

General Purpose Laboratory Freezer

Installation and Operation

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IMPORTANT Read this instruction manual. Failure to follow the instructions in this manual can result in damage to the unit, injury to operating personnel and poor equipment performance.

CAUTION All internal adjustments and maintenance must be performed by qualified service personnel.

Material in this manual is for informational purposes only. The contents and the product it describes are subject to change without notice. Thermo Fisher Scientific makes no representations or warranties with respect to this manual. In no event shall Thermo be held liable for any damages, direct or incidental, arising from or related to the use of this manual.

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For your future reference and when contacting the factory, have the following information readily available. It can be found on the data plate attached to your unit.

Model Number: _____

Serial Number: _____

The following information, if available, is helpful for contacting the factory.

Date Purchased: _____

Purchase order number: _____

Source of Purchase: _____

(manufacturer or specific agent/rep organization)

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Model

The table below shows the units covered in this operation and installation manual by model number.

Table 1. Applicable Model

Freezer
TSV05FPSA

Safety Information

It is your responsibility to understand the proper function and operational characteristics of the unit. This instruction manual should be thoroughly read and all operators must be trained before attempting to place these units in service. Awareness of the stated cautions and warnings, and compliance with recommended operating parameters together with maintenance requirements are important for safe and satisfactory operation. The units should be used for its intended application, alterations or modifications will void the Warranty.

This products is not intended, nor can they be used, as a sterile or patient connected device. In addition, these units are not designed for use in Class I, II or III locations as defined by the US National Electrical Code, unless otherwise noted.

Alert Signals



Safety Alert: Important operating instructions. To reduce the risk of injury or poor performance of the unit. Read the user manual before putting the equipment into operation.



WARNING: Indicates an immediately hazardous situation, which if not avoided, will result in death or serious injury.



CAUTION: Indicates an immediately hazardous situation, which if not avoided, may result in minor to moderate injury.



WARNING: Avoid contact with cold freezer surfaces potential for cold burns or skin sticking to cold surfaces.



WARNING: Use of this symbol involves risk of electric shock.

Note: Notes alert you to pertinent facts and conditions.



WARNING: Do not modify or use power supplies other than OEM equipment. Connection of the power supply may require a properly grounded receptacle. Potential for electrical shock or equipment damage exists if precautions are not followed.



DANGER RISK OF CHILD ENTRAPMENT
Before you throw away your old freezer:

- Take off doors.
- Leave the shelves in the place so that children may not easily climb inside.



WARNING: Do not use electrical appliances inside the cabinet of the appliance, unless they are of the type recommend by the manufacturer.

Note: Component parts shall be replaced with like components, so as to minimize the risk of possible ignition due to incorrect parts or improper service.



WARNING: If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.



WARNING: Units are charged with hydrocarbon refrigerant (R600a). Only qualified service personnel should service this unit.



WARNING: Risk of fire or explosion. Flammable refrigerant used. To be repaired only by trained service personnel. Do not puncture refrigerant tubing.



WARNING: No equipment that uses an open flame should be placed inside the freezer. This will harm the unit, hamper functionality and compromise your safety.



WARNING: Risk of fire or explosion. Flammable refrigerant used. Do not use mechanical devices to defrost the unit.



WARNING: This product can expose you to chemicals including DI (2-ETHYLHEXYL) PHTHALATE (DEHP), which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov



WARNING: Risk of fire. This unit is not for storage of flammable materials.



WARNING: Risk of fire. No equipment that uses an open flame should be placed inside the unit. This will harm the unit, hamper functionality and compromise your safety.



WARNING: Risk of shock. Disconnect unit from all power sources before cleaning, troubleshooting, or performing other maintenance on the product or its controls.



CAUTION: Risk of fire or explosion. Dispose of property in accordance with federal or local regulations. Flammable refrigerant used.



CAUTION: Adjusting Programmable parameters can result in system failure, have an impact on how well the system works and performs, and void the warranty.



CAUTION: The appliance use flammable insulation blowing gas C5H10. The disposal of the appliance shall be in accordance with the regulations of local authorities.



WARNING: If the supply cord is damaged, it must be replaced by the manufacturer, It's service agent or similarly qualified persons in order to avoid a Hazard.



WARNING: Keep ventilation openings, in the appliance enclosure or in the built-in structure, clear of obstruction.

Intended And Non-Intended Use

Intended Use

The Freezers described in this manual are for professional use only.

These products are intended for laboratory use in research for the storage of samples or inventory between temperature range -12°C to -24°C (10.4°F to -11.2°F).

Non-Intended Use

These units are not considered as medical devices and have therefore not been registered with a medical device regulatory body (e.g. FDA): that is, these have not been evaluated for the storage of samples for diagnostic use or for samples to be re-introduced to the body.

Note: Do not store corrosive materials in these units. Any damage which occurs due to storage of corrosives will not be covered under warranty claims.

Follow site protocols to identify materials of corrosive nature.

General Purpose Laboratory Freezer

This is a General Purpose Laboratory Freezer unit.

Model: TSV05FPSA - 5 Cu.ft

22" Wide, Under-counter freezer

Features:

- Defrost Type: Manual
- Control Type / Conduction: Dial Type Thermostat
- Shelves: 2 Wired shelves and 3 Door Shelves
- Certification: CuLUS Listed

Product Specification

Characteristics	TSV05FPSA
Freezer Chamber Dimensions H x W x D inches (cm)	29.5" x 18.63" x 19.0" (75 x 47 x 48) cm
Exterior Dimensions H x W x D inches (cm)	33.63" x 21.38" x 25.75" (85 x 54 x 65) cm
Net Weight lbs. (kg)	90 lbs (41.2 kg)
Shipping Weight lbs. (kg)	93 lbs (42.1 kg)
Refrigerant	R600a 55 gm (1.94 Oz)
Freezer Temperature Range °C (°F)	-12°C to -24°C (10.4°F to -11.2°F)
Electrical Characteristics Volts / Hz, Amps	115VAC/60 Hz, +/- 10%, 1.4 A
Maximum Shelf Load	Upto 44 lbs (20 kg)

Note: Amps listed are at normal run mode, starting amps may be higher.

Unpacking



CAUTION: DO NOT REMOVE, under any circumstance, the grounding prongs from the 3-prong power cord supplied with all unit.



CAUTION: DO NOT USE electrical extension cords that may result in voltage loss and possible hazardous operation.

Shipping Package

The shipping package must be inspected upon delivery. After receiving, carefully examine for any shipping damage before unpacking. If the damage is discovered, the delivering carrier should both specify and sign for the damage on the copy of delivery receipt. Open the carton carefully and make sure that all the parts are accounted for, before packaging materials are discarded.

If damage is found after unpacking the unit or parts, immediately report it to the carrier and request for a damage inspection.

IMPORTANT: The failure to initiate an immediate request for inspection of damage within a few days of receiving the shipment releases the carrier from liability for any resulting damage. Contact for damage inspection quickly.

Unpacking

Ensure that you have ordered and received all the required components. This includes:

- Freezer
- Operation Manual
- Volt Warning Tag
- Inspection Tag

Note: Do not discard packing materials until all is accounted for.

Operating Conditions

This unit is designed to operate under the following environmental conditions:

Pollution Degree	2
Installation Category	II
Altitude	2000 Meters MSL (Mean Sea Level)
Humidity	65% RH, non-condensing
Electrical Supply	115V/60Hz, Single phase
Voltage Tolerance	+/-10% of normal rated line
Ambient Temperature Range	15°C to 32°C (59°F to 89.6°F)
Product Usage	This product is intended for use indoors only

Installation

Selecting a Location

Place the unit on the floor that is strong enough to support the unit when it is fully loaded. To level the unit, adjust the leveling legs at the bottom. The leveling legs can either be turned clockwise to raise the side of the unit, or turn counter-clockwise to lower that side. Locate the unit away from direct sunlight and sources of heat (heater etc.). Locate the unit in most convenient place and near a grounded electrical outlet.

Clearance

Install the rear of the appliance at minimum 4" from the wall and the cabinet bottom at minimum 3/4" to 1" above the floor or carpet. There must be a minimum of 0.5" clearance at the top and the sides. Keeping the mentioned clearance helps the air circulates freely around the freezer.

Electrical Connection

The unit must be connected to a grounded outlet matching the nameplate and/or the information furnished in this manual. If you are not sure about the outlet, contact a qualified electrician for assistance. The unit should always be connected to its individual outlet.



CAUTION: DO NOT REMOVE, under any circumstance, the grounding prongs from the 3-prong power cord supplied with all units.



CAUTION: DO NOT USE electrical extension cords that may result in voltage loss and possible hazardous operation.

Be Advised



CAUTION: Before connecting the final power supply, check the electrical characteristics of the unit nameplate to see that it is in agreement with the power supplied. In addition, power should be wired to the unit according to the electrical schematic and all applicable codes. Only qualified electricians should work on the electrical portion of any unit installation.



CAUTION: Storage by user of any materials in the product that may cause a deterioration of the product shall be deemed to constitute abnormal and improper usage of the product for purposes of this warranty.



WARNING: RISK OF CHILD ENTRAPMENT!
Before you discard your old refrigerator or freezer:

- Remove door(s),
- Leave the shelves in place so that children may not easily climb inside.

Operation



WARNING: Do not use in the presence of flammable or combustible materials or explosive gases. Fire or explosion could result, causing death or severe injury.

Start-Up Procedure

The markings on the thermostat knob ranges from MIN to MAX where MIN is the warmest setting and MAX is the coldest setting. When the unit is turned on for the first time (or after defrosting), set the control to its maximum position, and leave it for at least 2 hours before storing the material. Wait for 24 to 48 hours and adjust the temperature control to the setting that is suitable.

How to Save Energy

- Be sure to follow location suggestions as mentioned in the **Installation**.
- Wipe moisture from glassware or other materials before placing them in a unit.
- Don't overcrowd the unit. Too many items can increase electrical energy demand in order to keep everything cool.
- Close the door as soon as possible in hot, humid weather.
- Make certain that the door is closed tightly.
- As soon as frost has accumulated to 1/4", defrost.
- Keep containers covered, when possible, to reduce moisture buildup.
- Set operating temperature no colder than necessary for the items being refrigerated.

Safety Tips



WARNING: After a unit is in operation, do not touch the cold surfaces, particularly when hands are damp. Skin may adhere to the extremely cold surfaces.



CAUTION: We recommend handling samples by wearing gloves to avoid frost bite.



CAUTION: Never disconnect your unit by pulling on the power cord. Always grip the plug securely and pull straight out from the outlet.



CAUTION: Do not use a power cord that shows cracks or abrasions. Have a qualified electrician repair or replace damaged cords immediately.

Maintenance

Note: DO NOT service or repair a Thermo Scientific product under warranty before consulting your Thermo Scientific dealer.

The consultation is still advised even after the warranty period, especially when the repair is technically sophisticated or difficult.

If more assistance is required, please call Customer Service at 800-438-4851. No merchandise should be returned directly to the factory without obtaining a Return Materials Authorization (RMA) number from Customer Service.



WARNING: Disconnect plug from electrical outlet before attempting any maintenance or repair of this unit.

Any internal adjustments or repairs must be performed by a qualified service personnel.

Cleaning the Unit

Before starting the cleaning of unit, follow the instructions listed below:

- Disconnect power cord from its outlet.
- Set the temperature control to OFF position.
- The unit designs permit easy and rapid cleaning and should not take more than a few minutes. Remember to wear protective gloves to prevent frost bite, especially when removing items from freezer units.
- Do not use abrasive scouring powders, waxes, solvents, furniture polish, undiluted detergents or cleansers containing petroleum products on the surfaces of units.

Interior / Exterior and Door Gaskets

Cleaning the Interior

- Turn off your freezer and remove all contents.
- Wash the interior with a solution of two tablespoons of baking soda and a quart of warm water.
- Rinse and wipe out the freezer with a clean cloth.
- DO NOT use soaps, detergents, scouring powders, spray cleaners, or similar products for cleaning the interior liner, as they may cause odors in the compartment.

Cleaning the Exterior

- Wipe the exterior surface with a soft cloth, dampened with soapy water.
- Dry with a soft, clean cloth.
- Normal appliance spray cleaners may be used for the exterior, only.

Cleaning the Door Gaskets

Use only mild soap and water to clean the door gasket.

CAUTION: Never use acid, chemical thinners, gasoline, benzene, or similar products to clean any part of the refrigerator. Boiling water and benzene may deform or damage the plastic parts.



CAUTION: Do not use any sharp instrument, blade or scraper to remove ice and frost on refrigerator surfaces. It may lead to puncturing of the cooling coil.



CAUTION: Do not use any electrical device to defrost the unit. When frost accumulates to 1/4" or more, the operating efficiency of the unit gets affected.

Manual Defrost Procedure

Transportation and Storage

Defrosting

1. Remove all the contents from the freezer.
2. Set cold control knob to “OFF” position.
3. Place towels at the bottom of freezer to absorb water.

Note: Defrosting may take up to several hours.

To defrost faster:

1. Keep the door open.
2. Put the pans of hot water on the frost shelves.
3. Wipe with warm towel or sponge.



CAUTION: Do not use mechanical devices or other means to accelerate the defrosting process, other than those recommended by the manufacturer.



CAUTION: Do not use boiling water to increase the defrosting process as this can damage the plastic parts of the unit.



CAUTION: Never use a sharp or metallic instrument to remove frost or separate frozen items as this could damage the cooling coils. Using a plastic scraper is recommended.

Material Compatibility

The interior cabinet of the unit is constructed of high impact polystyrene. Care must be taken while storing the chemicals and the storage materials in the refrigerator and freezer as it should not react with high impact polystyrene and cause any damage to the unit.

HIPS (High Impact Polystyrene) Plastic deteriorates when exposed to, but not limited to the following:

Amines (Aromatic), Aldehydes (Aromatic, Aliphatic), Ketones (Aromatic, Aliphatic), esters (Aromatic, Aliphatic), Ethers (Aromatic, Aliphatic), Hydrocarbons (Aromatic, Halogenated).

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Troubleshooting

General

This section is a guide to troubleshoot general operational problems.

When the unit is not operating properly, check the following before calling for service assistance.

Problem	Probable Cause	Actions
Unit not operating	Unit not plugged in.	Make sure that the unit is connected to a grounded outlet.
	Temperature control knob is turned OFF.	Turn temperature control knob to ON.
	Blown fuse or tripped circuit breaker.	Check fuse or circuit breaker at breaker box.
Unit runs continuously	Frost build up on refrigeration coils.	Defrost unit.
	Door gasket worn out.	A leak around the door gasket will allow cold air to escape. This causes unit to work harder than necessary to maintain cold temperatures. Re-seat or replace the gasket if worn.
	Temperature too low	If you have temperature set too cold, this may cause unit to run continuously. Check optimum running temperature.
	Ambient air over 43°C (109°F), or unit located close to heat sources	If possible, move the unit to a different location.
	Door opening frequency is high.	An unusually high frequency of door openings and closings can increase operating load. Unit will stabilize as these are decreased.
Noise problems	Contents of unit set too close and rattling against each other.	Rearrange contents as needed.
	Hissing or gurgling noise is caused by refrigerating fluid circulating.	This is normal.
	Unit is not level on floor	Check with level.

Wiring Diagram

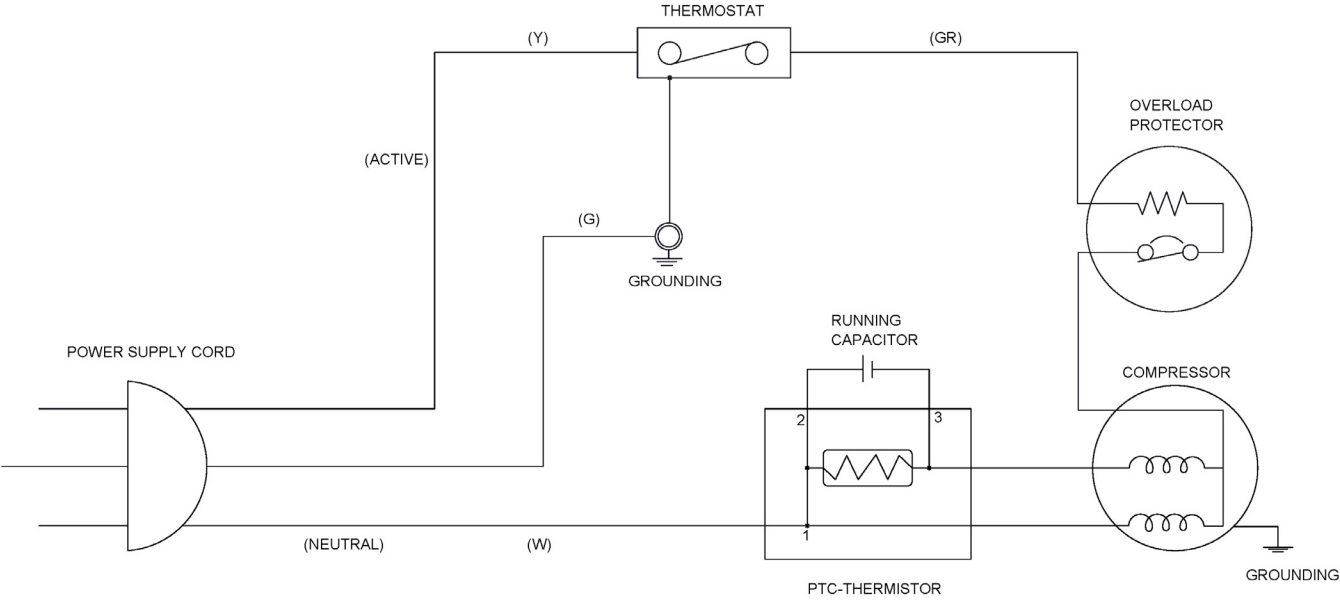


Figure 1. Wiring diagram

Replacement Parts

To obtain replacement parts information and pricing, please call the Customer Service Department at 1-800-438-4851 and have the unit's model, serial and code numbers available. This information is located on data plates on the rear of the unit.

Ordering Procedures

Please refer to the Specification Plate for the complete model number, serial number, and series number when requesting service, replacement parts or in any correspondence concerning this unit.

All parts listed herein can be ordered from the Thermo Scientific dealer from whom you purchased this unit or can be obtained immediately from the factory. Reach out to your dealer when service or replacement parts are required. In case the dealer cannot take your request, then contact our Customer Service Department at 1800-438-4851.

Prior to returning any materials, please contact our Customer Service Department for a "Return Materials Authorization" (RMA) number. Material returned without an RMA number will not be accepted.

End of Life Care

Be sure to follow local regulations when disposing of an old unit. Some suggestions are listed below:

1. Remove items and defrost unit. Be sure to clean up any biological safety hazards.
2. Remove the cabinet door to help prevent entrapment inside of a unit.
3. Have a certified technician remove the refrigerant and compressor, then drain the compressor and oil from the system. Disposal of the unit should be done by following local regulations.

Warranty

13 MONTHS LIMITED WARRANTY

Within the 48 contiguous United States, for 13 months from the date of purchase, when this unit is operated and maintained according to instructions attached to or furnished with the product, warrantor will pay for factory-specified parts and repair labor to correct defects in materials or workmanship. Service must be provided by a designated service company. Outside the 48 states, all parts are warranted for two years from manufacturing defects. Plastic parts, shelves and cabinets are warranted to be manufactured to commercially acceptable standards and are not covered from damage during handling or breakage.

FIVE-YEAR COMPRESSOR WARRANTY

1. The compressor is covered for five years.
2. Replacement does not include labor.

ITEMS WARRANTOR WILL NOT PAY FOR:

1. Service calls to correct the installation of your equipment, to instruct you how to use your equipment, to replace or repair fuses or to correct wiring or plumbing.
2. Service calls to repair or replace unit light bulbs or broken shelves. Consumable parts (such as filters) are excluded from warranty coverage.
3. Damage resulting from accident, alteration, misuse, abuse, fire, flood, acts of God, improper installation, installation not in accordance with electrical or plumbing codes, or use of products not approved by warrantor.
4. Replacement parts or repair labor costs for units operated outside the United States.
5. Repairs to parts or systems resulting from unauthorized modifications made to the unit.
6. The removal and re-installation of your unit if it is installed in an inaccessible location or is not installed in accordance with published installation instructions.

DISCLAIMER OF IMPLIED WARRANTIES; LIMITATION OF REMEDIES

CUSTOMER'S SOLE AND EXCLUSIVE REMEDY UNDER THIS LIMITED WARRANTY SHALL BE PRODUCT REPAIR AS PROVIDED HEREIN. IMPLIED WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO 13 MONTHS. WARRANTOR SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, OR LIMITATIONS ON THE DURATION OF IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS, SO THESE EXCLUSIONS OR LIMITATIONS MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS, WHICH VARY FROM STATE TO STATE.

Regulatory Compliance

Product Safety

This product family has been tested to applicable product standards by UL 471/ CSA 120-13, a Nationally Recognized Test Laboratory (NRTL).



Hydrocarbon Refrigerant Service Notes

According to U.S. Code of Federal Regulation 40 Part 82, this refrigerator employs the natural hydrocarbon refrigerant R600a. Because of the nature of hydrocarbon refrigerants, for mechanical repair, such as recharge or compressor replacement, should only be carried out by a certified refrigeration technician. The safety of this equipment is listed by Underwriters Laboratory (UL) under Standard UL471, section SB - "natural refrigerant".

Environmental Compliance

Evaluation of Chemicals - Regulations and Directives

Proposition 65 - California



WARNING: This product can expose you to chemicals including nickel (metallic), which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov

WEEE Compliance

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/WEEERoHS.

Great Britain



WEEE Konformität. Dieses Produkt muss die EU Waste Electrical & Electronic Equipment (WEEE) Richtlinie 2012/19/EU erfüllen. Das Produkt ist durch folgendes Symbol gekennzeichnet. Thermo Fisher Scientific hat Vereinbarungen getroffen mit Verwertungs-/Entsorgungsanlagen in allen EU-Mitgliedstaaten und dieses Produkt muss durch diese Firmen wiederverwertet oder entsorgt werden. Mehr Informationen über die Einhaltung dieser Anweisungen durch Thermo Scientific, die Verwerter und Hinweise die Ihnen nützlich sein können, die Thermo Fisher Scientific Produkte zu identifizieren, die unter diese RoHS-Anweisung fallen, finden Sie unter www.thermofisher.com/WEEERoHS.

Deutschland



Conformità WEEE. Questo prodotto deve rispondere alla direttiva dell'Unione Europea 2012/19/EU in merito ai Rifiuti degli Apparecchi Elettrici ed Elettronici (WEEE). È marcato col seguente simbolo. Thermo Fisher Scientific ha stipulato contratti con una o diverse società di riciclaggio/smaltimento in ognuno degli Stati Membri Europei. Questo prodotto verrà smaltito o riciclato tramite queste medesime. Ulteriori informazioni sulla conformità di Thermo Fisher Scientific con queste Direttive, l'elenco delle ditte di riciclaggio nel Vostro paese e informazioni sui prodotti Thermo Scientific che possono essere utili alla rilevazione di sostanze soggette alla Direttiva RoHS sono disponibili sul sito www.thermofisher.com/WEEERoHS.

Italia



Conformité WEEE. Ce produit doit être conforme à la directive européenne (2012/19/EU) des Déchets d'Équipements Électriques et Électroniques (DEEE). Il est marqué par le symbole suivant. Thermo Fisher Scientific s'est associé avec une ou plusieurs compagnies de recyclage dans chaque état membre de l'union européenne et ce produit devrait être collecté ou recyclé par celles-ci. Davantage d'informations sur la conformité de Thermo Fisher Scientific à ces directives, les recycleurs dans votre pays et les informations sur les produits Thermo Fisher Scientific qui peuvent aider la détection des substances sujettes à la directive RoHS sont disponibles sur www.thermofisher.com/WEEERoHS.

France





IF YOU NEED ASSISTANCE:

Thermo Fisher Scientific products are backed by a global technical support team ready to support your applications. We offer cold storage accessories, including remote warnings, temperature recorders, and validation services.

Visit www.thermofisher.com/cold or call:

Countries	Sales
North America	+1 866 984 3766
India toll free	1800 22 8374
India	+91 22 6716 2200
China	+800 810 5118, +400 650 5118
Japan	+81 3 5826 1616
Australia	+61 39757 4300
Austria	+43 1 801 40 0
Belgium	+32 53 73 42 41
France	+33 2 2803 2180
Germany international	+49 6184 90 6000
Germany national toll free	0800 1 536 376
Italy	+32 02 95059 552
Netherlands	+31 76 579 55 55
Nordic/Baltic/CIS countries	+358 9 329 10200
Russia	+7 812 703 4215
Spain/Portugal	+34 93 223 09 18
Switzerland	+41 44 454 12 22
UK/Ireland	+44 870 609 9203
New Zealand	+64 9 980 6700
Other Asian Countries	+852 2885 4613
Countries not listed	+49 6184 90 6000

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