

« Cryo-accumulator » plates

"Cryo-accumulator" plates, available on our very low (-86°C) and low (-45°C) temperature TRUST & EVOLUTION freezer ranges, allow to delay the temperature rise. This option can be decisive in the event of a power failure or when the user opens the door regularly.

What is the purpose of the cryo-accumulator option?

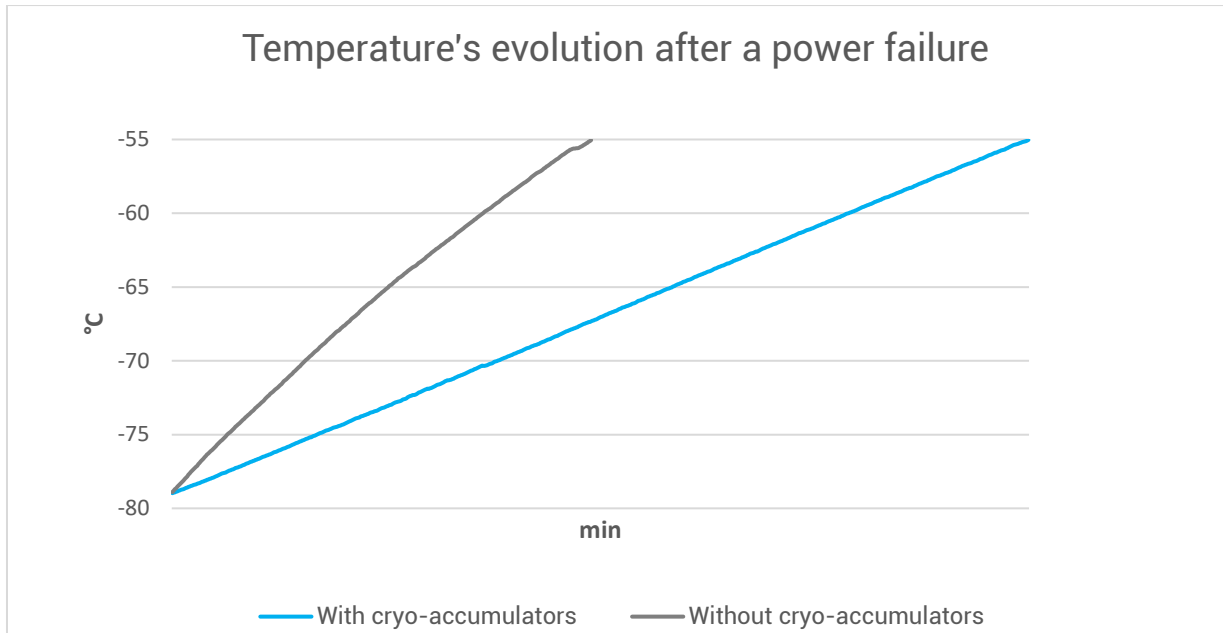
As an option on freezers, the "cryo-accumulator" plates can be used to delay the temperature rise in the event of a breakdown/shutdown of the appliance. These plates, placed in the internal dead volume of the freezer, are designed to reduce the internal dead volume, and increase the thermal inertia of the freezer.

In the event of a power failure, this option allows to significantly delay the temperature rise because the entire vessel has a higher thermal inertia.

However, the first descent in temperature of the appliance is longer due to the greater inertia of the tank.

What is the efficiency of the cryo-accumulator?

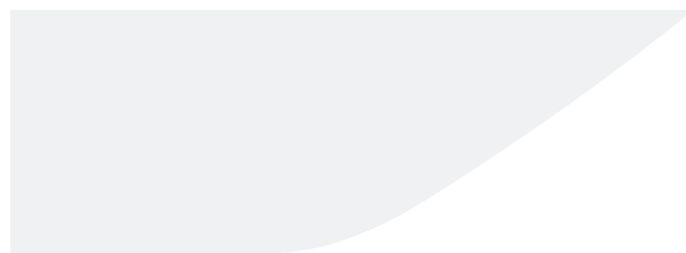
To test the efficiency of the cryo-accumulators, tests were carried out on a -86°C EVOLUTION 690L freezer, **empty and in air**, and the results are presented in the following graph. It compares the temperature rise of a freezer with and without cryo-accumulators following a power failure. The graph was produced using a probe placed in the lower part of the freezer.



The use of cryo-accumulators delays the increase in temperature of a freezer to go from -80°C to -55°C.

The device is restarted once the temperature of -55°C has been reached. We can see that in an empty freezer, the rise time from -78°C to -55°C is multiplied by 2.

It is important to point out that a full freezer has a greater inertia, therefore the rise time would be more important.



Where are the cryo-accumulators in the freezer?

To visualize the location of the cryo-accumulators in the tank of a freezer, photos are available below.



Picture 1 : Cryo-accumulator plate situated on the left part of a freezer, full inside left view



Picture 2 : Cryo-accumulator plate situated on the right part of a freezer, central inside right view



Photo 3 : Cryo-accumulator plates situated on the right part of a freezer, three-quarter interior view



Photo 4 : Cryo-accumulator plates situated on the right part of a freezer, right up inside corner view