CLAIMS

What is claimed is:

1. A molecular sieve material having, in its calcined form, an X-ray diffraction pattern including the following peaks:

d-spacing (Å)	**Relative Intensity [100 x I/I(o)]%**
11.74-11.34	60-100
9.50-9.10	30-80
8.68-8.28	10-40
5.64-5.44	20-60
4.52-4.42	10-50
4.28-4.18	10-40
3.96-3.86	40-80
3.69-3.59	30-70.

2. A molecular sieve material having a framework defined by the following connectivities for the tetrahedral (T) atoms in the unit cell, the tetrahedral (T) atoms being connected by bridging atoms:

T atom	Connected to:
T1	T3, T4, T33, T71
T2	T5, T48, T72, T82
T3	T1, T31, T47, T97
T4	T1, T5, T81, T106
T5	T2, T4, T55, T75
T6	T8, T9, T38, T76
T7	T10, T43, T77, T84
T8	T6, T36, T42, T98
T9	T6, T10, T83, T105
T10	T7, T9, T60, T80
T11	T13, T14, T23, T61
T12	T15, T58, T62, T86
T13	T11, T21, T57, T99
T14	T11, T15, T85, T108

T15	T12, T14, T45, T65
T16	T18, T19, T28, T66
T17	T20, T53, T67, T88
T18	T16, T26, T52, T100
T19	T16, T20, T87, T107
T20	T17, T19, T50, T70
T21	T13, T23, T24, T51
T22	T25, T52, T68, T90
T23	T11, T21, T67, T101
T24	T21, T25, T89, T110
T25	T22, T24, T55, T75
T26	T18, T28, T29, T56
T27	T30, T57, T63, T92
T28	T16, T26, T62, T102
T29	T26, T30, T91, T109
T30	T27, T29, T60, T80
T31	T3, T33, T34, T41
T32	T35, T42, T78, T94
T33	T1, T31, T77, T103
T34	T31, T35, T93, T112
T35	T32, T34, T45, T65
T36	T8, T38, T39, T46
T37	T40, T47, T73, T96
T38	T6, T36, T72, T104
T39	T36, T40, T95, T111
T40	T37, T39, T50, T70
T41	T31, T43, T44, T73
T42	T8, T32, T45, T86
T43	T7, T41, T71, T103
T44	T41, T45, T85, T112
T45	T15, T35, T42, T44
T46	T36, T48, T49, T78
T47	T3, T37, T50, T88
T48	T2, T46, T76, T104
T49	T46, T50, T87, T111

T50	T20, T40, T47, T49
T51	T21, T53, T54, T63
T52	T18, T22, T55, T82
T53	T17, T51, T61, T101
T54	T51, T55, T81, T110
T55	T5, T25, T52, T54
T56	T26, T58, T59, T68
T57	T13, T27, T60, T84
T58	T12, T56, T66, T102
T59	T56, T60, T83, T109
T60	T10, T30, T57, T59
T61	T11, T53, T63, T64
T62	T12, T28, T65, T94
T63	T27, T51, T61, T99
T64	T61, T65, T93, T108
T65	T15, T35, T62, T64
T66	T16, T58, T68, T69
T67	T17, T23, T70, T96
T68	T22, T56, T66, T100
T69	T66, T70, T95, T107
T70	T20, T40, T67, T69
T71	T1, T43, T73, T74
T72	T2, T38, T75, T90
T73	T37, T41, T71, T97
T74	T71, T75, T89, T106
T75	T5, T25, T72, T74
T76	T6, T48, T78, T79
T77	T7, T33, T80, T92
T78	T32, T46, T76, T98
T79	T76, T80, T91, T105
T80	T10, T30, T77, T79
T81	T4, T54, T89, T92
T82	T2, T52, T91, T113
T83	T9, T59, T90, T91
T84	T7, T57, T89, T114

T85	T14, T44, T93, T96
T86	T12, T42, T95, T115
T87	T19, T49, T94, T95
T88	T17, T47, T93, T116
T89	T24, T74, T81, T84
T90	T22, T72, T83, T113
T91	T29, T79, T82, T83
T92	T27, T77, T81, T114
T93	T34, T64, T85, T88
T94	T32, T62, T87, T115
T95	T39, T69, T86, T87
T96	T37, T67, T85, T116
T97	T3, T73, T103, T112
T98	T8, T78, T104, T111
T99	T13, T63, T101, T110
T100	T18, T68, T102, T109
T101	T23, T53, T99, T108
T102	T28, T58, T100, T107
T103	T33, T43, T97, T106
T104	T38, T48, T98, T105
T105	T9, T79, T104, T113
T106	T4, T74, T103, T114
T107	T19, T69, T102, T115
T108	T14, T64, T101, T116
T109	T29, T59, T100, T113
T110	T24, T54, T99, T114
T111	T39, T49, T98, T115
T112	T34, T44, T97, T116
T113	T82, T90, T105, T109
T114	T84, T92, T106, T110
T115	T86, T94, T107, T111
T116	T88, T96, T108, T112.

3. The molecular sieve material of claim 1, having a composition comprising the molar relationship: $(n)YO_2:X_2O_3$, wherein n is at least 10, X is a trivalent element, and Y is a tetravalent element.

4. The molecular sieve material of claim 3, wherein X comprises one or more of B, Al, Fe, and Ga, and wherein Y comprises one or more of Si, Ge, Sn, Ti, and Zr.

5. The molecular sieve material of claim 3, wherein X is boron and Y is silicon.

6. The molecular sieve material of claim 3, also comprising a noble metal and/or a salt of a noble metal.

7. The molecular sieve material of claim 2, having a composition comprising the molar relationship: $(n)YO_2:X_2O_3$, wherein n is at least 10, X is a trivalent element, and Y is a tetravalent element.

8. The molecular sieve material of claim 7, wherein X comprises one or more of B, Al, Fe, and Ga, and wherein Y comprises one or more of Si, Ge, Sn, Ti, and Zr.

9. The molecular sieve material of claim 7, wherein X is boron and Y is silicon.

10. The molecular sieve material of claim 7, also comprising a noble metal and/or a salt of a noble metal.

11. A molecular sieve material having, in its as-synthesized form, an X-ray diffraction pattern including the following peaks:

d-spacing (Å)	Relative Intensity [100 x I/I(o)]%
11.77-11.37	30-80
9.51-9.11	20-70
8.67-8.27	5-30
5.64-5.44	10-40
4.50-4.40	30-80
4.28-4.18	30-80
3.95-3.85	60-100
3.70-3.60	50-90.

12. The molecular sieve material of claim 11, having a composition comprising the molar relationship: $mQ:(n)YO_2: X_2O_3$, wherein $0.004 < m/n \leq 0.04$, n is at least 10, Q is an organic structure directing agent, X is a trivalent element and Y is a tetravalent element.

13. The molecular sieve material of claim 12, wherein X is boron and Y is silicon.

14. The molecular sieve material of claim 12, wherein Q is a cation of the formula:

$$R_1R_2(CH_3)N^+CH_2CH_2CH_2CH_2N^+(CH_3)R_1R_2$$

wherein R_1 and R_2 are chosen independently from butyl, pentyl, and hexyl.

15. The molecular sieve material of claim 14, wherein Q is a cation selected from the group consisting of N,N,N',N'-tetrahexyl-N,N'-dimethylbutane-1,4-diammonium, N, N'-dihexyl-N,N'-dipentyl-N,N'-dimethylbutane-1,4-diammonium, N,N,N',N'-tetrapentyl-N,N'-dimethylbutane-1,4-diammonium, N,N'-dipentyl-N,N'-dibutyl-N,N'-dimethylbutane-1,4-diammonium, and mixtures thereof.