

Varian SpectrAA-400 Zeeman Graphite Furnace Atomic Absorption Spectrometer
Operating Instructions
(Rev.C 07Apr04)

1. Fill wash reservoir with ~ 0.01% nitric acid (100 uL conc. nitric acid + 500 mL water)
2. Turn Instrument On
 - Printer, monitor, computer, spectrometer, Zeeman generator
3. Position snorkel exhaust duct over furnace
4. Open argon cylinder valve and alternate gas valve if used in method
 - Inform Lab Manager when cylinder pressure falls to 500 psi. Pressure should be ≥ 300 psi to perform a run.
 - Regulator should be set @ 40 psi
5. If Zeeman software opens when computer is turned on, exit to DOS prompt and enter "sglrunz.bat". This will open Zeeman software and start a new file to store the signal graphics for your run. Note that the time and date on this PC are incorrect, so you should record the date/name of the signal graphics file for future reference.
6. General notes about software:
 - Configured like a book
 - **F10** – Index – access to other pages
 - * use F10 to Index at any time to get back to index for a menu of pages
 - **F6** used to go to entered program or page number and to turn page.
 - The **home** key toggles through the choices of the highlighted selection
 - See plastic overlay on keyboard for function key codes
7. From "Program Directory" (#2 on Index), choose and enter program number to be run. Press F1 to recall program.
 - Confirm that proper lamp is in place and turned on
8. Review the following method parameters and edit if necessary:
 - Method
 - Instrument Parameters
 - Notes
 - Standards
 - Sampler
 - Signal Graphics settings
 - Furnace Parameters

To save, go to Program Storage and either overwrite current program or assign new program number.

9. Go to "Sampler" page:

-Align sampler:

1. Stand on stool and catch sampler before it enters the graphite tube
2. Check that capillary is in the middle of the top hole of the graphite tube, and at the correct height (just above the bottom of the graphite tube).
3. Adjust if necessary.

-Purge syringe:

1. Press 'Rinse' to fill overflow
2. Stroke plunger to draw out air bubbles
3. Push the key to rinse the sampler, and while the sampler is rinsing, remove the plunger to let out the air bubbles, and then replace the plunger before the rinsing noise stops.

10. Go to "Optimization"

- Align HC Lamp (2 knobs on lamp)
- Rescale Phopmultiplier Volts (PMT) if necessary
- Record signal and PMV in your notes. These will be recorded on log at end of run.

11. Go to "Signal Graphics"

- Perform necessary number of tube cleans and record in the log book

12. To Start an Automatic Run:

- Go to "Index" → "Program Modes" → "Autorun"
- On "Sequence Selection" page: F1 to clear old sequence, then enter program to be run → F6 to "Sequence Control"
- Enter tray positions of first and last sample to be analyzed
- Use F6 to page through the following... view and edit if necessary:
Error Protocol, Notes, Report Format, Sample Labels
- F6 to Signal Graphics
- Load samples, standards, blank, modifier, etc.
- Press Alt-F10 to zero instrument
- Press F11 to start

13. Watch first injection using mirror to confirm proper droplet formation and position.

14. Shut down

- Press F12 to stop run
- Turn off printer, monitor, computer, instrument, argon
- Complete run log and billing log in GEL database on another PC... the GFAA PC is not networked
- Dispose of samples and other solutions and waste properly
- Clean glassware