CLAIMS

1. A method of forming a dewaxing catalyst, the method comprising:

(a) forming a mixture which comprises a first zeolite, a second zeolite and a binder, wherein the first and second zeolites are selected from two different 10-membered ring zeolites, or a 10-membered ring zeolite and a 12-membered ring zeolite;

(b) mulling the mixture to form an extrudable paste;

(c) extruding the extrudable paste to form an extrudate;

(c) drying the extrudate at a temperature of 80°C to 200°C to form a dried extrudate;

(d) impregnating the dried extrudate with a solution comprising a source of the metal hydrogenation component ion, and a dispersion agent to form a metal-containing extrudate, wherein the metal hydrogenation component is a non-noble metal component which comprises a salt of a first metal selected from the group consisting of nickel, cobalt and mixtures thereof, and a salt of a second metal selected from the group consisting of chromium, molybdenum, tungsten and mixtures thereof; and

(e) drying the metal-containing extrudate at a temperature of 80°C to 200°C to form a dewaxing catalyst.

2. The method of claim 1, wherein the mixture further comprises water, wherein the solids content of the extrudable paste is from 45% to 55% by weight.

3. The method of claim 1 or 2, wherein the mixture further comprises an extrusion aid selected from the group consisting of tetraethylammonium hydroxide, citric acid, sodium hydroxide, nitric acid, methocel^{TM}, and mixtures thereof.

4. The method of any one of claims 1 to 3, wherein the dispersion agent is an organic compound comprising 2 to 10 carbons.

5. The method of any one of claims 1 to 4, wherein the dispersion agent is a carboxylic acid, preferably citric acid, gluconic acid or nitrilotriacetic acid.

6. The method of any one of claims 1 to 5, wherein the dewaxing catalyst is sulfided.

7. The method of any one of claims 1 to 6, wherein the dewaxing catalyst is exchanged with a source of ammonium ions, washed with water, dried and calcined.

8. The method of any one of claims 1 to 7, wherein the 10-membered ring zeolite has a framework type selected from the group consisting of EUO, MEL, MFI, MFS, MRE, MTT, MWW, MWW, NES, TON and mixtures thereof.

9. The method of any one of claims 1 to 7, wherein the 10-membered ring zeolite is selected from the group consisting ZSM-50, EU-1, ZSM-11, ZSM-5, ZSM-57, ZSM-48, ZSM-23, EMM-10, EMM-12, EMM-13, MCM-22, MCM-36, MCM-49, MCM-56, NU-87, ZSM-22, Theta-1, and mixtures thereof.

10. The method of any one of claims 1 to 9, wherein the 12-membered ring zeolite has a framework type selected from the group consisting of *BEA, BEC, EMT, FAU, LTL, MEI, MOR, MOZ, MTW, MSE, OFF and mixtures thereof.

11. The method of any one of claims 1 to 9, wherein the 12-membered ring zeolite is selected from the group consisting of beta, ZSM-2, ZSM-3, ZSM-20, Y, US-Y, L, ZSM-18, mordenite, ZSM-10, ZSM-12, MCM-68, offretite, and mixtures thereof.

12. The method of any one of claims 1 to 7, wherein the first and second zeolites are ZSM-11 and ZSM-48, or ZSM-23 and ZSM-48, or ZSM-48 and ZSM-12.

13. The method of any one of claims 1 to 2, wherein the first metal is nickel or cobalt, and the second metal is molybdenum.

14. The method of any one of claims 1 to 13, wherein the binder comprises alumina, silica, silica-alumina, zirconia, titania, or mixtures thereof.

15. A process for trim dewaxing a distillate boiling range feed, comprising the step of contacting at least a portion of a distillate boiling range feed with the dewaxing catalyst prepared by the method of any one of claims 1 to 14, under effective dewaxing conditions to form a diesel boiling range product.

16. The process of claim 15, further comprising the step of contacting the portion of the distillate boiling range feed to a hydrotreating catalyst under hydrotreating conditions.

17. The process of claim 16, wherein the hydrotreating catalyst and the dewaxing catalyst are arranged in fluid communication in a stacked bed of catalyst or are comingled in a mixed bed of catalyst, or a combination thereof.

18. The process of any one of claims 15 to 17, wherein the effective dewaxing conditions comprise a temperature of at least 300°C.