

## DMF GPC Manual – Weck Lab

### *Preparation of a polymer sample for GPC analysis:*

- Prepare a 1 mg/ml sample solution in HPLC grade DMF
- **FILTER SAMPLE** through a 0.45  $\mu\text{m}$  syringe filter into a HPLC vial. **NEVER** inject samples without filtering them first.

### *Setting up a new GPC run:*

- Open Lab Solutions software – Instruments – DMF GPC
- File – Open Method File (Date – Project 1 – Methods) – load latest calibration file and select Download and Close
- Set pump flow to 1 ml/min
- Let GPC equilibrate for 30 minutes.
- On left panel, select Main – Realtime Batch – Wizard
- Modify the following:
  - Batch Table (select either New or Append depending on whether you want to create a new batch table or add samples to an existing one)
  - Injection Volume (typically 50-100  $\mu\text{l}$ ) Injection volume should **NEVER** exceed 100  $\mu\text{l}$ \*
  - Select Unknown only
- Select Next and modify:
  - Sample Name and Sample ID, deselect Auto-increment
  - Data File Name
  - Vial #
- Select Next 3X, then select Save Batch File and enter the file location (your folder), select Finish
- After GPC is equilibrated, at the top of the software panel select RID R. Flow ON/OFF, then Balance RID (wait about 1 minute). Select RID R. Flow ON/OFF again, Zero Detector A and Zero Detector B. Select Batch Start from the top menu.

### *Analyzing Data:*

- Back in initial Lab Solutions menu – Postrun – GPC Postrun
- Open data file from explorer or File – Open Data File
- Select either UV or RID channel from the top menu
- Integrate polymer peak by selecting the Manual Integration Bar from the top menu
- Select Molecular Weight Distribution from the top menu to check your  $M_n$ ,  $M_w$ , and dispersity

### *Shutting Down GPC:*

- Back in the Realtime Analysis Program – File – Open Method File – Load Shutdown Menu
- Set pump A flow to 0 ml/min and select Download
- Put the recycling line back to the solvent bottle