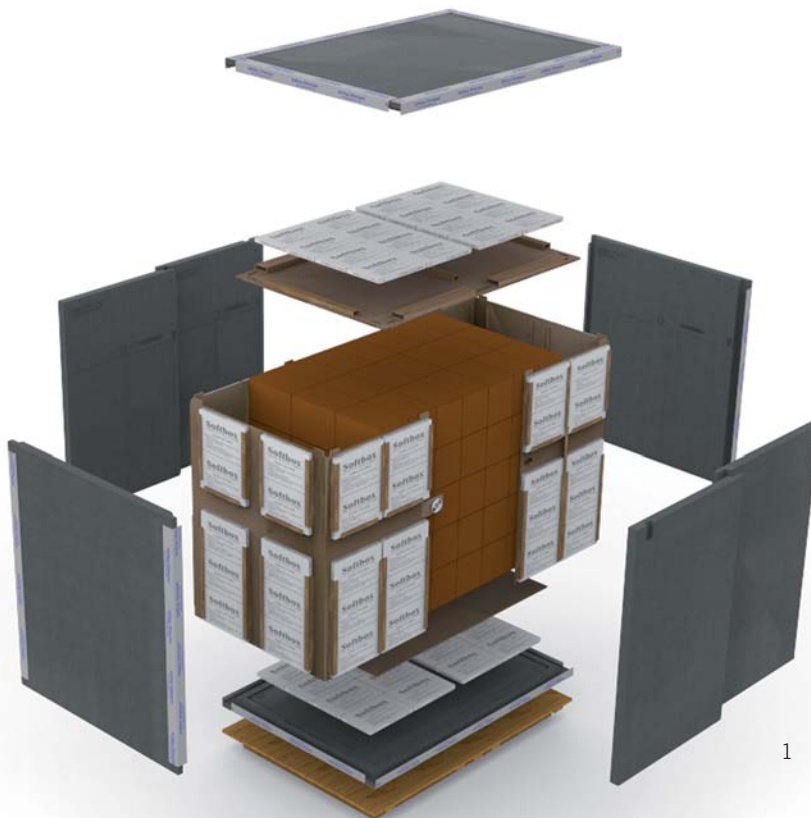




OCEAN SYSTEM

Silverpod Ocean System

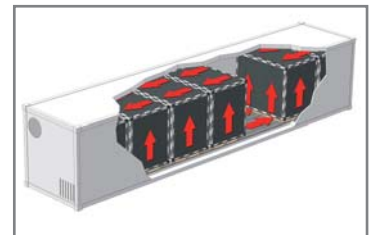
The Silverpod Ocean shipping system has been designed to integrate perfectly with Ocean Reefer containers to provide a high performance thermal barrier to protect products from temperature excursions that can occur during periods of power outage at port or whilst at sea.



1



2



3

1. Exploded component view.
2. Fully assembled system ready to load into reefer.
3. 40' Reefer accommodates seven Silverpod Ocean systems.

Features and Benefits

- Designed to minimise excursions during power outage.
- Sized to maximise shipping space inside Ocean Reefers.
- Thermal protection for ambient, chilled & frozen products.
- Single pack-out to cover multiple temperature ranges.
- Flat pack design reduces delivery, storage & return costs.
- Robust materials and construction allow multiple-use.
- Manufactured from 100% recyclable materials.



012



For more information about this or any other Softbox Packaging System, please see reverse for contact details

Patent GB2470662 "A Temperature Control System" & GB2459392 "Transport Container" – International Patents Pending

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Silverpod Ocean System Specification

External Dimensions (mm) LxWxH	2195 x 1565 x 2000
Internal Product Space (mm) LxWxH	1900 x 1270 x 1575
Internal Payload Volume (Litres)	3800

Tare Weight (kg)*	420
Pharmacools®	92 x 3000g
Temperature range	+2°C to +8°C / +15°C to +25°C / Frozen

*Tare weight tolerance can be +/- 5%

Test Protocol

Research has determined that the rates of temperature change inside a standard Ocean Reefer with a set point of +5°C at time of power outage when exposed to defined ambient temperatures are as follows:

Ambient Temp (°C)	Temperature Change (°C)	Rate of change (Minutes)
- 30	- 0.7	10
+ 30	+ 0.7	10
+ 50	+ 1	10

Using the above three ambient temperatures, Softbox performed Operational Qualifications to determine the time taken for a full load of low thermal mass pharmaceutical product packed in a Silverpod Ocean system to experience a temperature excursion outside a defined + 2°C to +8°C range.

Test Conclusions – Time to Excursion

Test results		
Ambient Temp (°C)	Standard Reefer	Including Silverpod Ocean
- 30	42 minutes	14 hours 10 minutes
+ 30	42 minutes	14 hours 10 minutes
+ 50	30 minutes	8 hours

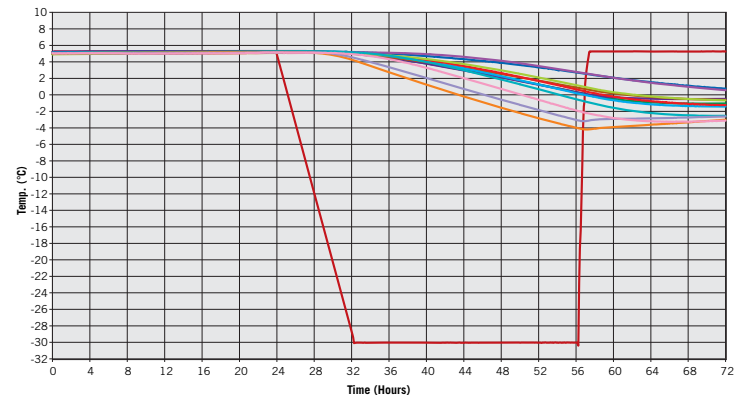
Test products: 144 product cartons containing 4,608 1ml water filled Phials

Measurement: 12 hard wired thermocouples strategically placed within the product load.

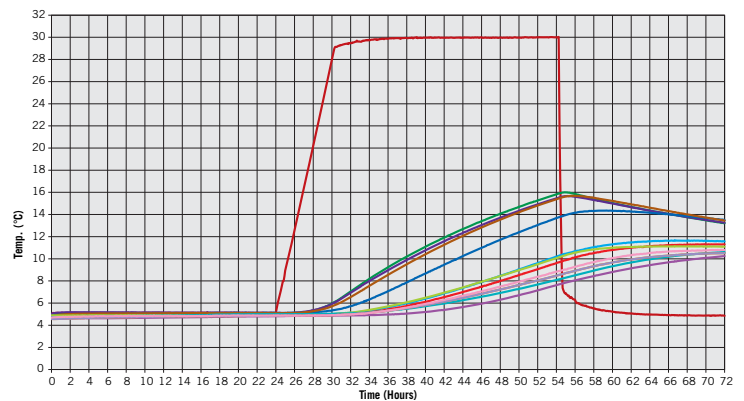
Pre conditioning: 24 hours @ +5°C.

Test results for +15°C to +25°C and Frozen product are available on request.

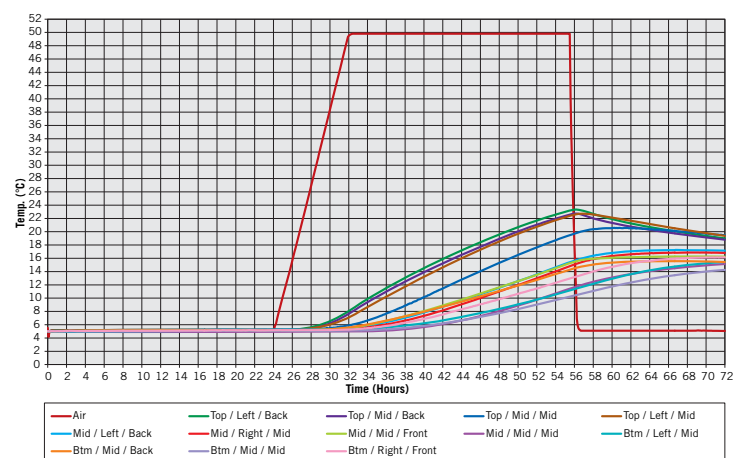
-30°C Ambient



+30°C Ambient



+50°C Ambient



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