TELEDYNE | Teledyne LABS

Combi*Flash®* NextGen Important Information

keywords: CombiFlash NextGen, Hazards, Safety

Overview

This document contains information for the CombiFlash NextGen system. The CombiFlash NextGen Installation and Operation Guide is available as a PDF file and can be downloaded from www.teledynelabs.com.

General Definitions and Symbols

Cautions identify a potential hazard, which if not avoided, may result in minor or moderate injury. This category can also warn you of unsafe practices, or conditions that may cause property damage.

Warnings identify a potentially hazardous condition, which if not avoided, could result in death or serious injury.

△ DANGER

DANGER - limited to the most extreme situations to identify an imminent hazard, which if not avoided, will result in death or serious injury.

Hazard Symbols Used on Instrument

Warnings and Cautions



The exclamation point within the triangle is a warning sign alerting you of important instructions in the instrument's technical reference manual.



The lightning flash and arrowhead within the triangle is a warning sign alerting you of "dangerous voltage" inside the product.

Symboles de sécurité



Ce symbole signale l'existence d'instructions importantes relatives au produit dans ce manuel.



Ce symbole signale la présence d'un danger d'électocution.

Warnungen und Vorsichtshinweise



Das Ausrufezeichen in Dreieck ist ein Warnzeichen, das Sie darauf aufmerksam macht, daß wichtige Anleitungen zu diesem Handbuch gehören.



Der gepfeilte Blitz im Dreieck ist ein Warnzeichen, das Sei vor "gefährlichen Spannungen" im Inneren des Produkts warnt.

Advertencias y Precauciones



Esta señal le advierte sobre la importancia de las instrucciones del manual que acompañan a este producto.



Esta señal alerta sobre la presencia de alto voltaje en el interior del producto.

Use and Disclosure of Data: Information contained herein is classified as EAR99 under the U.S. Export Administration Regulations.

Export, reexport or diversion contrary to U.S. law is prohibited.

CombiFlash NextGen Safety Considerations

Before installing, operating, or maintaining this equipment, all hazards and preventive measures must be fully understood. While specific hazards may vary according to location and application, read and follow these general warnings:

Chemical, Laboratory, and Equipment Hazards

Use of Flammable and/or Hazardous Chemicals and Solvents

Chemicals used with this instrument may be classified as carcinogenic, bio-hazardous, flammable, or radioactive. Additionally, the use of flammable solvents or chemicals with this system may result in vapor concentration levels that exceed the maximum exposure levels as recommended by OSHA Guide 1910.1000.

In all cases, use good laboratory practices and standard safety procedures.

Should these chemicals be used, Teledyne ISCO highly recommends that these applications be performed in an isolated environment and/or a laboratory fume hood designed to reduce exposure to a safe level for these types of materials in accordance with federal, state, and local regulatory laws, and in compliance with your company's chemical/hygiene plan in the event of a spill.

Damage to System by Chemicals

Do not allow chemicals to come into contact with the system's power cord or cables. Solvents can degrade cord and cable insulation, causing a risk of electric shock, fire, and equipment damage.

Electrical Hazards: General

Resetting of GFI Devices and Circuit Breakers

If the lab power outlet circuit breaker or GFI (Ground Fault Interrupter) is tripped, follow your company's procedures to ensure no hazardous conditions occur, such as an electrical spark igniting solvent vapors in the area.

If the rear panel circuit breaker is tripped, the area should be cleared of solvents and vapors before resetting the circuit breaker. If the breaker trips again, follow your company's guidance on lock out/tag out to prevent operation until the instrument can be repaired by a qualified service technician.

Use of Non-RediSep Columns

This product is designed to use RediSep columns with Luer lock inlet connections and Luer slip outlet connections (also known as "slip tip"). Use of other columns may result in fluid leakage due to the quality or design of the column fittings or rupture of the column body due to insufficient pressure capability. Luer lock outlet columns WILL NOT fit into the system's column outlet fitting and will result in fluid leakage.

▲ CAUTION

Unintended Use of this Equipment

Use of this instrument in any way not specified in the manual, may impair the protection provided by the instrument.

Operators and maintainers of the system must be provided with all applicable health and safety regulations for use of the system, its accessories, and consumables. They must be educated, trained, and competent to use the machine as it is intended.

Only use columns (4 to 330 g) and/or solid load cartridge sizes (5 to 65 g) designed for use on this instrument. Specifically, columns larger than 330 g (specifically 750 g, 1.5 kg and 3 kg columns) or solid load cartridges above 65 g (260 g cartridge cap) should only be used on the NextGen with the NextGen Large Column Stand Accessory (PN 605394551).

Use of the Solid Load Cartridge Cap (SLCC) ring

Ensure the appropriate SLCC ring is installed on the CombiFlash NextGen system to support the 5, 25, or 65 gram sample loading cartridge.

Placing the System

Do not locate this instrument near potential spark sources such as equipment with mechanical thermostats or line level power switches. Vapors that occur during normal operation due to open fraction collection vials may be ignited by external spark sources.

General Safety Guidance

Follow all applicable safety practices and regulations when handling and moving the system's shipping crate and associated containers, and when moving the system itself.

Locate the system away from potential spark sources. See the warning above regarding placing the system.

Keep the system's power cord plug and outlet easily accessible in case the system needs to be disconnected quickly from AC power.

Install external fire protection conforming to local regulations

Have plans in place that conform to local regulations to address solvent spills or leakage at your site to prevent a fire or explosion hazard.

Electrical Hazards: Electrostatic Discharge

Maintaining the System to Prevent Static Electrostatic Discharge

Clean the collection tube racks and tray monthly. They are made of conductive plastic which must be kept clean to dissipate static electricity. Use distilled water with a mild detergent. For tougher stains, use isopropyl alcohol.

Preventing Person-to-System Electrostatic Discharge

Observe the following precautions to prevent person-to-system electrical static discharges:

- 1) Wear anti-static clothing and shoes when operating the system. Stand on an anti-static floor mat.
- Touch a grounded object before touching the system or before handling any of its parts (such as columns). For example, metal water pipes are typically grounded. This will discharge any static electricity you may have accumulated.
- 3) Maintain humidity above 65% at the instrument location so that static buildup will be generated less readily.

Preventing Static Electrostatic Discharge During System Operation

Static electricity can also be generated during system operation, such as when non-polar liquids flow through it. To prevent static buildup as the system operates, observe the following precautions:

- 1) Do not exceed the flow rate specified in the documentation for the flash chromatography column.
- 2) Prevent air bubbles from accumulating in the flow lines. These can significantly increase electrostatic charge.

▲ CAUTION

Static Electricity

When using the Combi*Flash* NextGen flash chromatography system, take precautions to avoid static electricity buildup. Discharges of static electricity could ignite vapors, especially when using the system with flammable, non-conducting solvents operating under high flow rate conditions.

Read, understand, and follow all local and national codes and regulations to avoid static electricity hazards.

Substitution of Tubing

Never substitute the black tubing on Combi*Flash* systems. The black tubing (P/N 023-0503-06) is anti-static. This tubing is required to dissipate static electricity. Discharges of static electricity could ignite vapors.

Solvent Leaks and Spills

Do not wipe solvents from system or column surfaces while the system is operating or while it is plugged in.

In the event of a solvent leak, immediately stop the system to prevent continuing leaks by pressing Stop Flow on the touchscreen or by pressing the side-mounted On/Standby switch (which produces no spark). Next, turn off the circuit breaker that controls the local power outlet used by the system to remove power for the entire system. Due to the possibility of producing a spark, DO NOT switch the rear panel power switch/circuit breaker or remove the line cord until vapors from the spill have dispersed.

In event of column leakage, allow all solvent vapor to dissipate before removing the column. Failure to do so could cause a discharge of static electricity that could ignite vapors.

Have plans in place that conform to local regulations to address solvent spills or leakage at your site.

CombiFlash NextGen General Information

Pressure Limits

The Combi*Flash* NextGen has redundant safety devices to limit system pressure. The maximum system pressure is the lowest value as based on the following considerations:

- 1) 300 psi (2068 kPa);
- 2) 150 psi (1034 kPa) for older systems without an automated injection valve;
- 3) 200 psi for methods using a solid-load cartridge; or
- the maximum pressure limits on RediSep columns as determined by each columns RFID-defined pressure limit. If the column is not RFID recognized, see section 1.6.5 of the *CombiFlash NextGen Installation and Operation Guide*.

RediSep columns smaller than 100 g are CE certified using standard IEC61010-1 for use on the Combi*Flash* NextGen.

RediSep columns 100 g or larger meet Pressure Vessel Directive 97/23/EC.2)

Turning the System On and Off

NextGen systems use a combination power switch and circuit breaker located on the rear panel. For normal operation, the switch can be left on while the right side panel Run/Standby push button is used to control most power circuits within the instrument. Power consumption while in Standby is ~6W. Use of the rear panel power switch is also acceptable. If used for power control, the system should be placed in Standby until the screen goes dark before switching the back panel power switch off to allow the internal operating system to complete an orderly shutdown.

Note

The rear panel mounted circuit breaker is the power disconnect device.

FCC Statement

Combi*Flash* NextGen systems equipped with RFID column and rack recognition (NextGen 300+ and optional on the NextGen 300) contain modules with FCC ID numbers of PJMCPR74 and 2ADZBID-2:

- 1) This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
 - a) This device may not cause harmful interference.
 - b) This device must accept any interference received, including interference that may cause undesired operation.
- 2) Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Technical Assistance

Assistance for the Teledyne LABS Combi*Flash* NextGen can be obtained from

Teledyne ISCO

4700 Superior St. Lincoln NE 68504

 Phone:
 (800) 775-2965 or (402) 853-5340

 Fax:
 (402) 465-3001

 Email:
 Isco.Service@teledyne.com



teledynelabs.com

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Teledyne LABS is continually improving its products and reserves the right to change product specifications, replacement parts, schematics, and instructions without notice.

EAR99 Technology Subject to Restrictions Contained on the Cover Page

69-5253-086 Rev. H 7/24

EU DECLARATION OF CONFORMITY

We the manufacturer:

Manufacturer's Name:	Teledyne ISCO
Manufacturer's Address:	4700 Superior Street, Lincoln, NE 68504
	USA

Declare, under our sole responsibility that the following equipment:

Product Model:	COMBIFLASH NEXTGEN100
	COMBIFLASH NEXTGEN300
	COMBIFLASH NEXTGEN300+
	INCLUDING OPTIONAL ELSD AND PURION
Object of Declaration:	Flash Chromatography System

Is designed and manufactured in compliance with the following applicable Directives and Standards:

Directive - Union Legislation	Standard	
2014/53/EU - Radio Equipment	EN 61010-1:2010/A1:2019	
	EN 61010-2-081:2020	
	EN 61326-1:2013	
	EN 55011:2016/A1:2017/A11:2020	
	EN 61000-3-3:2013	
	EN 61000-3-2:2014	
	ETSI EN 300 330 V2.1.1	
	ETSI EN 301 489-1 V2.1.1	
	ETSI EN 301 489-3 V2.1.1	
	EN 50364:2010	
	EN 62368-1:2014+AC:2015	
2011/65/EU - RoHS, with amendments	EN IEC 63000:2018	

I, the undersigned, hereby declare, by sole responsibility of the manufacturer that the design of the equipment specified above conforms to the above Directives and Standards, and the fulfilment of essential safety requirements and essential requirements set out in the Directives have been demonstrated.

Authorized Signatory

Signatur

Name:

Title: Date:

ire:	Samuel Ramey
	Samuel Ramey
	Director of Engineering
	7/12/2023



4700 Superior Street Lincoln, NE 68504 USA +1 402-464-0231 www.teledyneisco.com

UK DECLARATION OF CONFORMITY

We the manufacturer:

Manufacturer's Name:	Teledyne ISCO
Manufacturer's Address:	4700 Superior Street, Lincoln, NE 68504
	USA

Declare, under our sole responsibility that the following equipment:

Product Model:	COMBIFLASH NEXTGEN100					
	COMBIFLASH NEXTGEN300					
	COMBIFLASH NEXTGEN300+					
	INCLUDING OPTIONAL ELSD AND PURION					
Object of Declaration:	Flash Chromatography System					

Is designed and manufactured in compliance with the following applicable Regulations and Standards:

Statutory Instrument (Regulation)	Standard
UKSI 2014/53 – Radio Equipment	EN 61010-1:2010/A1:2019
	EN 61010-2-081:2020
	EN 61326-1:2013
	EN 55011:2016/A1:2017/A11:2020
	EN 61000-3-3:2013
	EN 61000-3-2:2014
	ETSI EN 300 330 V2.1.1
	ETSI EN 301 489-1 V2.1.1
	ETSI EN 301 489-3 V2.1.1
	EN 50364:2010
	EN 62368-1:2014+AC:2015
UKSI 2012/3032 RoHS	EN IEC 63000:2018

I, the undersigned, hereby declare, by sole responsibility of the manufacturer that the design of the equipment specified above conforms to the above Directives and Standards, and the fulfilment of essential safety requirements and essential requirements set out in the Directives have been demonstrated.

Authorized Signatory

Signature:

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Name:

Samuel /	<u>me</u>
Samuel Ramey	

 Title:
 Director of Engineering

 Date:
 7/12/2023



4700 Superior Street Lincoln, NE 68504 USA +1 402-464-0231 www.teledyneisco.com







CERTIFICATE

No. U8 102721 0001 Rev. 00

Holder of Certificate:

Teledyne Isco

4700 Superior Street Lincoln NE 68504-1398 USA

Certification Mark:



Product:

Laboratory Equipment Chromatography System

This product was voluntarily tested to the relevant safety requirements referenced on this certificate. It can be marked with the certification mark above. The mark must not be altered in any way. This product certification system operated by TÜV SÜD America Inc. most closely resembles system 3 as defined in ISO/IEC 17067. Certification is based on the TÜV SÜD "Testing and Certification Regulations". TÜV SÜD America Inc. is an OSHA recognized NRTL and a Standards Council of Canada accredited Certification body.

Test report no.:

231-72144060-000

Date, 2019-07-26

(Adrian Rabago Valenzuela)



CERTIFICATE No. U8 102721 0001 Rev. 00

Model(s):

CombiFlash NextGen 100 CombiFlash NextGen 300 CombiFlash NextGen 300+ TELEDYNE ISCO

Brand Name:

Tested according to:

UL 61010-1:2012/R:2016-04 Supplemented by UL 61010-2-081:2015 UL 61010-2-010:2015 CAN/CSA-C22.2 No. 61010-1:2012/U2:2016-04 CAN/CSA-C22.2 No. 61010-2-081:2015 CAN/CSA-C22.2 No. 61010-2-010:2015

Production Facility(ies): 102721

Parameters:	Rated Input Voltage:	100-240 VAC
96	Rated Input Frequency:	50/60 Hz
	Rated Input Current:	2 A Max
	Protection Class:	PE Connected
	Degree of Protection:	IPX0
	Temperature, Ambient:	20°C to 40°C
	Maximum Altitude:	2000 m

MODEL DIFFERENCES

CombiFlash NextGen 300+ is the product of the NextGen product family. It has all features and maximum capabilities.

The CombiFlash NextGen 300 is a subset of the CombiFlash NextGen 300+. Compared to the CombiFlash NextGen 300+ it doesn't have the injection valve or RFID support of columns or racks. It has reduced pressure capabilities of 150 psi maximum instead of 300 psi.

The CombiFlash NextGen 100 has limited capabilities compared to the CombiFlash NextGen 300. It has a flow rate of 100 ml/min (compared to 300 ml/min for the CombiFlash NextGen 300 and 300+). It is also limited to 150 psi instead of 300 psi in the 300+. It has the ability to select from only 2 solvents instead of the 4 solvents used in the CombiFlash NextGen 300 and 300+.

CONDITIONS OF ACCEPTABILITY

The following pressure limit was defined by manufacturer for normal operation:

- CombiFlash NextGen 100: 150 psi
- CombiFlash NextGen 300 and CombiFlash NextGen 300+: 300 psi
- CombiFlash NextGen 300 and CombiFlash NextGen 300+: 150 psi (if not equipped with injection valve)

产品中有毒有害物质或元素的名称及含量 Name and amount of Hazardous Substances or Elements in the product

Name and amount of Mazardous Substances of Elements in the product						
		有毒有害物质或元素				
部件名称		Hazardous Substances or Elements				
Component Name	铅	汞	镉	六价铬	多溴联苯	多溴二联苯
_	(Pb)	(Hg)	(Cd)	(Cr(VI))	(PBB)	(PBDE)
液晶显示 LCD Display	О	0	0	0	О	О
线路板 Circuit boards	0	0	0	0	О	О
接线 Wiring	Ο	Ο	О	Ο	Ο	О
内部电缆 Internal Cables	Ο	Ο	Ο	Ο	Ο	Ο
主电源线 Line Cord	О	О	0	0	0	О
步进电机 Stepper Motor	О	О	0	0	0	О
氘气灯 Deuterium lamp	0	О	0	0	0	О
阀体 Valve Body	О	О	О	О	О	О

产品中有毒有害物质或元素的名称及含量: Name and amount of Hazardous Substances or Elements in the product O: 表示该有毒有害物质在该部件所有均质材料中的含量均在ST/标准规定的限量要求以下。

O: Represent the concentration of the hazardous substance in this component's any homogeneous pieces is lower than the ST/ standard limitation.

X:表示该有毒有害物质至少在该部件的某一均质材料中的含量超出ST/标准规定的限量要求。

(企业可在此处,根据实际情况对上表中打"X"的技术原因进行进一步说明。)

X: Represent the concentration of the hazardous substance in this component's at least one homogeneous piece is higher than the ST/ standard limitation.

(Manufacturer may give technical reasons to the "X"marks)

环保使用期由经验确定。

The Environmentally Friendly Use Period (EFUP) was determined through experience.

生产日期被编码在系列号码中。前三位数字为生产年(207代表2007年)。随后的一个字母代表月份:A为一月, B为二月,等等。

The date of Manufacture is in code within the serial number. The first three numbers are the year of manufacture with the second digit removed (218 is year 2018) followed by a letter for the month. "A" is January, "B" is February and so on (I is not used).