What is claimed is:

1. A method of preparing a chromium-based catalyst for the polymerization of an olefin into a polyolefin, the method comprising:

contacting a chromium-based catalyst with a reducing agent in a solvent to lower an oxidation state of at least some chromium in the chromium-based catalyst to give a reduced chromium-based catalyst, wherein the chromium-based catalyst comprises a chromium oxide catalyst;

drying the reduced chromium-based catalyst at a drying line-out temperature; and

adjusting the drying line-out temperature to change the flow index response of the reduced chromium-based catalyst.

2. The method of claim 1, wherein the reducing agent comprises an organoaluminum compound, and wherein the solvent comprises an alkane.

3. The method of claim 1, wherein the reducing agent comprises triethyl aluminum (TEAL).

4. The method of claim 1, wherein the chromium-based catalyst comprises an inorganic oxide support having a pore volume of about 1.1 to about 1.8 cubic centimeters (cm3)/g and a surface area of about 245 to about 375 square meters (m2)/g.

5. The method of claim 1, wherein the chromium-based catalyst comprises an inorganic oxide support having a pore volume of about 2.4 to about 3.7 cm3/g and a surface area of about 410 to about 620 m2/g.

6. The method of claim 1, wherein the chromium-based catalyst comprises an activated and supported chromium-based catalyst, and wherein drying comprises evaporating at least a majority of the solvent.

7. The method of claim 1, wherein contacting the chromium-based catalyst with the reducing agent allows the chromium-based catalyst to react with the reducing agent to give the reduced chromium-based catalyst.

8. The method of claim 1, wherein contacting comprises contacting the chromium-based catalyst with the reducing agent in the solvent at a reaction temperature lower than the drying line-out temperature, and wherein the reaction temperature is in the range of 20° C to 60° C, and the drying line-out temperature is in the range of 40° C to 90° C.

9. The method of claim 1, wherein the drying is initiated after substantially all of the reducing agent contacted with the chromium-based catalyst has been consumed in a reaction of the reducing agent with the chromium-based catalyst.

10. The method of claim 1, wherein drying comprises filtering the reduced chromium-based catalyst to remove solvent at a temperature of less than 30° C.