

Preparative GPC Manual
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Sample preparation: Prepare solution max. 0.1 g of the polymer/2 mL of THF. Calculate how much of the polymer you have to separate and make 10-20 mL of the solution at once. **MUST BE SOLUBLE** in THF. After filtration through 0.45 µm filter you can inject on the column.

Do not overload GPC columns. Sample concentration affect both viscosity and injection volume. While small sample amounts produce narrower peaks, viscous samples may require larger, more dilute samples. Table 1 lists the recommended concentration of sample for optimal results.

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%

Run Sample:

Open Empower:

Click on Run Samples:

Project- Preparative, Ch. System- Preparative GPC-OK

1. Write/choose:
 - Sample Name: ?
 - Function: Inject Samples.
 - Method Set: Prep 6 ml min.
 - Vial: 1
 - Injection volume: max 2000 mL.
 - Run Time: 45 min.

2. **Slowly increase Flow Rate** from 0.1 mL to 6 ml/min. After increasing for each 1 mL wait until pressure is stable.
 - Flow A = 1 ml-OK-Pressure ~ 118
 - Flow A = 2 ml-OK-Pressure ~ 282
 - Flow A = 3 ml-OK-Pressure ~ 447
 - Flow A = 4 ml-OK-Pressure ~ 635
 - Flow A = 5 ml-OK-Pressure ~ 835
 - Flow A = 6 ml-OK-Pressure ~ 1035Use **Stop Flow** icon only in emergency situation.

3. Injection:

- Wash injector (few times) with 2 mL of THF. Make sure that injector is in the load position.
- Load max. 2000 mL of the filtered solution into the injector. Use syringe with flat needle.
- Click on **PREPARE** icon. Wait until **INJECT** icon on the desktop will be active. Inject sample moving injector's arm to inject position and same time click on **INJECT** icon on the desktop. Observe signal and collect solution into the vial or into waste bottle.
- From time to time inject pure THF to be sure that no polymer was left inside the injector or on the column. After 45 min move injector's arm to the load position and you are ready to inject another sample.

4. After using GPC don't forget:

- Move injector's arm into the load position.
- Recycle solvent moving tube into the pure THF bottle.
- Slowly decrease Flow Rate from 6-0.1 mL/min. See increasing Flow Rate.