CLAIMS:

1. A method for forming a lubricant boiling range product, comprising:

exposing a 600°F+ (316°C+) portion of a hydrocracked effluent to a supported catalyst under effective hydrogenation conditions to form a hydrogenated effluent, the supported catalyst comprising 0.1 wt% to 5.0 wt% of a Group VIII noble metal on a silica support, the supported catalyst further comprising 0.3 wt% to 2.5 wt% alumina deposited on the silica support, the supported catalyst having a ratio of aluminum atoms in tetrahedral sites to octahedral sites of at least 1.0, the supported catalyst having a relative acidity of less than 1 when measured using the 2MP2 Isomerization Test, wherein less than 3 wt% of the molecules in the hydrocracked effluent boiling above 700°F are converted to molecules boiling below 700°F in the hydrocracked effluent when measured at a reaction temperature of 354°C;

dewaxing the hydrogenated effluent under catalytic dewaxing conditions to form a dewaxed effluent; and

hydrofinishing at least a portion of the dewaxed effluent under hydrofinishing conditions to form a hydrofinished effluent comprising a lubricant boiling range product.

2. The method of claim 1, further comprising exposing a feedstock comprising a lubricant boiling range portion to a hydrocracking catalyst under hydrocracking conditions to form the hydrocracked effluent; and

separating the hydrocracked effluent to form a fraction comprising the 600°F+ (316°C+) portion of the hydrocracked effluent.

3. The method of claim 2, wherein the feedstock comprises a hydrotreated feedstock.

4. The method of claim 3, wherein the hydrotreated feedstock comprises a hydrotreated effluent, the hydrotreated effluent being cascaded to the hydrocracking catalyst without intermediate separation.

5. The method of claim 1, wherein the 600°F+ (316°C+) portion of the hydrocracked effluent comprises 50 wppm or less of sulfur.

6. The method of claim 1, wherein the catalyst comprises 0.3 wt% to 2.1 wt% alumina deposited on the silica support.

7. The method of claim 1, wherein the catalyst comprises 0.5 wt% to 2.2 wt% alumina deposited on the silica support.

8. The method of claim 1, wherein the effective hydrogenation conditions comprise a temperature from 75°C to 425°C; a hydrogen partial pressure from 100 psig (0.7 MPa) to 3000 psig (20.7 MPa); a liquid hourly space velocity from 0.1 hr^{-1} to 5 hr^{-1} LHSV; and a hydrogen treat gas rate of from 35.6 m^3/m^3 to 1781 m^3/m^3 (200 SCF/B to 10,000 SCF/B).

9. The method of claim 1, wherein the Group VIII noble metal comprises Pt.

10. The method of claim 9, wherein the Group VIII noble metal further comprises one or more of Pd, Ir, or Rh, a molar ratio of Pt to the one or more of Pd, Ir, or Rh being at least 1 : 1.

11. The method of claim 9, wherein the supported catalyst comprises 0.1 wt% to 2.0 wt% of the Group VIII noble metal.

12. The method of claim 1, wherein the ratio of aluminum atoms in tetrahedral sites to octahedral sites is at least 1.5.