



Tech Tips



February, 2010

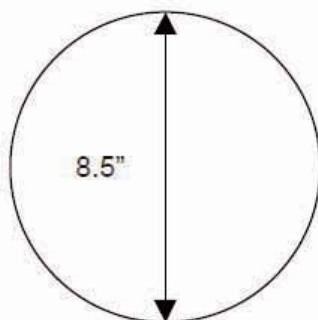


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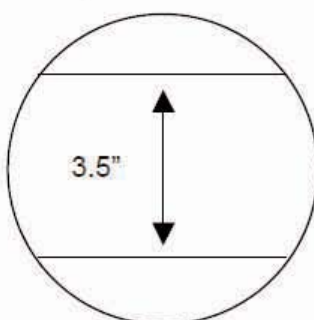
CryoShipper Mini

The CryoShipper Mini may be purchased with or without welded vapor inserts. Those that do not have welded inserts require the purchase of CryoBlocks. Below are the hold times for the Cryoblock inserts. The inserts can be mixed and matched to meet the customer's specifications.

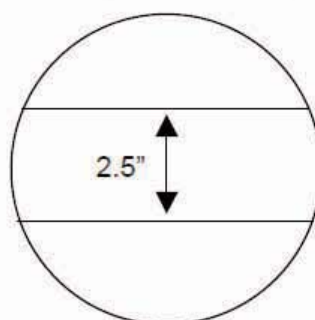
CryoShipper Mini
(PN 11037386)



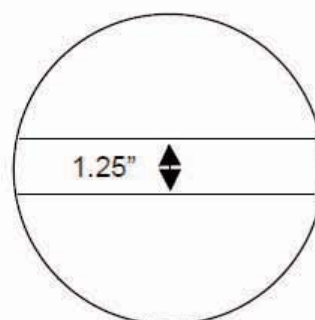
CryoShipper Mini with
Small Cryo Blocks
(PN 11046952)



CryoShipper Mini with
Medium Cryo Blocks
(PN 11046944)



CryoShipper Mini with
Large Cryo Blocks
(PN 11046936)



Approximate Hold Times

4 days

5 days

7 days

Note: The approximate hold times were determined using two inserts.

CryoShipper Part Numbers

Part Number	Description
11037378	FNL CRYOSHIPPER MINI W/ 2" SLOT
10979435	FNL CRYOSHIPPER MINI W/ 4" SLOT
11037386	FNL CRYOSHIPPER MINI

CryoBlock Part Numbers

Part Number	Insert Size	Hold Time (days)
11046952	2" (Small)	4
11046944	3" (Medium)	5
11046936	4" (Large)	7

Concentration of Nitrogen Gas

Nitrogen gas displaces the oxygen in the atmosphere. Large amounts of nitrogen gas in a room can cause asphyxiation. Use the formula below to calculate the approximate concentration of nitrogen gas in a room.

$$C_t = \frac{L}{V \times n}$$

C_t = gas concentration of room

L = gas release, m³/hr

V = volume of room, m³

n = air changes per hour

This same formula can be used to calculate the number of air changes per hour needed to properly ventilate a room.

$$n = \frac{L}{C_t \times V}$$

The gas release, L , pertains to the evaporation rate of the Dewar in question. Convert the normal evaporation rate from liters per day to cubic meters per hour. If you have multiple tanks add the evaporation rates of all. The volume of the room is just the dimension of the room, i.e. length x width x height. The air changes per hour is a measure of ventilation and describes the number of times the total volume of air is removed from the room.

There are a couple conversions that will assist with these calculations:

1 liter/ day = 0.027m³/hr

1 ft³ = 0.028 m³



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