

Containerized Brackish and Seawater Reverse Osmosis Systems



Metito's Containerized Reverse Osmosis Water Purification System

Metito's containerized reverse osmosis water purification system is especially designed for use at remote locations and worksites, where mobility and ease of installation are crucial.

As an ISO container is used, it can be shipped without crating and placed directly onto a truck trailer for inland transportation. For short-term water treatment requirements, the air-conditioned container can be left in place on the trailer. For long-term use, it can easily be installed on level ground.

Similar to Metito's packaged treatment systems are highly automated and operating the system requires simple skills—an important consideration for remote areas where highly technical personnel maybe few or unavailable.

The water desalination equipment is identical to that of our skid-mounted reverse osmosis treatment systems but includes the pre-treatment and post-treatment within the container. The pre-treatment removes suspended solids and other components to a level that is suitable for direct feed to the membranes. The permeate water maybe subject to post treatment, to make it suitable for different applications such as drinking water, boiler feed, process cement mixing and many others.

The brackish water containerized system can be designed to treat different types of water such as, rivers, lakes and wells, depending on the choice of pre-treatment.

The seawater containerized system can desalinate both deep sea and beach well waters.





Size Range

Metito's standard 20-foot ISO container can be equipped with a range of packaged treatment plants. The brackish units handle capacities from 134m³/day (35,400 US gpd) to 403m³/day (106,000 US gpd). The seawater units handle capacities from 40m³/day (10,800 US gpd) up to 240m³/day (63,000 US gpd).

For larger capacities a 40-foot container can be used or multiple units used in parallel, alternatively equipment can be housed in separate containers.

Storage

For long-term storage of product water, Metito can supply any type of tanks including inflatable, glass lines and GRP panel type.

Accessories

- Trailer or skid-mounted generators to make the system fully self-contained are available. Solar PVC panels can also be adapted to improve power consumption.
- The containerized unit can be equipped with an inside laboratory.
- An additional container unit can be provided to store spares and chemicals or to be used as living quarters for on-site personnel. The laboratory work area can be included in this container, if preferred.

Field Proven for Minimal Maintenance

Metito's extensive experience as global provider of choice for total intelligent water management solutions, ensures trouble-free operations. Our systems have been operating successfully in some of the world's most remote and hostile environments for many years.

All the components that are being used are built with materials that have been tested thoroughly for their reliability in harsh and corrosive environments.

All desalination units are assembled and pre-tested in one of Metito's manufacturing facilities prior to shipping, thus ensuring direct start-up and production.

Feedwater Temperature

The containerized system is designed to operate at a range of temperatures. The minimum temperature which defines the design feed pressure, and the maximum temperature which defines the permeate water quality. The plant will smoothly work within this design temperature range with different system recoveries. Our system can handle a wide range of temperatures, from 20°C to 40°C.

Maintenance, when required, is simple since all components are easily accessible. Metito's extensive spare parts inventory in operational offices around the world ensures that the right part will always be available, when and where it's needed.

Specifications

A 6m (20ft) or 12m (40ft) ISO container, insulated and air-conditioned, houses the following equipment:

- Inlet feed pump
- Media filters/ ultrafiltration as pre-treatment
- Chemical dosing systems
- M-50 or M-50A and acid dosing systems with manual dosage control
- Thermoplastic or SS pre-filter with five micron polypropylene cartridge elements, vent-valve, inlet and outlet pressure gauges
- Stainless steel or aluminum bronze high pressure pump with TEFC motor
- Reverse osmosis membranes in GRP pressure housings
- Low pressure piping in PVC
- Full range of instruments
- High pressure piping in stainless steel
- A reject control valve
- Low feedwater pressure switch
- pH meter with high and low alarms
- Product flow indicator
- Zero recovery flush pipework and valves
- Flushing water tank, pipework and valves
- Hypochlorite dosing system for product water
- Post-treatment/re-mineralization
- Control panel to NEMA 12 or IP 54 including programmable logic controller (PLC), star-delta starter, integral disconnect switch, control circuit transformer, control switches, status and fault indication lights
- Standard power supply of 440-380V. 3 phases, 50 or 60 Hz
- Operation and maintenance manual (in English)

