What is claimed is:

1. A method of operating a polyolefin reactor system, the method comprising:

feeding a chromium oxide catalyst through an inline reduction system to a polymerization reactor where the chromium oxide catalyst includes an inorganic oxide support having a pore volume of about 2.4 to about 3.7 cm^3/g and a surface area of about 410 to about 620 m^2/g;

adding diethylaluminum ethoxide (DEAlE) to the chromium oxide catalyst in the inline reduction system to reduce an oxidation state of at least a portion of the chromium in the chromium oxide catalyst; and

polymerizing an olefin into a polyolefin in presence of the chromium oxide catalyst in the polymerization reactor, wherein the chromium oxide catalyst is not contacted with the DEAlE prior to feeding the chromium oxide catalyst through the inline reduction system.

2. The method of claim 1, wherein feeding the chromium oxide catalyst comprises feeding the chromium oxide catalyst substantially continuously through the inline reduction system to the polymerization reactor.

3. The method of claim 1, wherein the inline reduction system comprises a mixer that contacts the chromium oxide catalyst and the DEAlE.

4. The method of claim 1, wherein DEAlE and triethylaluminum (TEAL) are added to the chromium oxide catalyst in the inline reduction system.

5. The method of claim 1, comprising contacting the chromium oxide catalyst with additional reducing agent in another system prior to feeding the chromium oxide catalyst through the inline reduction system.

6. The method of claim 5, wherein the additional reducing agent contacting the chromium oxide catalyst in the another system is different than the DEAlE contacting the chromium oxide catalyst in the inline reduction system.

7. The method of claim 1, comprising specifying a ratio of an addition rate of the DEAlE to a feed rate of the chromium oxide catalyst through the inline reduction system to give a desired flow index of the polyolefin.

8. The method of claim 1, comprising adjusting a ratio of an addition rate of the DEAlE to a feed rate of the chromium oxide catalyst through the inline reduction system in response to a measured flow index of the polyolefin.

9. The method of claim 1, comprising adjusting via the inline reduction system an aluminum concentration on the chromium oxide catalyst or an aluminum to chromium molar ratio on the chromium oxide catalyst to give a desired flow index of the polyolefin.

10. The method of claim 1, comprising adjusting an addition rate of the DEAlE to maintain an aluminum to chromium molar ratio or an aluminum concentration on the chromium oxide catalyst in response to changes in a feed rate of the chromium oxide catalyst to maintain a flow index of the polyolefin.