

# Cirrus™ Strips-DNA PCR Master Mix

## INSTRUCTIONS FOR USE



### INTRODUCTION

**Cirrus™ Strips DNA** (Product code CIR-S-DNA-01) is a 'ready-to-use' pre-dispensed (96-wells) dry master mix that may be used for DNA amplification and detection using the 5' nuclease real-time PCR method. **Cirrus™ Strips DNA** has been formulated using Fluorogenics Cirrus™ reagent, a proprietary blend of sugars, stabilizers and macromolecules produced in a freeze drying process providing instant reagent dissolution. This drying process ensures the entire active components remain stable at ambient temperatures and eliminates the requirement for refrigerated reagent transport and storage.

**Cirrus™ Strips DNA** contains the core reaction components required to carry out a 5' nuclease PCR, this includes: core PCR reaction buffer, dNTP nucleotides, Magnesium ions and a high performance *Taq* DNA polymerase exhibiting 5' to 3' exonuclease activity. Supplied as a dry reagent, each well of **Cirrus™ Strips DNA** is reconstituted using target-specific oligonucleotide primers and probes (not supplied) to provide a complete 20 µL PCR reaction mix within each well of the plate.

**Cirrus™ Strips DNA** is provided in a generic low profile 96-well fully skirted PCR plate that may be used directly on a wide variety of commercial cyclers. Alternatively, 8 well strips may be removed and used individually. Using an alternative frame Cirrus™ Strips DNA can be configured for ABI FAST Block or Roche LightCycler 480. The guidance platform compatibility is provided below.

### PROTOCOLS

1. Open the **Cirrus™ Strips DNA** Mylar® foil packet by tearing along the pre-cut tear notch and remove the 96-well plate.
2. Gently tap the plate to settle its contents to the bottom of each well.
3. Remove the temporary adhesive seals from wells and add reagents as described in the user protocol described below. It is recommended that primer and probes are prepared as a sub- mix before dispensing into each plate well to minimise volumetric errors. The **Cirrus™ Strips DNA** reagent undergoes almost instant

dissolution and does not require mixing - the reaction is sufficiently mixed by convection alone (during the PCR thermocycling enzyme activation phase).

4. The supplied optical lids can be applied to each strip or the whole plate once dispensing is complete. Alternatively, a new permanent PCR seal may be applied to the plate (not supplied). The plate may be centrifuged to collect the contents to the bottom of each well should any reaction mix have collected on the well walls following dispensing. Alternatively tapping the plate, once sealed, onto a flat surface should allow the reaction to collect at the apex of each tube.

### Protocol 1: 20µL Probe-based PCR reactions using 10µl template per reaction.

Each **Cirrus™ Strips DNA** contents may be reconstituted to a final volume of 20µL to provide a PCR reaction as follows:

Reagent	Volume
<b>Cirrus™ Strips DNA</b> (Product code CIR-S-DNA-1000-01)	-
<b>Oligonucleotide Primer</b> (not supplied)	
Forward Primer to a final reaction concentration of 0.1 to 1µM	e.g. 2µL 10µM stock solution
Reverse Primer to final reaction concentration of 0.1 to 1 µM	e.g. 2µL 10µM stock solution
<b>Oligonucleotide Probe</b> (not supplied)	
Probe (Dual labelled 5' nuclease probe) to a final reaction concentration 0.05 to 0.2µM	e.g. 2µL of 2µM stock
<b>Diluent/ Nuclease-free water</b>	e.g. 4µL
<b>TOTAL (2X PCR reaction mix)</b>	<b>10 µL</b>
<b>Template (water for NTC)</b>	<b>10 µL</b>
<b>TOTAL (1X PCR reaction mix)</b>	<b>20 µL</b>

**Thermal Cycling:** The following are general recommended thermal cycler settings for **Cirrus™ Strips DNA** reagents. The actual hold temperatures, times and transition rates may vary according to PCR assay type and instrument used.

Product:	Cirrus™ Strips DNA PCR MASTER	Page 1 of 2
Product Code:	CIR-S-DNA-1000-01	
Document Code-Revision:	FGL-IFU-(CIR-S-DNA-1000-01)-02	
Date of Issue:	20-Oct-18	

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Phase	Hold	Temp (°C)	Time (s)	Rate (°C/s)
<b>Enzyme Activation</b>	Hold	95	5-10	3-10
<b>Amplification</b>	Denature	95	5-10	3-10
	Anneal & Optical Acquisition	50-65	5-30	3-10
	Extend (optional)	74	5-30	3-10

### ADDITIONAL INFORMATION

Cirrus™ Strips DNA reagent is formulated to provide 5mM final reaction Magnesium ions. This concentration can be adjusted to suit the requirements of different assays (above 5 mM) by substituting diluent with additional MgCl<sub>2</sub> solution (not supplied) in the final master mix.

### STORAGE

Cirrus™ Strips DNA is supplied as a dried reagent and should be stored in its original packaging at 15-30°C for up to 24 months. If opened but not used immediately, the plate may be re-sealed in its original zip-lock Mylar® pouch but should be used within 72 hours when stored with the desiccant provided.

### DISPOSAL

Dispose of the plate and packaging as laboratory waste according to local rules.

### TECHNICAL SPECIFICATION

Specification	Dimension
DNA dependant DNA Polymerase	High Performance full length Taq polymerase (derived from <i>Thermus aquaticus</i> )
Nucleotides	dNTP with dUTP
Buffer	Tris-HCl, pH 8.8
Magnesium Chloride	5 mM May be adjusted (increased) by user
Storage	15 to 30 °C
Shelf life	24 Months from manufacture date
Dissolution time	< 1s
BSA	Contains Bovine Serum Albumin of Canadian origin.


### MANUFACTURER DETAILS

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Cirrus™ Strips 0.1ml 8-tube strips	
Standard Strips	
With semi-skirted ABI consumable accessory.	
With semi-skirted Roche consumable accessory.	
 <b>Cirrus™ Strips PCR Platform Compatibility</b>	
• GeneAmp® 9800 FAST Block	Lifotech
• ProFlex™ 0.1ml (96-well block) FAST	
• Veriti 0.1ml (96-well block) FAST	
• T1 Thermocycler	
• T3 Thermocycler	
• Tprofessional (Standard/Basic)+/- Gradient 96	BIOMETRA
• TRobot, Uno	
• Uno II	
• Tadvanced Thermal cycler	
• C1000	
• S1000	BIO-RAD
• T100	
• Mini Gradient	
• PTC100™ (96-well block only)	BIO-RAD MJ RESEARCH
• DNA Engine™, DNA Dyad™, DNA Tetrad™	
• (Qiagen) Palm Cycler	Qiagen CORBETT
• MasterCycler®	
• MasterCycler® EP Gradient	Eppendorf
• MasterCycler® Gradient	
• Primus 96	MVG
• The Q Lifecycler	
• peqSTAR 96X universal / gradient / HPL	Peqlab
• labcycler	
• Robocycler 96 Gradient Cycler	STRATAGENE
• TP3000	sensoquest
• Cyclogene	
• Flexigene	
• Genius, Genius Quad	
• TC412/512	TECHNE
• Touchgene	
• Touchgene Gradient	
• MultiBlock System, MBS	THERMO Scientific (FISHER)
• PCR Sprint	
• 7500 Fast, 7500 Fast Dx, 7900 Fast, 7900HT Fast	
• StepOne™ and StepOnePlus™	Lifotech
• QuantStudio™	
• ViiA7™	
• CFX96 Touch™	Bio-Rad
• Chromo4™	
• Opticon™, Opticon2™, MiniOpticon™	BIO-RAD MJ RESEARCH
• Mastercycler™ ep realplex	EPENDORF
• LightCycler® LC480	
• LightCycler® LC96	ROCHE
• LightCycler® Nano	
• Quanta	TECHNE
• OPTICAL Thermalcycler	BIOMETRA
• MegaBACE™ 1000 mark 2	
• MegaBACE™ 500	AMERSHAM

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