



SOLVOX[®] Membrane Oxygenator



Background & Challenge

At Linde, we are making our world more productive. Whether providing industrial gases that are used in aquaculture or technologies that enable farmers to maintain fish health and reduce mortality, Linde helps the aquaculture industry be more productive.

With aquaculture expected to grow significantly in the coming years, Linde is ready to help the aquaculture industry to meet its growth challenges.

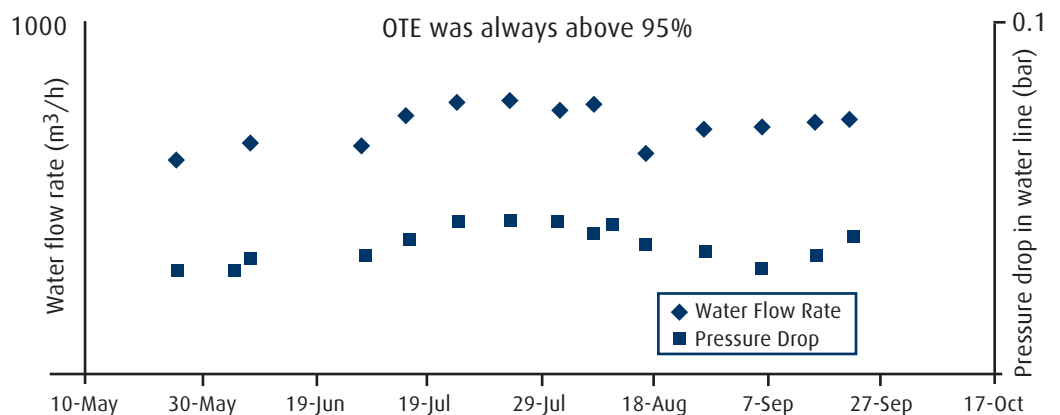
With more than 30 years of aquaculture experience, Linde is a leading resource for oxygenation and oxygen based technologies.

Improving Oxygenation of Water for Aquaculture

Linde's SOLVOX[®] membrane oxygenator is a proprietary technology designed for aquaculture systems that have high water flow rates. It can achieve high oxygen transfer rates (OTR) and high oxygen transfer efficiency (OTE), helping you control your costs without using a lot of space. Our proprietary oxygenator operates with a low water pressure drop, helping save power while meeting your oxygen requirements.

The proprietary oxygen injection system delivers high levels of mass transfer ensuring that oxygen is effectively mixed into the water.

A Single Linde Oxygenator Was Able to Maintain Optimum DO Level in the Fish Tank at Various Seawater Flow Rates



Based on customer experience – Individual results might vary.

Commerical Salmon Farm in Norway

Conditions

Total biomass in tank	150 ton of salmon
Sea water flow rate	900 m ³ /h (4,000 gpm)

Results

DO exiting oxygenator	18 mg/L
DO maintained in holding tank	9 mg/L
Oxygen transfer rate	Up to 10 kg/h per unit
Oxygen transfer efficiency	> 95%
Pressure drop	< 0.03 bar

Based on customer experience – Individual results might vary.

DO is used as an abbreviation for dissolved oxygen.

- Main Features**
- High oxygen transfer efficiency
 - Corrosion resistance
 - Low pressure drop with high water flow
 - Range of sizes to match capacity

High O₂ Transfer Efficiency and O₂ Transfer Rates with a Low Pressure Drop are the Key

The SOLVOX membrane oxygenator is a highly efficient oxygen dissolver that can be installed in existing lines with water flow rates that can exceed as much as 4000 m³ per hour. Our oxygenator is designed to work with closed holding tanks or land based recirculating aquaculture systems (RAS) where water is re-circulated and pumped through pipes to the tanks. Linde can offer oxygen flow control options to match the specific needs and control sophistication of our customers. The oxygenator has shown high reliability and requires little maintenance.



A Wealth of Experience and Support



When you choose Linde, you're selecting a support team that includes:

- Experienced scientists, engineers and customer service professionals
- A complete array of services is available as a part of Total System Approach
- Water application and gas dissolution experts
- Dedicated 24 hour service force for quick system disruptions

It's everything you need to improve the quality, yield and consistency of your products

Contact Linde Today

For more information about atmosphere and gas applications developed from years of industrial gas research with atmosphere, cryogenic and process gases, call Linde at **1.844.44LINDE** or visit our website at www.lindeus.com.

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