CLAIMS:

1. A method for reducing a level of occluded alkali metal cations from an MSE-framework type molecular sieve, the method comprising:

(a1) contacting an MSE framework-type molecular sieve containing a first amount of occluded potassium ions with a solution containing ammonium ions at a temperature of at least about 50ºC to ammonium-exchange at least part of the occluded potassium ions and produce a treated molecular sieve containing a second amount of occluded potassium ions, wherein the second amount is less than the first amount and the second amount is no more than 0.10 wt% potassium, and wherein the MSE framework-type molecular sieve is MCM-68 having a silicon to aluminum atomic ratio of at least about 21.

2. The method of claim 1, wherein the MSE framework-type molecular sieve has a silicon to aluminum atomic ratio in the range of from about 21 to about 1000.

3. The method of claim 1, wherein the first amount of occluded potassium ions is at least about 0.25 wt% potassium by weight of the molecular sieve.

4. The method of claim 1, wherein the second amount of occluded potassium ions in the treated molecular sieve is no more than about 0.08 wt% potassium.

5. The method of claim 1, further comprising:

(b1) crystallizing a reaction mixture comprising a source of water, a source of an oxide of a tetravalent element, Y, a source of a trivalent element, X, a source of potassium and a source of organic structure directing agent effective to direct the crystallization of an MSE framework-type molecular sieve from the reaction mixture;

(c1) recovering crystals of MSE framework-type molecular sieve from the reaction mixture; and

(d1) supplying at least part of the recovered crystals or a product thereof to the contacting (a1).

6. The method of claim 5, further comprising:

(e1) removing at least part of the organic structure directing agent contained by the recovered crystals prior to supplying the crystals to the contacting (a1).

7. The method of claim 5, further comprising:

(f1) heating the treated molecular sieve to convert at least part of the exchanged ammonium ions to hydrogen ions.

8. The method of claim 1, wherein the second amount of occluded potassium ions in the treated molecular sieve is no more than 0. 05 wt% potassium.

9. The method of claim 1, wherein the second amount of occluded potassium ions in the treated molecular sieve is no more than 0.02 wt% potassium.

10. A method for reducing a level of occluded alkali metal cations from an MSE-framework type molecular sieve, the method comprising:

(a2) contacting an MSE framework-type molecular sieve of MCM-68 containing a first amount of occluded potassium ions with steam at a temperature of at least about 300ºC to produce a steamed molecular sieve; and

(b2) contacting the steamed molecular sieve with a solution containing ammonium ions to ammonium-exchange at least part of the potassium ions in the steamed molecular sieve thereby producing a treated molecular sieve containing a second amount of occluded potassium ions, wherein the second amount is less than the first amount and the second amount is no more than 0.10 wt% potassium.

11. The method of claim 10, wherein the contacting (b2) is conducted with a solution containing ammonium ions at a temperature of at least about 10ºC.

12. The method of claim 10, wherein the MSE framework-type molecular sieve comprises an aluminosilicate.

13. The method of claim 12, wherein the MSE framework-type molecular sieve has a silicon to aluminum atomic ratio of at least about 7.

14. The method of claim 10, wherein the first amount of occluded potassium ions in the molecular sieve is at least about 0.25 wt% potassium.

15. The method of claim 10, wherein the second amount of occluded potassium ions in the treated molecular sieve is less than about 0.10 wt% potassium.

16. The method of claim 10, further comprising:

(c2) crystallizing a reaction mixture comprising a source of water, a source of an oxide of a tetravalent element, Y, a source of a trivalent element, X, a source of potassium and a source of organic structure directing agent effective to direct the crystallization of an MSE framework-type molecular sieve from the reaction mixture;

(d2) recovering crystals of MSE framework-type molecular sieve from the reaction mixture; and

(e2) supplying at least part of the recovered crystals or a product thereof to the contacting (a2).

17. The method of claim 16, further comprising:

(f2) removing at least part of the organic structure directing agent contained by the recovered crystals prior to supplying the crystals to the contacting (a2).

18. The process of claim 16, further comprising:

(g2) heating the treated molecular sieve to convert at least part of the exchanged ammonium ions to hydrogen ions.

19. The method of claim 10, wherein the second amount of occluded potassium ions in the treated molecular sieve is no more than 0.05 wt% potassium.

20. The method of claim 10, wherein the second amount of occluded potassium ions in the treated molecular sieve is no more than 0.02 wt% potassium.