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CLAIMS

The invention claimed is:

1. An aromatic transformation process comprising contacting a feed comprising at least a first aromatic compound with a microporous crystalline zeolitic catalytic composite at hydrocarbon conversion conditions to produce at least a second aromatic, the catalytic composite comprising a first microporous crystalline zeolite, UZM-44, having a three-dimensional framework of at least AlO_2 and SiO_2 tetrahedral units and an empirical composition in the as synthesized and anhydrous basis expressed by an empirical formula of:

$$Na_nM_m{}^{k+}T_tAl_{1-x}E_xSi_yO_z$$

where “n” is the mole ratio of Na to (Al+E) and has a value from approximately 0.05 to 0.5, M represents a metal or metals selected from the group consisting of zinc, Group 1 (IUPAC 1), Group 2 (IUPAC 2), Group 3 (IUPAC 3), the lanthanide series of the periodic table, and any combination thereof, “m” is the mole ratio of M to (Al+E) and has a value from 0 to 0.5, “k” is the average charge of the metal or metals M, T is the organic structure directing agent or agents derived from reactants R and Q where R is an A,Ω-dihalogen substituted alkane having 5 carbon atoms and Q is at least one neutral monoamine having 6 or fewer carbon atoms, “t” is the mole ratio of N from the organic structure directing agent or agents to (Al+E) and has a value of from 0.5 to 1.5, E is an element selected from the group consisting of gallium, iron, boron and combinations thereof, “x” is the mole fraction of E and has a value from 0 to about 1.0, “y” is the mole ratio of Si to (Al+E) and varies from greater than 9 to about 25 and “z” is the mole ratio of O to (Al+E) and has a value determined by the equation:

$$z=(n+k\cdot m+3+4\cdot y)/2$$

wherein the microporous crystalline zeolite, UZM-44, is further characterized in that it has the x-ray diffraction pattern having at least the d-spacings and intensities set forth in Table A:

TABLE A

2-Theta	d(†)	I/Io %
7.72	11.45	m
8.88	9.95	m
9.33	9.47	m
12.47	7.09	w-m
12.85	6.88	vw
14.62	6.05	vw-w
15.27	5.80	w
15.57	5.68	w
16.60	5.34	w
17.70	5.01	vw-w
18.71	4.74	w-m
19.30	4.59	w
22.55	3.94	m
23.03	3.86	vs
23.39	3.80	s
24.17	3.68	m
25.01	3.56	m
26.19	3.40	vw-w
26.68	3.34	w-m
28.76	3.10	w-m
30.07	2.97	w
35.72	2.51	vw-w
45.08	2.01	w
45.83	1.98	vw-w
46.77	1.94	vw-w.

2. The process of claim 1 wherein the microporous crystalline zeolitic catalytic composite is thermally stable up to a temperature of greater than 600° C.

3. The process of claim 1 wherein the microporous crystalline zeolitic catalytic composite has a micropore volume as a percentage of total pore volume of less than 60%.

4. The process of claim 1 wherein the microporous crystalline zeolitic catalytic composite has micropore volume of less than 0.155 mL/g.

5. The process of claim 1 wherein the microporous crystalline zeolitic catalytic composite has micropore volume of less than 0.150 mL/g.

6. The process of claim 1 wherein the microporous crystalline zeolitic catalytic composite exhibits no feature at 200-300 Å on a dV/dlog D versus pore diameter plot of differential volume of nitrogen adsorbed as a function of pore diameter.

7. The process of claim 1 wherein the microporous crystalline zeolitic catalytic composite exhibits adsorption occurring at greater than 450 Å on a dV/dlog D versus pore diameter plot of differential volume of nitrogen adsorbed as a function of pore diameter.

8. The process of claim 1 wherein the differential volume of nitrogen adsorbed by the catalytic composite at a pore diameter of 475 Å is greater than 0.1 mL N_2/gÅ on a dV/dlog D versus pore diameter plot of differential volume of nitrogen adsorbed as a function of pore diameter.

9. The process of claim 1 wherein the differential volume of nitrogen adsorbed by the catalytic composite at pore diameters greater than 475 Å is greater than 0.1 mL N_2/gÅ on a dV/dlog D versus pore diameter plot of differential volume of nitrogen adsorbed as a function of pore diameter.

10. The process of claim 1 wherein the feed further comprises at least one alkane having from 2 to about 6 carbon atoms.

11. The process of claim 1 wherein the first aromatic is benzene.

12. The process of claim 1 wherein the first aromatic is benzene and the second aromatic is toluene or xylene.

13. The process of claim 1 further comprising removing an effluent comprising the second aromatic, fractionating the effluent, and recovering the second aromatic.

14. The process of claim 13 further comprising, subjecting the effluent to partial condensation and vapor-liquid separation prior to fractionation.

15. The process of claim 14 further comprising recycling at least a portion of the effluent to the catalyst.

16. The process of claim 1 wherein the aromatic transformation process is the dealkylation of aromatics and the second aromatic is at least one dealkylated aromatic, and wherein the process is operated at a hydrogen:hydrocarbon mole ratio of between 0.1:1 and 15:1, a LHSV of about 0.1 to about 50 hr^{-1}, a temperature of about 100° to about 600° C. and a pressure of about 10 kPa to about 5 MPa.

17. The process of claim 1 wherein the aromatic transformation process is the alkylation of aromatics and the second aromatic is at least one linear alkyl substituted aromatic, and wherein the process is operated at an aromatic:olefin mole ratio of between 5:1 and 30:1, a LHSV of about 0.3 to about 6 hr^{-1}, a temperature of about 100° to about 250° C. and a pressures of about 200 to about 1000 psig.