



## Application Note 220

### Handling Techniques and Procedure for Liquid Samples

The analysis of liquid samples can be done quite easily on the Exeter Analytical CE440 analyzers without sacrificing accuracy or precision. By implementing the following procedure for handling liquid samples, all CE440 users can now be assured of quality results.

#### EQUIPMENT

Exeter Analytical Capsule Sealer	P/N 150-00054
Tin Capsules; 6x2.9 mm	P/N 6703-0418
Nickel Sleeves; 7x3 mm	P/N 6703-0412
Syringe, 10 ml	P/N 318-00010
or Micropipette & Plunger	Wiretrol, 5 ul

#### PROCEDURE

Place the tin capsule in a sturdy holder made of grease-free metal. Place the micropipette or syringe, with plunger fully inserted, into the liquid sample. Pull back on the plunger to draw liquid into the pipette or syringe (~2.5 ul is usually enough). Withdraw the micropipette or syringe from the liquid sample and insert it into the tin capsule so that the tip is resting on the bottom of the capsule. Be sure not to touch the inside walls of the tin capsule with the micropipette or syringe at any time during this procedure; this may lead to poor seal or allow volatile matter to coat the inside walls of the tin capsule above the seal. Press plunger down until an ample amount of liquid is in the capsule. Pull the micro pipette or syringe out of the capsule, again without touching the inside walls, and seal the capsule immediately with the Exeter Analytical Capsule Sealer or equivalent. Weigh the capsule on an ultra microbalance. If weight loss is observed over a short period of time, either seal the capsule with more force, or dispose of the capsule and repeat the sample loading procedure. Clean the syringe or dispose of the micropipette and clean the plunger with methanol and a dry tissue.

Place the sealed capsule inside a nickel sleeve and proceed with the sample injection, or place the sample in the proper position on the HA-64 wheel.

## NOTES

- 1) Tin capsules are recommended over aluminum capsules in order to prevent trouble associated with capsule “jetting”.
- 2) If aluminum capsules are used, (NOT recommended with the HA-64), be sure to place capsule on the ladle so that the crimped end is facing the combustion tube packings. This will aid the capsule in remaining on the ladle in case of “jetting”.
- 3) When analyzing liquids for oxygen, silver capsules must be used (without nickel sleeves). If running an HA-64, the silver capsules must be run through the SSI port.

The logo for Exeter Analytical, featuring the letters 'EAI' in a large, bold, serif font. A horizontal red line passes through the middle of the letters.

**EXETER ANALYTICAL**

University of Warwick Science Park, The Venture Centre, Sir William Lyons Road,  
Coventry CV4 7EZ. United Kingdom

Tel: +44 (0)24 76323223 Fax: +44 (0)24 76323221 Email: [sales@exeteranalytical.co.uk](mailto:sales@exeteranalytical.co.uk)