CLAIMS:

1. A method for producing a zeolite catalyst comprising:

mixing (101) a zeolite material with a filler material comprising transition phase and alpha alumina, a porosity enhancing agent, and water to produce a paste;

milling (102) the paste;

extruding (103) the paste to produce a shaped extrudate; and

drying and calcining (104) the shaped extrudate to produce a zeolite catalyst, characterized in that the zeolite catalyst has a total porosity greater than 0.60ml/gm and greater than 15% of a total pore volume of pores in the range from 550Å to 31,000Å.

2. The method of claim 1, characterized in that the transition phase alumina is a gamma, chi, kappa, delta, eta, and/or theta alumina.

3. The method of claim 2, characterized in that the transition phase alumina is gamma alumina.

4. The method of claim 1, characterized in that the transition phase and alpha alumina have a particle size of less than 100 microns, or less than 20 microns, or less than 10 microns.

5. The method of claim 1 further comprising mixing the zeolite, and the transition phase and alpha alumina with a porosity enhancing agent, characterized in that the porosity enhancing agent comprises an organic, water-soluble porosity enhancing agent, an organic water-insoluble large pore enhancing agent, or a mixture of thereof.

6. The method of claim 1, characterized in that extruding the paste to produce a shaped extrudate comprises extruding the paste to form a tri-lobe shaped extrudate having an external surface to volume ratio of greater than 80 $inch^{-1}$.

7. The method of claim 1, characterized in that the mixture comprising the zeolite, transition phase or alpha alumina and porosity enhancing agents is mulled over a period of time from 10 to 360 minutes.

8. The method of claim 1, characterized in that calcining the shaped extrudate comprises calcining at a temperature from 500 °C to 700 °C for a time period from 20 minutes to 240 minutes.

9. The method of claim 1, characterized in that milling the stock zeolite comprises milling the stock zeolite to produce milled zeolite having an average particle size in the range from 100 microns to 10 microns.

10. The method of claim 1, further comprising contacting the zeolite catalyst with a hydrocarbon stream comprising an olefin.

**CLAIMS**

1. A method for producing a zeolite catalyst comprising:

mixing (101) a zeolite material with a filler material comprising transition phase alumina including a gamma, chi, kappa, delta, eta, theta or ~~and~~ apha alumina, organic additives, a porosity enhancing agent, and water to produce a paste;

mulling (102) the paste;

extruding (103) the paste to produce a shaped extrudate; and

drying and calcining (104) the shaped extrudate to produce a zeolite catalyst, characterized in that the zeolite catalyst has a total porosity greater than 0.6ml/gm and greater than 15% of a total pore volume of pores in the range 550Å to 31,000Å.

2. The method of claim 1, characterized in that the transition phase ~~and alpha~~ alumina have a particle size of less than 100 microns, or less than 20 microns, or less than 10 microns.

3. The method of claim 1, wherein the porosity enhancing agent comprises an organic, water-solution porosity enhancing agent, an organic water-insoluble large pore enhancing agent, or a mixture of thereof .

4. The method of clam 1, characterized in that extruding the paste to produce a shaped extrudate comprises extruding the paste to form a tri-lobe shaped extrudate having an external surface to volume ration of greater than 80 $inch^{-1}$ .

5. The method of claim 1, characterized in that the mixture comprising the zeolite material, transition phase alumina including a gamma, chi, kappa, delta, eta, theta or apha alumina, organic additives, a porosity enhancing agent, and water is mulled over a period of time from 10 to 360 minutes.

6. The method of claim 1, characterized in that calcining the shaped extrudate comprises calcining at a temperature from 500°C to 700°C for a time period from 20 minutes to 240 minutes.

7. The method of claim 1, further comprising the step of milling the zeolite material to produce milled zeolite material having an average particle size in the range from 100 microns to 10 microns.

8. The method of claim 1, further comprising contacting the zeolite catalyst with a hydrocarbon stream comprising an olefin.