

## Varian Star 3600 CX Gas Chromatograph

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### General Instruction

This GC has ECD and FID detector and dedicated for fluorinated compounds (SEMETECH project). You have to get training and permission from the person in charge to use this GC (Kwangjoo; [kl2013@columbia.edu](mailto:kl2013@columbia.edu)).

*See GC Guidelines for in detail.*

[http://turmac13.chem.columbia.edu/group/instrument/gc\\_guideline.htm](http://turmac13.chem.columbia.edu/group/instrument/gc_guideline.htm)

### Installation

Varian GC 3600 (System ID: 3600-02182)

Detector A: Thermal conductivity detector (TCD)/  
-- Carrier gas to injector (He)

Detector B: Electron Capture Detector (ECD)/  
-- Carrier gas to injector (H<sub>2</sub>), make-up gas (ultra pure N<sub>2</sub>)

Column A: Packed column (Varian CP-Sil-5B, 2m)

Column B: Capillary column (SPB tm 5, Supel Co.)

Oven A: TCD

Oven B: ECD

### Test Condition

See Table 6 (page 2-28) in manual for details.

See 14.2 (page 2-30) for ECD Test Chromatogram

See 14.4 (page 2-32) for TCD Test Chromatogram

### Operation Instruments

1. Increase head pressure to 15 (to maintain the reference flow about 30 cc/min ).
2. Turn on make-up gas (N<sub>2</sub>) knob, if you would like to use ECD for detector.
3. Go to <GC configure> to select detector (A for TCD, B for ECD) and column/injector (A for TCD, and B for ECD) and also set up temperature. If finished, press <Reset>.
4. To build up the program (Method), go to <Build/Modify>, select method <Method #> and then set up specific conditions by answering the each questions. Look up “operation” part from manual (p. 3-32~3-40) to know the specific condition for each section in building method.

You can quickly get the ideas of the limit or range of value by pressing <Prompt> on GC keypad.

5. If finished, press <Activate> and <Method#>.
6. Go to <Status> to check if the GC is ready to run.
7. Set up computer for recording the chromatogram.  
Choose <HP 3365 VA> and check running time is correct.  
To edit method for PC, go to <Method>, <Edit method> and press <OK>. Go to <Method>, <Load>, <Run control> and <Sample intro> and specify your experiments and sample information.
8. If three green lights are on for <Ready>, <Status>, and <Method> on the GC, now it's ready to inject sample.
9. Inject 1  $\mu\text{L}$  of sample with GC syringe and press button to start recording the chromatogram on the computer. Don't overload samples (especially ECD detector).
10. To finish the GC, cool down the oven temperature to 50 degree.  
Decrease the head pressure to 5. Double check everything is fine before you leave GC.

**Emergency Contact:**

Kwangjoo: kl2013@columbia.edu

For service call: Varian 1-800-926-3000 (Tom Hoover: ext 4040 )