Pore Size of Sparging Stone for Carbonating Applications - Tech Information

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Overview

Achieving consistent, high-quality carbonation in beverages and related products depends heavily on bubble size, gas-transfer efficiency, and the mechanical characteristics of the sparging stone used. The pore size of the stone directly influences the fineness of the bubbles produced, which in turn affects CO_2 absorption, carbonation uniformity, and process stability.

This guide provides clarity on the recommended pore size for carbonation applications and explains available product options and connection styles used in production environments.

Recommended Pore Size for Carbonation

A **10 µm pore size** is considered ideal for carbonation processes.
This pore size produces fine, uniform bubbles that offer excellent gas-liquid contact area, resulting in more efficient carbonation of beverages and other carbonated solutions.

Fine bubbles promote:

- Faster CO_2 dissolution
- Better saturation levels
- Improved product texture and mouthfeel in beverages

This makes the 10 µm stone the most widely selected option for carbonation lines.

Product Options for 10 µm Sparging Stones

We offer multiple configurations of 10 µm sparging stones, including:

- Various diameters to suit line size and flow requirements
- Multiple fitting and connector styles
- Versions designed for direct installation into sparging assemblies

In carbonation applications, these stones are typically installed directly onto a gas sparging line, using:

- Stainless steel tubing (SS tubing)
- NPT connectors for robust, leak-free performance

This setup supports the higher mechanical demands common in beverage carbonation processes.

Custom Pore Sizes Available

While 10 µm is the standard recommendation, other pore sizes can be manufactured **upon special request**.

These can be useful for:

- Non-beverage carbonation
- Specialized gas-liquid contact applications
- Process optimization requiring different bubble distributions

Users can reach MICROSOLV Customer Service by phone (1-732-380-8900, 9–5 EST) or email to discuss custom pore size needs and lead times.

Use Case: Carbonated Beverage Production

In beverage carbonation, sparging stones are often installed permanently within the carbonation line, where they must:

- Withstand repeated cleaning cycles
- Deliver stable bubble formation
- Integrate seamlessly with stainless steel line components
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