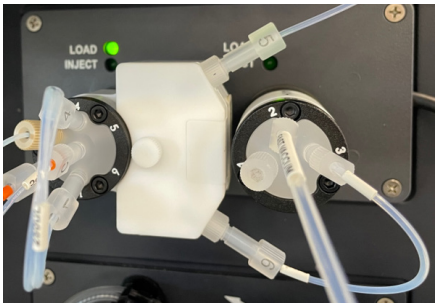
SampleSense Sampling Valve for Agilent ICP-OES instruments

High-speed analysis—less than 8 s per sample



The SampleSense dual sampling valve, installed on an Agilent ICP-OES instrument The valve is available in a variety of configurations.

The SampleSense automated sampling valve from Elemental Scientific (ESI) can be combined with an Agilent ICP-OES[1] to increase the speed of sample measurement. The SampleSense uses optical sensors to automatically sense and inject samples into the instrument and then triggers the measurement.

The SampleSense valve offers the following advantages:

- Reduces the time it takes to load a sample into the sample introduction system, which reduces the time it takes to measure a sample and the argon and power consumed
- Minimizes the sample volume aspirated into the instrument, reducing the maintenance required. This feature will be particularly beneficial if you are running food or environmental samples
- Minimizes the amount of sample required
- Handles samples of varying viscosities without the need to change method timing parameters
- No adjustment to instrument parameters is required—it's a plug-and-play accessory
- Detects sampling errors—if the sample loop is not filled for any reason, such as bubbles or a missing sample tube, the run will continue but the error will be reported in the ESI autosampler control software

Combining the SampleSense with an Agilent ICP-OES

The SampleSense valve can optionally be combined with the prep*FAST* valve injection automation system and/or an autosampler[2], also from ESI. To combine the SampleSense valve with an Agilent ICP-OES, you simply connect the tubing from the SampleSense module to the instrument sample introduction system and install the autosampler control software from ESI. The autosampler control software provides the link between the Agilent ICP Expert instrument software[1] and the ESI hardware.

1.Requires version 7.6 or later of the Agilent ICP Expert instrument software
2.The SampleSense can only be used with an ESI autosampler

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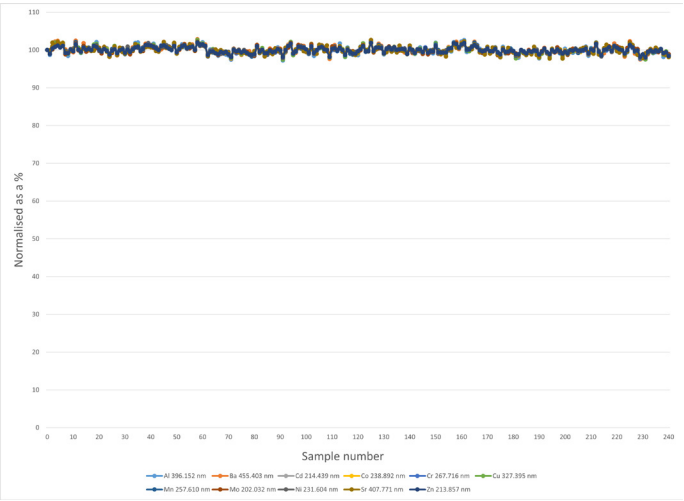
Measurement precision and speed

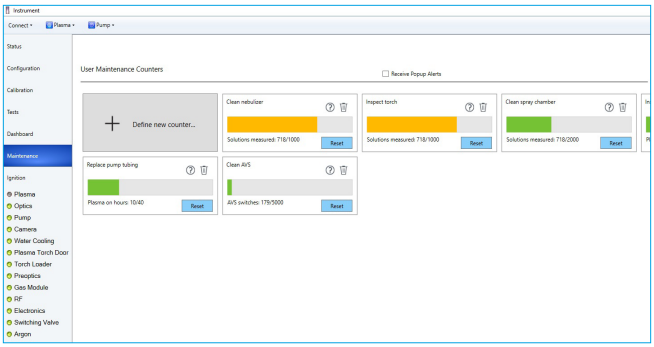
As shown in the graph below, the SampleSense valve enables high speed, precise, measurements. Eleven elements can be measured in less than eight seconds per sample.



240 samples were analyzed in approximately 30 minutes using an Agilent 5800 ICP-OES, fitted with a SampleSense valve. All %RSD were less than 1.1% and a measurment time per sample of less than 8 seconds was achieved.

Reducing instrument maintenance

As the SampleSense requires little sample, the amount of sample entering the instrument spray chamber and the plasma is low. Low sample volumes mean fewer solids to be deposited and reduced impact on other sample introduction components. Instrument cleaning and consumable replacements will be reduced.



The early maintenance feedback function of Agilent ICP-OES instruments tracks instrument use and alerts the operator when maintenance tasks are required.

The Agilent ICP Expert software includes an early maintenance feedback (EMF) function that alerts the analyst when maintenance is required, using counters to track instrument usage. When using a SampleSense valve, the counters can be adjusted to allow more samples to be measured before alerting the analyst that maintenance is required.

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