

VII. Equipment

F. GPC (DMF and CHCl₃)



Sample preparation

1. Samples for GPC analysis should be pure (confirmed by NMR).
2. The solvents used for GPC are HPLC grade DMF (with LiBr) and HPLC grade chloroform.
3. The polymers should be dissolved in the corresponding solvent one day before you run the GPC.
4. The concentration of the samples should be around 1mg/mL. (1mL solution is enough)
5. The samples need to be filtered by 0.45 μ m PTFE filter before analysis. (after dissolving for one day)
6. The information of the samples should be recorded in the GPC checklist file in the dropbox.
7. If you have any questions, please ask Chao.

Running GPC Sample

1. Double click the EcoSEC icon on the desktop.
2. From the EcoSEC logon dialog box, log on to the Acquisition Control. Enter the username (EcoSEC) and password (tosohgpc), select the Acquisition Control program (the blue icon on the left), and click [log on].
3. When the Acquisition Control program is open, a monitor screen is displayed. Click [Power] button at top left corner to start the instrument. (Check if the remaining solvent is enough)
4. To execute warmup, click the [Warmup] key on the toolbar of the monitor screen. During warmup, the upper status indicator on the monitor screen changes to **Warmup**. (Warmup will take a few hours)

5. When the instrument is turned on, the display backlight is illuminated. Press the [Rack Eject/Insert] key (triangle) in the control section of the instrument to eject the sample rack. Place the sample cups on the sample rack and press the [Rack Eject/Insert] key.
6. Go to the Acquisition Control program and click the [Sample Queue] icon which is the second blue icon on the left. Enter the information of the samples, including cup number (accord to the number in the sample rack), sample name, injection volume (10) and UV wavelength.
7. Click the [Analysis] key on the toolbar of the Acquisition Control program to start analysis. The lower indicator indicates the data acquisition status (during acquisition, **Acquisition** is displayed).
8. To shut down the instrument, click [shutdown] on the toolbar of the monitor screen. When [shutdown] is selected during analysis, shut down is executed after analysis.
9. If you have any questions, please ask Chao.

Data Analysis

1. Double click the icon named EcoSEC on the desktop.
2. Logon to the Analysis program using the EcoSEC Logon dialog box. Enter the user name (EcoSEC) and password (tosohgpc), select the Analysis program, and click the [Log on] key.
3. Click [browse] to select your result (find date and sample name).
4. Click [Peak Edit] in the Analysis program screen to display the Peak Editor Screen.
5. Click [Draw], click the start position of the peak, and move the mouse to the peak end position while pressing the left mouse button.
6. Select the standard listed at the lower left (PS or PMMA) and click [Calculation].
7. Click [Report] in the toolbar of the Analysis program to get the report.
8. If you have any questions, please ask Chao.