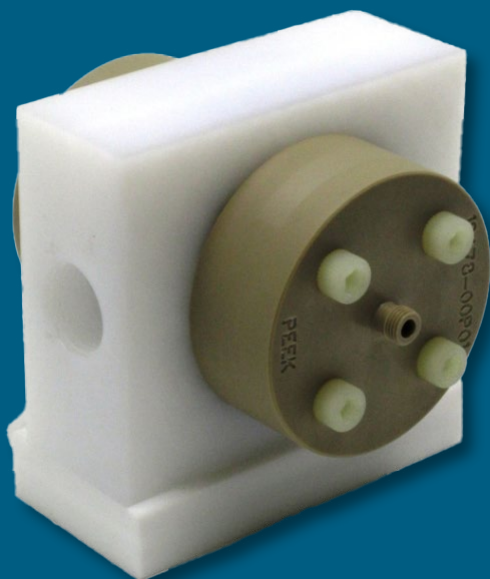


PRODUCT DATASHEET

# Teflon PFA/PEEK Process Flow Cell

Compatible with NIR and UV-VIS Analyzers



**More signal**

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**Less noise**

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**Lower detection limits**

- For sample streams that are incompatible with metal components, specifically HF semi-conductor baths
- For corrosive process streams containing strong acids, bases, peroxides, or halogenated compounds
- All metal-free construction

## Teflon PFA/PEEK Process Flow Cell

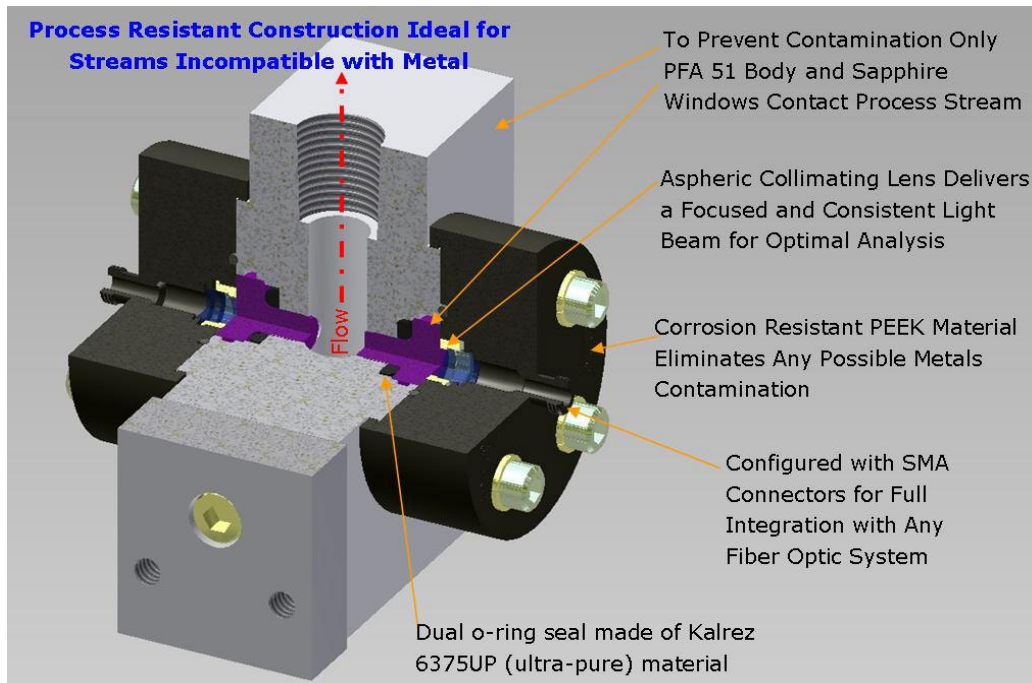
The Teflon PFA/PEEK Flow Cell was developed for sample streams that are incompatible with metal components, specifically HF semi-conductor baths. None of the cell's wetted parts are constructed of metal. Only smooth Teflon PFA and sapphire surfaces contact the process stream. Corrosion-resistant PEEK is used in the outer cell construction to eliminate any possible metal contamination originating from this part.

## A Simple, Serviceable Design

The Teflon PFA/PEEK Flow Cell is a convenient, compact, rugged sample interface that is easy to install and even easier to service. Key elements of the design include simple, serviceable o-ring seals, sapphire windows, and o-ring sealed optics to prevent ambient moisture infiltration. If necessary, the flow cell can be completely disassembled for inspection or deep cleaning. The reassemble step is easily accomplished without changing the pathlength, a crucial parameter for repeatable measurements.

## Process-Resistant Flow Cell Construction

The Teflon PFA/PEEK Flow Cell is designed to withstand corrosive processes. Since no metal parts encounter the liquid stream, the design is ideal for processes where even parts per billion levels of



metal contamination can create serious problems, as in semiconductor fab etching and cleaning steps. The Teflon PFA/PEEK Flow Cell also performs well in the presence of extremely corrosive streams containing strong acids, bases, peroxides, or halogenated compounds. Other major components of the flow cell are Teflon PFA and Kalrez® 6375UP (ultra-pure) o-rings. Elastomeric seals prevent leakage and protect the Teflon PFA/PEEK Flow Cell's vital internal optics. The process and processing environment dictate the actual o-ring material that is best suited for the application.

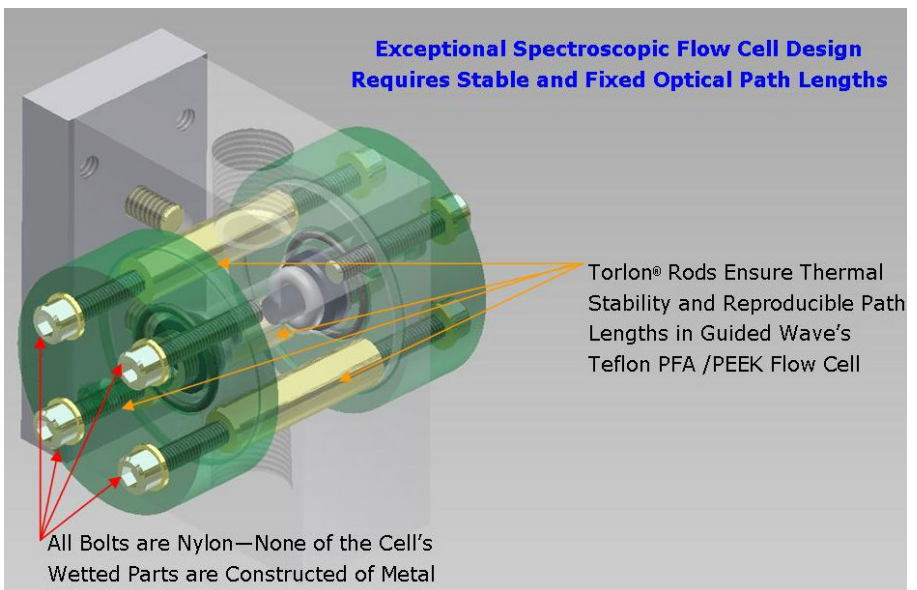
## Dual Seal for Added Safety

Perhaps the most crucial aspect of any online sample interface design is the sealing approach. Since process fluid streams will be under pressure and the composition is often hazardous leaks are unacceptable. Additionally, moisture infiltration from the external environment adversely affects performance too. Our brand utilizes multiple o-ring seals that effectively address both issues. This protects the expensive internal optics.

## Exceptional Light Transmission

Like all our sample interfaces, the Teflon PFA/PEEK Flow Cell provides exceptional optical performance. Internal optics result in a collimated light beam for consistently accurate measurements. Typically, peak transmission exceeds 45%. That means more signal, less noise, and lower detection limits for the measurement. The optics on the Teflon PFA/PEEK Flow Cell are permanently aligned at the factory.

As a result, there is no need for any optical adjustments in the field. Additionally, there is no chance for optical misalignment to occur under normal processing conditions or during servicing.



## Optically Matched with All Our Analyzers and Compatible with Most Other Spectrometer Brands

The sample interface is a crucial component of a complete fiber optic-based analyzer system. For maximum performance, the probe or flow cell must be optically matched with both the analyzer (spectrometer) and the fiber that transmits the spectral signal. All our sample interfaces, analyzers, and fiber optic cables are optically matched, so when used in combination they achieve the highest possible consistency and performance. The Teflon PFA/PEEK Flow Cell is also manufactured to facilitate full integration with any fiber optic system configured with SMA 905 connectors. This includes FT-NIR analyzers. When choosing a sample interface for an FT-NIR analyzer the current fiber core size must be taken into consideration. The Teflon PFA/PEEK Flow Cell design works best when used with fibers having a core diameter of 400 to 600 micron.

One of the primary advantages of UV-VIS and NIR process spectroscopy is the utilization of intrinsically safe fiber optic cables to remotely locate the analyzer relative to the sample interface (probe or flow cell) installed in the process. Get the full power of this technology and choose the Teflon PFA/PEEK Flow Cell along with one of our optically matched analyzers and process grade fiber optic cables – *for control you can measure!*

### Specifications

<b>Optical Pathlength:</b>	2; 5; 10; 20 mm
<b>Spectral Range:</b>	UV-VIS (200 – 800 nm); NIR (800- 2100 nm)
<b>Fiber Connector:</b>	SMA 905
<b>Optical Efficiency:</b>	>45% transmission from 800 – 1650 nm (%T)
<b>Temperature Range:</b>	0 to 150 °C (o-ring material dependent)
<b>Pressure Range:</b>	0 to 100 psi [690 kPa]
<b>Body Material:</b>	Teflon
<b>O-Ring Material:</b>	Kalrez® 6375 UP (wetted only)
<b>Process Connection:</b>	3/8 or 1/2 inch FNPT (pathlength dependent)

## GAIN REAL-TIME INSIGHT INTO YOUR PROCESS

Process Insights manufactures and delivers premium sensors, monitors, detectors, analyzers, instrumentation, and software that are mission-critical to keep your operations, personnel, and the environment safe – every day across the globe.

Get the most reliable, precision analytical technologies available on the market today. We will work to match your needs and budget, and provide the optimal, and most stable process analysis solution for your application.

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Process Insights is committed to solving our customers' most complex analytical, process, and measurement challenges everyday.

### Process Insights – The Americas

4140 World Houston Parkway Suite 180, Houston, TX 77032, USA +1 713 947 9591

### Process Insights – EMEA

ATRICOM, Lyoner Strasse 15, 60528 Frankfurt, Germany +49 69 20436910

### Process Insights – APAC


Wujiang Economic and Technology, Development Zone, No. 258 Yi He Road, 215200 Suzhou, Jiangsu Province, China +86 400 086 0106

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For a complete range of products, applications, systems, and service options, please contact us at: [info@process-insights.com](mailto:info@process-insights.com)

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**EVERYWHERE**