

GPC-DMF Manual

Krystyna Brzezinska (kbrzez@mrl.ucsb.edu)

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SAMPLE PREPARATION: Polymer **must be perfectly soluble** in DMF. Prepare solution 6-8 mg of the polymer in 2 mL of DMF. Sample concentration affect both viscosity and injection volume. While small sample amounts produce narrower peaks, viscous samples may require larger, more dilute solution.

Table 1. Recommended Sample Concentrations

Molecular-weight Range	Sample Concentration
0 to 25,000	<0.25%
25,000 to 200,000	<0.1%
200,000 to 2,000,000	<0.05%

After filtration through 0.45 μ m filter transfer solution into the auto-sampler vial (3/4 of the vial must be filled). Available small inserts for vials (150 and 300 μ L).

ADD SAMPLES to the running GPC (only red icon is active):

1. Edit- **Alter Running Sample**- OK. Red and green icons should be active.
2. Insert rows, change name, vial #. Don't forget to load carousel with vials.
3. Don't change rows: Condition Columns; Equilibrate; Purge Injector; Purge Detector; Ramp Flow Down, or PDA lamp OFF; Injection volume 100 μ L and # of injections 1.
4. Click on the **GREEN ICON**. Only red icon should be active. For automatic results use "Run and Report", continue on Fault- Run.
5. If you are not satisfied with integration you can change it (see analysis) and print it again.

RUN SAMPLE when instrument idle (only green icon is available):

1. Delete unused rows. Insert more rows if necessary- change name, vial #. Load carousel with your vials.
2. Don't change rows: Condition Columns (ramp flow up to 1 mL); Equilibrate; Purge Injector; Purge Detector; Condition Columns, Ramp Flow Down, or PDA lamp OFF; Injection volume 100 μ L and # of injections 1.
3. Click on the green icon. For automatic results use "Run and Report", continue on Fault- Run.
4. If you are not satisfied with integration you can change it (see analysis) and print it again.

ANALYSIS:

1. **MOLECULAR WEIGHT:** Open "Browse Project" from the Empower- Results- open your run with left mouse. Using left mouse integrate signal, Quantitate (icon). Click on the icon Save ALL- close analysis window. Update Results. If you need to integrate few signals which are close to each another use CTRL-ALT and click with left mouse between signals
2. **REPORT:** With right mouse click on your updated analysis- **Preview/Publisher** -Open Preview/Publisher with left mouse- Use the Report Method- GPC Default Individual Report- OK.
3. **SCALE CHANGE:** after closing first window with right mouse click on the GPC results- Chromatogram Properties- Scaling- change Y-start and Y-end- Apply- close. You must save properties to be able to print. After you finish please ALWAYS change properties- Y should be ~ 50 and save. Don't save any changes to the **GPC Default Individual Report**.
4. **PMMA CALIBRATION:** Empower-Browse Project- Polymers- Results- Open Go to File- Open Processing Method- PMMA cal.- Open. Go to Edit-Clear Integration- Integrate with left mouse- Quantitate (icon)- Save All (icon)- Close Window- Update Results Table. Open results (Processing Method should be PMMA cal)- Print Report (see analysis).
5. **OVERLAY:** Empower- Results- with left mouse (SHIFT) select data- Tools- Compare.

UV DATA:

1. To change wavelength- in the RUN window- Edit- UV- change wavelength (can be used from 200-800nm)- save. After you finish please change it back from 300-600 nm- Save.
2. Analysis- Channels- UV Data. Click on signal with right mouse- Extract Spectrum- Extract Chromatogram. Export UV data- copy and paste into Paint. Export data as Paint. 3D plot- Window- 3 D Plot

EXPORT DATA:

1. Empower- Browse Project- results-choose your run- Database- Export Method- ASCII- Browse- Choose driver- write name of your file- OK
2. SAFELY remove a memory stick.