

# ICP-OES Productivity Package

SVS 2

## Technical Overview



### Make the Switch to Higher Productivity

Increase sample throughput and decrease turnaround time and operating costs with the Agilent SVS 2 ICP-OES Productivity Package. The SVS 2 provides:

- Fast, accurate results — the SVS 2 immediately rinses the sample introduction system while the next sample is presented to the instrument. Introduction of excess sample into the spraychamber is eliminated, reducing sample carry-over.
- Higher productivity — combine with Agilent's fastest ever autosampler, the SPS 3 Sample Preparation System, to more than double your productivity with the SVS 2.
- Easy upgrade — upgrade your existing SVS 1 to the SVS 2 as your sample load and throughput requirements increase.
- Time savings — the system is compatible with other high capacity autosamplers, each holding over 700 samples, for overnight operation.
- Reduced costs — shorter analysis times means less argon usage. More efficient handling of complex sample matrices extends the life-time of consumable items, reducing operating costs.
- Extended torch lifetime — the SVS 2 limits the amount of sample that reaches the torch, thus reducing torch wear.
- Robustness — the SVS 2 is ideal for challenging sample matrices. The metal-free liquid flow path is suitable for samples containing strong acids, HF acid, organic solvents and high levels of dissolved solids.



The Agilent SVS 2 is compatible with the Agilent 700 Series ICP-OES. The series delivers the full wavelength coverage and reduced interferences needed for determining major, minor, and trace elements. The SVS 2 enables you to more than double the productivity of the 700 Series ICP-OES — making the world’s most productive ICP-OES even more cost-effective for your laboratory.

## Reduced sample-to-sample cycle times

The SVS 2 (see Figure 1) introduces an innovative triple-stacked, 4-port switching valve. Samples are quickly loaded into the SVS 2 sample loop, ready for immediate analysis by the ICP, greatly reducing sample uptake delays. Pre-emptive rinsing of the sample line means analysis times of less than 30 seconds per sample can be routinely achieved.

The SVS 2 also features an internal T-piece within the valve, reducing dead volume and providing online addition of internal standard and ionization buffer solutions. A bubble injector automatically injects bubbles after the sample is loaded into the loop, isolating the sample from the rinse solution. This reduces the volume of sample required for measurement as tailing (or dilution) effects are minimized.

Combined, these features provide the additional benefits of faster stabilization of the analyte signal prior to measurement, and reduced washout times.

High-throughput laboratories typically measure more than 30 elements per sample and analyze, hundreds, even thousands of samples everyday. Using the SVS 2 with SPS 3 autosampler, typical sample-to-sample measurement time is reduced by 35 seconds (Table 1), so you can measure an extra 2000 samples per day.

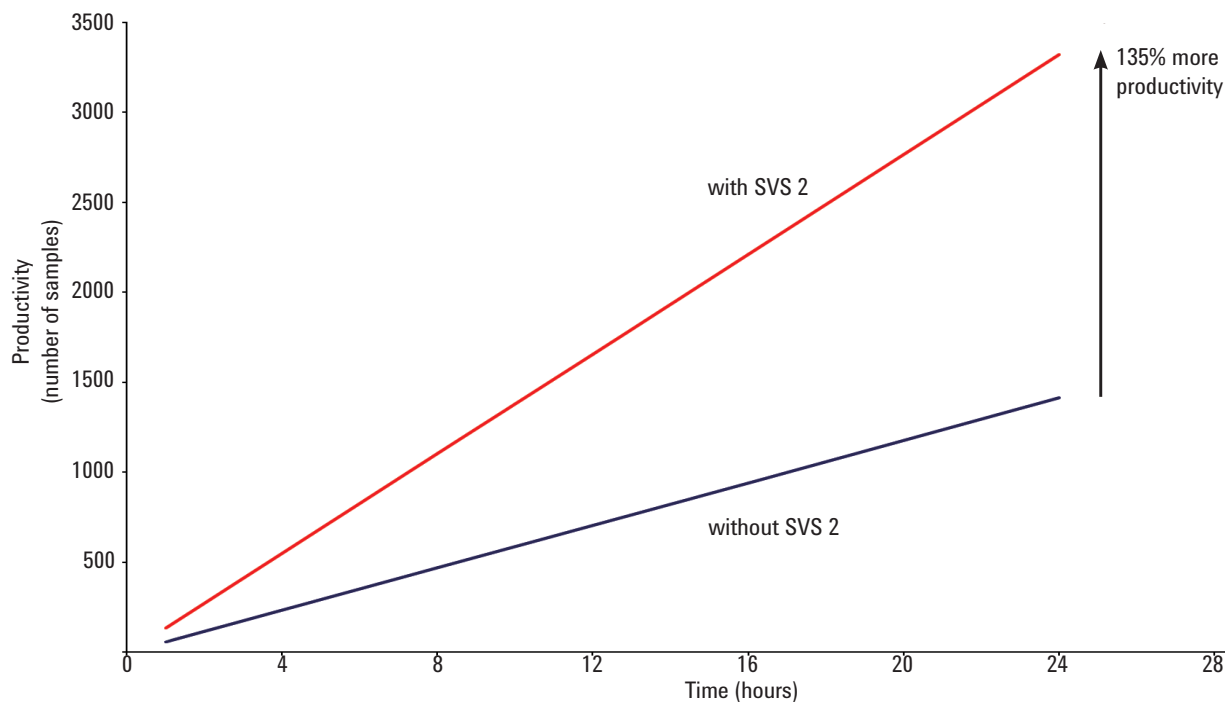


Figure 1. Color coding of tubing lines simplifies setup of the SVS 2

**Table 1.** Typical operating parameters for high-throughput analysis without and with the SVS 2. The rinse time for each mode is sufficient to achieve at least 4 orders of magnitude reduction in analyte signal intensity.

Operation	Without the SVS 2 720 ICP-OES + SPS 3 ONLY		With the SVS 2 720 ICP-OES+ SPS 3 + SVS 2	
	Analysis Time (s)	Actual rinsing time (s)	Analysis Time (s)	Actual rinsing time (s)
Move autosampler probe to sample	3	-	3	3
Sample uptake/loading delay	15	-	8	8
Instrument stabilization delay	10	-	5	5
Sample Measurement time	10	-	10	10
Move autosampler probe to rinse	3	-	-	-
Autosampler probe rinse time	20	20	0	0
<b>Total time</b>	<b>61</b>	<b>20</b>	<b>26</b>	<b>26</b>
<b>Analysis time saving</b>	<b>N/A</b>		<b>Save 35 seconds</b>	

# ICP-OES Productivity Package

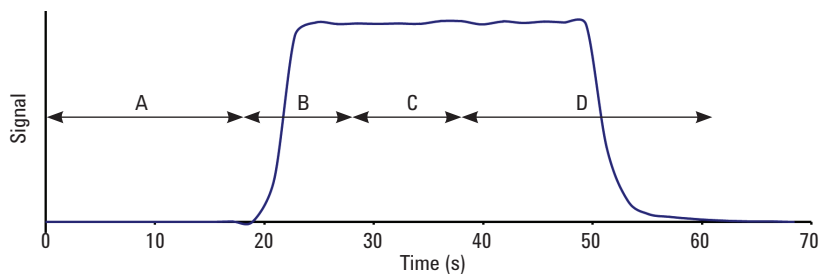


**Figure 2.** Increase your productivity to a level that suits your needs using the Agilent 700 Series ICP-OES coupled with the SPS 3 autosampler and SVS 2 accessory. The data shown is from the Agilent 720 ICP-OES.

## Timelines for ICP-OES instruments with and without SVS Productivity Packages

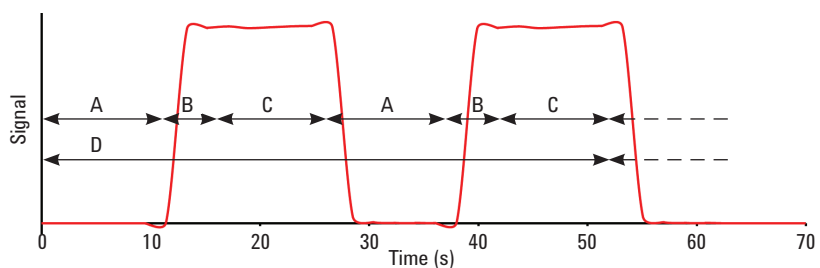
### Without SVS 2

- Analysis time is 61 seconds per sample



### With SVS 2

- More than double your throughput
- Continuous rinsing
- Faster sample uptake
- Shorter stabilization delays



**Figure 3.** Comparison of the sample uptake, measurement and rinse profiles of 100 mg/L manganese without an SVS 2 and with the SVS 2. The data shows a dramatic increase in productivity while maintaining consistent data quality. Timeline positions are A: Sample uptake, B: Stabilization, C: Measurement and D: Rinsing.

## Ordering Information

Description	Part number
<b>710/715/720/725 ICP-OES Productivity Package ordering information</b>	
SVS 2 Productivity Package for ICP-OES includes: <ul style="list-style-type: none"> <li>• Switching valve accessory with triple-stack, 4-port valve</li> <li>• SVS 2 Productivity Package software</li> <li>• Fast Uptake Pump, tubing and connector kit</li> </ul> SVS 2 sample loop kit must be ordered separately.	9910136400
SVS 1 to SVS 2 upgrade kit includes: <ul style="list-style-type: none"> <li>• Triple stack, 4-port valve</li> <li>• SVS 2 Productivity Package software</li> <li>• Fast Uptake Pump, tubing and connector kit</li> </ul> SVS 2 sample loop kit must be ordered separately.	9910136500
<b>SVS 2 Spares</b>	
SVS 2 EzyFit Sample Connector: 0.5 mm ID x 1.6 mm OD tubing (qty 10)	1610146100
Routine maintenance parts for SVS 2 triple-stack, 4-port valve (replace every 12 months)	3610020400
Spare SVS 2 Tubing Kit (does not include sample loop)	7910063800
SVS 2 sample loop kit, 0.25 mL volume	9910143200
SVS 2 sample loop kit, 0.5 mL volume	9910143300
SVS 2 sample loop kit, 1.0 mL volume	9910143400
SVS 2 sample loop kit, 1.5 mL volume	9910143500
SVS 2 sample loop kit, 2.0 mL volume	9910143600
SVS 2 sample loop kit, 2.5 mL volume	9910143700
SVS 2 sample loop kit, 3.0 mL volume	9910143800
SVS 2 sample loop kit, 3.5 mL volume	9910143900
4 channel pump	3810005600
1.0 mm ID PTFE sleeved inert probe for SPS 3	9910112000
Blanking plugs, set of 3	G3138-65129
<b>Fast Uptake Pump</b>	
Routine maintenance parts for Fast Uptake Pump (replace every 12 months) (Requires tool 7910064600, ordered separately.)	7910064500
Spare Fast Uptake Pump Tubing Kit (includes bubble injector)	3710066700
Uptake pump tool	7910064600

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