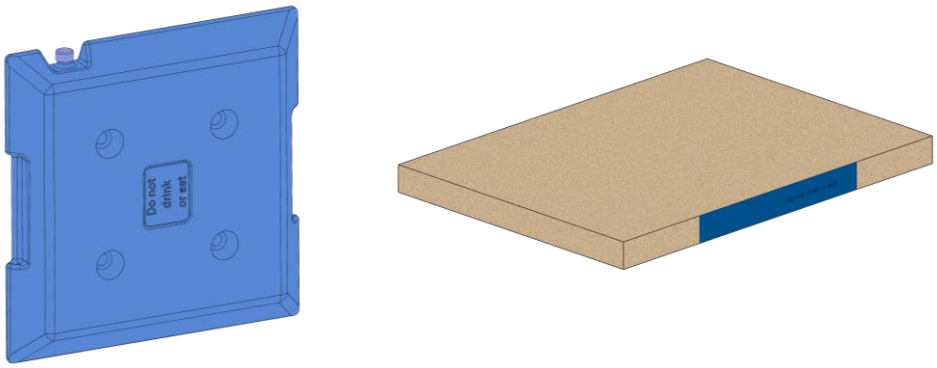
Preconditioning Instruction for +05G temperature batteries – freeze & thaw

For ProofBlok and OneBlok
For +2 °C to +8 °C shipments

Envirotainer
Precision with Purpose



Left: ProofBlok with +05G PCM; right: OneBlok with +05G/+05G EL PCM.

TEMPERATUR BATTERIES WITH +05G AND +05G EL PCM

The ability to stabilize the temperature inside Envirotainer's high performance insulating container/parcel shipper for a qualified duration is caused by Envirotainer´s unique temperature batteries. Depending on customer requirements temperature batteries are available with different Phase Change Materials (PCM) in individual colors. For a temperature-controlled shipment, a proper preconditioning process of the temperature batteries is mandatory. This instruction document describes each step of the freeze and thaw preconditioning process for ProofBlok and OneBlok with +05G PCM. The following preconditioning instruction is only valid for the temperature batteries. ProofBlok +05G, OneBlok +05G and OneBlok+05G EL.

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Step 1

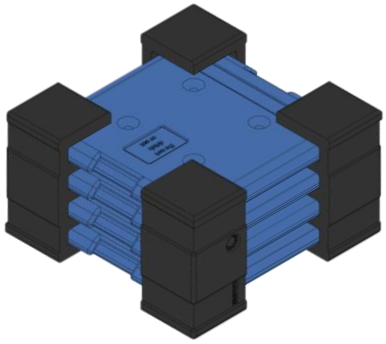
Before use check the temperature batteries for damages such as leakages. Do not use damaged temperature batteries! A detailed check 3 years after the manufacturing date is recommended.

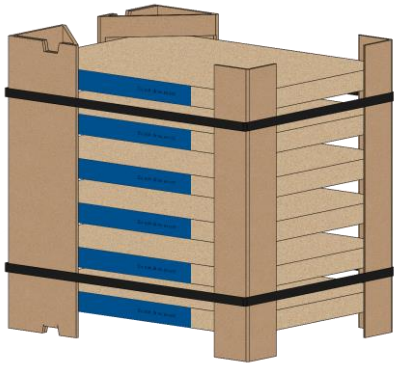
Step 2 - freeze

Store the temperature batteries in a freezer at -20.0 °C ± 5.0 °C **for at least 24 hrs**.

Note

It is necessary to secure proper airflow around the temperature batteries during the entire preconditioning process. A space of at least 1.5cm (0.6”) between each temperature battery is mandatory.
Optionally, Envirotainer´s preconditioning racks can be used to ensure the space between the temperature batteries to achieve the best preconditioning results. Preconditioning racks can be ordered separately if required. If bulging during the preconditioning process occurs, horizontal storage for preconditioning can remedy this – see pictures below.





Step 3 - thaw

Take the temperature batteries out of the freezer. Depending on the **thawing temperature**, store the temperature batteries for a duration as defined in the table below.

+3.0 °C – THE THAWING DURATION IS NOT RELATED TO THE TEMPERATURE BATTERY THICKNESS

Temperature Battery Thickness	*Thawing Temperature*	*Tolerance*	*Thawing Duration*	*Tolerance*
Not relevant	+3.0 °C	± 0.5 °C	≥ 20 hrs	-

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+5.0 °C – THE THAWING DURATION IS RELATED TO THE TEMPERATURE BATTERY THICKNESS

Temperature Battery Thickness	*Thawing Temperature*	*Tolerance*	*Thawing Duration*	*Tolerance*
20 mm	+5.0 °C	± 3.0 °C	5 hrs	± 1 hr
30 mm	+5.0 °C	± 3.0 °C	7 hrs	± 1 hr
40 mm	+5.0°C	± 3.0 °C	9 hrs	± 1 hr

Temperature Battery Thickness	*ProofPak* [1]	*OnePak* [2]
20 mm	11 … 240 standard	23 … 300
30 mm	4 standard 11 … 240 premium	8
40 mm	4 premium	4

[1]ProofPak is available in the following sizes in a standard and premium configuration each: 4, 11, 23, 43, 74, 240
[2]OnePak is available in the following sizes: 4, 8, 23, 43, 74, 300

Step 4

Remove the temperature batteries from the preconditioning device.

Step 5

Load the temperature batteries into the container/parcel shipper as per the respective loading instruction.

Prior to a shipment with the preconditioned temperature batteries, it is suggested that the user performs a validation process with the equipment available and under the conditions available. A test in worst case conditions is recommended. The temperature batteries can buffer energy and keep the temperature stable. Requests can be addressed to our service team: **support@envirotainer.com**

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