WHAT IS CLAIMED IS:

1. A hydroisomerization catalyst system, useful to make dewaxed products including base oils, comprising

a first catalyst composition comprising an SSZ-91 molecular sieve; and

a second catalyst composition comprising an SSZ-95 molecular sieve;

wherein, the first catalyst and the second catalyst compositions are arranged such that a hydrocarbon feedstock is sequentially contacted with either the first or the second catalyst composition to provide a first product followed by contacting the first product with the other catalyst composition to provide a second product.

2. The catalyst system of claim 1, wherein the first and second catalyst compositions are arranged such that the feedstock is fed to the first catalyst composition to form the first product.

3. The catalyst system of claim 1, wherein the first and second catalyst compositions are arranged such that the feedstock is fed to the second catalyst composition to form the first product.

4. The catalyst system of claim 1, wherein the molecular sieve of each of the first and second catalyst compositions is combined with a matrix material to form, respectively, a first and second base material, and wherein each of the first and second catalyst compositions further comprises at least one modifier selected from Groups 6 to 10 and Group 14, and optionally further comprising a Group 2 metal, of the Periodic Table.

5. The catalyst system of claim 1, wherein the SSZ-91 molecular sieve comprises ZSM-48 type zeolite material, the molecular sieve having:

at least 70% polytype 6 of the total ZSM-48-type material;

an EUO-type phase in an amount of between 0 and 3.5 percent by weight; and

polycrystalline aggregate morphology comprising crystallites having an average aspect ratio of between 1 and 8.

6. The catalyst system of claim 5, wherein the silicon oxide to aluminum oxide mole ratio of the SSZ-91 molecular sieve is in the range of 40 to 220 or 50 to 220 or 40 to 200, or 50 to 140.

7. The catalyst system of claim 5, wherein the SSZ-91 molecular sieve comprises one of more of:

at least 80%, or 90%, polytype 6 of the total ZSM-48-type material;

between 0.1 and 2 wt.% EU-1;

crystallites having an average aspect ratio of between 1 and 5, or between 1 and 3;

or a combination thereof.

8. The catalyst system of claim 1, wherein the SSZ-95 molecular sieve is an MTT framework molecular sieve having a mole ratio of 20 to 70 of silicon oxide to aluminum oxide, a total micropore volume of between 0.005 and 0.02 cc/g; and a H-D exchangeable acid site density of up to 50% relative to SSZ-32.

9. The catalyst system of claim 4, wherein the modifier content is 0.01-5.0 wt.% or 0.01-2.0 wt.%, or 0.1-2.0 wt.% (total catalyst weight basis).

10. The catalyst system of claim 4, wherein the catalyst comprises Pt, or a combination of Pt and Pd, as the modifier in an amount of 0.01-1.0 wt.%, or 0.3-0.8 wt.% Pt or the combination of Pt and Pd, optionally further comprising Mg.

11. The catalyst system of claim 4, wherein the matrix material for either or both of the first and second catalyst compositions is selected from alumina, silica, ceria, titania, tungsten oxide, zirconia, or a combination thereof.

12. The catalyst system of claim 11, wherein either or both of the first and second catalyst compositions comprises 0.01 to 5.0 wt.% of the modifier, greater than 0 to 99 wt.% of the matrix material, and 0.1 to 99 wt.% of the molecular sieve.

13. The catalyst system of claim 1, wherein the second product is a base oil product, or is used to make a base oil product, having a viscosity index of at least 109 and/or a pour point of no greater than -10°C or -13°C.

14. A process for producing a base oil product having an increased base oil product yield, the process comprising contacting a hydrocarbon feedstock with the hydroisomerization catalyst system of claim 1 under hydroisomerization conditions to produce a base oil product.

15. The process of claim 14, wherein the hydrocarbon feedstock comprises gas oil; vacuum gas oil; long residue; vacuum residue; atmospheric distillate; heavy fuel; oil; wax and paraffin; used oil; deasphalted residue or crude; charges resulting from thermal or catalytic conversion processes; shale oil; cycle oil; animal and vegetable derived fats, oils and waxes; petroleum and slack wax; or a combination thereof.

16. The process of claim 14, wherein the base oil yield is increased using the catalyst system of claim 1 as compared with the same process using only the first catalyst composition or the second catalyst composition.

17. The process of claim 16, wherein the base oil yield is increased by at least 1 wt.% using the catalyst system of claim 1 as compared with the same process using only the first catalyst composition or the second catalyst composition.

18. The process of claim 14, wherein the first and second catalyst compositions are arranged such that the hydrocarbon feedstock is fed to the first catalyst composition to form the first product.

19. The process of claim 14, wherein the first and second catalyst compositions are arranged such that the hydrocarbon feedstock is fed to the second catalyst composition to form the first product.

20. The process of claim 14, wherein the second stage product is a base oil product, or is used to make a base oil product, having a viscosity index of at least 109 and/or a pour point of no greater than -13°C or -10°C.