CLAIMS~~WHAT IS CLAIMED IS:~~

1.–___A bottoms cracking catalyst composition, comprising:

about 30 to about 60 wt% alumina;

greater than 0 to about 10 wt% of a dopant comprising ytterbium, gadolinium, cerium, lanthanum, yttrium, barium, magnesium, or a mixture of any two or more thereof, measured as the oxide;

about 2 to about 20 wt% reactive silica;

about 3 to about 20 wt% of a component comprising peptizable boehmite, colloidal silica, aluminum chlorohydrol, or a combination of any two or more thereof; and

about 10 to about 50 wt% of kaolin.

2.–___The catalyst of claim 1, ~~comprising~~wherein the dopant is present in an amount of about 0.1 to about 5 wt% of the composition, measured as the oxide.

3.–___The catalyst of ~~any one of~~ claim~~CLAIMS~~ 1~~ or 2~~, wherein the dopant is present in an amount of about 4 wt%.

4.–___The catalyst of claim 1, wherein the dopant comprises lanthanum.

5.–___The catalyst of ~~any one of claims~~claim 1~~ to 4~~, wherein the dopant is impregnated into the alumina, or coated onto the alumina, or the dopant is co-precipitated with the alumina.

6.–___The catalyst of ~~any one of claims~~claim 1~~ to 5~~, having an average particle size of about 70-95 microns.

7.–___The catalyst of ~~any one of claims~~claim 1~~ to 6~~, having a mercury pore volume of 0.3 - 0.56 cc/g in a diameter range from 4 to 2,000 nm.

8.– The catalyst of ~~any one of claims~~claim 1 ~~to 7~~ further comprising a zeolite in the composition.

9.– The catalyst of claim 8, wherein the zeolite is Y zeolite.

10.– The catalyst of ~~any one of claims~~claim 1 ~~to 8~~ which is zeolite-free.

11.– The catalyst of ~~any one of claims~~claim 1 ~~to 10~~, wherein the alumina is calcined alumina.

12.– A method of making bottoms cracking catalyst, comprising

forming an aqueous slurry containing on a dry weight basis,

about 30 to about 60 wt% alumina;

greater than 0 to about 10 wt% of a dopant comprising ytterbium, gadolinium, cerium, lanthanum, yttrium, barium, magnesium, or a mixture of any two or more thereof, measured as the oxide with respect to the alumina;

about 2 to about 20 wt% reactive silica;

about 3 to about 20 wt% of a component comprising peptizable boehmite, colloidal silica, aluminum chlorohydrol, or a combination of any two or more thereof; and

about 10 to about 50 wt% of kaolin, and

spray drying the aqueous slurry to obtain microspheres.

13.– The method of claim ~~11~~12, further comprising calcining the microspheres.

~~14. The method of claim 11, wherein the alumina is calcined alumina.~~

~~15.~~ 14. A method of cracking a hydrocarbon feed comprising contacting said feed with a fluid catalytic cracking (FCC) catalyst comprising a zeolitic component and a bottoms cracking catalyst, the bottoms cracking catalyst comprising:

about 30 to about 60 wt% alumina;

greater than 0 to about 10 wt% of a ~~dopant comprising~~rare earth element that is ytterbium, gadolinium, cerium, lanthanum, yttrium, barium, magnesium, or a mixture of any two or more thereof, measured as the oxide;

about 2 to about 20 wt% reactive silica;

about 3 to about 20 wt% of a component comprising peptizable boehmite, colloidal silica, aluminum chlorohydrol, or a combination of any two or more thereof; and

about 10 to about 50 wt% of kaolin.

~~16.~~ 15. The method of claim ~~15~~14, wherein the catalyst comprises the dopant in an amount of about 0.1 to about 5 wt%, measured as the oxide.

~~17.~~ 16. The method of claim ~~16~~15, wherein the rare earth element ~~comprises~~includes lanthanum.

~~18.~~ 17. The method of ~~any one of claims 15 to 17~~claim 14, wherein the method results in greater than 10% lower coke yield measured at 13 wt% bottoms, when compared to contacting the feed with a catalyst having the same physical properties which does not include the bottoms cracking catalyst.

~~19. The method of any one of claims 15-~~18. The method of claim 14, wherein the zeolite comprises a Y zeolite.

~~20. The method of any one of claims 15-19, wherein the FCC catalyst comprises at least 15 wt% of the bottoms cracking catalyst.~~

~~21. The method of claim 20, wherein the FCC catalyst comprises at least 50 wt% of the zeolitic component.~~

~~22. The method of any one of claims 15-18, wherein the FCC catalyst comprises 15 wt% to 80 wt% of the bottoms cracking catalyst.~~

~~23.~~ 19. The method of claim ~~22, wherein the FCC catalyst comprises 50 wt% to 80 wt% of the bottoms cracking catalyst.~~

~~24. The method of any one of claims 15-18~~14, wherein the FCC catalyst comprises 15 wt% to 50 wt% of the bottoms cracking catalyst and 85 wt% to 50 wt% of the zeolitic component and optionally other clay-based components.

~~25.~~ 20. The method of ~~any one of claims 15-24~~claim 14 wherein the FCC catalyst further comprises a vanadium trap, or a crystalline boehmite nickel trap.

~~26.~~ 21. The method of ~~any one of claims 15-25~~claim 14, wherein the ~~alumina is calcined alumina.~~

~~27. A bottoms cracking catalyst composition, comprising:~~

~~about 30 to about 60 wt% alumina;~~

~~greater than 0 to about 10 wt% of a~~ rare earth ~~carbonate comprising~~element is present in a slurry as ytterbium carbonate, gadolinium carbonate, cerium carbonate, lanthanum carbonate, yttrium carbonate, or a mixture of any two or more thereof~~;~~

~~about 2 to about 20 wt% reactive silica;~~

~~about 3 to about 20 wt% of a component comprising peptizable boehmite, colloidal silica, aluminum chlorohydrol, or a combination of any two or more thereof; and~~

~~about 10 to about 50 wt% of kaolin.~~

~~28. The catalyst of claim 27, comprising the rare earth carbonate is present in an amount of about 0.1 to about 5 wt% of the composition, measured as the oxide.~~

~~29. The catalyst of any one of claims 27 to 28, wherein the rare earth element comprises lanthanum.~~

~~30. The catalyst of any one of claims 27 to 29, having an average particle size of about 70-95 microns.~~

~~31. The catalyst of any one of claims 27 to 30, having a mercury pore volume of 0.3 -0.56 cc/g in a diameter range from 4 to 2,000 nm.~~

~~32. The catalyst of any one of claims 27 to 31, wherein the alumina is calcined alumina.~~

~~33. A bottoms cracking catalyst composition, comprising:~~

~~about 10 to about 20 wt% of a rare earth exchanged Y zeolite;~~

~~about 10 to about 30 wt% of a binder comprising silica and boehmite;~~

~~about 30 to about 60 wt% of an active matrix comprising alumina and, optionally, crystalline boehmite; and~~

~~about 10 to about 50 wt% of kaolin.~~

~~34. The bottoms cracking catalyst composition of claim 33, wherein the rare earth exchanged Y zeolite comprises ytterbium, gadolinium, cerium, lanthanum, yttrium, or a mixture of any two or more thereof.~~

~~35. The bottoms cracking catalyst composition claims 33 or 34, wherein the rare earth exchanged Y zeolite comprises lanthanum.~~

~~36. The bottoms cracking catalyst composition claims 33, 34, or 35 having an average particle size of about 70-95 microns.~~

~~37. The bottoms cracking catalyst composition of any one of claims 33 to 36, having a mercury pore volume of 0.3 -0.56 cc/g in a diameter range from 4 to 2,000 nm.~~

~~38. A method of making bottoms cracking catalyst, the method comprising:~~

~~forming an aqueous slurry containing on a dry weight basis,~~

~~about 10 to about 20 wt% of a rare earth exchanged Y zeolite;~~

~~about 10 to about 30 wt% of a binder comprising silica and boehmite;~~

~~about 30 to about 60 wt% of an additive comprising alumina and, optionally, crystalline boehmite; and~~

~~about 10 to about 50 wt% of kaolin; and~~

~~spray-drying the aqueous slurry to obtain microspheres.~~

~~39. The method of claim 38 further comprising calcining the microspheres.~~

~~40. The method of claim 38, wherein Y zeolite is exchanged with about 1 to 10 wt% of the rare earth.~~

~~41. A method of cracking a hydrocarbon feed comprising contacting said feed with the bottoms cracking catalyst of any one of claims 33-37.~~.