



Basic Vortex Mixer

88882011 & 88882012

In the United States:

For customer service, call 1-800-766-7000
To fax an order, use 1-800-926-1166
To order online: thermofisher.com

In Canada:

For customer service, call 1-800-234-7437
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ThermoFisher
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Operating Manual

Revision A .04 01 2021

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Section 1 Important Information

Ignoring the following warnings could cause serious injuries or even fatal accidents.

Check the voltage, phase and capacity of power supply on the ID plate before installation. Connect properly.

Power supply must be properly grounded. Abnormal grounded connection causes serious damage. Grounded connection must not be on the water pipe and gas pipe.

Use provided power cord. Power cord: Wall outlet with grounded terminal power cord 250V 10A.

Do not install the product in a place that gas could leak. Do not use in a place that has industrial oil smoke or metallic dust. It causes fire or electric shock. Do not use the machine near to places where explosion could happen due to organic evaporating gases.

Explosive materials: acid, ester, nitro compound.

Inflammable materials: salt peroxides, inorganic peroxide, salt acids.

Check equipment for permissible environmental conditions when using inside of Temperature and Humidity Chamber or Incubator. It can be the cause of fire or trouble by stirrer electricity, electronic, and damage of motor.

Mixer's permissible environmental condition. Temperature 5°C to 40°C, Maximum relative humidity 85%.

Unplug if there is a strange sound, smell and/or smoke from the product. Stop

operating and request the service.

Keep out of the direct sunlight. It may influence product life and proper operation.

Do not use the machine at places where moisture is high and flooding can happen.

Do not assemble, repair, modify on your own, this product may not work well and electrical shock may possible.

Changes to the product could result in product inefficiency. Also this will void warranty. Which also indicates a hazardous situation, if not avoided may result in minor or moderate injury.

Do not put heavy things on the power cord. Do not put the machine on the cord. It may take off the wire coating and cause electric shock or fire.

Do not touch it with wet hands and place the main plug correctly. It could cause the electric shock or injuries.

Installing power outlet near instrument may be convenient. Allow adequate spacing around the product to ensure proper ventilation, accessibility to the power switch and for allowing the instrument to run without impediment.

Do not install the Vortex Mixer near machinery generating high frequency noise. Avoid installation close to high frequency-welding machine, sewing machine, or mass SCR controller.

Do not inject any liquid and inflammable things inside of product.

Do not pour water or put liquid on the top of the product when cleaning. Disconnect

the main power immediately and request the service if water may be in the product.

Do not let the product take any strong shock or vibration. It could cause abnormal operation or trouble. It may deteriorate the ability of the product operation and not obtain correct results.

Do not sprinkle insecticide or flammable spray on the product. Use smooth cloths. Cleaning with solvent can cause fire and deformity.

Power off while product cleaning. It may cause electric shock or fire.

Do not drop or allow the machine to fall. It will cause wrong operation and malfunction.

Only accessories that meet the manufacturer's specifications shall be used.

Disposing of Product

Dispose of the unit by separating the plastic, motor and electronics and dispose according to local laws and regulations.

Section 2 Introduction

Welcome to use Thermo Scientific Vortex Mixers. Vortex mixers are used in biomedical engineering, physical and chemical analysis, environmental monitoring, food, hygiene, petrochemical, metallurgy and other fields, for cell culture, sample tissue, chemical reagents, bacteria liquid and other substances mixed. It is suitable for test tubes, centrifugal tubes, color tubes, enzyme plates, deep hole plates, PCR plates and other containers.

This product is intended to be used in a laboratory setting and is not to be used in a clinical setting.

2.1 Feature

It can be easily switched between touch and continuous modes and the corresponding light is on when working normally.

- ◆ It has speed adjustment display function.
- ◆ It uses a knob to achieve stepless speed regulation.
- ◆ It has a high sensitivity touch switch.
- ◆ A variety of accessories can be selected to maximize the needs of customers.
- ◆ It uses brushless DC motor, with accurate speed control, stability, safe and reliable features.
- ◆ DC motor design is suitable for long-time operation, up to 1 week or longer.
- ◆ It has a power recovery function.
- ◆ The housing material is ABS, which has excellent heat resistance, corrosion resistance, impact resistance and chemical resistance.





Section 3 Inspection and Installation

Before unpacking the unit, first check for damages in the package of the unit.

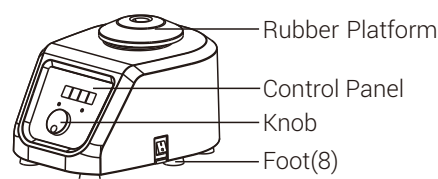
Then unpack the unit. Check carefully to see if there were damages incurred during transit.

After unpacking, check that all unit parts and accessories are as listed below. Contact us or the agent from which you purchased the unit if any components were omitted.

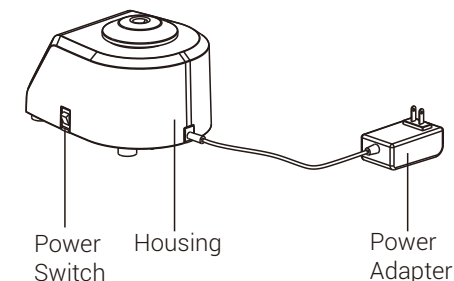
3.1 Packing List

Description	Catalog Number		Figure
Basic Vortex Mixer	88882011	88882012	
Rubber Platform	1	1	
Power Adapter 120V	1	N/A	
Multi-Power Adapter 220V	N/A	1	

3.2 Connections



3.3 Structure Diagram



Section 4 Overview

4.1 Specifications

Rotation Speed	Speed Range.....	200 to 3000rpm
	Speed Accuracy.....	±5%
	Orbit Diameter.....	∅ 4mm
	Operating Mode.....	Touch /Continuous
Drive	Motor.....	Brushless DC motor (Suitable for long-time operation)
	Load	Maximum Load.....0.5kg @ 800rpm
Size	Overall Dimensions.....	205×151×131mm
	Platform Diameter.....	∅ 76mm
	Packing Dimensions.....	290×270×240mm
Weight	Net Weight.....	6.5Kg(14.33lb)
	Gross Weight.....	6.8Kg(14.99lb)
Power Supply	Input Requirement.....	100-240VAC~, 50/60Hz, 6W
	Output Requirement.....	24V=, 1A
Others	Certification.....	RoHS, WEEE, cCSAus, CE Mark
	IP Class.....	IP32

4.2 Environmental Conditions

Application Environmental Conditions: indoor use
Temperature.....5 to 40°C
Altitude.....≤2,000 m
Humidity..... 20% to 85%

Storage Environmental Conditions
Temperature.....0 to 60°C
Altitude.....≤2,000 m
Humidity.....20% to 90%, non-condensing

4.3 Safety Instructions

Please read the entire instruction manual before operating the Basic Digital Vortex.



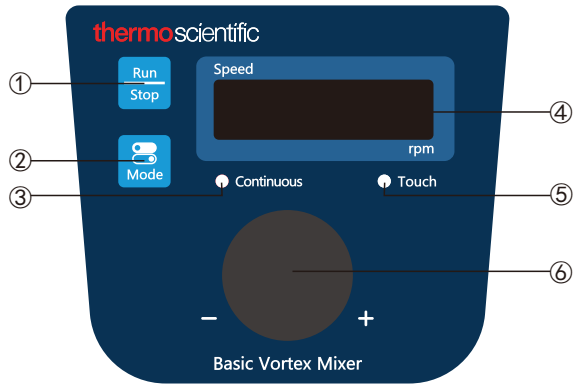
WARNING DO NOT use the Basic Vortex Mixer in a hazardous atmosphere or with hazardous materials for which the unit was not designed. Also, the user should be aware that the protection provided by the equipment may be impaired if accessories used are not provided or recommended by the manufacturer, or are used in a manner not specified by the manufacturer.

CAUTION ! To avoid electrical shock, completely cut off power to the unit by disconnecting the power cord from the unit or unplug from the wall outlet. Disconnect unit from the power supply prior to maintenance and service. Any spills should be removed promptly. Bio hazard spills should be cleaned using approved liquid promptly. Solvent spills are a fire hazard. Stop the unit immediately, and DO NOT operate until clean up is complete and vapors have dissipated. **DO NOT** immerse the unit for cleaning. **DO NOT** operate the unit if it shows signs of electrical or mechanical damage.

Section 5 Operation

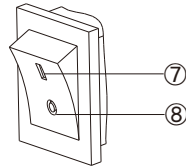
This chapter covers the control panel and its operation.

5.1 Control Panel



- ①. Run/Stop button: Run or stop the instrument.
- ②. Mode button: To switch running mode between "Touch" and "Continuous".
- ③. Continuous Mode indicator: When in Continuous Mode, light up.
- ④. Speed display window: The window displays set speed (when the instrument is in standby) or current speed (when the instrument is running).
- ⑤. Touch Mode indicator: When in Touch mode, light up.
- ⑥. Speed setting Knob: Turn the knob clockwise or counterclockwise are used to increase/decrease the set speed of the instrument.

Power Switch



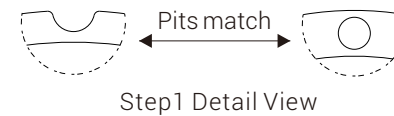
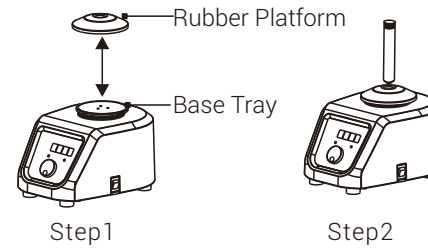
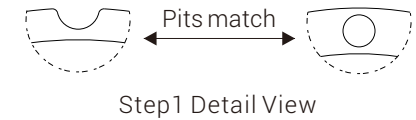
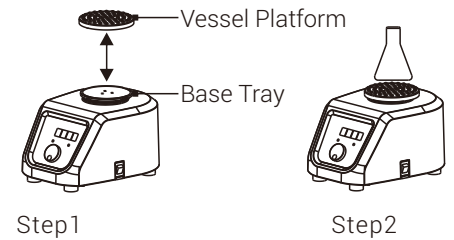
- ⑦. Gear I: When the switch is in "gear 1", the instrument power is on.
- ⑧. Gear O: When the switch is in "gear 0", the instrument power is off.

5.2 Installation of Accessories

Only accessories that meet the manufacturer's specifications shall be used.

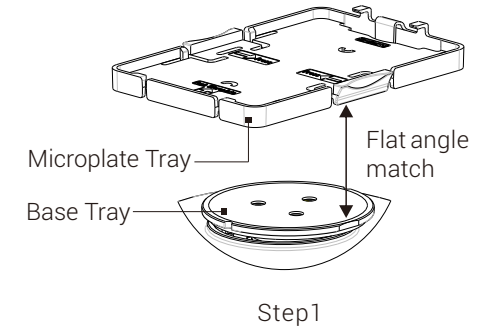
Installation of Rubber Platform

1. Place the Rubber Platform on the top of the base tray and align the inner bump of the Rubber Platform is to the groove on the base tray.
2. Press evenly along the perimeter of the Rubber Platform so that the Rubber Platform is stuck on the base tray.



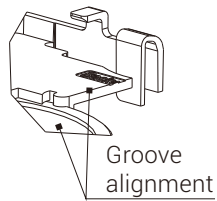
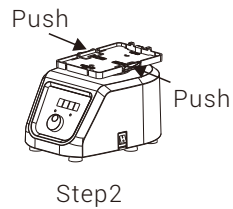
Installation of Flat Bottom Vessel Platform

1. Place the Flat Bottom Vessel Platform on the top of the base tray and align the inner bump of the Flat Bottom Vessel Platform is to the groove on the base tray.
2. Press evenly along the perimeter of the Flat Bottom Vessel Platform so that the Flat Bottom Vessel Platform is stuck on the base tray.



Installation of Microplate Tray
Microplate Tray are suitable for "continuous" mode and samples are mixed with enzyme ELISA PLATE.

1. Parallel place the Microplate Tray on the top of the base tray.
2. Align the inner bump of the Microplate Tray is to the groove on the base tray. gently press both sides of the Microplate Tray to snap it onto the base tray, and please make sure it tighten.



Note:

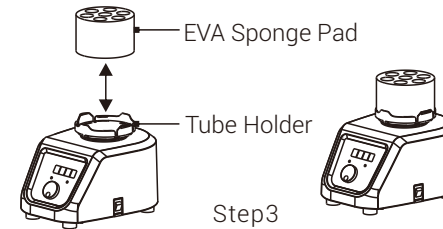
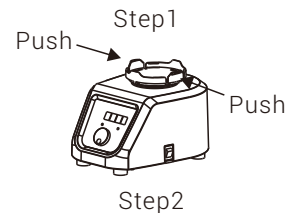
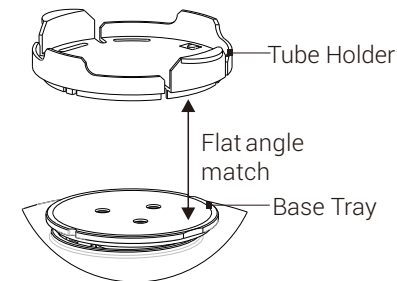
- (1). When mixing by ELISA PLATE, the capacity of the ELISA PLATE shall not exceed 1/2 of the maximum capacity. Otherwise, there may be liquid splash.
- (2). When Microplate Trap(88882122) is used with Deepwellplate, the capacity of the Deepwellplate shall not exceed 2/3 of the maximum capacity, and the maximum speed not exceed 650rpm.
- (3). The Recommended speed values in the table are for reference only (Section Optional Accessories). Change the speed value according to the actual operation of the instrument.

Installation of Tube Holder

Caution:

When replacing the accessories, remove power from the instrument by unplugging. Tube Holders are suitable for "Continuous" mode to mix samples by test tubes.

1. Parallel place the Tube Holder on the top of the base tray.
2. Align the inner bump of the Tube Holder is to the groove on the base tray. gently press both sides of the Tube Holder to snap it onto the base tray, and please make sure it tighten.
3. Install the corresponding EVA sponge pad on the Tube Holder, after inserting the test tube into the EVA sponge pad, the instrument can then be turned on.

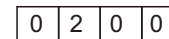


5.3 Settings

Please confirm the environmental condition and the power voltage first, and then, connect the mixer power cord to the power outlet, Ensure the machine is on a flat surface prior to operating.

Switch On

Press the power switch to position "I" and the display window is shown as below:



Speed display window

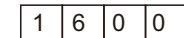
The corresponding indicator for the running mode is on.

Mode Settings

In standby, press "Mode" button to switch "Touch" mode or "Continuous" mode. In "Touch" mode, the instrument starts running automatically when the vessel presses on the Rubber Platform or Flat Bottom vessel Platform, and automatically stops when the vessel leaves the platform. In "Continuous" mode, press "Run/Stop" button, the instrument with tray, platform or tube holder starts running continuously, and press "Run/Stop" button again, the instrument stops running.

Speed setting

Turn the speed knob clockwise or counterclockwise, the Speed display window to set the target speed, for example:



In this case, the set speed is 1600rpm. Press the Speed setting knob, the digital tube starts flashing, turn the knob to adjust the display window value to 1600, then press the knob again within 5s, the digital tube stop flashing, the display window shows 1600, the speed setting is finished.

Power Recovery

Continuous Mode: If the power is cut off suddenly while the instrument is in operation, the instrument will resume the parameters set before the power is cut off, but the instrument will not continue to run.

Touch Mode: The power is cut off when the instrument is working. If the power is on again, the instrument will resume the parameters set before the power is off, put the vessel onto the Rubber Platform or Flat Bottom Vessel Platform and press to run.

Finish Operation

After use, please press power switch to turn off the power. Unplug the instrument and store it according to the storage guide.

Section 6 Safety Tips and Maintenance

Please read the manual carefully and follow the following safety guidelines before operating this instrument.

1. Keep this manual for reference.
2. Professionals are required to operate the instrument.
3. The instrument can only be used with the original power adapter.
4. When operating the instrument, the operator must choose to wear appropriate clothing to avoid toxic and harmful solvents produced as follows:
 - ◆Harmful liquids splashed
 - ◆The harmful solids ejected
 - ◆Body, hair, clothing is rolled or corroded
5. If the instrument becomes abnormal or higher vibration in use, please immediately reduce the speed accordingly. If the instrument becomes abnormal or there is a higher vibration when in use, immediately reduce the speed accordingly or immediately stop the instrument but turning off the power.
6. Ensure that the accessories and containers are installed correctly.
7. Check that the instrument and the accessories are in good condition before each operation.
8. For a single test tube mixing, please put test tube in the middle hole of the rubber platform. For multi-test tube mixing, please always place the test tubes in the center and symmetrically.
9. Be careful of the risks that may arise.
 - ◆Flammable substances
 - ◆Fragile substances
10. Unplug the power before installing the accessories.
11. Carefully handle the instrument to avoid any collision or impact.

Cleaning

In order to ensure the safe use of the instrument, please follow the manufacturer's recommendations when cleaning the instrument.

- Unplug the power first when cleaning.
- Wipe the instrument with a damp, soft cloth or non-corrosive cleaning agent
- Direct spray instruments are prohibited.
- Make sure that the instrument is completely dry before operating it.
- Please wear gloves when cleaning.

Warning: Avoid dripping detergent or water into the inside of the instrument during cleaning.

Clean Spill

If accidental spillage of liquids caused by mishandling or contained breakage occurs on the surface of the instrument, please shut down the instrument and clean up the liquid immediately. If the liquid has already spilled into the unit, cut off the power supply first and immediately clean up the liquid at the surface of the instrument. Place the instrument in a ventilated and dry environment for 24 hours before reuse. If the instrument is not functioning after drying for 24 hours, please contact the manufacturer.

Warning: The operator is not permitted to gain access using a tool, to a part which in normal use may be hazardous live.












Section 7 Troubleshooting

Please refer to the following table to troubleshoot if any malfunction occurs.

If the problem still exists, contact your local sales representative.

Error	Cause	Solution
Not working properly	Power disconnected	Connect the power
	Power switch off	Switch on power
Loud noise Vibration large Abnormal sound	The instrument is not stable	Place the instrument on a horizontal, rugged platform
	The sample in the test tube is imbalance	Fill an equivalent amount of sample in the test tube
	Contact with other objects of the instrument's case	Remove the objects contacted

Section 8 Optional Accessories

Description	Cat. No.	Touch	Continuous	Speed Range	Dimensions	Figure
Rubber Platform	88882120	✓	✓	200~3000rpm	φ 82x16.5mm	
Flat Bottom Vessel Platform	88882121	✓	✓	200~3000rpm	φ 80x9mm	
Microplate Tray	88882122	-	✓	200~1200rpm	136x97x11.5mm	
Microplate Tray with Rubber Strips	88882122 88882103	-	✓	200~2000rpm Half full with lid	-	
10mm dia x19 Tube Holder	88882123	-	✓	200~2000rpm	φ 100x54mm	
12mm dia x 13 Tube Holder	88882124	-	✓	200~1800rpm	φ 100x54mm	
15mm dia x 12 Tube Holder	88882125	-	✓	200~1000rpm	φ 100x68mm	
20mm dia x 7 Tube Holder	88882126	-	✓	200~1000rpm	φ 100x68mm	
26mm dia x 4 Tube Holder	88882127	-	✓	200~900rpm	φ 100x68mm	
Multi-Power Adapter 220V	88870124	-	-	-	100~240VAC 1.0A 1.8m	
Power Adapter 120V	88870125	-	-	-	100~240VAC 1.0A 1.8m	

Section 9 Warranty

THERMO FISHER SCIENTIFIC STANDARD PRODUCT WARRANTY

The Warranty Period starts two weeks from the date your equipment is shipped from our facility. This allows for shipping time so the warranty will go into effect at approximately the same time your equipment is delivered. The warranty protection extends to any subsequent owner during the first year warranty period.

During the first two (2) years, component parts proven to be non-conforming in materials or workmanship will be repaired or replaced at Thermo's expense, labor included. Installation and calibration are not covered by this warranty agreement. The Technical Services Department must be contacted for warranty determination and direction prior to performance of any repairs. Expendable items, glass, filters and gaskets are excluded from this warranty.

Replacement or repair of components parts or equipment under this warranty shall not extend the warranty to either the equipment or to the component part beyond the original warranty period. The Technical Services Department must give prior approval for return of any components or equipment. At Thermo's option, all non-conforming parts must be returned to Thermo Fisher Scientific postage paid and replacement parts are shipped FOB destination.


THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER WRITTEN, ORAL OR IMPLIED. NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE SHALL APPLY. Thermo shall not be liable for any indirect or consequential damages including, without limitation, damages relating to lost profits or loss of products.

Your local Thermo Sales Office is ready to help with comprehensive site preparation information before your equipment arrives. Printed instruction manuals carefully detail equipment installation, operation and preventive maintenance.

If equipment service is required, please call your Technical Services Department at 1-866-984-3766, option number 2. We're ready to answer your questions on equipment warranty, operation, maintenance, service and special application. Outside the USA, please contact local Thermo Technical Services Department or local distributor for warranty information.

Section 10 Compliance

1. European Union


 The European voltage models of this product meet all the applicable requirements of the European Directives and therefore display the CE Marking. These Directives are captured in the EU Declaration of Conformity which may be obtained from the manufacturer.

2. Product Safety

This product family has been tested to applicable productsafety standards by a Nationally Recognized Test Laboratory (NRTL) and may bear the NRTL's mark of safety compliance to those applicable standards.

3. Electromagnetic Compatibility

3.1 FCC Statement (USA)

 Any 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 B 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.

3.2 Canadian ISCED IC Notice

This ISM digital apparatus complies with Canadian ICES-001. Cetappareil ISM estconformeá la norme NMB-001 du Canada.owing optimum tray rotation.

3.3 Korean KC Registration


 사용자안내문
이기는은무용환경에서사용할 목적으로적합성평가를받은기기로서가정용환경에서사용하는경우전파 간섭의우려가있습니다

WARNING Statement: EMC Registration is done on this equipment for business use only. It may cause interference when the product would be used in home. This warning statement applies a product for business use.

4. Environmental Compliance

4.1 Evaluation of Chemicals - Regulations and Directives

4.1.1 REACH - Europe

 Thermo Fisher Scientific is committed to meeting all compliance obligations to evaluate, communicate, and register any Substances of Very High Concern (SVHC), and finding alternates where

appropriate.

4.1.2 RoHS - Europe

Thermo Fisher Scientific is determined to reduce the impact we have on the environment, and so can declare that this product fully complies with the European Parliament's RoHS2 (Restriction of Hazardous Substances) Directive 2011/65/EU, with respect to the limitation for the following substances:

- Lead (0.1 %)
- Mercury (0.1 %)
- Cadmium (0.01 %)
- Hexavalent chromium (0.1 %)
- Polybrominated biphenyls (PBB) (0.1 %)
- Polybrominated diphenyl ethers (PBDE) (0.1 %)

2015/863 Annex II (RoHS2 Amendment, In effect after July 22, 2021)

- Bis(2-ethylhexyl) phthalate (DEHP) (0.1 %)
- Butyl benzyl phthalate (BBP) (0.1 %)
- Dibutyl phthalate (DBP) (0.1 %)
- Diisobutyl phthalate (DIBP) (0.1 %)

Our compliance is witnessed by written declaration from our suppliers and/or component testing. This confirms that any potential trace contamination levels of the substances listed above are below the maximum level set by the latest regulations or follow established

exemptions of the regulation due to their application.

4.1.3 RoHS - China

This product complies with the requirements of the legislative act Administration on the Control of Pollution Caused by Electronic Information Products (ACPEIP). A label of conformance, such as one of the following, may be found on the product:



5. End of Life Care

Some considerations and suggestions are listed below for proper disposal of this product. While addressing these actions for safe recycling and disposal, please follow all guidelines, Safety Data Sheets (SDS), or regulations applicable to your location.

- This product has materials and components that may be recycled or reused according to local guidelines and regulations.
- Clean up any chemical or biological safety hazards.



WEEE Compliance. This product is required to comply with the European Union's Waste Electrical & Electronic Equipment (WEEE) Directive 2012/19/EU. It is marked with the following symbol. Thermo Fisher Scientific has contracted with one or more recycling/disposal

companies in each EU Member State, and this product should be disposed of or recycled through them. Further information on our compliance with these Directives, the recyclers in your country, and information on Thermo Scientific products which may assist the detection of substances subject to the RoHS Directive are available at www.thermofisher.com/