

SYRINGE VALIDATION and CALIBRATION

If your laboratory is involved in GLP, ISO, GMP, NAMAS, ANSI, BSI or National Standards Protocol, then you will appreciate the importance of instrument calibration and its traceability. Although essential, this is often a time consuming, error prone and costly exercise to perform.



1. CERTIFICATE OF CONFORMANCE

SGE supplies a syringe conformance certificate with every syringe to guarantee the syringe meets all specifications. This syringe conformance certificate satisfies protocol requirements for syringes and provides traceability back to International Standards.

SGE syringes are produced under a quality manufacturing management system independently certified in accordance with ISO9001:2008. All measuring equipment involved in production processes is calibrated and traceable to international standards and records are maintained. Through adherence to our quality system requirements, SGE ensures that syringe displacement volume will meet our specification for accuracy and reproducibility.

Certificate Supplied with every SGE Syringe



Syringe Conformance Certificate

This syringe has been manufactured using measuring equipment traceable to International Standards. SGE Analytical Science ensures that the displacement volume is within the conformance specifications. For applications requiring individual syringe calibration, SGE Analytical Science offers a factory calibration service. Contact your local SGE Analytical Science office or visit our web site.

Figure 1. Syringe Conformance Certificate

This certification is included with every SGE syringe and guarantees it has passed our quality standards.


Some of the 30 checks carried out on SGE syringes before they pass our quality standard:

- Volume conformance and accuracy to ensure a syringe falls within the specified displaced volume ranges of $\pm 1\%$ for Plunger-in-Barrel syringes and $\pm 2\%$ for Plunger-in-Needle syringes.
- Liquid and gas leak checks.
- Plunger 'feel' checks to reduce the risk of plunger binding as a result or irregularities.
- Needle contamination checks.
- Functional tests such as dry pumping the plunger on an autosampler to ensure there is no binding.
- Aesthetic inspection.

2. CERTIFICATE OF CALIBRATION - AVAILABLE FOR ALL SGE SYRINGES

SGE offers a factory calibration service, at an additional cost, for any syringe nominated by you at the time of purchase. These syringes are supplied with a Certificate of Calibration providing volume conformance and traceability. For identification each calibrated syringe is uniquely numbered and marked with this number.

To order a calibrated syringe simply add 'CAL' to the end of the part number when ordering. For example; if you require a calibration certificate for part number 002000, 10 μ L fixed needle syringe; order part number 002000CAL.



Certificate of Calibration

This certificate of calibration provides traceable displacement volume accuracy for the enclosed syringe. It should be noted that the precision of dispensed volume will depend on operating conditions and operator technique.

Volume accuracy has been measured using equipment traceable to International Standards.
A copy of SGE's method of calibration is available on request.

Part No: _____

Code: _____

Serial No: _____

Plunger Diameter at tip: _____ \pm _____
(barrel diameter for gas tight syringes)

Scale length: _____ \pm _____

Full syringe capacity: _____ \pm _____

Needle volume (nominal): _____

Date: _____ Signed: _____

Quality Control
MN00295_Rev0 03/08

Figure 2. Certificate of Calibration

PRODUCT DATA

3. EVOL® - WORLD'S FIRST USER CALIBRATED DIGITAL ANALYTICAL SYRINGE

SGE's eVol® – Digital analytical syringe, is the world's first user calibrated analytical syringe.

To achieve the highest level of accuracy possible eVol® is easily calibrated and calibration factors can be saved for 20 syringes, enabling laboratories to comply with stringent global laboratory standards. A calibration factor for each syringe is used to adjust the software instructions controlling the motor to compensate for any slight variations in the positively displaced liquid volume. This will ensure your eVol® will dispense more accurately than any other manual syringe-based dispensing technique.

The calibration procedure for eVol® is based on a gravimetric measure of the volume dispensed from the eVol®. Every eVol® is factory tested to ensure its operation complies with a comprehensive list of criteria.

For more information on eVol® visit www.sge.com/evol.



Figure 3. eVol® Electronic Syringe Starter Kit.

For more information contact our technical customer support team on: techsupport@sge.com

AUSTRALIA & PACIFIC REGION

SGE Analytical Science Pty Ltd
Toll Free: 1800 800 167
Tel: +61 (0) 3 9837 4200
Fax: +61 (0) 3 9874 5672
Email: support@sge.com

CHINA

SGE Shanghai Representative Office
Tel: +86 21 6407 9382
Fax: +86 21 6407 9386
Email: china@sge.com

MIDDLE EAST

SGE Gulf
Tel: +971 6 557 3341
Fax: +971 6 557 3541
Email: gulfsupport@sge.com

EUROPE

SGE Europe Ltd
European Head Office
Toll Free: 00800 2790 8999
Toll Free Fax: 00800 2626 2609
Tel: +44 1908 568 844
Fax: +44 1908 566 790
Tel France: +33 1 69 29 80 90
Fax France: +33 1 69 29 09 25
Tel Germany: +49 (0) 6155 / 60746 0
Fax Germany: +49 (0) 6155 / 60746 50
Email: europe@sge.com

INDIA

SGE Laboratory Accessories Pvt Ltd
Tel: +91 22 24715896
Fax: +91 22 24716592
Email: sgeindia@vsnl.com

JAPAN

SGE Japan Inc
Tel: +81 45 222 2885
Fax: +81 45 222 2887
Email: japan@sge.com

UNITED STATES OF AMERICA

SGE Incorporated
Toll Free: (800) 945 6154
Tel: +1 512 837 7190
Fax: +1 512 836 9159
Email: usa@sge.com

 **SGE Analytical Science**
www.sge.com