CLAIMS

1. A dewaxing catalyst, comprising:

(a) a co-extrusion of two different zeolites selected from two different 10-membered ring zeolites, or a 10-membered ring zeolite and a 12 membered ring zeolite; and

(b) a metal hydrogenation component selected from the group consisting of palladium, platinum, mixtures of palladium and platinum, and mixtures of a first metal selected from the group consisting of nickel, cobalt and mixtures thereof, and a second metal selected from the group consisting of chromium, molybdenum, tungsten and mixtures thereof.

2. The catalyst of claim 1, 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.

3. The catalyst of claim 1, 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.

4. The catalyst of claim 1 or 2, 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.

5. The catalyst of claim 1 or 2, 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.

6. The catalyst of claim 1, wherein the co-extrusion of two different zeolites is a co-extrusion of ZSM-11 and ZSM-48, or a co-extrusion of ZSM-23 and ZSM-48, or a co-extrusion of ZSM-48 and ZSM-12.

7. The catalyst of any one of claims 1 to 6, wherein the metal hydrogenation component is a non-noble metal component which comprises a first metal selected from the group

consisting of nickel, cobalt and mixtures thereof, and a second metal selected from the group consisting of chromium, molybdenum, tungsten and mixtures thereof.

8. The catalyst of claim 7, wherein the first metal is nickel or cobalt, and the second metal is molybdenum.

9. The catalyst of any one of claims 1 to 6, wherein the metal hydrogenation component is a noble metal selected from the group consisting of palladium, platinum and mixtures thereof, preferably platinum.

10. The catalyst of any one of claims 1 to 9, further comprising a binder, the binder comprising alumina, silica, silica-alumina, zirconia, titania, or mixtures thereof.

11. 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 of any one of claims 1 to 10, under effective dewaxing conditions to form a diesel boiling range product.

12. The process of claim 11, further comprising the step of contacting the portion of the distillate boiling range feed to a hydrotreating catalyst under hydrotreating conditions.

13. The process of claim 12, 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.

14. The process of any one of claims 11 to 13, wherein the effective dewaxing conditions comprise a temperature of at least 300°C.

15. A method of forming the dewaxing catalyst of any one of claims 1 to 10, the method comprising:

(a) forming a mixture which comprises the first zeolite, the second zeolite and a binder;

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

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

(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 optionally a dispersion agent to form a metal-containing extrudate; and

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

16. The method of claim 15, wherein the mixture further comprises water, wherein the solids content of the extrudable paste is from 45% to 55% by weight.

17. The method of claim 15 or 16, 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.

18. The method of any one of claims 15 to 17, wherein the dewaxing catalyst is sulfided.

19. The method of any one of claims 15 to 18, wherein the dewaxing catalyst is exchanged with a source of ammonium ions, washed with water, dried and calcined.