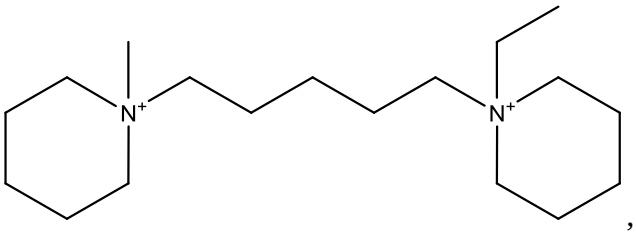
Claims:

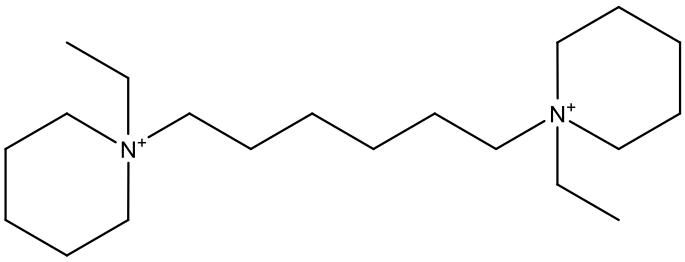
1. A process for making a molecular sieve comprising the steps of:

(a) preparing a synthesis mixture comprising a source of tetravalent tetrahedral atoms Y, optionally a source of alkali metal ions Z, optionally a source of trivalent tetrahedral atoms X, a source of water and at least one structure directing agent (SDA) selected from the group consisting of the following cations:



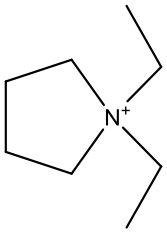
(III)

,



(IV)

and



(V)

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(b) maintaining the synthesis mixture under crystallization conditions until the molecular sieve has formed, and

(c) separating the molecular sieve from the synthesis mixture.

2. The process of claim 1, wherein the synthesis mixture comprises at least one SDA selected from the group consisting of cation (III), cation (IV) and cation (V), and the molecular sieve is of the MFS framework type.

3. The process of claim 1, wherein the molecular sieve is ZSM-57.

4. The process of claim 1, wherein the synthesis mixture has a composition falling within the following molar ratios:

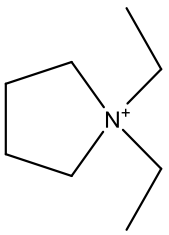
YO_2/X_2O_3	=	4 – 200
H_2O/YO_2	=	10 – 200
OH^-/YO_2	=	0 – 3
Z/YO_2	=	0 – 3
SDA/YO_2	=	0.01 – 2

wherein X is a trivalent tetrahedral atom, Y is a tetravalent tetrahedral atom, Z is an alkali metal ion and SDA is the structure directing agent.

5. The process of claim 4, wherein the synthesis mixture has a composition within the following molar ratios:

YO_2/X_2O_3	=	15 - 100
H_2O/YO_2	=	20 -50
H_2O/YO_2	=	0.1 – 1.0
Z/YO_2	=	0 – 2
SDA/YO_2	=	0.1 – 1.

6. The process of claim 1, wherein the synthesis mixture comprises a cation of structure (V):



(V)

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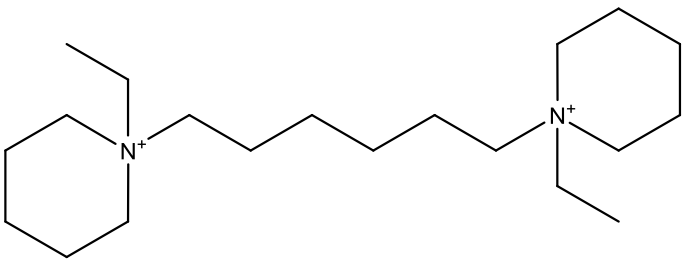
7. The process of claim 1, wherein the synthesis mixture comprises a cation of structure (IV):



(IV)

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8. The process of claim 1, wherein the synthesis mixture is maintained under crystallization conditions including a temperature in the range of from 80ºC to 250ºC for a duration in the range of from 12 hours to 60 days.

9. The process of claim 1, wherein the synthesis mixture comprises potassium ions.

10. The process of claim 1, wherein X is aluminum and Y is silicon.

11. The process of claim 1, further comprising a step of calcining the molecular sieve.

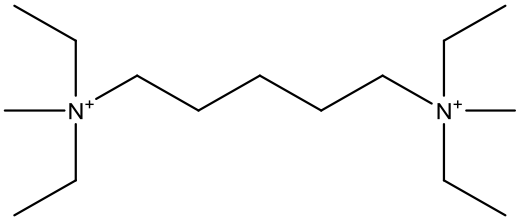
12. A process for converting a feedstock comprising an organic compound which comprises the step of contacting said feedstock at organic compound conversion conditions with a catalyst comprising an active form of the molecular sieve prepared by the process of claim 1.

13. The process of claim 12, wherein the process for converting a feedstock is an olefin oligomerization process.

14. A molecular sieve in its as-synthesised form made by the process of claim 2 which comprises the at least one SDA selected from the group consisting of cation (III), cation (IV) and cation (V).

15. A process for making a molecular sieve of MFS framework type, the process comprising the steps of:

(a) preparing a synthesis mixture comprising a source of tetravalent tetrahedral atoms Y, optionally a source of alkali metal ions Z, optionally a source of trivalent tetrahedral atoms X, a source of water and at least one structure directing agent (SDA) which comprises a cation of structure (II):



(II)

(b) maintaining the synthesis mixture under crystallization conditions until the molecular sieve of a MFS framework type has formed, and

(c) separating the molecular sieve of a MFS framework type from the synthesis mixture.

16. The process of claim 15, wherein the molecular sieve is ZSM-57.

17. The process of claim 15, wherein the synthesis mixture has a composition falling within the following molar ratios:

YO_2/X_2O_3	=	4 – 200
H_2O/YO_2	=	10 – 200
OH^-/YO_2	=	0 – 3
Z/YO_2	=	0 – 3
SDA/YO_2	=	0.01 – 2

wherein X is a trivalent tetrahedral atom, Y is a tetravalent tetrahedral atom, Z is an alkali metal ion and SDA is the structure directing agent.

18. The process of claim 17, wherein the synthesis mixture has a composition within the following molar ratios:

YO_2/X_2O_3	=	15 - 100
H_2O/YO_2	=	20 -50
H_2O/YO_2	=	0.1 – 1.0
Z/YO_2	=	0 – 2
SDA/YO_2	=	0.1 – 1.

19. The process of claim 15, wherein the synthesis mixture is maintained under crystallization conditions including a temperature in the range of from 80ºC to 250ºC for a duration in the range of from 12 hours to 60 days.

20. The process of claim 15, wherein the synthesis mixture comprises potassium ions.

21. The process of claim 15, wherein X is aluminum and Y is silicon.

22. The process of claim 15, further comprising a step of calcining the molecular sieve of a MFS framework type.

23. A process for converting a feedstock comprising an organic compound which comprises the step of contacting said feedstock at organic compound conversion conditions with a catalyst comprising an active form of the molecular sieve of a MFS framework type prepared by the process of claim 15.

24. The process of claim 23, wherein the process for converting a feedstock is an olefin oligomerization process.

25. A molecular sieve in its as-synthesised form of the MFS framework type made by the process of claim 15 which comprises the SDA of cation (II).