CLAIMS

1. A catalyst useful for dewaxing of a feedstock comprising: between 40 wt.% and 99.9 wt.% zeolite, wherein the zeolite comprises a crystal having a largest included sphere less than or equal to 7.5 angstroms, a largest diffusing sphere greater than or equal to 5.0 angstroms, and a silica to alumina ratio greater than or equal to 100:1; between 0 wt.% and 60 wt.% binder, wherein the binder is selected from alumina, silica, titania or a mixture thereof; and greater than or equal to 0.1 wt.% noble metal, wherein the catalyst has a TPAD of less than or equal to 0.25 mmol/g, wherein 20 percent or greater of a total surface area of the catalyst is an external surface area, and wherein the catalyst has a activity (α) of less than 50.

2. The catalyst of any one of the preceding claims, wherein the catalyst has a collidine uptake less than or equal to 200 μmol/g.

3. The catalyst of any one of the preceding claims, wherein the catalyst has a total surface area less than or equal to 500 m^2/g.

4. The catalyst of claim 1, wherein the noble metal is platinum, palladium, or rhodium.

5. The catalyst of claim 1, wherein the catalyst comprises greater than or equal to 0.3 wt.% noble metal.

6. The catalyst of claim 1, wherein the catalyst comprises greater than or equal to 0.4 wt.% noble metal.

7. The catalyst of any one of the preceding claims, wherein the zeolite is ZSM-12 and/or wherein the catalyst has greater than 5 percent micropore volume, and/or wherein the catalyst has greater than 25 percent metal dispersion.

8. The catalyst of any one of the preceding claims, wherein the crystal has a pore size between 5.5 angstroms to 6.5 angstroms and/or wherein the crystal comprises 12 ring members (12 MR).

9. A catalyst system for dewaxing a feedstock to produce a base stock comprising a catalyst bed having two or more separate regions in a stacked configuration, wherein the two or more separate regions comprise a first region and a second region, the first region comprising one or more of the catalysts of any one of the preceding claims, the second region comprising a catalyst having between 40 wt.% and 99.9 wt.% zeolite comprising a crystal having 11 ring members (11 MR) or less, a medium pore size, and a silica alumina ratio greater than or equal to 50, the first region and the second region are in fluidic communication providing a fluidic pathway of a composition from the first region to the second region.

10. The catalyst system for dewaxing to produce a base stock of claim 9, wherein the catalyst bed comprises 25 percent to 100 percent of the catalyst with the large pore size.

11. The catalyst system for dewaxing to produce a base stock of claim 9 or claim 10, wherein the catalyst of the second region has a collidine uptake less than or equal to 100 μmol/g and/or wherein the catalyst of the second region has an activity (α) of greater than 50 and/or wherein the catalyst of the second region has a total surface area of less than or equal to 350 m^2/g.

12. The catalyst system for dewaxing to produce a base stock of any one of the claims 9-11, wherein the catalyst of the first region has an external surface area of greater than or equal to 50 percent of a total surface area of the catalyst and/or wherein the catalyst of the first region has a micropore volume of greater than 2 percent of a total pore volume of the catalyst.

13. A process for dewaxing a hydrocarbon stream to produce base stocks comprising contacting a hydrocarbon feedstock with one or more of the catalysts or catalyst systems of any one of the preceding claims to provide an increased yield of 5 percent or greater in the base stock product in comparison to the hydrocarbon feedstock that has not been contacted with the catalyst or the catalyst systems of any one of the preceding claims when dewaxed under equivalent catalytic conditions.

14. The process of claim 13, wherein the catalyst is pretreated by steaming the catalyst in the first region between 482°C and 593°C for between one hour and twenty hours.