CLAIMS

1. A crystalline molecular sieve having the framework structure of ZSM-5, said molecular sieve having an X-ray diffraction pattern having at least the following features:

(i) a first peak with a maximum at 8.90 (± 0.30) degrees two-theta which has an intensity above background of $Imax_A$, and which intersects a second peak with a maximum at 7.96 (± 0.30) degrees two-theta, to form a local minimum which has an intensity above background of $Imin_A$, such that the $Imin_A/Imax_A$ ratio is > 0.33; and

(ii) a third peak with a maximum at 24.0 (± 0.30) degrees two-theta which has an intensity above background of $Imax_B$, and intersects a fourth peak with a maximum at 23.2 (± 0.20) degrees two-theta, such that said intersection of said third and said fourth peaks forms a local minimum which has an intensity above background of $Imin_B$, such that the $Imin_B/Imax_B$ ratio is > 0.90.

2. The molecular sieve of claim 1 and comprising crystals having an external surface area ~~(~~as determined by the t-plot method for nitrogen physisorption~~)~~ in excess of 100 m^2/g.

3. The molecular sieve of claim 1, wherein said third peak has an intensity above background of $Imax_B$, and intersects a fourth peak with a maximum at 23.2 (± 0.20) degrees two-theta, to form a composite peak exhibiting an inflection point at the intersection of the third and fourth peaks.

4. The molecular sieve of any preceding claim, wherein the $Imin_A/Imax_A$ ratio is at least 0.40.

5. The molecular sieve of any preceding claim, said molecular sieve comprising crystals having an external surface area ~~(~~as determined by the t-plot method for nitrogen physisorption~~)~~ in excess of 200 m^2/g.

6. A molecular sieve having the framework structure of ZSM-5, said molecular sieve comprising crystals having an external surface area in excess of 200 m^2/g ~~(~~as determined by the t-plot method for nitrogen physisorption~~)~~, and an X-ray diffraction pattern with a single diffuse composite feature in the two-theta range from 21.5 to 26°.

7. The molecular sieve of any preceding claim, said molecular sieve comprising crystals having an external surface area ~~(~~as determined by the t-plot method for nitrogen physisorption~~)~~ in excess of 250 m^2/g.

8. The molecular sieve of any preceding claim, said molecular sieve comprising crystals having an external surface area ~~(~~as determined by the t-plot method for nitrogen physisorption~~)~~ greater than their internal surface area.

9. The molecular sieve of any preceding claim, said molecular sieve comprising crystals having a total surface area ~~(~~as determined by the t-plot method for nitrogen physisorption~~)~~ in excess of 550 m^2/g.

10. The molecular sieve of any preceding claim, wherein said molecular sieve has a composition comprising the molar relationship:

$$X_2O_3:(n)YO_2,$$

wherein n is at least about 20, X is a trivalent element, and Y is a tetravalent element.

11. The molecular sieve of claim 10, wherein X includes aluminum and Y includes silicon and/or germanium.

12. A process for converting a feedstock comprising an organic compound to a conversion product, said process comprising the step of contacting said feedstock at organic compound conversion conditions with a catalyst comprising an active form of the molecular sieve material of any preceding claim, to form said conversion product.