

VorTemp™ 1550 Shaking Incubator

Instruction Manual

Catalog Numbers:

S2050A

S2050-230V



Table of Contents

1.0 Introduction	1
2.0 Packing	1
3.0 Specifications	1
4.0 Technical Description	2
4.1. Construction	2
4.2. Main Components	2
5.0 Safety Information	2
6.0 Installation	3
6.1. Device Placement	3
6.2. Attaching the Power Cord	3
6.3. Starting Up Check List	3
6.4. Platforms	3
7.0 Operating Instructions	4
7.1. Control Panel	4
7.2. Basic Operation	4
7.3. Shaking Without Heating	7
7.4. Heating Without Shaking	7
7.5. Additional Operations	7
8.0 Troubleshooting	8
9.0 Temperature Calibration	9
10.0 Maintenance and Cleaning	9
11.0 Accessories	9
12.0 Limited Warranty	10
13.0 Equipment Disposal	10

1.0 Introduction

Congratulations on purchasing your Labnet VorTemp™ 1550 Shaking Incubator. This shaker is designed for simultaneous heating and mixing of small samples. It replaces two devices, reducing both time and space needed. It is suitable for biochemistry, microbiology and clinical laboratories in which applications require temperature and shaking treatment.

2.0 Packing

The Labnet VorTemp 1550 Shaking Incubator includes the following components:

- ▶ VorTemp 1550 Shaking Incubator
- ▶ Platform for 15 mL microtubes
- ▶ Platform for 50 mL microtubes
- ▶ Instruction manual

3.0 Specifications

Power	515W
Heater Power	500W
Motor Power	15W
Fuse	2 x T 3.15A L 250V (230V version) 2 x T 6.3A L 250V (120V version)
Environmental Temperature	From 4°C to 65°C
Relative Humidity	Up to 85% non-condensing
RPM Regulation	Digital load independent, from 100 to 900 rpm in 10 rpm steps
Shaker Orbit	3 mm
Temperature Operating Range	From 4°C above room temperature to 99.5°C
Temperature Sensor	PT100
Heating-up Time	Approx. 5°C/min.
Temperature Uniformity	± 0.5°C
Timer	30 sec.- 99 min. 50 sec. in 10 sec. steps, under 10 min. in 1 sec. steps, timer HOLD function
Maximum Capacity	8 x 50 mL tubes or 18 x 15 mL tubes
Dimensions (W x D x H)	10 x 13 x 12 in. (26.5 x 32.5 x 30.5 cm)
Weight	25 lbs. (11.5 kg)

4.0 Technical Description

4.1. Construction

The housing of VorTemp™ 1550 is constructed of steel plate coated with highly resistant polyurethane lacquer. The interior chamber is isolated with special thermal protection materials and insulation foam. Both the shaking mechanism and temperature chamber regulated via microprocessors, which control all sensors for motor speed, temperature and time.

4.2. Main Components

The VorTemp consists of seven main parts:

- ▶ Drive Motor
- ▶ Eccentricity control mechanism
- ▶ Chamber Fan
- ▶ Heating element
- ▶ Temperature sensor
- ▶ Temperature controlled chamber
- ▶ Control electronics

The motor drives the eccentricity control mechanism which generates the orbital motion of the sample platform.

The motion of the motor also drives the fan, which moves air over the heating element and throughout the temperature chamber. The convection action of the airflow creates a very uniform temperature environment throughout the chamber. Chamber conditions are monitored by the temperature sensor and the control electronics regulate heater function to maintain the set temperature.

5.0 Safety Information

NOTE: Be careful when changing the microtube platform, especially when you have used unit at temperatures higher than 60°C. Always wear protective clothing before you handle a hot platform.

The unit will continue to shake for 5 seconds after the lid is opened. Be careful when opening the lid as the parts inside may still be in motion. In addition, never touch the fan unless the unit is turned off or unplugged.

- ▶ Before cleaning the housing unplug the unit. The housing should only be cleaned with a damp cloth and if necessary, a mild soap. Don't use aggressive or aerosol cleaners.
- ▶ Do not use the unit near sources of water. Take care to ensure that water will not spill in the device, especially during cleaning procedures.
- ▶ Make sure, that all test tubes are closed tightly before placing them into the unit to avoid spilling samples inside the chamber.

In the case of a malfunction, unplug the device and contact your distributor for service.



Do not shake flammable or explosive samples.

6.0 Installation

6.1. Device Placement

When selecting the right place for device, please consider following:

- ▶ Put the device on smooth, horizontal and stable place.
- ▶ Leave at least 10 cm of space around the device for adequate air circulation.
- ▶ Leave enough space around the device, for easy access and maintenance.
- ▶ Don't place the device where there are rapid temperature and humidity changes. Also avoid places where the unit would be exposed to direct sunlight or next to devices that output large amounts of heat.
- ▶ Avoid locations where the unit may be exposed to excessive shocks or vibrations.
- ▶ Avoid locations subject to frequent power fluctuations or power losses.



Do not use the device in a flammable or explosive atmosphere.

NOTE: There has to be easy access to the shaker control panel and main plug in case of emergency.

6.2. Attaching the Power Cord

First connect the main power cord to the shaker then connect the plug end of the cord to a grounded wall socket. Avoid lines on which powerful electric motors, refrigerators and similar devices are connected.



- ▶ Be careful when you plug the cord to a grounded wall socket.
- ▶ Do not touch the plug with wet hands.
- ▶ Do not pull the plug by the cord.

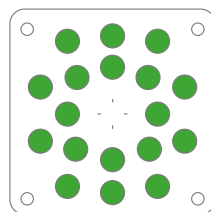
6.3. Starting Up Check List

- ▶ Unpack and install the device as specified in the previous section.
- ▶ Open the lid and attach the microtube platform or the microplate platform.
- ▶ Close the lid.
- ▶ Switch on the device using of the ON/OFF switch on the front panel The switch will illuminate to indicate that power is on.
- ▶ Check the running parameters and set new parameters if necessary. Please refer to the instructions described in next chapters.

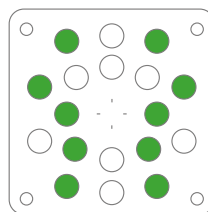
6.4. Platforms

There are two platforms available for VorTemp 1550™. The 50 mL Conical Tube Platform can accommodate up to 8 x 50 mL test tubes. The 15 mL Conical Tube Platform accommodates up to 18 x 15 mL test tubes.

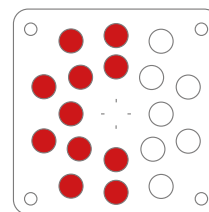
In order for the unit to perform correctly the platform needs to be balanced at all times. Tubes need to be distributed evenly across the platform and they also need to be filled with equal amounts of liquid. Shaking unbalanced loads will affect the performance of the VorTemp 1550 and may permanently damage the motor. The following are examples of correct and incorrect tube distribution across the platform.



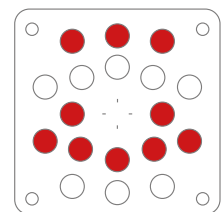
CORRECT



CORRECT



INCORRECT



INCORRECT

The platforms are easily interchangeable and don't require any tools. The platform should be inserted onto four posts that fit into platform's corner rubber gaskets. To change the platform simply grab the center piece of the platform and carefully pull straight up.

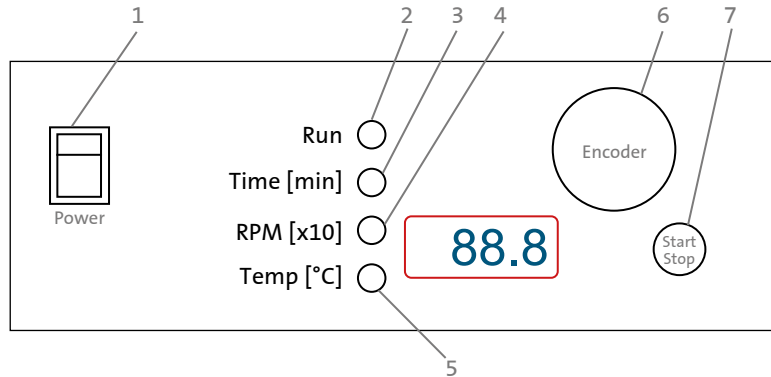
NOTE: If you work with temperatures over 50°C, we recommend the use of special microtubes which are designed for use in thermal cyclers. These tubes are molded from plastic designed to withstand temperatures as high as 135°C. The thin-walled construction also allows for fast heat transfer and reduced heating times.



WARNING: Be careful if the unit has been used to heat samples because the internal components can be extremely hot and can cause burns to uncovered skin. Always check the handle temperature before changing the platform.

7.0 Operating Instructions

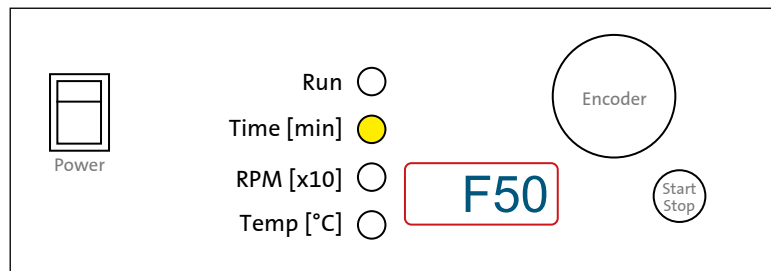
7.1. Control Panel



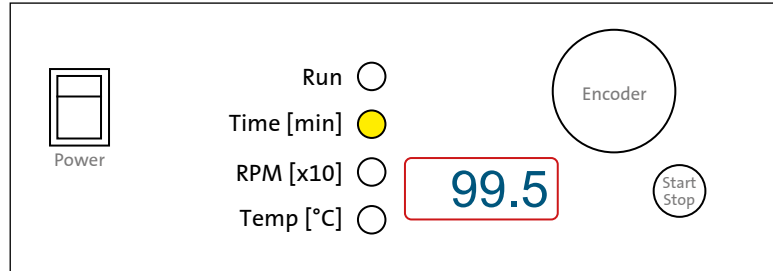
1. **Power Key** – switch ON (illuminates when on) or OFF.
2. **Run** – green signal light illuminated when the shaker is operating.
3. **Time** – yellow signal light illuminated when the unit is set to adjust time.
4. **RPM** – yellow signal light illuminated when the unit is set to adjust RPM.
5. **Temperature** – yellow signal light illuminated when shaker is set to adjust the set temperature.
6. **Encoder Knob** – by rotating the encoder right (+) or left (-) you are modifying the Time, Temperature or RPM settings of the unit. Push in on the encoder to change between Time, Temperature and RPM set values. If you rotate Encoder Knob quickly, then the adjustment increments are larger and it will allow for values to be set more quickly.
7. **Start/Stop Button** – start or stop shaking.

7.2. Basic Operation

Press Power Key on control panel. On the LED display the unit will automatically detect the line frequency F50 (50Hz) or F60 (60Hz).



After a 2 second delay the unit will then default to the time setting.



Time Illuminated

- ▶ With the Encoder knob, right (+) or left (-) sets the run time to the desired value from 30 sec to 99 min 50 sec:

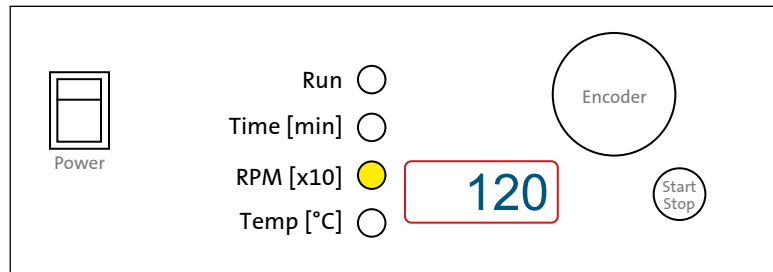
99.5 = 99 min 50 sec

9.59 = 9 min 59 sec

0.30 = 30 sec

- ▶ If you want the unit to run continuously, set Time on hold. The timer is set to hold when "HLD" is displayed. Rotate the encoder under 0.30 or above 99.5 to set this hold function.

Push encoder knob to adjust the RPM setting.



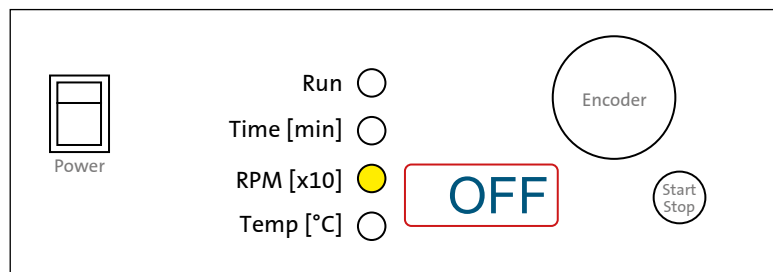
RPM Illuminated

- ▶ Rotating the encoder right (+) or left (-) set the rotating speed to the desired value:

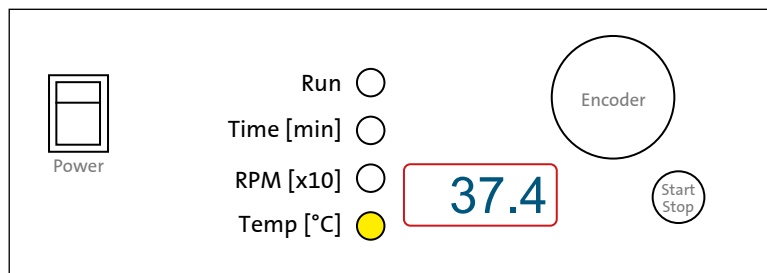
34 = 340 RPM

90 = 900 RPM

- ▶ By turning the RPM setting below 20, the shaking function can be turned off. When the shaker is off, "OFF" is displayed.



Push encoder knob to adjust the Temperature setting.

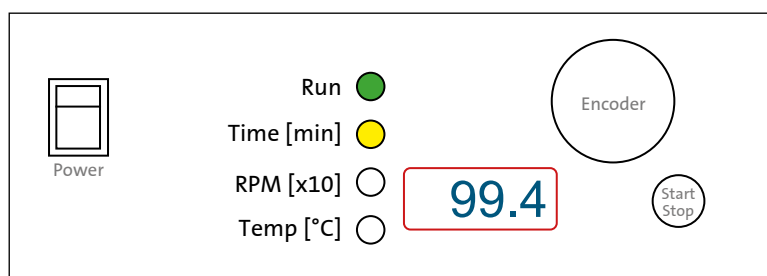


Temperature Illuminated

- ▶ Rotating the encoder right (+) or left (-) set the temperature to the desired value:
 $37.4 = 37.4^{\circ}\text{C}$
- ▶ If you want use shaker without temperature control activated turn the encoder under 0.5 or above 99.5 until the display reads "OFF".

Press Start/Stop Button

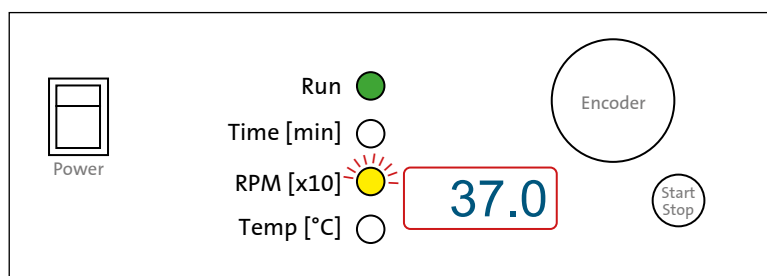
- ▶ Run and Time are illuminated. The timer will count down from set time value.



NOTE: You cannot adjust the set time during shaking.

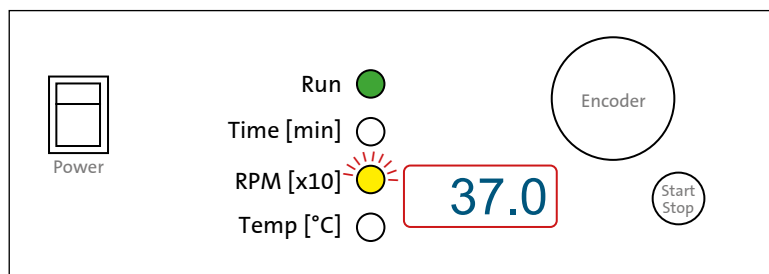
RMP Adjusting During a Run

- ▶ Push the Encoder Knob until the RPM light is illuminated.
- ▶ Rotate the encoder right (+) or left (-) until the new value is set. While adjusting the RPM, the light will pulse.
- ▶ When you stop rotating the encoder knob, the RPM light will stop pulsing after 2 sec.



Temperature Adjusting During a Run

- ▶ Push the Encoder Knob until the RPM light is illuminated.
- ▶ Rotate the encoder right (+) or left (-) until the new value is set. While adjusting the RPM, the light will pulse.
- ▶ When you stop rotating the encoder knob, the RPM light will stop pulsing after 2 sec.



- ▶ When the set time expires or if you press the START/STOP button, “End” will be displayed and the Run light will pulse. When the unit stops shaking, the last set values for time, RPM and temperature will be saved in memory.

7.3. Shaking Without Heating

If you want shake samples without heating, set Temp to OFF.

7.4. Heating Without Shaking

If you want heat samples without shaking, set RPM to OFF.

NOTE: The shaker motor drives the fan, which circulates warm air throughout the chamber aiding in temperature uniformity. If the shaker is set to OFF, the temperature control will not be as precise due to lack of airflow over the heating element. Maximum set temperature in this program is 70°C.

7.5. Additional Operations

Viewing the Set Value for RPM During Shaking

- ▶ Set the unit to RPM Mode.
- ▶ Turn the encoder ONE CLICK right (+) or left (-). On the display the RPM light will pulse for 2 sec and display will show the set RPM. After 2 sec the display will return to showing the actual RPM and the light will stop pulsing.

Viewing the Set Value for Time During Shaking

- ▶ Set the unit to Time Mode.
- ▶ Turn the encoder ONE CLICK right (+) or left (-). On the display the Time light will pulse for 2 sec and display will show the set Time. After 2 sec the display will return to showing the actual Time and the light will stop pulsing.

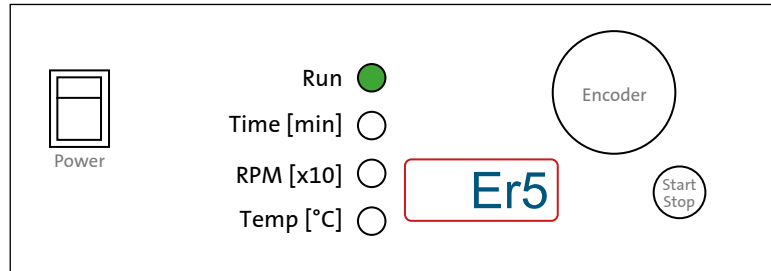
Viewing the Set Value for Temperature During Shaking

- ▶ Set the unit to Temperature Mode.
- ▶ Turn the encoder ONE CLICK right (+) or left (-). On the display the Temperature light will pulse for 2 sec and display will show the set Temperature. After 2 sec the display will return to showing the actual Temperature and the light will stop pulsing.

8.0 Troubleshooting

The VorTemp features built in self-diagnostic procedures which are constantly checking the operating parameters and performance, as well as functions that are necessary for safe and reliable operation. An error code is shown on the LCD display if an error occurs.

Sample of Error display:



E 1.1: This error message appears when something is wrong with motor regulation (PWM regulator, pulse generator, motor). The unit will automatically stop. Call for service.

E 1.2: This error appears when the motor does not reach set RPM in 30 sec. The unit will automatically stop. Call for service.

E 1.3: This error appears when set RPM oscillates more than 100 RPM in 2 seconds. The unit will automatically stop. Call for service.

E 2.1: The temperature sensor is not working properly with regards to the heater. The unit will automatically stop. Call for service.

E 2.2: Temperature sensor registers a 5°C higher temperature than set temperature. The unit will automatically stop. Call for service.

Er 5: The lid of shaker is opened for more than 5 seconds. The unit will automatically stop. To restart the shaker, close the lid and press start.

When shipping your equipment to for service, follow the packing guidelines listed below:

- ▶ Clean the inside of the chamber and platforms according to GLP standards, especially if you have used the equipment with hazardous biological or radioactive materials.
- ▶ A written description of the error should accompany the unit.
- ▶ Use the original shipping container and packaging materials if possible.

9.0 Temperature Calibration

The temperature control software allows for user calibration of the temperature settings. First, measure the temperature in the middle of the chamber after allowing the temperature to equilibrate for two hours. The temperature should be measured with a digital calibrated thermometer with precision 0.1°C or more. After allowing the temperature to equilibrate 2 hours, read the temperature on thermometer and compare it with the temperature on the LED display. This difference between the thermometer and the display is the value which you will enter into the unit to recalibrate it.

- ▶ **Example 1:** Temperature on thermometer is 37.9°C, temperature on display is 37°C.
The difference is $37.9 - 37 = 0.9$. This value 0.9, is the value which you will enter into the software.
- ▶ **Example 2:** Temperature on the thermometer is 36.2°C, temperature on display is 37°C.
The difference is $37 - 36.2 = -0.8$. This value -0.8, this is the value which you will enter into the software.

Procedure for temperature calibration:

1. Hold (press) the encoder for 5 seconds – the display then show “Cor” (correction).
2. Press the encoder once and then enter the value from the previous section by rotating the encoder left or right to select a value (see Example 1 and Example 2 above). Be sure to note whether your value was positive or negative. After you have entered the value press the encoder again.
3. Press the START/STOP button to complete the temperature calibration.

NOTE: Temperature calibration should only be performed by qualified personnel.

10.0 Maintenance and Cleaning

The chamber should be cleaned regularly. Any samples which spill inside or outside the chamber must be wiped up immediately. Use only warm water or a mild soap solution to clean the surfaces of the unit. Using aggressive or abrasive cleaners can cause permanent damage to the finish.

To decontaminate the surface of the unit, use only neutral solutions (Ph 7-8). The stainless steel platform and nuts can be decontaminated with autoclave (120°C).

NOTE: Take care when cleaning device after operation, especially when you have used device at temperatures higher than 60°C. Exposed surfaces will be extremely hot and may cause burns to unprotected skin.

Before you begin cleaning the unit, be sure to unplug the unit.

Before using any cleaning or decontamination methods other than those recommended by the manufacturer, contact Corning to check that the proposed method will not damage the equipment.

11.0 Accessories

Product	Cat. No.	Qty/Pk
Additional platform/workstation for microtubes	S2056-R	1
Microplate platform	S2056-Q	1
Individual adapters for 0.5/0.6 mL tubes	C1205	6
Individual adapters for 0.4 mL tubes	C1206	6
Individual adapters for 0.2 mL thermal cycling tubes	C1222	6

12.0 Limited Warranty

Corning Incorporated (Corning) warrants that this product will be free from defects in material and workmanship for a period of one (1) year from date of purchase. CORNING DISCLAIMS ALL OTHER WARRANTIES WHETHER EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE. Corning's sole obligation shall be to repair or replace, at its option, any product or part thereof that proves defective in material or workmanship within the warranty period, provided the purchaser notifies Corning of any such defect. Corning is not liable for any incidental or consequential damages, commercial loss or any other damages from the use of this product.

This warranty is valid only if the product is used for its intended purpose and within the guidelines specified in the supplied instruction manual. This warranty does not cover damage caused by accident, neglect, misuse, improper service, natural forces or other causes not arising from defects in original material or workmanship. This warranty does not cover motor brushes, fuses, light bulbs, batteries or damage to paint or finish. Claims for transit damage should be filed with the transportation carrier.

In the event this product fails within the specified period of time because of a defect in material or workmanship, contact Corning Customer Service at: USA/Canada 1.800.492.1110, outside the U.S. +1.978.442.2200, visit www.corning.com/lifesciences, or contact your local support office.

Corning's Customer Service team will help arrange local service where available or coordinate a return authorization number and shipping instructions. Products received without proper authorization will be returned. All items returned for service should be sent postage prepaid in the original packaging or other suitable carton, padded to avoid damage. Corning will not be responsible for damage incurred by improper packaging. Corning may elect for onsite service for larger equipment.

Some states do not allow limitation on the length of implied warranties or the exclusion or limitation of incidental or consequential damages. This warranty gives you specific legal rights. You may have other rights which vary from state to state.

No individual may accept for, or on behalf of Corning, any other obligation of liability, or extend the period of this warranty.

For your reference, make a note of the serial and model number, date of purchase, and supplier here.

Serial No. _____ Date Purchased _____

Model No. _____ Supplier _____

13.0 Equipment Disposal



According to Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE), this product is marked with the crossed-out wheeled bin and must not be disposed of with domestic waste.

Consequently, the buyer shall follow the instructions for reuse and recycling of waste electronic and electrical equipment (WEEE) provided with the products and available at www.corning.com/weee.

To request certificates, please contact us at www.labnetlink.com.

Warranty/Disclaimer: Unless otherwise specified, all products are for research use or general laboratory use only.* Not intended for use in diagnostic or therapeutic procedures. Not for use in humans. These products are not intended to mitigate the presence of microorganisms on surfaces or in the environment, where such organisms can be deleterious to humans or the environment. Corning Life Sciences makes no claims regarding the performance of these products for clinical or diagnostic applications. *For a listing of US medical devices, regulatory classifications or specific information on claims, visit www.corning.com/resources.

CORNING

Corning Incorporated
Life Sciences

www.corning.com/lifesciences

NORTH AMERICA

t 800.492.1110
t 978.442.2200

ASIA/PACIFIC

Australia/New Zealand
t 61 427286832

Chinese Mainland
t 86 21 3338 4338

India

t 91 124 4604000

Japan

t 81 3-3586 1996

Korea

t 82 2-796-9500

Singapore

t 65 6572-9740

Taiwan

t 886 2-2716-0338

EUROPE

CSEurope@corning.com

LATIN AMERICA

grupoLA@corning.com

Brazil

t 55 (11) 3089-7400

Mexico

t (52-81) 8158-8400