

# FAQ

Frequently Asked Questions



## What makes pharmaceutical refrigerators different from consumer refrigerators\*1 ?

## Are you experiencing the following issues when using a consumer refrigerator for pharmaceuticals\*2 and for sample\*2 storage?

### Freezing

Temperature variations caused by frost can cause quality deterioration of pharmaceuticals and samples. Auto defrost is a function that prevents freezing.



### Records/Management

Is your workload increasing with record keeping and equipment management? The convenient log function automates temperature management tasks and delivers data.



### Changes in temperature

If the inside temperature of a consumer refrigerator rises, there is no alert. Pharmaceutical refrigerators incorporate an alarm to notify users.



PHCbi's pharmaceutical refrigerators and pharmaceutical refrigerators with freezers are designed and built specially for pharmaceuticals and to store samples under optimal conditions, offering the functions that keep the inside temperature stable.

- A special heater function prevents the temperature inside the chamber from dropping and prevents stored items from freezing.
- A log function maintains records of alarms, temperatures, door openings/closings and will output such data via a USB port\*3.
- Various other operational tasks such as displaying the temperature transition and maximum/minimum control temperature points can be performed\*3.

Pharmaceutical refrigerators



MPR-S150H

MPR-S300H

MPR-514

Pharmaceutical refrigerators with freezers



MPR-215F

MPR-N450FH

Please refer to the back page for a detailed comparison of pharmaceutical refrigerators vs. consumer refrigerators. ....▶

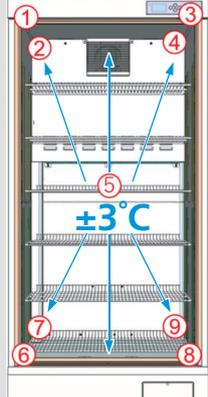
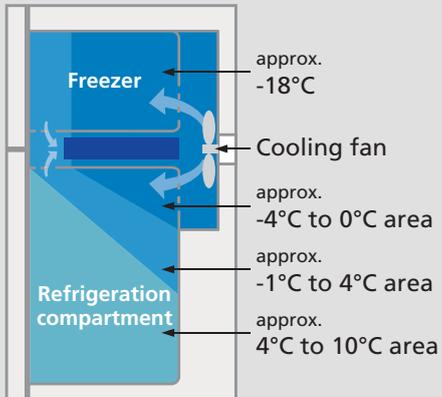
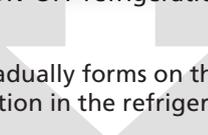
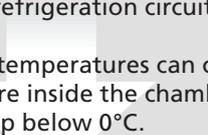
\*1: The consumer refrigerators in this flyer refers to a dormitory-style or bar-style combined refrigerator/freezers design for food storage.

\*2: Pharmaceuticals and samples have their own control temperatures. Pharmaceuticals and/or samples with controlled temperatures must not be stored in conditions that do not meet the specifications of PHCbi pharmaceutical refrigerators.

\*3: Some products may not be equipped with a corresponding function.



# Pharmaceutical refrigerators are essential for pharmaceuticals<sup>\*1</sup> and sample<sup>\*1</sup> storage.

	<b>PHCbi Pharmaceutical Refrigerators &amp; Freezers</b> A temperature uniformity of $\pm 3^{\circ}\text{C}$ is maintained for average temperature readings at 9 locations (① to ⑨) such as the upper, lower and center sections inside the refrigerator <sup>*2</sup> .	<b>Consumer refrigerators</b> A temperature difference of approx. $14^{\circ}\text{C}$ is seen between the refrigeration compartment's top and bottom sections <sup>*3</sup> .
<b>In-chamber temperatures</b>		
<b>In-chamber temperature during defrost</b>	The heater-type cycle defrost system controls the temperature and defrosts at the same time to maintain a constant internal temperature.	The temperature within the chamber is not stable as it is necessary to defrost manually, turning the heater on and turning the refrigeration circuit off on a regular cycle (every 7-8 hours).
	Alternates refrigeration and heater turn on.  Suppresses frost from developing within the internal cooling section. <div style="background-color: #0056b3; color: white; padding: 5px; text-align: center; border-radius: 10px;"> <b>Maintains a constant temperature inside the chamber.</b> </div>	Temperature control through ON-OFF refrigeration.  Frost gradually forms on the cooling section in the refrigerator. <div style="background-color: #333; color: white; padding: 5px; text-align: center; border-radius: 10px;"> <b>The temperature inside the chamber fluctuates.</b> </div>
<b>Maintaining correct state of stored items</b>	For maintaining a constant temperature inside the chamber, a heater is used to prevent the temperature inside the chamber from dropping and freezing stored items.  Alternates refrigeration and heater turn on. <div style="background-color: #0056b3; color: white; padding: 5px; text-align: center; border-radius: 10px;"> <b>Keeps the temperature inside the chamber constant.</b> </div>	At low ambient temperatures, the temperature inside the chamber can drop below $0^{\circ}\text{C}$ ( $32^{\circ}\text{F}$ ), which could freeze stored items.  Operation of refrigeration circuit only Low ambient temperatures can cause the temperature inside the chamber to drop below $0^{\circ}\text{C}$ . <div style="background-color: #333; color: white; padding: 5px; text-align: center; border-radius: 10px;"> <b>Storage items may freeze.</b> </div>

\*1: Pharmaceuticals and samples have their own control temperatures. Pharmaceuticals and/or samples with controlled temperatures must not be stored in conditions that do not meet the specifications of PHCbi pharmaceutical refrigerators.

\*2: Average temperature is measured in accordance with PHCbi guidelines on validations. Measurement methods and results may differ depending on referenced standards.

\*3: The consumer refrigerator in this flyer refers to a dormitory-style or bar-style combined refrigerator/freezers design for food storage.