CLAIMS

1. A molecular sieve SCM-15, characterized in that the molecular sieve, particularly in its prepared form or calcined form, has a schematic chemical composition of formula "$SiO_2 \cdot GeO_2$", wherein the molar ratio of silicon to germanium satisfies $SiO_2/GeO_2 \geq 1$ and has an X-ray diffraction spectrum substantially as shown in Table A-1 or Table A-2 below,

TABLE A-1

2θ (°)[a]	d-distance (Å)[b]	Relative intensity ($I/I_0 \times 100$)
4.811	18.353	w
6.571	13.441	m-vs
6.888	12.823	m-s
9.675	9.134	m-vs
9.894	8.933	m-vs
19.888	4.461	w-m

(a)=±0.3°, (b) is a function of 2θ,

TABLE A-2

2θ (°)[a]	d-distance (Å)	Relative intensity ($I/I_0 \times 100$)
4.811	18.424±1.148	w
6.571	13.468±0.614	m-vs
6.888	12.847±0.559	m-s
9.675	9.143±0.283	m-vs
9.894	8.941±0.270	m-vs
19.888	4.462±0.067	w-m

(a) = ±0.3°.

2. The molecular sieve SCM-15 according to claim 1, characterized in that the X-ray diffraction spectrum further comprises X-ray diffraction peaks substantially as shown in Table B-1 or Table B-2 below,

TABLE B-1

2θ (°)[a]	d-distance (Å)[b]	Relative intensity ($I/I_0 \times 100$)
8.225	10.741	w

15.592	5.679	w
22.031	4.031	w-m
22.435	3.960	w-m
25.330	3.513	w

(a)=±0.3°, (b) is a function of 2θ,

TABLE B-2

2θ (°)[(a)]	d-distance (Å)	Relative intensity ($I/I_0 \times 100$)
8.225	10.755±0.392	w
15.592	5.681±0.109	w
22.031	4.032±0.054	w-m
22.435	3.960±0.052	w-m
25.330	3.514±0.041	w

(a)=±0.3°,

said X-ray diffraction spectrum optionally further comprising X-ray diffraction peaks substantially as shown in the table below,

2θ (°)[(a)]	d-distance (Å)	Relative intensity ($I/I_0 \times 100$)
14.294	6.194±0.129	w
16.909	5.241±0.0.092	w
19.156	4.630±0.0.072	w-m
19.517	4.546±0.0.069	w-m
21.162	4.196±0.0.059	w-m

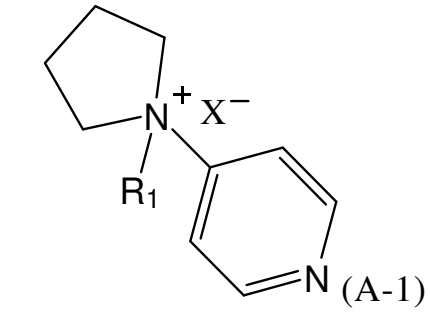
(a) =± 0.3°.

3. The molecular sieve SCM-15 according to claim 1, characterized in that the molecular sieve has a schematic chemical composition of formula "$SiO_2 \cdot GeO_2$", wherein the molar ratio of silicon to germanium satisfies $1 \leq SiO_2/GeO_2 \leq 15$, more preferably $2 \leq SiO_2/GeO_2 \leq 10$, or more preferably $2.5 \leq SiO_2/GeO_2 \leq 5$.

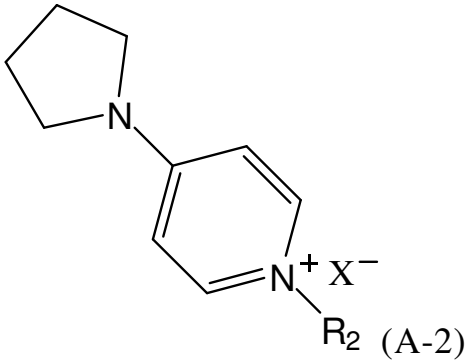
4. The molecular sieve SCM-15 according to claim 3, characterized in that not more than 10% of the Ge atoms in the molecular sieve are substituted by atoms of at least one element other than silicon and germanium.

5. The molecular sieve SCM-15 according to claim 4, characterized in that the element other than silicon and germanium is at least one selected from the group consisting of boron, aluminum, tin, zirconium and titanium.

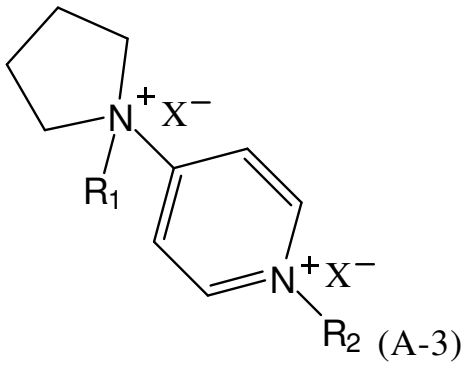
6. A process of preparing molecular sieve SCM-15, wherein the molecular sieve has a schematic chemical composition of formula "$SiO_2 \cdot GeO_2$", wherein the molar ratio of silicon to germanium satisfies $SiO_2/GeO_2 \geq 1$, characterized in that the process comprises a step of crystallizing a mixture comprising a silicon source, a germanium source, a fluorine source, an organic template and water or consisting of a silicon source, a germanium source, a fluorine source, an organic template and water, to obtain the molecular sieve, wherein the organic template is selected from 4-pyrrolidinylpyridine, or a quaternary ammonium form represented by formula (A-1), formula (A-2) or formula (A-3), preferably 4-pyrrolidinylpyridine,



(A-1)



(A-2)



(A-3)

in each formula, R_1 and R_2 are each independently H or C_{1-2} alkyl, and X^- are each independently Cl^-, Br^-, I^- and a hydroxide ion (OH^-), preferably hydroxide ion (OH^-).

7. The process of preparing molecular sieve SCM-15 according to claim 6, characterized in that the silicon source is at least one selected from the group consisting of silicic acid, silica gel, silica sol, tetraalkyl orthosilicate and water glass; the germanium source is at least one selected from the group consisting of germanium oxide, germanium nitrate and tetraalkoxygermanium;

and the molar ratio of the silicon source (calculated by SiO_2), the germanium source (calculated by GeO_2), the fluorine source (calculated by F), the organic template agent and water is 1:(0-1):(0.1-2.0):(0.1-2.0):(3-30); preferably 1:(1/15-1.5):(0.2-1.5):(0.2-1.5):(4-25); more preferably 1:(0.1-0.5):(0.4-1.2):(0.4-1.2):(5-20); more preferably 1:(0.2-0.4):(0.6-1.0):(0.6-1.0):(5-15).

8. The process of preparing molecular sieve SCM-15 according to claim 6, characterized in that the crystallization conditions comprise: a crystallization temperature of 131 to 210℃, preferably 150 to 190℃, more preferably 160 to 180℃; and a crystallization duration of 1 to 20 days, preferably 2 to 10 days, more preferably 2 to 7 days.

9. The process of preparing molecular sieve SCM-15 according to claim 6, characterized in that the process comprises an aging step prior to crystallization; and the aging conditions include: an ageing temperature of 50-90℃, and an ageing duration of 2 hours to 2 days.

10. The process of preparing molecular sieve SCM-15 according to claim 6, characterized in that the mixture further comprises a source of an element other than silicon and germanium, preferably at least one selected from the group consisting of boron source, aluminum source, tin source, zirconium source and titanium source; more preferably at least one oxide source selected from the group consisting of a boron oxide source, an alumina source, a tin oxide source, a zirconium oxide source and a titanium oxide source;

and the molar ratio of the oxide source (calculated as the corresponding oxide) to the germanium source (calculated as GeO_2) is (0.01-0.1):1, preferably (0.02-0.08): 1.

11. A molecular sieve composition, comprising the molecular sieve SCM-15 according to any one of claims 1 to 5 or the molecular sieve SCM-15 prepared according to the process of preparing the molecular sieve SCM-15 according to any of claims 6 to 10, and a binder.

12. Use of the molecular sieve SCM-15 according to any one of claims 1 to 5, the molecular sieve SCM-15 prepared according to the process of preparing the molecular sieve SCM-15 according to any one of claims 6 to 10, or the molecular sieve composition according to claim 11, as an adsorbent or catalyst.