Chart MVE Doble Series Aluminum Tanks

The MVE Doble Series aluminum tanks are designed for both vapor shipment and liquid storage. These tanks utilize the same components and vacuum technology that make our current range of aluminum tanks the best-selling breeder units on the world market. The unique absorbent layer in the base of these storage units enables the tank to be charged with liquid nitrogen in as little as two hours, and they can be employed as a dry shipper. When a Doble tank arrives at its destination, the tank can be filled with liquid nitrogen and used as a long-term storage tank, therefore avoiding the need for return shipments.

Features Include:
- Liquid and vapor storage options
- Low liquid nitrogen consumption
- Convenient lightweight package
- CHARGES IN LESS THAN TWO HOURS

The MVE Doble Series tanks are available in various sizes:

<table>
<thead>
<tr>
<th>Model</th>
<th>Part Number</th>
<th>Canisters</th>
<th>Liters</th>
<th>Liquid/Vapor Hold Time*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doble 11</td>
<td>11507886</td>
<td>6</td>
<td>10</td>
<td>37 Days Liquid / 17 Days Vapor</td>
</tr>
<tr>
<td>Doble 20</td>
<td>11492151</td>
<td>6</td>
<td>18.5</td>
<td>116 Days Liquid / 21 Days Vapor</td>
</tr>
<tr>
<td>Doble 28</td>
<td>11527730</td>
<td>6</td>
<td>28</td>
<td>50 Days Liquid / 24 Days Vapor</td>
</tr>
<tr>
<td>Doble 34</td>
<td>11497948</td>
<td>6</td>
<td>32</td>
<td>100 Days Liquid / 20 Days Vapor</td>
</tr>
<tr>
<td>Doble 47</td>
<td>11498684</td>
<td>6</td>
<td>46</td>
<td>74 Days Liquid / 21 Days Vapor</td>
</tr>
<tr>
<td>Doble 47-10</td>
<td>11554308</td>
<td>10</td>
<td>46</td>
<td>72 Days Liquid / 21 Days Vapor</td>
</tr>
</tbody>
</table>

*Hold times are nominal. Actual rate will be affected by the nature of container use, atmospheric conditions, and manufacturing tolerances.
Chart MVE LN2 tx - Liquid Nitrogen Transfer System

Chart MVE’s LN2 tx is designed specifically to allow the safe and easy removal of liquid nitrogen from an open vessel. Instead of lifting and pouring liquid nitrogen from heavy Dewars, one can simply utilize the LN2 tx to transfer liquid nitrogen from one open vessel to another. The MVE LN2 tx uses a high velocity nitrogen gas stream to create suction (vacuum) at the inlet that draws liquid up into the transfer device. Once the liquid is drawn into the gas stream, the liquid is pushed through the transfer tube and hose by the gas stream.

The LN2 tx Assembly is PN 15098872 and pictured below.

NOTE: The minimum neck opening for the vessel that liquid nitrogen is to be removed from is 3.25” (83 mm) and the minimum neck opening for the vessel that the liquid nitrogen is being transferred to is 4” (102 mm).

Chart MVE Freezer Static Evaporation Rates (SER)

The Evaporation Rates listed below represent tanks observed in a "static setting" which means that the tanks were left undisturbed, without any lid openings for a set period of time. We understand that our freezers are most often used in non-static conditions, so with this in mind, these figures are only intended to be used as general estimates. These values can vary depending on a variety of uncontrolled parameters.
### OPEN TOP

<table>
<thead>
<tr>
<th>Model</th>
<th>SER (L/Day)</th>
<th>Model</th>
<th>SER (L/Day)</th>
<th>Model</th>
<th>SER (L/Day)</th>
</tr>
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<tbody>
<tr>
<td>MVE 103</td>
<td>4.1</td>
<td>800 Series</td>
<td>5.0</td>
<td>815</td>
<td>5.0</td>
</tr>
<tr>
<td>MVE 205</td>
<td>3.0</td>
<td>1500 Series</td>
<td>7.5</td>
<td>819</td>
<td>5.0</td>
</tr>
<tr>
<td>MVE 510</td>
<td>6.2</td>
<td>1800 Series</td>
<td>12.5</td>
<td>1536P</td>
<td>6.5</td>
</tr>
<tr>
<td>MVE 616 &amp; 616C</td>
<td>8.5</td>
<td>1842 (Old 1830)</td>
<td>12.0</td>
<td>1539P</td>
<td>6.5</td>
</tr>
<tr>
<td>MVE 808</td>
<td>8.0</td>
<td></td>
<td></td>
<td>1542R</td>
<td>6.5</td>
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<tr>
<td>MVE 1223</td>
<td>13.0</td>
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<td></td>
<td>1879P</td>
<td>10.0</td>
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<tr>
<td>MVE 1318</td>
<td>8.5</td>
<td></td>
<td></td>
<td>1892P</td>
<td>10.0</td>
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<tr>
<td>MVE 1426 &amp; 1426C</td>
<td>14.0</td>
<td></td>
<td></td>
<td>1894R</td>
<td>10.0</td>
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<tr>
<td>MVE 1839</td>
<td>13.0</td>
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</tr>
</tbody>
</table>

### HIGH EFFICIENCY

### HEco

### Helpful Hints/FAQ’s

#### XC 47/11-10 and XC 47/11-6 Conversion Kits

The XC 47/11-10 and the XC 47/11-6 can be converted from one to the other. The kits required to convert these tanks include a new cork and cover, a new platform to be installed at the bottom of the tank, and a new index ring from which the canisters will hang. Along with the conversion kit, new canisters must also be purchased.

- **PN 20569389**: CONVERSION KIT FROM XC47/11 – 6 CANISTER TO XC47/11 – 10 CANISTER
- **Canisters sold separately**: PN 14782429

- **PN 20569387**: CONVERSION KIT FROM XC47/11 – 10 CANISTER TO XC47/11 – 6 CANISTER
- **Canisters sold separately**: PN 14782411

#### Magnetic Lid Lock System

Chart MVE offers an optional Magnetic Lid Lock System that can be installed onto any 1800 series freezer, except for MVE HEco models. The part number to reference is 13384939. The locking system should be requested at the time of purchase, as it cannot be field installed due to welding required around the neck of the freezer. Chart MVE provides **two pieces** for the locking system: one is an electromagnet and the other is a plated carbon steel strike. The magnet is mounted to the neck of the freezer and the strike is attached to the lid. The magnet has leads attached, through which a current can be applied to activate...
When the current is removed from the magnet, the strike is released so that the lid can then be opened. Chart MVE does not include the system that activates the lock (only the electromagnet and strike). The intent is that the user has their own security provider install a card or keypad entry device on the freezer to operate the magnetic lid locking system.

Vapor Shipper SER/NER Certificate
Q: Does PN 20582341 NER Certificate come standard with Vapor Shippers?
A: The NER Certificate is only available at the time the Vapor Shipper order is placed. Unfortunately, it cannot be ordered after the Vapor Shippers have been built and shipped. The document is serial number specific and will have to be requested at the time the order is entered. Contact Customer Service or your Sales Representative for pricing and more information.

Freezer Plumbing Leak Check
Q: What is the recommended procedure to perform a plumbing leak check?
A: Leaky plumbing connections can create a host of problems including but not limited to:
   - Slow fill times
   - Nuisance alarms
   - High LN2 Consumption
   - Inaccurate level readings
   - Inaccurate liquid usage readings

To perform a leak check:
1. With the supply system at operating pressure, thoroughly spray all transfer hose connections and freezer plumbing connections with leak detect solution
2. Allow leak detect solution to penetrate fittings for at least 30 seconds
3. Large leaks will be immediately apparent with large bubble formations
4. Small leaks will take longer to detect, with small bubble formation in the appearance of “foam”
5. Most leaks can be repaired by tightening the suspect fitting with a crescent or appropriate sized wrench

6. If tightening the fitting does not fix the leak, check the fitting for cracks and/or galling. If the fitting is damaged, replace

7. Recheck any replaced fittings for leaks

Accessories

Cryogenic Gloves
Chart MVE has cryogenic gloves available to help with insertion and removal of racks and cassettes:

Medium length-M size 9717119

Medium length-L size 9717129

Medium length-XL size 9717139

Elbow length-M size 9717149

Elbow length-L size 9717159

Elbow length-XL size 9717169

IATA Secondary Shipping Container
The IATA shipping container is used only in the IATA CryoShipper and is intended for safe delivery of biohazards. The container is held closed by six screws.

PN: 2910221 Hex Screw
PN: 10987831 Hex Key
PN: 10862106 Secondary Container
Canes for Straws and Vials
Chart MVE offers canes to hold straws and 1.0, 1.2, and 2.0 ml vials.

P/N 9717009 1.0ml vials and straws
P/N 9717029 1.2ml vials
P/N 9717089 2.0ml vials

CryoSleeves for Canes
Chart MVE offers CryoSleeves to keep vials from falling from canes.
PN: 9710899 - 100 per case

Don't Miss Out on our Upcoming Trade Shows!

<table>
<thead>
<tr>
<th>Date</th>
<th>Show</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 21-24, 2016</td>
<td>GGBN Biodiversity Biobanking Conference</td>
<td>Berlin, Germany</td>
</tr>
<tr>
<td>July 3-6, 2016</td>
<td>ESHRE</td>
<td>Helsinki, Finland</td>
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<tr>
<td>Sept 27-29, 2016</td>
<td>ESBB</td>
<td>Vienna, Austria</td>
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<tr>
<td>Oct 4-8, 2016</td>
<td>World Dairy Expo</td>
<td>Madison, WI</td>
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<tr>
<td>Oct 15-19, 2016</td>
<td>ASRM</td>
<td>Salt Lake City, UT</td>
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<td>Oct 22-25 2016</td>
<td>AABB</td>
<td>Orlando, FL</td>
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<tr>
<td>Nov 15-18, 2016</td>
<td>Eurotier</td>
<td>Hanover, Germany</td>
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<tr>
<td>Dec 6-9, 2016</td>
<td>World Stem Cell Summit</td>
<td>West Palm Beach, FL</td>
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