

CombiFlash® NextGen

Important Information

#69-5253-086
 Rev. F, July 2023

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.teledyneisco.com.

General Definitions and Symbols

CAUTION

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.

WARNING

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'électrocution.

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 Sie 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.

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

WARNING

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.

WARNING

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.

CAUTION

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).

Electrical Hazards: General

WARNING

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.

WARNING

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.

CAUTION

Static Electricity

When using the CombiFlash 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.

WARNING

Substitution of Tubing

Never substitute the black tubing on CombiFlash 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.

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.
- 2) 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.

WARNING

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 such solvent leaks, immediately turn off the system and disconnect the power cord. The combination power switch and circuit breaker is located on the rear panel.

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 CombiFlash 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 systems without an automated injection valve;
- 3) 200 psi for methods using a solid-load cartridge;
- 4) or the maximum pressure limits on RediSep columns as determined by each column's 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 CombiFlash 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 basis 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

CombiFlash 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 and are subject to the following statements:

- 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.

Technical Assistance

Assistance for the Teledyne ISCO CombiFlash 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

EAR99 Technology Subject to Restrictions Contained on the Cover Page

Teledyne ISCO

P.O. Box 82531, Lincoln, Nebraska, 68501 USA

Toll-free: (800) 228-4373 • Phone: (402) 464-0231 • Fax: (402) 465-3022

Email: Isco.Service@teledyne.com

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



July 13, 2023

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

Signature:



Name:

Samuel Ramey

Title:

Director of Engineering

Date:

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



Name:

Samuel Ramey

Title:

Director of Engineering

Date:

7/12/2023



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Lincoln, NE 68504 USA
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No. U8 102721 0001 Rev. 00

Certification Mark:



C US

(Adrian Rabago Valenzuela)

~~Handwritten signature~~



America

CERTIFICATE

No. U8 102721 0001 Rev. 00

Model(s):

CombiFlash NextGen 100
CombiFlash NextGen 300
CombiFlash NextGen 300+

Brand Name:

TELEDYNE ISCO

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
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

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

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).

Effective: January 5, 2012

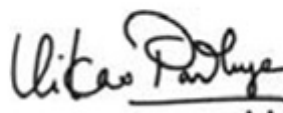
Subject: Teledyne Isco Products

RE: Bovine Spongiform Encephalopathy (BSE)/Transmissible Spongiform Encephalopathy (TSE)

Teledyne Isco products are not manufactured using materials that are derived from animal sources. Therefore, we can state that Bovine Spongiform Encephalopathy (BSE)/Transmissible Spongiform Encephalopathy (TSE) should not be a concern.

If you have any questions or require further information, please contact us or visit our website at www.isco.com.

Sincerely,



Vikas Padhye Ph. D.
Vice President and General Manager
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Lincoln, Nebraska 68504
Phone: (402-464-0231)
FAX: (402-464-0318)