

Heat Sealer

Instruction Manual

eppendorf



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1 Introduction / 2 Safety precautions

The Heat Sealer offers a convenient method for heat sealing plates made from various types of plastic. The device is designed for low to medium throughput applications.

Pre-set temperature settings enable optimal sealing.

Used in conjunction with Eppendorf heat sealing film and foils, the Heat Sealer provides a nearly 100 % seal, preventing sample loss during exposure to high temperatures or for long-term storage.

2 Safety precautions



Please read the operating instructions carefully before using the Heat Sealer. If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

The Heat Sealer may only be used by qualified specialists in the research lab.

The following instructions must be unconditionally observed:

The safety regulations valid for the lab are to be constantly observed when working with the device.

In order to avoid damage through condensation, the device may first be switched on 12 hours after being set up. This is also the case when the location of the device is changed.



The mains voltage must coincide with the information on the identification plate. The device must be connected to a grounded socket.

The device must be switched off and the plug pulled before maintenance work and cleaning are carried out. Wait for the heater plate to cool.

The Heat Sealer must stand completely on a stable work surface.

Damage to the device can result from using sample plates other than those recommended. Unsuitable plates can be damaged to such an extent that sample material may escape. This is especially important to remember when working with infectious materials.



The heater plate is set to approximately 170 °C. Sealed plates can also reach temperatures of over 50 °C very quickly. There is a risk of burns!

Coming into contact with heater plate and sample plates should be avoided until temperatures of around 30 °C or less are reached.

Do not use materials (plates, foils, films) that are not sufficiently temperature resistant.

Do not get your fingers caught between the heater plate and the plates to be sealed.

Explosive, flammable and volatile materials may not be sealed with the Heat Sealer.

The device may not be operated in rooms at risk of explosion.

The appropriate safety regulations should be observed when working with pathogenic material, radioactive materials or other health-damaging materials.

In the event of spillage or other contamination of the unit, switch off and disconnect the unit from the mains power supply. Do not attempt to clean the unit until it has thoroughly cooled.

2 Safety precautions

It should be ascertained that no liquid penetrates into the device.

Repairs should be carried out by a specialist. Use only original Eppendorf replacement parts.

Transfer

If the device is passed on to someone else, please include the instruction manual.

Disposal

In case the product is to be disposed of, the relevant legal regulations are to be observed.

Information on the disposal of electrical and electronic devices in the European Community

The disposal of electrical devices is regulated within the European Community by national regulations based on EU Directive 2002/96/EC on waste electrical and electronic equipment (WEEE).

According to these regulations, any devices supplied after 13.08.05 in the business-to-business sphere, to which this product is assigned, may no longer be disposed of in municipal or domestic waste. They are marked with the following symbol to indicate this.



As disposal regulations within the EU may vary from country to country, please contact your supplier if necessary.

3 Installation

3.1 Delivery package

The delivery package contains the following items

- 1 Heat Sealer
- 1 Base Plate for 96 well PCR plates
- 1 Instruction Manual
- 1 Power lead

3.2 Setting up the device

In order to avoid damage caused by condensation, the device may first be switched on 12 hours after setting up. This also applies to a change in location.

The Heat Sealer must stand completely stable on the work surface in a safe, dry location away from the edge of the work surface.

Space requirement: Width: 14 cm
 Depth: 15 cm
 Height: 33 cm

Mains connection: An earthed wall socket for the Heat Sealer.

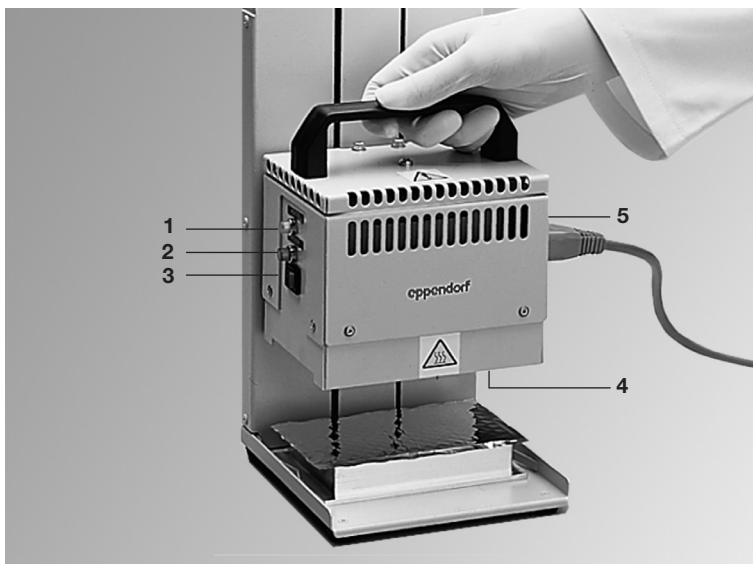
The mains voltage must agree with the information on the name plate.

The device must be connected to a grounded socket.

The delivery carton should be kept in order to be able to ship the device in case repairs are necessary.

3 Installation

3.3 Functional units



- 1 Heater light
- 2 Power light
- 3 Mains switch 0 = off / 1 = on
- 4 Heater plate
- 5 Mains connection socket

3.4 Starting up the device

Connect the mains cable to the Heat Sealer and then to the power main.

Switch on the mains switch on the side of the unit. If electricity is being supplied to the unit, the green power light will illuminate. If the heater within the unit is receiving power, the amber light will also illuminate.

When starting from cold, it is preferable to leave the unit on for 20 to 25 minutes to settle down before carrying out the first sealing operation. On initial power-up, both green and amber lights will appear. After approximately 10 – 15 minutes the amber light will go out.

Do not use the Heat Sealer until 20 – 25 minutes have elapsed from power-up. By this time the amber lamp will flicker on and off constantly. This flickering on and off is the normal behaviour exhibited by the amber lamp indicating correct working temperature has been reached. The unit is now up to temperature and ready for sealing.

4 Operation

4.1 Sealing

After installation, follow the procedures set out below:

- Check that the unit is connected to an appropriate power supply and leave for 20 – 25 minutes to settle down to correct operating temperature. The green power lamp should be illuminated and the amber heater lamp flicker on and off.
- Slide the plate to be sealed on to the platform of the sealer, making sure that it is flat between the two centralizing springs.
- Deep well plates can be sealed without a base plate. If the plate to be sealed does not have its own support skirt to keep it perfectly flat, place it in an appropriate base plate (PCR Plate 96 should be placed in the metal 96-well base plate supplied with this instrument. PCR Plate 384 has an alternative base plate (see recommended accessories, ordering information).
- Once the heater plate has reached operating temperature, the amber heater light on the side of the sealer will go off.
- Place the sealing film over the plate, ensuring that the sealing surface is face down.
- Holding the handle on the top of the unit, push the heater down to the plate. Once the heater is resting on top of the plate, continue to push down to compress the floating springs which are located behind the plate. Once these are fully compressed (a distance of only 5 mm), this applies a force equivalent to a weight of 10 kg to the surface of the plate.
- Hold in this position for approximately 2 – 5 seconds (this time will vary significantly depending on the plate material, the surface area and the sealing film being used. An initial time/seal study is strongly recommended for each new type of plate) then turn the plate by 180° and hold for another 2 – 5 seconds (again, an initial time/seal study is strongly recommended).



The heater plate is set to approximately 170 °C. Sealed plates can also reach temperatures of over 50 °C very quickly. There is a risk of burns!

Coming into contact with heater plate and sample plates should be avoided until temperatures of around 30 °C or less are reached.

- Return the heater to the top of the track.
- Remove the plate.

Note: The instrument is fitted with an internal heater with a maximum temperature of approximately 170 °C when ON. Take care to avoid skin contact with the heater plate and to prevent contact between the heater plate and any material which may be damaged or ignited.

Foil-backed film may remain hot for a number of seconds after sealing; care should be taken in handling these plates.

4 Operation

4.2 Removing seal

Depending on the heat sealing sheet used, it can be removed in a number of ways:

Eppendorf Peel-it-Lite Heat Sealing Foil (0030 127.668) can be peeled off. Complete removal of the foil can be achieved with the Eppendorf Foil Stripper (0030 127.641) or by hand. If the foil has been removed fully, a new foil sheet can be used to reheat-seal the plate.

For removal of the sample, Eppendorf Pierce-it-Lite Heat Sealing Foil (0030 127.676) can be easily pierced with an Eppendorf pipette tip. For long-term storage, a pierced foil seal can be resealed with adhesive PCR Foil (0030 127.471) or PCR Film (0030 127.480) or reheat-sealed with Pierce-it-Lite.

Using of Eppendorf Heat Sealing Film (0030 127.650) allows monitoring of the sample, but the seal can only be pierced or peeled off with difficulty.

5 Maintenance

5

Maintenance

The device may only be opened by a qualified specialist. The device guarantee becomes defunct with unauthorized work on the device!



The device must be switched off and the main plug pulled before maintenance or cleaning is carried out.

The heater plate reaches temperatures of more than 50 °C very quickly. There is a danger of burns. Wait until the temperature reaches 30 °C or less.

It should be ascertained that no liquid penetrates into the device.

Before using any cleaning or decontamination method other than that recommended by the manufacturer, users should check with the manufacturer that the proposed method will not damage the equipment.

You can clean the Heat Sealer cover with a cloth dipped in water, mild lab cleaner or ethanol (methanol or formaldehyde can also be used).

Note: Do not use acetone or abrasive cleaners for cleaning!

In case of radioactive spillages, Eppendorf recommends that you use a proprietary cleaning agent and follow the manufacturer's instructions!

6 Troubleshooting

Should you have any recurring problems with this unit, please contact our service department or your local Eppendorf dealer. Return of the device requires its original packing.

Error	Cause	Solution
Plates not correctly sealed. Evaporation problems.	- Sealing time not sufficient.	- General sealing time 2 – 5 seconds; for appropriate sealing conditions see specifications of used heat sealing film / foil.
	- Sealing not consistent.	- Turn the plate by 180° after first sealing and hold for another 2 – 5 seconds. - Springs behind the heated plate not fully compressed; push the heater head down on to the seal and plate more strongly.
Heater plate impurity.	- E.g. film / foil out of place.	- Cleaning of heater plate, see chapter 5.
Instrument ON, amber heater light off (no flickering on and off to top up the heat to the unit).	- Excess-temperature problem. If the block temperature exceeds 220 °C, thermal cut-out removes power to the heater.	- Thermal cut-out is non-resettable and the unit should be returned to Eppendorf for repair.

7 Technical data

Power supply:	110 V AC (Nominal) 230 V AC (Nominal)
Input frequency:	47 – 63 Hz
Fuses:	T 5 A (T) (110 V) T 3.15 A (T) (230 V)
Power consumption:	Approx. 500 W (110 V) Approx. 400 W (230 V)
Internal heater: Heater plate:	Ambient to 220 °C max. Approx. 170 °C max.
Dimensions:	Width: 14 cm Depth: 15 cm Height: 33 cm
Weight:	3.4 kg
Instrument housing:	Sheet metal
Operating conditions:	10 to 35 °C, 10 % to 80 %, non-condensing
Storage conditions:	– 20 to 40 °C, 10 % to 80 %, non-condensing

Technical specifications subject to change!

8 Ordering information

Please use only the original accessories recommended by Eppendorf. The function and safety of the device may be negatively affected by the use of accessories or consumables other than those recommended by Eppendorf. We do not honor any warranty or accept any responsibility by damage resulting from such action.

Description	Order no. international	Order no. for North America
Heat Sealer, 115 V, incl. Base Plate for 96 well PCR plate	5390 000.016	951023078
Heat Sealer, 230 V, incl. Base Plate for 96 well PCR plate	5390 000.024	
Recommended Accessories:		
Base Plate for 384 well PCR plate	5390 100.029	951023086
Instruction manual	5390 900.009	
Also available from Eppendorf:		
Heat Sealing Film 100 sheets	0030 127.650	951023060
PCR Film (adhesive) 100 sheets	0030 127.480	951023019
PCR Foil (adhesive) 100 sheets	0030 127.471	951023001
Pierce-it-Lite 100 sheets	0030 127.676	951023213
Peel-it-Lite 100 sheets	0030 127.668	951023205
Foil Stripper	0030 127.641	951023043
Eppendorf twin.tec PCR Plate 96, skirted		
colorless 25 pieces	0030 128.648	951020401
yellow 25 pieces	0030 128.656	951020427
green 25 pieces	0030 128.664	951020443
blue 25 pieces	0030 128.672	951020460
red 25 pieces	0030 128.680	951020486
Eppendorf twin.tec PCR Plate 96, semi-skirted		
colorless 25 pieces	0030 128.575	951020303
yellow 25 pieces	0030 128.583	951020320
green 25 pieces	0030 128.591	951020346
blue 25 pieces	0030 128.605	951020362
red 25 pieces	0030 128.613	951020389
Eppendorf twin.tec PCR Plate 384		
colorless 25 pieces	0030 128.508	951020702
yellow 25 pieces	0030 128.516	951020711
green 25 pieces	0030 128.524	951020729
blue 25 pieces	0030 128.532	951020737
red 25 pieces	0030 128.540	951020745
Eppendorf Plate Deepwell 96/500 µl		
20 pieces	0030 501.101	951031801
120 pieces	0030 505.107	951032204
Eppendorf Plate Deepwell 96/1000 µl		
20 pieces	0030 501.209	951032603
80 pieces	0030 505.204	951033006
Eppendorf Plate/Deepwell 96/2000 µl		
20 pieces	0030 501.306	951033405
80 pieces	0030 505.301	951033600
(also available as sterile or LoBind qualities, and various colors)		

PCR (Polymerase Chain Reaction) is covered by U.S. patents owned by Hoffmann-La Roche.

EG-Konformitätserklärung EC Conformity Declaration

Das bezeichnete Produkt entspricht den einschlägigen grundlegenden Anforderungen der aufgeführten EG-Richtlinien und Normen. Bei einer nicht mit uns abgestimmten Änderung des Produktes oder einer nicht bestimmungsgemäßen Anwendung verliert diese Erklärung ihre Gültigkeit.

The product named below fulfills the relevant fundamental requirements of the EC directives and standards listed. In the case of unauthorized modifications to the product or an unintended use this declaration becomes invalid.

Produktbezeichnung, Product name:

Heat Sealer 5390

Produkttyp, Product type:

Gerät zum Verschließen von Mikrotiterplatten / thermal sealing device for micro plates

Einschlägige EG-Richtlinien/Normen, Relevant EC directives/standards:

73/23/EWG, EN 61010-1

89/336/EWG, EN 55014, EN 61000-6-1, EN 61000-3-2, EN 61000-3-3

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