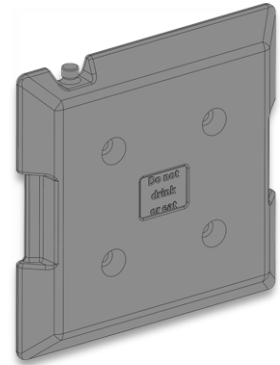


Preconditioning Instruction for temperature batteries at constant temperature

For va-Q-accus

The ability to stabilize the temperature inside va-Q-tec's high performance insulating container/parcel shipper for a qualified duration is caused by va-Q-tec'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 preconditioning process for **va-Q-accus** at a *constant temperature*. The following preconditioning instruction is only valid for the temperature batteries: **va-Q-accu**.

















Step I

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 II

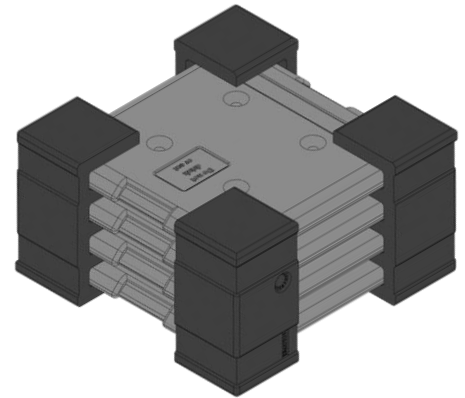
Depending on the PCM in use, store the temperature batteries at a temperature as defined in the table below **for at least 72 hours**.

PCM	Application	Color Code		Average Preconditioning Temperature	Tolerance
		PCM	Cap		
+37G	For +37°C shipments			+40.0°C	± 1.0°C
+22G	For +20°C shipments			+20.5°C	± 0.5°C
+05G	For +5°C shipments			+3.0°C	± 0.5°C
-21G	For -20°C shipments			≤ -25°C	
-26G	For -20°C shipments			≤ -35°C	
-32G	For -30°C shipments			≤ -45°C	
-37G	For -40°C shipments			≤ -55°C	

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, va-Q-tec'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 picture on the right.

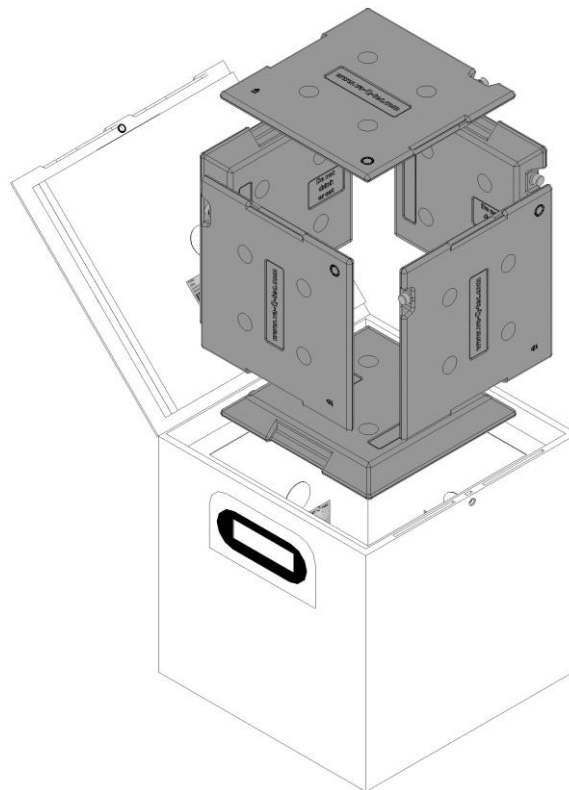


Step III

Remove the temperature batteries from the preconditioning device.

Step IV

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: TempChainInfo@va-q-tec.com

Preconditioning instruction at constant temperature for va-Q-accus