

Evaluating Your Diffuser Membrane Supplier

Conversion to Advanced Technology, Flexible Membrane Diffusers

Bulletin Brief

Purchasing membrane diffuser units is a significant investment decision. On any investment, it is important to know the quality and performance capabilities of the product being purchased. The membrane diffuser units and replacement membrane products offered by EDI provide superior process performance, maximum service life, reduced energy consumption, and require minimal routine maintenance for proper performance.

Technical Presentation

Membranes Should Be Engineered

There are many suppliers of membrane diffusers throughout the world. It is easy to find someone to manufacture a rubber hose or tube and simply cut holes in the material to create a diffuser. Unfortunately, this approach has been used by several manufacturers and minimal engineering has been considered for the following:

1. Mechanical properties of the base membrane material.
2. Mechanical requirements of the membrane which is perforated to allow air to escape.
3. Polymer formulation for specific performance requirements.

All of the above items can be engineered into the membrane material for superior performance in the intended service. Today, membrane diffusers have been engineered to perform well in:

4. High oil concentrations in oily wastewaters,
5. High temperature conditions,
6. High airflow applications, and
7. Maximum operating efficiency at low air rate conditions.

When evaluating membrane diffuser suppliers, it is important to understand the capabilities and resources of the supplier as well as the engineered properties of the membrane being considered.

Questions to Ask Membrane Diffuser Suppliers

When evaluating membrane diffuser suppliers, it would be important to know the following:

- Q.* How many years has the company been manufacturing membrane diffusers?

Q. Can the manufacturer supply quality membranes specifically formulated for municipal, industrial or specific wastewater applications?

A manufacturer's ability to engineer the membrane material to match specific wastewater applications is critical because there is no universal product that can be applied to all wastewaters.

Environmental Dynamics Inc. formulates and recommends:	
EPDM	Most domestic wastewater applications
Nitrile, Urethane	Superior service in oily wastewater applications
Silicone based compounds	Excellent performance in high temperature applications
Neoprene, Specialty Polymers	Other industrial or unusual wastewater applications

Q. Does the supplier carry adequate inventory to address emergency product needs?

Q. Can the membrane manufacturer supply specialty membranes on request?

Q. Does the supplier offer membrane evaluation services?

EDI offers a membrane evaluation program for difficult or unusual wastewaters. A test apparatus is available from EDI for field-testing. Field-testing allows the selection of the membrane material to be optimized as well as provides an opportunity to demonstrate the performance capabilities of different products. When evaluating applications with unusual conditions, the field test program is invaluable in determining the appropriate membrane material.

Q. Are application design services available?

EDI can provide full process and application design support to ensure that the aeration system meets the design objectives of your application. Applications requiring technical support should contact EDI for assistance.

For specific information on proper design and evaluation of your existing system contact Environmental Dynamics Inc. at 573-474-9456.