

Conditioning guide for BioChills and PharmaChills

BioChill and PharmaChill packs can be used, once they are suitably prepared, to provide thermal protection to a temperature sensitive payload as components of a temperature control packaging system.

BioChill packs consist of an outer polymer film barrier containing a water based non-toxic phase change material with a physically supportive polymer lattice.

PharmaChill packs consist of an outer rigid polymer barrier containing a water based non-toxic phase change material with a flowing gel form.

Frozen

When required to be used as frozen units, packs need preparing considering the following guidance:

Step 1: Before Preparing Packs

Any freezer to be used for preparing frozen packs should be capable of cooling below frozen i.e. 0°C, and then to the target temperature of the freezer, between -18°C and -20°C.

Packs for freezing should not be excessively warm when loaded into the freezer as this can disrupt the freezer temperature extremely and lead to incomplete freezing in the time given for these packs to freeze.

Note: Depending on the volume of packs that are added to the freezer the time taken to freeze the entire load will vary. For example, the higher the mass of warm packs added the longer the entire group will take to freeze.

Refer to packing instructions supplied which will describe the time and directions specific to your temperature control system.

Step 2: Placing Packs into Freezer Space

When placing packs into a freezer environment, it is important for there to be air circulation about the two large flat sides of the packs. *(This allows the air temperature of the freezer space to contact the maximum amount of the frozen packs. It also will increase the consistency of the freezing effects and reduce the possibility of distortion to the product).*



Do not:

1. Place warm stacks or boxes of packs into the freezer space (if placing stacks or boxes, they should be conditioned in a refrigerator first)
2. Place packs in locations within the freezer space or use freezer plant settings which permit fast freezing
3. Use snap freezing
4. Allow excessive airflow on the smaller sides of the packs when not on the large flat faces

Step 3: Handling the Frozen Packs

The contents of the BioChill and Pharmachill packs will expand when transitioning from liquid to frozen during the freezing process. This expansion can lead to distortion of the frozen packs.



DO NOT USE



OK TO USE

When the packs are frozen the outer barrier materials can become fragile and should be handled with care. If damaged while frozen, leakage of the contents will not be detectable until the pack has begun to thaw.

The BioChill packs can be punctured by sharp objects, this can occur when liquid or frozen. It is best to avoid sharp points and edges in freezer spaces and at handling or assembly points.

Step 4: Conditioning of Frozen Packs for use

Conditioning of the packs takes place after the freezing of the packs and is a necessary stage to ensure the packs are at a suitable temperature for use prior to inclusion in a system. The durations for conditioning given on the pack out instructions are only a recommendation and the time required for efficient conditioning will depend upon a number of factors.

These factors include the air temperature, the air flow speed, the moisture of the air and any radiative or direct conductive heat transfer. Control or consistency of these factors will allow for controlled conditioning. Consult with your Intelsius representative for further assistance.

Refrigerated

When required to be used as refrigerated units, packs need preparing considering the following guidance:

Step 1: Before Preparing Packs

Any refrigerated space to be used for preparing refrigerated packs should have sufficient refrigeration capacity to effectively cool to the desired temperature (5°C +/-1°C) all of the packs loaded into the refrigerator space in the time given for these packs to be chilled.

Packs for refrigerating should not be excessively warm when loaded into the refrigerator as this can disrupt the refrigerator temperature extremely and lead to incomplete conditioning in the time given for these packs to chill.

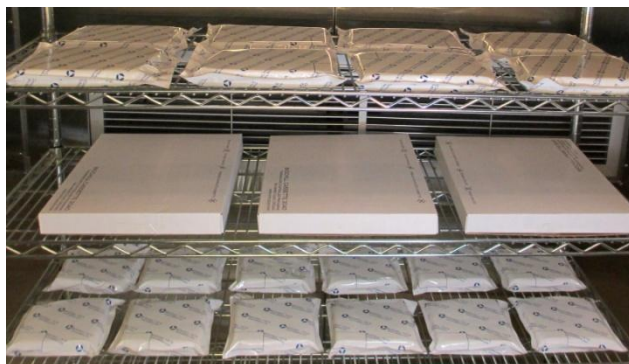
Refer to the packing instructions supplied which will describe the conditioning time and directions specific to your temperature control system.

Step 2: Placing Packs into Refrigerated Space

The packs should be placed into the refrigerated space in such a way that sufficient air-flow around the packs is present to allow the material to come to the desired temperature within the time given for these packs to be chilled.

Avoid placing packs into refrigerated space in direct stacks as these will take longer to reach the desired temperature and increase the risk of materials not being ready for use after the anticipated exposure.

When placing packs into the refrigerated space, it is important for there to be air circulation about the two large flat sides of the packs. (*This allows the air temperature of the conditioning space to contact the maximum amount of the packs. This will increase the consistency of the refrigerated conditioning effects.*)



Be aware that certain areas within the refrigerated space may be exposed to temperatures below the desired temperature and material exposed to these temperatures can pose a risk of cold shock. Avoid placing materials into these areas within the refrigerated space or move material from these areas for a sufficient time prior to use in systems.

Step 3: Removing Packs from Refrigerated Space

Once refrigerated packs are ready for use they should be used immediately upon removal from the refrigerated space. There is no need for a further conditioning period prior to assembly according to the packing instructions.