



# IsoTherm-System<sup>®</sup>

**Instructions for use**

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## 1 Intended use

The IsoTherm-System is used for cooling micro test tubes.

The product can be used for training, routine and research laboratories in the areas of life sciences, industry or chemistry. This product is intended to be used for research purposes only. Eppendorf does not provide a warranty for other applications. The product is not suitable for use in diagnostic or therapeutic applications. The product may only be used by skilled personnel who have been trained in the areas mentioned above.

## 2 Product description

### 2.1 Main illustration

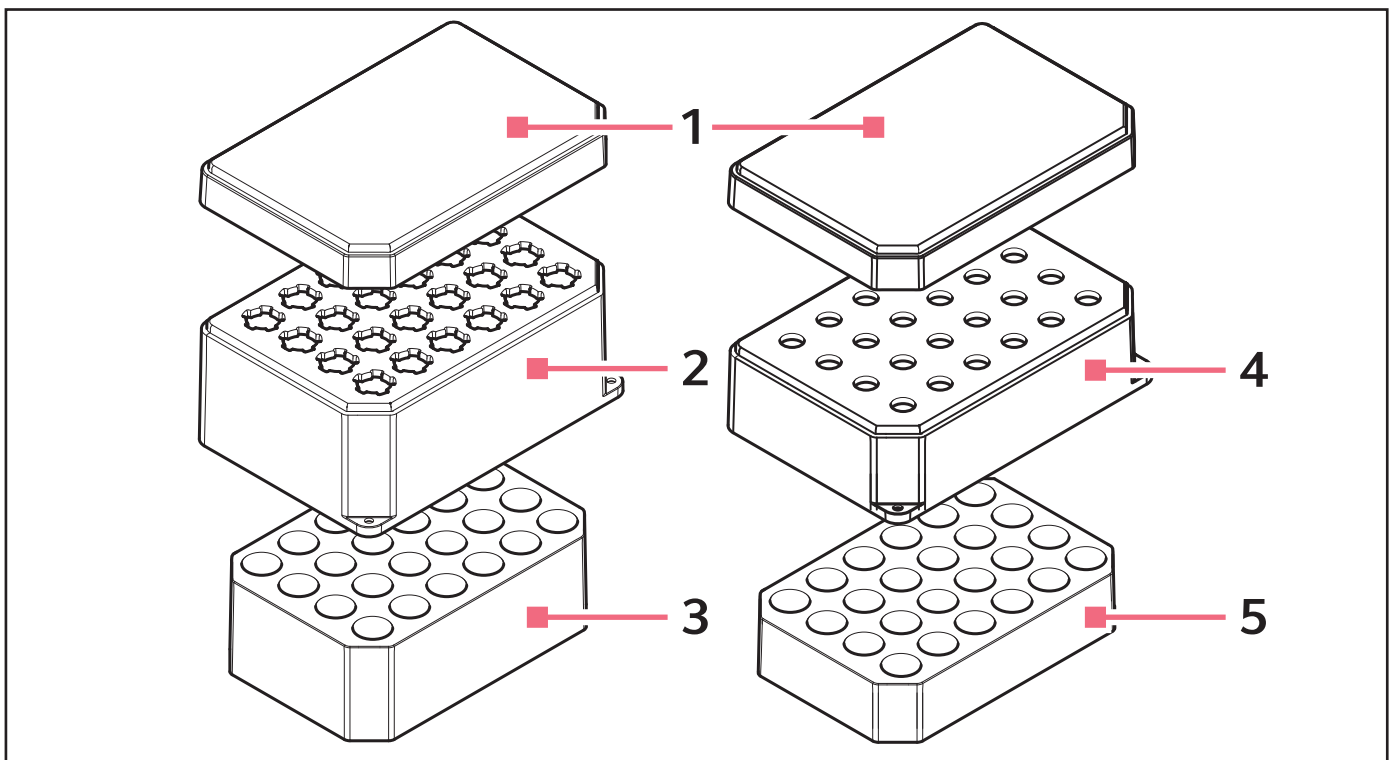


Fig. 1: IsoRack and IsoPack

**1 IsoRack lid**

**2 IsoRack 1.5/2.0 mL**

for 24 micro test tubes 1.5 mL/2.0 mL

**3 IsoPack 1.5/2.0 mL**

cool pack for IsoRack 1.5/2.0 mL

**4 IsoRack 0.5 mL**

for 24 micro test tubes 0.5 mL

**5 IsoPack 0.5 mL**

cool pack for IsoRack 0.5 mL

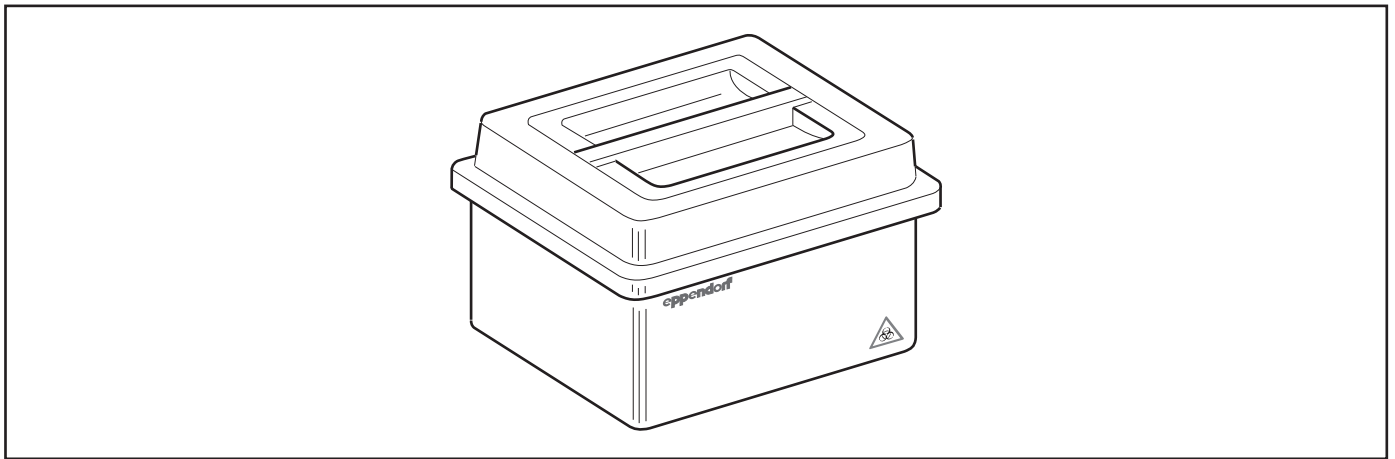


Fig. 2: IsoSafe

## 2.2 Features

With the IsoTherm-System you can cool samples efficiently and at a constant temperature and then thaw them gently.

The IsoTherm-System includes the components IsoRack, IsoPack, and IsoSafe.

The IsoRack further serves as work rack when filling micro test tubes and for provisioning, sorting, distributing, transporting, storing, and freezing samples in micro test tubes.

### **IsoRack with lid (work rack)**

for 24 micro test tubes (0.5 mL or 1.5 mL/2.0 mL)

- base corresponds to microplate (MTP)
- bore holes at the distances of the MTP grid, allowing for micro test tubes to be filled using multi-channel pipettes
- can be labeled, numbered per row
- stackable with or without lid
- suitable for centrifuging in the plate rotor with IsoRack adapter
- lid fits twist-proof, locks to the IsoRack
- lid can also be used as base for cool pack and IsoRack: protects the film on the underside of the cool pack
- floatable with lid: thawing in a water bath possible

### **IsoPack white**

cool pack for 0 °C

- for IsoRack 0.5 mL
- for IsoRack 1.5 mL/2.0 mL

### **IsoPack blue**

cool pack for -21 °C

- for IsoRack 0.5 mL
- for IsoRack 1.5 mL/2.0 mL

### **IsoSafe (insulating box)**

- polystyrene box with lid for one IsoPack each with IsoRack

### 3 Operation



#### **NOTICE! Damage to the IsoPack from sharp edges.**

Sharp edged objects can damage the film on the underside of the IsoPack.

- ▶ Do not use sharp edged objects on the IsoPack.
- ▶ To protect the film against damages, place the IsoPack on the IsoRack lid.

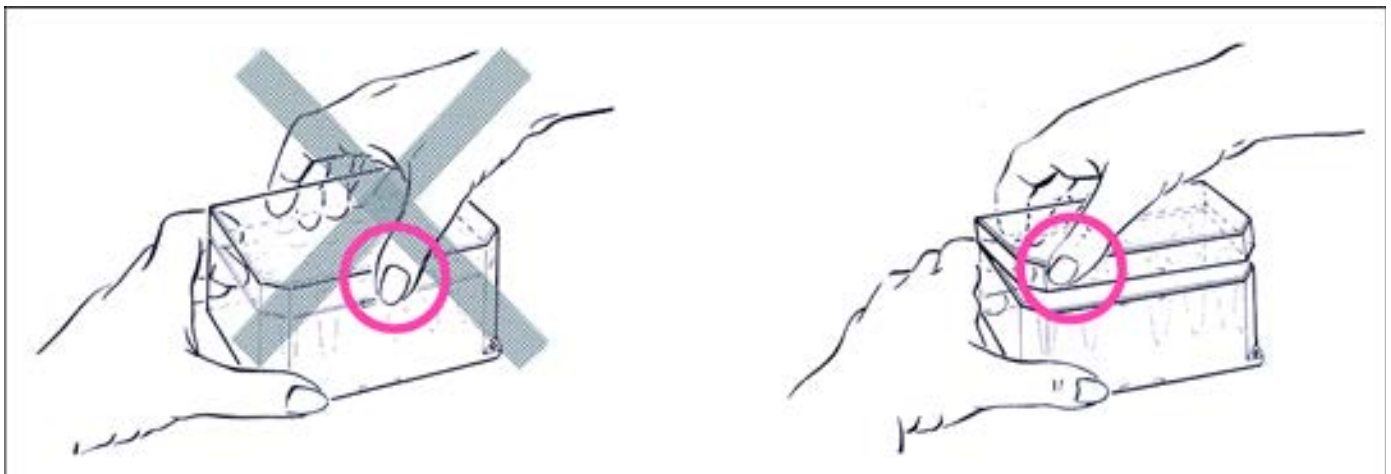


The IsoRacks are stackable with and without lid.

#### **Pre-cooling the IsoPacks**

- IsoPack white 0 °C:  
approx. 2 hours (\*\* freezer) or over night (\* freezer)
  - IsoPack blue -21 °C:  
approx. 4 hours at -35 °C (\*\*\*\* freezer, setting: rapid freeze)
1. Insert pre-cooled cool pack (IsoPack) into the IsoSafe insulating box.
  2. Place IsoRack with samples onto the cool pack.
  3. Close the IsoSafe insulating box with a lid.  
This prevents the formation of frost.  
The samples can be temperature-controlled for several hours at 0 to -21 °C.

#### **Removing the lid**



- ▶ Touch the lid on the outside and remove it in an upwards motion.  
If you touch the lid in the middle, it cannot be removed.

## 4 Maintenance

### 4.1 Cleaning

Clean the components of the IsoTherm-System immediately if sample fluid comes into contact with the surfaces or enters the bore holes.

1. Clean the components of the IsoTherm-System with a mild cleaning agent.
2. Thoroughly rinse with distilled water afterwards.



- ▶ Do not use organic solvents such as phenol, chloroform, and acetone.
- ▶ Do not clean the insulating box (IsoSafe) and the cool packs (IsoPack) in the dish washer.

### 4.2 Disinfection

IsoRack and lid are resistant to alcohol, UV resistant, and autoclavable (121 °C, 20 min).

- ▶ Select a disinfection method that corresponds with the legal provisions and guidelines valid for your area of application. Use e.g. alcohol (ethanol, isopropanol) or alcoholic disinfectant.

## 5 Technical data

### 5.1 Material resistance

Material	<b>IsoRack:</b> polycarbonate <b>IsoPack:</b> polyethylene. Bottom: aluminum foil <b>IsoSafe:</b> polypropylene
Storage	Store dry at room temperature. Protect from direct sunlight and UV light.
Temperature resistance	<b>IsoRack:</b> -200 °C to 100 °C
UV resistance	<b>IsoRack:</b> UV resistant
Resistance to chemicals	Not resistant to organic solvents such as phenol, chloroform, and acetone  <b>IsoRack</b> and lid: resistant to alcohol  <b>IsoPack:</b> <ul style="list-style-type: none"> <li>• resistant to alcohol</li> <li>• resistant to sodium hypochlorite</li> </ul> IsoPack 1.5/2.0 mL: Aluminum foil is damaged if exposed more than 8 h.  <b>IsoSafe:</b> resistant to alcohol
Autoclavability	<b>IsoRack:</b> autoclavable at 121 °C, 20 minutes <b>IsoPack:</b> not autoclavable <b>IsoSafe:</b> not autoclavable

### 5.2 Centrifugation stability

The IsoRack is suitable for centrifugation with the IsoRack adapter in plate rotors.  
Maximum  $g$ -force:  $2250 \times g$ .

► Perform a test run to define the suitable conditions for your application.

**i** The mechanical strength of tubes is reduced by the use of organic solvents. If in doubt, contact Eppendorf Application Support.

### 5.3 IsoTherm time (temperature dwell time)

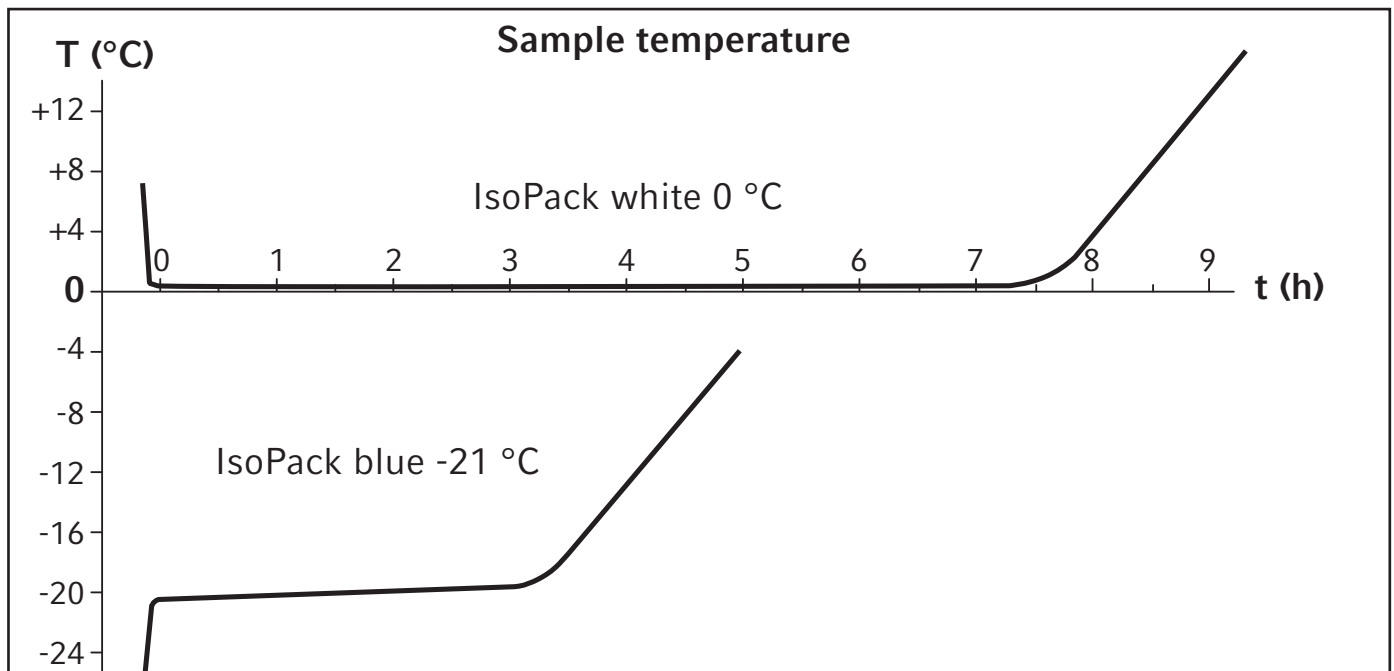
For the cool packs IsoPack 0.5 mL and 1.5/2.0 mL, the temperature dwell time has been calculated for 3 use cases.

**Framework conditions for measuring the IsoTherm time:**

- Maximum filling of the IsoRack
- Micro test tubes filled to the maximum
- Environment at ambient temperature
- Measurement of the sample temperature

	in IsoSafe (lid closed)		in IsoSafe (lid open)		at ambient temperature (IsoRack and IsoPack stand on IsoRack lid)	
	white 0 °C	blue -21 °C	white 0 °C	blue -21 °C	white 0 °C	blue -21 °C
IsoTherm time	> 6 h	> 3 h	> 4 h	> 1 h – 2 h	> 1.5 h – 3 h	> 0.5 h – 1 h*

\* IsoPack 1.5/2.0 mL: valid for inner bore holes only.





## 6 Ordering information

### 6.1 IsoTherm-System

Order no. (International)	Order no. (North America)	Description
3880 000.011 3880 001.018	022510002 022510053	<b>IsoTherm-System</b> IsoSafe, IsoRack, IsoPack 0 °C and IsoPack -21 °C for 0.5 mL tubes 1.5/2.0 mL tubes
3880 000.160 3880 000.178 3880 001.166 3880 001.174	022510282 022510291 022510240 022510258	<b>IsoPack and IsoRack set</b> includes 1 IsoPack and 1 IsoRack for 0.5 mL tubes, 0 °C 0.5 mL tubes, -21 °C 1.5/2.0 mL tubes, 0 °C 1.5/2.0 mL tubes, -21 °C
3880 000.038 3880 001.034	022510100 022510169	<b>IsoRack</b> Set of 4 racks for 0.5 mL tubes 1.5 mL/2.0 mL tubes
3880 000.020 3880 000.046 3880 001.026 3880 001.042	– 022510142 022510185 022510207	<b>IsoSafe and IsoPack</b> 1 IsoSafe and 3 IsoPacks for 0.5 mL tubes, 0 °C 0.5 mL tubes, -21 °C 1.5/2.0 mL tubes, 0 °C 1.5/2.0 mL tubes, -21 °C

### 6.2 IsoRack centrifugation adapter

Order no. (International)	Order no. (North America)	Description
5825 708.008 5825 709.004	022638980 022638998	<b>IsoRack adapter</b> for 24 × 0.5 mL tubes in the IsoRack, 2 pcs. for 24 × 1.5/2.0 mL tubes in the IsoRack, 2 pcs.





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