

Junkosha launches uniquely constructed High Barrier PFA Tubing solution at SEMICON West 2024

Fluoropolymer pioneers unveil durable tubing solution designed to provide semiconductor manufacturers with superior chemical resistance & gas barrier properties

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Junkosha, pioneers of sophisticated fluoropolymer application technologies, have launched their latest innovation for the global semiconductor manufacturing industry at this year's SEMICON West exhibition. Junkosha High Barrier PFA Tubing showcases a unique ability to prevent deterioration and gas permeation, one that places it as the ideal solution for semiconductor manufacturers looking to minimize tubing replacement frequency and lower Total Cost of Ownership (TCO) in semiconductor fabrication plants.

The challenge for today's semiconductor industry is producing smaller, faster and smarter chips to meet the evolving needs of new technologies at scale. The pursuit of these more advanced and powerful chips has led to increasing process complexity. Shrinking chip dimensions highlights the need for more stringent outcomes, necessitating new equipment, precision parameters, and rigorous control measures

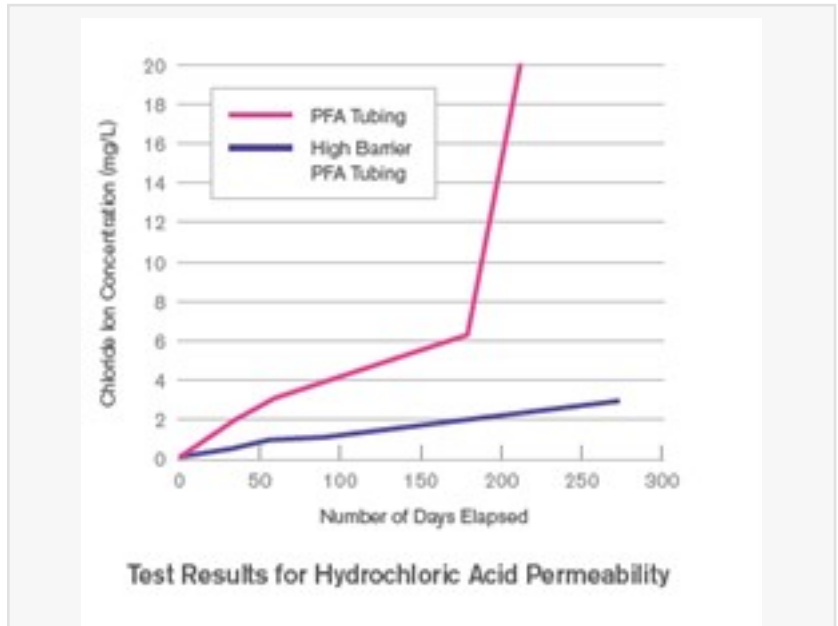


Figure 1 - Test Results for Hydrochloric Acid Permeability



Junkosha High Barrier PFA Tubing

in high-vacuum environments to minimize contamination. In this landscape, Junkosha has developed its High Barrier PFA Tubing as the most durable tubing solution available for piping in wet processes in semiconductor fabrication. Developed with two heat fusion-bonded layers, it offers an excellent barrier against strong acids, alkalis and organic solvents, resulting in a reduction in the number of replacements needed.

“Few facilities demand the level of cleanliness required in semiconductor fabrication plants, where particles as small as human skin cells can contaminate production” explains Shinsuke Kitazawa, Product Manager at Junkosha. “Our High Barrier PFA Tubing is distinguished by its unique construction, incorporating high-purity PFA for the inner layer and barrier fluoropolymer for the outer layer. This advanced design effectively reduces migration into internal fluids and prevents gasification and permeation of internal fluids through the tube to the external environment.”

Junkosha High Barrier PFA Tubing utilizes high-purity PFA for the inner layer, a standard choice among semiconductor manufacturers due to its chemical-resistant properties. The outer layer incorporates a fluoropolymer with high gas barrier properties, providing resistance against strong acids such as hydrochloric acid, nitric acid, and hydrofluoric acid, as well as strong alkalis, and organic solvents. Overall, it suppresses the deterioration of the tube over an extended period and minimizes the impact of the internal and the surrounding environment purity as shown in Figure 1. This innovative design not only improves the safety of the working environment, but also helps to reduce the TCO through decreased maintenance and corrosion suppression of the surrounding metal parts.

“Each new fab will need tubing for transporting liquids, slurries, and gases around the facility,” explains Shinsuke Kitazawa, Product Manager at Junkosha. “PFA stands out as one of the very few materials that is inert, stable, and impermeable enough to handle the aggressive chemicals used in fabs and to keep ultrapure chemicals—including water—free from particles and leachates. Backed by our commitment to quality and innovation, our High Barrier PFA Tubing is the trusted choice for high reliability PFA and superior gas barrier performance.”

For more information about Junkosha High Barrier PFA Tubing, click on:

<https://www.junkosha.com/en/products/ITF-03>.

SEMICON West brings the incredibly diverse global electronics supply chain together to address the semiconductor ecosystem's greatest opportunities and challenges through programs highlighting market intelligence, standards, sustainability, workforce development, supply chain management and much more. The event attracts visitors from around the world and from every major microelectronics company, including buying teams from the world's top capital spending IDMs, foundries, fabless, OSATs, and OEMs. The event is being held at the Moscone Center in San Francisco, California from July 9th to 11th.

For more information, click on <https://www.semiconwest.org/>.

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