

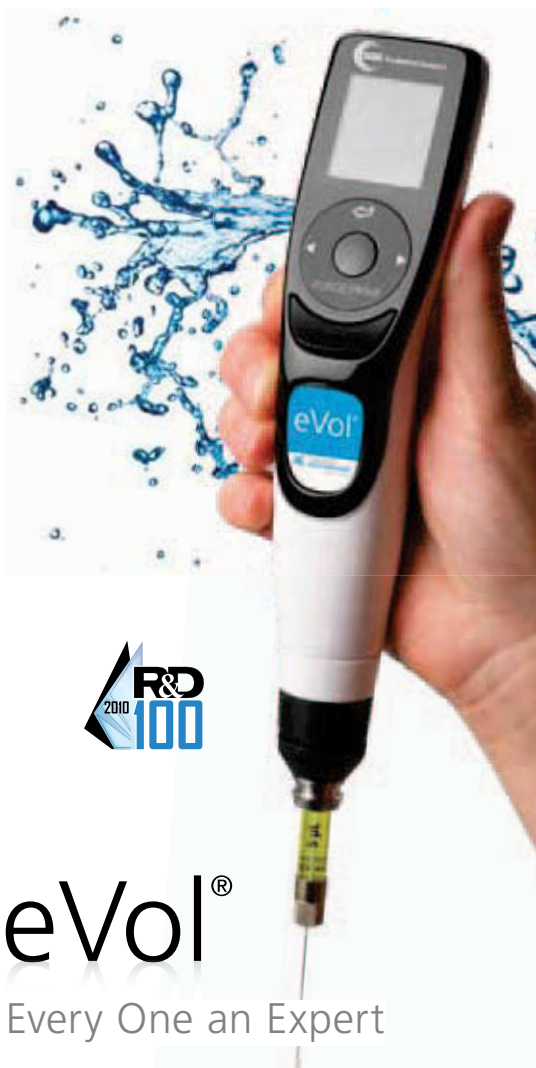


eVol® and Accessories

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Packaging of the innovative eVol® kit.





eVol® Every One an Expert

eVol® is the coupling of two precision devices: a digitally controlled electronic drive and an XCHANGE® (Patent Pending) enabled analytical syringe. Refer to page 18 for further information on XCHANGE®. The result is a digitally controlled positive displacement dispensing system that can be programmed to reproducibly and accurately perform a wide variety of liquid handling procedures.

- The programmable digital drive accurately and precisely dispenses liquids independent of the user's skills – allowing more efficient workflow scheduling and a reduction in the re-analysis of incorrectly processed or false positive samples.
- XCHANGE® analytical syringes are easily and quickly changed allowing them to be dedicated to individual liquids to prevent possible cross-contamination of reagents.
- To comply with stringent laboratory standards (e.g. GLP, GMP, FDA) eVol® is easily calibrated. eVol® is the world's first user calibrated analytical syringe. The gravimetric calibration procedure is simple, intuitive and can be performed at appropriate intervals. Calibration factors are stored for up to ten XCHANGE® syringes and quickly loaded when the syringe is changed.
- Accuracy $\pm 0.2\%$ for a calibrated syringe at full scale.
- Precision RSD (%) at full scale:
 - eVol® 500 μL syringe 0.3 %.
 - eVol® 100 μL syringe 0.3 %.
 - eVol® 50 μL syringe 0.4 %.
 - eVol® 5 μL syringe 0.5 %.



APPLICATIONS

Typical applications for eVol® include:

- Preparation of calibration standards.
- Preparation and addition of internal standards.
- Precise dispensing of aqueous and non-aqueous liquids.
- Sample dilution.
- Instrument (GC and LC) injections.
- Serial dilutions.
- Micro titrations.
- TLC spotting.
- Routine dispensing.
- Precise measurements.
- Spiking.
- Quantitative NMR.

Multiple operating modes maximize the flexibility of eVol® use:

- **Dispense** – aspirate and dispense the same volume.
- **Repeat Dispense** – repetitive dispensing of a desired volume.
- **Manual** – aspirate and dispense varying volumes (i.e. titrations).
- **Custom** – create and store methods with parameters tailored to your solution (up to 98 steps).

Custom programs can be created tailoring methods that standardize laboratory work flows, improve efficiencies, reduce variation and better utilize laboratory staff. The automation of traditionally manual processes will increase throughput and generate valuable resource savings, highly sought after in commercial laboratories.

Expert Tip :

Adjustable operational speed allows for sample variations, such as viscosity.



eVol® MEPS™



eVol® is ideal for use with MEPS™ - Micro Extraction by Packed Sorbent.

MEPS™ performs the same function as SPE, namely the purification or speciation of samples, but with the advantage that MEPS™ works with much smaller samples (as small as 3.6 µL) than full scale SPE.

eVol® and MEPS™ together offer improvements in workflow, resource savings and their combined use is ideal for method development.

The eVol® custom programming function allows MEPS™ to be automated – the sample processing, extraction and injection steps are performed using the same syringe.

The MEPS™ Barrel-Insert-Needle (BIN) contains the stationary phase and is built into the syringe needle.

The dimensions of the sorbent bed ensure that the performance remains identical to conventional SPE devices when used for extraction of similar samples.

MEPS™ BINs can easily be fitted to eVol® MEPS™ Syringes and are available in a variety of common SPE phases.

Refer to pages 222-225 for more information about MEPS™ and the range of stationary phases.

SGE is continuing to develop eVol® to include:

- Slow dispense.
- Password protection.
- More syringe options.

Contact SGE for more information.

eVol® NMR Edition

SGE has recognized the advantages eVol® brings to NMR sample preparation and has developed the 'NMR Edition' of eVol®. eVol® 'NMR Edition' improves accuracy and confidence in results, improves workflow and delivers cost savings.

eVol® 'NMR Edition' features extra long stainless steel needles (115 and 180 mm) that prevent contamination and enable 'in tube' sample dilution and mixing.

Recovery of precious samples from NMR tubes is also possible with eVol® allowing samples to be stored in cost effective vials while the NMR tubes can be emptied, washed and reused.



eVol® and Accessories



eVol® – Electronic Syringe

| Description | Part No. |
|--|--|
| eVol® Electronic Syringe Starter Kit | 2910000 |
| Contains: <ul style="list-style-type: none"> eVol® Electronic Syringe (handle). 3 eVol® Syringes – 5 µL, 50 µL and 500 µL. Stand. | <ul style="list-style-type: none"> Universal Charger. Comprehensive Instruction Manual. Disc with Manual in Multiple Languages. |
| eVol® NMR Edition | 2910100 |
| Contains: <ul style="list-style-type: none"> eVol® Electronic Syringe (handle). 3 eVol® Syringes – 5 µL syringe is supplied with a 115 mm needle, 50 µL and 500 µL syringes are supplied with both 115 and 180 mm needles. | <ul style="list-style-type: none"> Stand. Universal Charger. Comprehensive Instruction Manual. Disc with Manual in Multiple Languages. |
| eVol® Electronic Syringe (handle only) | 2910005 |

eVol® XCHANGE® and eVol® MEPS™ Syringes



| Description | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Replacement Needle Part No. | Replacement Plunger Part No. | Syringe 3 Pack Part No. | Syringe Part No. |
|----------------------------------|--------------------|--------------|----------------|----------------|------------|-----------------------------|------------------------------|-------------------------|------------------|
| 5 µL | 50 | 25 | 0.5 | 0.12 | Bevel | 036910 | 2910380 | 2910320 | 2910020 |
| 5 µL (supplied without needle) | – | – | – | – | – | – | 2910380 | – | 2910021 |
| 50 µL | 50 | 25 | 0.5 | 0.2 | Bevel | 038110 ^V | 2910382 | 2910322 | 2910022 |
| 50 µL (supplied without needle) | – | – | – | – | – | – | 2910382 | – | 2910023 |
| 50 µL for MEPS™ applications* | – | – | – | – | – | – | 2910382 | – | 2910027 |
| 100 µL | 50 | 25 | 0.5 | 0.2 | Bevel | 038110 | 2910383 | 2910329 | 2910029 |
| 100 µL MEPS™ applications* | – | – | – | – | – | – | 2910383 | – | 2910028 |
| 500 µL | 50 | 23 | 0.63 | 0.32 | Bevel | 039110 [^] | 2910384 | 2910324 | 2910024 |
| 500 µL (supplied without needle) | – | – | – | – | – | – | 2910384 | – | 2910025 |
| 500 µL for MEPS™ applications* | – | – | – | – | – | – | 2910384 | – | 2910026 |

^V All SGE 25 – 500 µL replacement needles can be used with 50 µL and 100 µL eVol® syringes. [^] All SGE 1 – 2.5 mL replacement needles can be used with 500 µL eVol® syringes. * The 50 µL, 100 µL and 500 µL eVol® MEPS™ syringes can be used with the range of MEPS™ BINs. Please refer to page 225 for the listing of available MEPS™ BINs.

Alternative Replacement Needles

| Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Needle Code | Pack Size | Part No. |
|-----------------------------------|--------------|----------------|----------------|------------|-----------------------|-----------|----------|
| 5 µL eVol® syringe needles | | | | | | | |
| 51 (2") | 22 | 0.028" | 0.17 | LC | N5-5.1/22LC 5UL EVOL | 5 | 036912 |
| 50 | 23 | 0.63 | 0.15 | Cone | N5-5/23C 5UL EVOL | 5 | 036914 |
| 70 | 25 | 0.50 | 0.20 | Bevel | N5-7/25BV 5UL EVOL | 5 | 036916 |
| 70 | 26 | 0.47 | 0.20 | Cone | N5-7/26C 5UL EVOL | 5 | 036918 |
| 115 | 25 | 0.50 | 0.20 | Bevel | N5-11.5/25BV 5UL EVOL | 2 | 036920 |

50 µL and 100 µL eVol® syringes can be used with all standard SGE 25-500 µL replacement needles. 500 µL eVol® syringes can be used with all standard SGE 1-2.5 mL replacement needles. Refer to pages 66 and 67 for the complete list of replacement needles.

Accessories for eVol®



Part No. 2910010
eVol® Stand



Part No. 2910012
eVol® Universal Charger



Part No. 2910040
eVol® Replacement Battery



Part No. 2910030
eVol® Charging Stand