

Should You Automate the Preparation of Calibration Standards?



Compare the costs: Manual standard preparation vs. an automated solution



If you've been trying to replace the manual labor associated with preparing calibration standards and diluting samples, this simple cost calculator can help you make your business case. The worksheet is designed to help you quantify the true cost of manual calibrations over a year. For any values you don't know accurately, enter a reasonable estimate.

Parameter		Enter values here
A	What hourly rate do you typically associate with staff time?	<input type="text"/> \$ per hour
B	How long does it take to make a set of ICP-OES calibration standards?	» <input type="text"/> hours
C	How many sets of standards are made for the different analyses each month?	<input type="text"/>
D	Monthly cost for calibration prep: A x B x C	\$
E	What is your monthly cost for bulk stock solutions or commercial standards?	<input type="text"/> \$
F	What is your monthly cost for consumables used in standard preparation (e.g., pipette tips)?	<input type="text"/> \$
G	What is your monthly cost for acids and other reagents?	<input type="text"/> \$
H	Monthly cost of calibration consumables: E + F + G	\$
I	How many times per month are incorrectly made standards the source of calibration error?	<input type="text"/> per month
J	How many samples have to be rerun after recalibration?	<input type="text"/> samples
K	What is your cost-per-sample?	<input type="text"/> \$ per sample
L	Monthly cost of calibration errors: (A x B) x I + (J x K) x I	\$
M	Your total monthly calibration cost: D + H + L	\$
N	Total amount that manual calibrations cost your lab each year: 12 x M	\$

If your annual cost of manual calibrations is more than half of the cost of an autodilutor, you have an excellent business case to buy one.

With a payback period of two years or less, an autodilutor would also improve your productivity and reduce errors.

Using commercial prepared multi element standards may also prove to be cost effective, compared to using single-element bulk standards. The business case will be particularly strong if you are doing lots of rework due to contaminated or incorrect standards.

Learn more

About the Agilent 5110 ICP-OES:

www.agilent.com/chem/5110icpoes

About ICP-OES supplies:

www.agilent.com/chem/icp-oes-supplies

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