

Consumer Applications



Aquarium Bubbler

Porex engineers develop a porous plastic media for aerators used in fish aquariums with swimming results. The material produces much finer bubble sizes than porous ceramic, optimizing oxygen transfer into the aquarium's tank.



Design Challenge

Aquarium manufacturers rely on aerators to efficiently introduce gas bubbles into fish aquariums. Traditionally, fish aquarium component manufacturers turned to porous ceramic or alternately fabricated porous plates to diffuse a gas stream into fish tanks liquid media. However, the need for finer bubble sizes and lower price points created a need for Porex's porous plastic technology. Porex engineers were asked to manufacture a porous media that could be used in an aquarium diffusion application.

Solution

Gas flow rates, backpressures, pore size, pore volume, and pore morphology were all variables that needed to be carefully controlled parameters in the finished product. Porex engineers eventually settled on an oversized PE raw material for use in this application that provided nominal pore sizes in between 100 and 120 microns.

Results

The overly large pore size distribution of the part created low airflow resistance values and minimal backpressures. Additionally, the material's pore size distribution created bubble sizes that optimize oxygen transfer into the aquarium's tank.

By combining ideas, know-how and proven results with the highest standard of innovation and excellence, POREX Porous Media provides unique solutions for various applications.

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