

## LG QuantumFlux™ MBR/Submerged UF Membrane

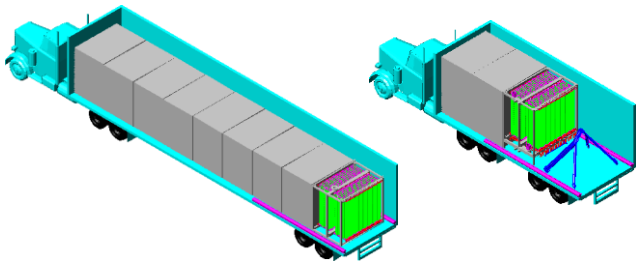
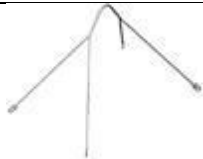
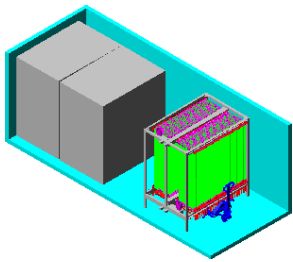
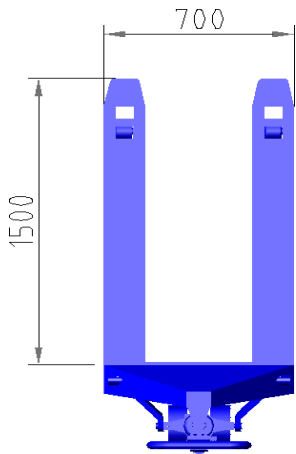
# Technical Service Bulletin 801

### MBR & Submerged UF Transportation, Receiving, Storage, and Disposal of Used Modules

#### Membrane Device Transportation

When transported by sea, the membrane device and accessories are loaded into containers for transportation; when transported by land, the membrane devices and accessories are loaded onto flatbed trucks for transportation.

Table 1 : Membrane Device Transportation

| Process | Figure  | Notes  |
|---------|---|--|
| 1       |    | <p>When shipped by sea, membrane devices and accessories are transported in 40-foot or 20-foot containers. Use high cube containers where possible.</p> <p>When transported by land, the membrane device and accessories are transported on flatbed trucks.</p>  |
| 2       |   | When loading, the spreader and accessories are put together for transportation.  |
| 3       |  | <p><b>Unloading:</b><br/>The membrane device can be unloaded using a crane or forklift. Before installing the membrane device, keep it in a secure area sheltered from sun and rain.</p> <p><b>Note: Do not open the outer packaging of the membrane skid.</b></p>   |
| 4       |  | <p><b>Precautions:</b><br/>When using a forklift to unload or transfer the membrane device, the forklift arm should be slowly extended under the membrane skid to avoid damaging the aeration box and membrane modules. The dimensions of the forklift used are that the opening of the two fork arms is not greater than 800MM and the length is not less than 1500MM. The distance between the front and rear of the skid frame bracket is 1280MM.</p> |

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### Receiving Inspection

After a shipment arrives, conduct a visual inspection of all packages to confirm that:

1. Shipment arrived without damaging the packaging or its contents.
2. All packages listed on the packing list arrived in good order.

 **CAUTION:** To avoid damage to the membrane module, the module should not be subjected to impact, drops, and excessive vibration.

 **CAUTION:** Take caution when opening the shipping container. Do not damage the membrane with the tools used to open the box.

 **CAUTION:** Two people are recommended to lift the module at all times.

MBR & Submerged UF membrane modules are shipped in cardboard boxes. LG Chem strongly recommends inspecting the product for any visible damage or defects immediately upon receipt. If any issues are encountered, please contact an LG Chem Customer Service representative before accepting the delivery to ensure that your rights are protected. In such cases, LG Chem will promptly identify possible causes of the damage and determine whether it occurred during transit.

Please notify your carrier or freight forwarder and a LG Chem Customer Service Representative IMMEDIATELY of any damaged merchandise or product shortages.

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**Storage**

Modules are shipped in cardboard boxes, typically containing 5 modules. Do not stack module boxes more than 5 layers: excessive stacking will damage the membrane or membrane modules. Keep the membrane module boxes dry during storage and prevent moisture from entering the boxes, as the integrity of the box will be compromised if wet.

Before use, the module(s) should be stored, in their original packing, in an area between 5-40°C (41-104°F), with good ventilation, no direct sunlight, and no corrosive substances.

Allowing the module to freeze by reaching temperatures below 0°C (32°F), may cause serious damage to the membrane.

After factory performance testing, membranes are preserved in a protective solution of 30% Calcium Chloride (CaCl<sub>2</sub>) and water. This prevents damage to the membrane, along with bacterial growth. Do not open the membrane module bags until ready to assemble the module(s).

LG Chem MBR & Submerged UF modules should NOT be stored in areas exposed to direct sunlight.

LG Chem MBR & Submerged UF modules should NOT be stored in areas where damage can occur from moving equipment such as forklifts and pallet jacks.

For long-term storage (greater than 60 days), periodically re-inspect the shipping containers to ensure that there is no physical damage or leakage. Any leakage may indicate a loss of the membrane preservative.

Please contact LG Chem Technical Services for instructions and supplies for re-preserving the modules.

Modules stored per the conditions listed in this bulletin, with original factory packaging and vacuum seal intact, are likely to meet expected performance for storage periods up to 12 months and possibly longer.

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### Disposal of Used Module

Used LG Chem membrane modules should be disposed of in accordance with all local and federal regulations. Used membrane modules can be disposed of as municipal waste provided that no preservation solution or other hazardous liquids remain within the module and no deposition of hazardous substances on the membranes at concentrations exceeding regulatory standards.

If the user wants to recycle the module, the material components by weight of an unused module can be found below:

| Material                              | Weight (%) |
|---------------------------------------|------------|
| Nitrile Rubber                        | 0.1 – 0.2  |
| ABS (Acrylonitrile-Butadiene-Styrene) | 15 - 30    |
| PVDF                                  | 60 - 80    |
| Epoxy (2Part)                         | 2 - 6      |
| Polyurethane                          | 2 - 6      |
| Silica Gel                            | 0.1 - 0.5  |

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