EcoSEC HLC-8321 GPC/HT
Standard Operating Procedure

These instructions are intended for reference only, and will not replace the thorough training required for proper system operation. Contact a superuser/staff member with questions or to report a system problem.
Written by Dr. Manju Rajeswaran (Aug., 2021)
1. Enable the tool in **BADGER**

2. Check the solvent supply. Make sure at least 200 mL of solvent is available. If not, contact staff to refill. (NOTE: Your sample must be completely soluble in 1,2,4-trichlorobenzene).

3. Sample preparation: Dissolve ~0.5 mg of sample in 5 mL of solvent. Filter the sample through a 0.2 um PTFE syringe filter. Your sample solution must be transparent with no particulates. Transfer the sample in a 10mL vial, cover it with a piece of Aluminum foil and close the lid.

4. Open the autosampler door using the key.

5. Place your sample in the autosampler. Remember the cup number.

6. Start the EcoSEC software by double-clicking the EcoSEC icon.
7. Start the EcoSEC application. Click on the purple blue diamond icon and login with username **Labuser** and password **polymer1**. The red icon is to analyze your data after you finish collecting it.

8. Press Power to start

9. Click on the "gears" icon on the main toolbar on the left. Next, at the bottom of the screen, click the "warm-up" tab. Column temperature takes about 3 hours to stabilize, set warm-up time to 180 minutes.

10. Select “Warm-up” on top of the screen.

   Select “OK”

11. Warm-up light will come on. Wait till “Warm-up” light change to “Ready” light.
12. To set up your samples, first enter the sample info. Click on the vial icon.

13. The most recently run queue will be displayed on screen. To start a new queue, click “new” and enter the name for your sample queue. Note: all of the samples you run today will be saved under this queue name.

14. For each sample: enter the proper cup number (position on the auto sampler tray), name, run time and injection volume. Use the default settings for rest. Default method is setup to collect data at 140C.

15. Make sure you have correct polarity of your polymer if the output (peak) is on the negative side, you will need to reverse the polarity.

16. Double check to make sure your sample(s) is loaded into the proper position(s) in the autosampler. Select Monitor and monitor progress of your experiment.
<table>
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<th>17.</th>
<th>It is recommended to wait (about 30 minutes) till baseline is linear and stabilized before starting – all pressure, temp and RI signals need to be stable.</th>
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<td>18.</td>
<td>To initiate the run, click the analysis dropdown menu and select Start.</td>
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<td>19.</td>
<td>When your run(s) have finished, select power (to power off) from main menu. Take your sample cup out of autosampler, empty sample cup out please remember to take your sample back with you. Clean the sample cup thoroughly and put it back in the box.</td>
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<td>20.</td>
<td>To analyze - double click on the EcoSEC desktop icon and then select the analysis (red diamond) application. Log in with username <strong>LabUser</strong> and password <strong>polymer1</strong>.</td>
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21. Note: The analysis application will first populate a previously analyzed sample(s). To locate your sample, click on the browse button and find your queue on the day it was run. Then click on the sample you want to analyze.

22. Select the most current calibration method for analysis.

23. To determine the Mn, Mw, and dispersity index of your samples, click “Peak Edit” from the Calculation drop down menu. Use the Draw, Move, and Delete menu options (at the top) to edit your peaks.

24. Finally, select "Calculation--Edited Peak". For each selected peak, the software will use the calibration curve to calculate the Mn, Mw, and dispersity index.
25. Record the calculated values. To generate a PDF report, save your data (Chromatogram--Save; type anything in the "reason" dialog), then Report--Print Chromatogram Report.

26. **BADGER LOGOUT:** Don’t forget to disable the tool in badger after you’re done.