framework type code *SFV by the Structure Commission of the International Zeolite Association (IZA).

[0006] The structure of SSZ-57 was recently resolved by C. Baerlocher *et al.* (*Science* 333, 1134-1137 (2011)), and is currently characterized as possessing a framework type described as a disturbed ZSM-11 (MEL) structure. The disturbances are 12-ring channels that substitute for 1 out of 16 10-ring channels, in an ordered manner. Disorder by the 12-membered rings channels results in a framework with large pockets of isolated three-dimensional 10-membered ring channel systems.

[0007] It has now been found that the large pore selectivity can be enhanced by substituting the boron in the borosilicate form of the zeolite with aluminum to yield an alumino-borosilicate material wherein substantially all of its aluminum atoms located within regions of the zeolite structure which form the 12 ring channels.

SUMMARY OF THE ~~INVENTION~~DISCLOSURE

[0008] In accordance with the present invention there is provided an alumino-borosilicate SSZ-57 characterized as having substantially all of its aluminum located within regions of the zeolite structure which form the 12 ring channels.

[0009] The present invention also includes a process for preparing an alumino-borosilicate SSZ-57 molecular sieve by:

(a) preparing a reaction mixture containing: (1) at least one source of silicon oxide; (2) at least one source of boron oxide; (3) at least one source of an element selected from Groups 1 and 2 of the Periodic Table; (4) hydroxide ions; (5) a structure directing agent ("SDA") selected from the group consisting of an N-butyl-N-cyclohexylpyrrolidinium cation, an N-propyl-N-cycloheptylpyrrolidinium cation, an N-butyl-N-cyclooctylpyrrolidinium cation, and mixtures thereof; and (6) water;

(b) maintaining the reaction mixture under crystallization conditions sufficient to form crystals of borosilicate SSZ-57;

(c) subjecting the borosilicate SSZ-57 crystals to calcination conditions; and

(d) replacing at least a portion of the boron in the 12-ring channels of framework of the calcined borosilicate SSZ-57 with aluminum to provide an alumino-borosilicate SSZ-57 characterized as having substantially all of its aluminum located within regions of the zeolite structure which form the 12 ring channels.

In one aspect, there is provided an alumino-borosilicate SSZ-57 zeolite, wherein the zeolite is characterized as having substantially all of its aluminum atoms located within regions of the zeolite structure which form the 12 ring channels, made by a method comprising the steps of:

(a) preparing a reaction mixture containing: (1) at least one source of silicon oxide; (2) at least one source of boron oxide; (3) at least one source of an element selected from Groups 1 and 2 of the Periodic Table; (4) hydroxide ions; (5) a structure directing agent selected from the group consisting of an N-butyl-N-cyclohexylpyrrolidinium cation, an N-propyl-N-cycloheptylpyrrolidinium cation, an N-butyl-N-cyclooctylpyrrolidinium cation, and mixtures thereof; and (6) water;

(b) maintaining the reaction mixture under crystallization conditions sufficient to form crystals of borosilicate SSZ-57;

(c) subjecting the borosilicate SSZ-57 crystals to calcination conditions; and

(d) replacing at least a portion of the boron in the 12-ring channels of framework of the calcined borosilicate SSZ-57 with aluminum to provide an alumino-borosilicate SSZ-57 characterized as having substantially all of its aluminum atoms located within regions of the zeolite structure which form the 12 ring channels.