 50 μL rxns	K1051
		500 x 50 μL rxns	K1052
	Maxima Hot Start <b>Green</b> PCR Master Mix	100 x 50 μL rxns	K1061
ENHANCED PERFORMANCE	Phire Hot Start II DNA Polymerase	500 x 50 μL rxns	K1062
		200 x 50 μL rxns	F-122S
	1000 x 50 μL rxns	F-122L	
	Phire <b>Green</b> Hot Start II DNA Polymerase	200 x 50 μL rxns	F-124S
	1000 x 50 μL rxns	F-124L	
	Phire Hot Start II PCR Master Mix	200 x 50 μL rxns	F-125S
	1000 x 50 μL rxns	F-125L	
Phire <b>Green</b> Hot Start II PCR Master Mix	200 x 50 μL rxns	F-126S	
	1000 x 50 μL rxns	F-126L	

## High-Fidelity PCR

	Description	Size	Cat. No.
NON-HOT START	Phusion High-Fidelity DNA Polymerase	100 U	F-530S
		500 U	F-530L
	Phusion <b>Green</b> High-Fidelity DNA Polymerase	100 U	F-534S
		500 U	F-534L
	Phusion High-Fidelity PCR Master Mix with HF Buffer	100 x 50 μL rxns	F-531S
		500 x 50 μL rxns	F-531L
	Phusion High-Fidelity PCR Master Mix with GC Buffer	100 x 50 μL rxns	F-532S
		500 x 50 μL rxns	F-532L
	Phusion High-Fidelity PCR Kit	50 x 50 μL rxns	F-553S
		200 x 50 μL rxns	F-553L
HOT START	Phusion Hot Start II High-Fidelity DNA Polymerase	100 U	F-549S
		500 U	F-549L
	Phusion <b>Green</b> Hot Start II High-Fidelity DNA Polymerase	100 U	F-537S
		500 U	F-537L
	Phusion Hot Start II High-Fidelity PCR Master Mix	100 x 50 μL rxns	F-565S
		500 x 50 μL rxns	F-565L
	Phusion <b>Green</b> Hot Start II High-Fidelity PCR Master Mix	100 x 50 μL rxns	F-566S
		500 x 50 μL rxns	F-566L
	Phusion U Hot Start DNA Polymerase	100 U	F-555S
		500 U	F-555L
Phusion U Hot Start PCR Master Mix	100 x 50 μL rxns	F-533S	
	500 x 50 μL rxns	F-533L	
Phusion U <b>Green</b> Hot Start DNA Polymerase	100 U	F-556S	
	500 U	F-556L	
Phusion U Multiplex PCR Master Mix	100 x 50 μL rxns	F-562S	
	500 x 50 μL rxns	F-562L	
Phusion U <b>Green</b> Multiplex PCR Master Mix	100 x 50 μL rxns	F-564S	
	500 x 50 μL rxns	F-564L	
FAST	Phusion Flash High-Fidelity PCR Master Mix	100 x 20 μL rxns	F-548S
		500 x 20 μL rxns	F-548L

### DID YOU KNOW?

Thermo Scientific stand-alone enzyme and master mix formats with **Green Reaction Buffer** allow direct loading of amplicons on gels after PCR. The Green Buffer includes density reagent and two electrophoresis tracking dyes. It does not interfere with the performance of DNA polymerases and is compatible with downstream applications including DNA sequencing, ligation and restriction digestion.



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