Standard Operating Procedure for the Perkin Elmer model 1600 FTIR.
8/5/2007

The FITR is capable of scanning gas samples using the BUCK gas cell. When using the gas cell do not expose the cell to water or alcohol as this will damage the cell. Take care not to touch the ends of the cell. To scan plastics use the plastic insert adapter located in the FTIR drawer. The Durascope attachment is used to scan liquids and solids. Liquids may also be scanned using the liquid cell. Consult lab personnel for assistance.

1. Switch on the FTIR, the power switch is located on the lower left side of the instrument.
2. Open the main tank valve on the nitrogen cylinder. The flow-rate should be preset to approximately 50 ml/min. To purge the sample chamber of air the nitrogen should flow for approximately 20 minutes before running a sample.
3. Press the (Proceed) button – soft key - located at the top right of the FTIR control panel.
4. Log on to the computer located to the left of the FTIR.
   Log on as (username = analab) (password = Letmein!).
5. Start the (Spectrumv2.00) software from the desktop.
6. Insert the sample. If you are using the Durascope see the section on Durascope operation. After inserting the sample wait 5 minutes before scanning to purge the sample chamber.
7. Using the Spectrum software, go to (instrument) and click on (scanbackground). Label file as desired.
8. Save background as new stored background.
9. Click on (Print) under (File Option) menu to print the background scan.
10. Insert the sample you wish to scan in the FTIR sample holder. Close cover and wait 2 minutes to re-establishing nitrogen purge.

11. Go to (instrument) select (scan sample).
12. Name sample. Verify the (Ratio vs. File) option is selected.
13. Scan sample.
14. When sample is scanned, select the background sample on the lower left hand corner of the screen. Go to (File) (Close) this will close the background scan and display the spectra of your sample as compared to the background.
15. Select the sample scan by highlighting the filename in the lower left hand corner of the window. Go to (View) and click on (Full Scale).
16. To label peaks go to (View) and click on (Label Peaks).
17. To remove peak labels go to (View) and click on (Clear All Peak Labels).
18. To add comments go to (View) and click on (Add / Edit Text).
19. To view peak area / height or to change the view from absorbance to transmittance go to tools and click on (A), (T) or the peak icon as desired.
20. Print from the print icon or (File) (Print).
21. To save go to (File) (Save As). Use ASCII file format which can be converted into Excel.

Sample Preparation

Liquids:

1. Swing sample press to the back.
2. Place O – ring centered on diamond sampling area.
3. Place desired amount of liquid in O-ring.
4. For volatile liquids cover sample with glass cup, for best results place volatile liquids in refrigerator for at least 3 minutes prior to test.

Solids:

1. Swing sample press to the back.
2. Grind solid with mortar and pestle until fine.
3. Place crushed sample over center ring completely covering the area. Verify coverage by viewing the LCD.
4. Swing sample press over center position.
5. Obtain a stainless steel or polycarbonate pin, fasten pin to swing arm.
6. Twist the large black knob on the sample press to apply pressure on the sample. The “Load” gauge on the DuraScope will display a green light. Continue twisting the knob until the first yellow light appears at the number 8. Do not twist further.