CLAIMS

~~1. An aerogel having a thermal conductivity of 0.03 W/m·K or less and a compressive elasticity modulus of 2 MPa or less at 25 ºC under atmospheric pressure.~~

~~2. The aerogel according to claim 1, having a recovery rate from deformation of 90% or more.~~

~~3. The aerogel according to claim 1 or 2, having a maximum compressive deformation rate of 80% or more.~~

~~4. An aerogel wherein a ratio Q +T:D of a signal area derived from Q and T to a signal area derived from D is from 1:0.01 to 1:0.5 when in a solid ^{29}Si-NMR spectrum as measured by using DD/MAS method, silicon-containing bonding units of Q, T, and D are defined below:~~

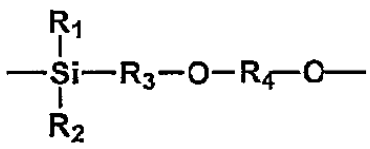
~~Q: a silicon-containing bonding unit comprising four oxygen atoms that are bonded to one silicon atom;~~

~~T: a silicon-containing bonding unit comprising three oxygen atoms and one hydrogen atom or one mono-valent organic group that are bonded to one silicon atom; and~~

~~D : a silicon-containing bonding unit comprising two oxygen atoms and two hydrogen atoms or two mono-valent organic groups that are bonded to one silicon atom,~~

~~providing that the organic group is a mono-valent organic group where an atom bonded to a silicon atom is a carbon atom.~~

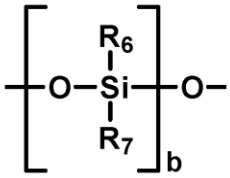
~~5. An aerogel having a structure represented by the following general formula (1):~~



(1)

~~wherein in the formula (1), R_1 and R_2 each independently represents an alkyl group or an aryl group and R_3 and R_4 each independently represents an alkylene group.~~

~~6~~1. An aerogel having a ladder type structure provided with a strut and a bridge, the bridge represented by the following general formula (2):

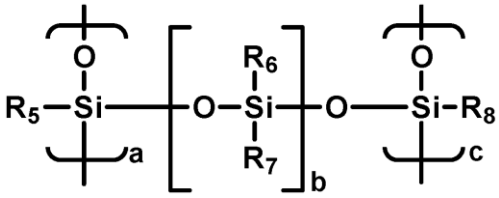


(2)

wherein in the formula (2), R_6 and R_7 each independently represents an alkyl group or an aryl group and "b" represents an integer of from 1 to 50.

~~7~~

2. The aerogel according to claim ~~6~~1, having a structure represented by the following general formula (3):



(3)

wherein in the formula (3), R_5, R_6, R_7, and R_8 each independently represents an alkyl group or an aryl group; "a" and "c" each independently represents an integer of from 1 to 3,000; and "b" represents an integer of from 1 to 50.

~~8~~

3. An aerogel from drying a wet gel, the wet gel being formed from a sol comprising at least one member selected from the group consisting of a polysiloxane compound having a reactive group within a molecule thereof and a hydrolyzed product of said polysiloxane compound~~.~~, wherein

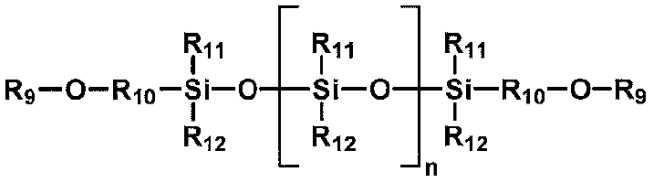
~~9. The aerogel according to any one of claims 1-7, from drying a wet gel, the wet gel~~

being formed from a sol comprising at least one member selected from the group consisting of a polysiloxane compound having a reactive group from within a molecule thereof and a hydrolyzed product of said polyxiloxane compound.

10. The aerogel according to claim 8 or 9, wherein the reactive group is a hydroxyalkylan alkoxy group.

11. The aerogel according to claim 10, wherein the , optionally having a carbon number of the hydroxyalkyl group is from 1 to 6.;

12. The aerogel according to claim 10 or 11, whereinand the polysiloxane compound is represented by the following general formula (4):



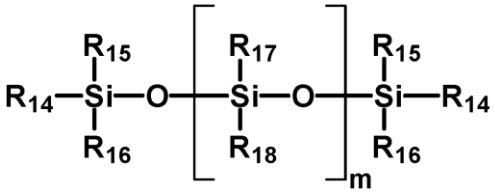
（4）

wherein in the formula (4), R_9 represents a hydroxyalkyl group; R_{10} represents an alkylene group; R_{11} and R_{12} each independently represents an alkyl group or an aryl group; and "n" represents an integer of from 1 to 50.

13. The aerogel according to claim 8 or 9, wherein the reactive group is an alkoxy group.

14. The aerogel according to claim 13, wherein the carbon number of the alkoxy group is from 1 to 6.

15. The aerogel according to claim 13 or 14, wherein the polysiloxane compound is a polysiloxane compound represented by the following general formula (5):



（5）

wherein in the formula (5), R_{14} represents an alkyl group or an alkoxy group; R_{15} and R_{16} each independently represents an alkoxy group; R_{17} and R_{18} each independently represents an alkyl group or an aryl group; and "m" represents an integer of from 1 to 50.

~~16~~

4. The aerogel according to ~~any one of claims 8-15~~claim 3, wherein the sol further comprises at least one member selected from the group consisting of a silicone compound having a hydrolyzable functional group within a molecule thereof and a hydrolyzed product of said silicone compound.

~~17~~

5. The aerogel according to ~~any one of claims 8-16~~claim 3 or 4, wherein the drying is carried out at a temperature of less than a critical temperature of a solvent to be used in the drying and under atmospheric pressure.

~~18~~

6. The aerogel according to ~~any one of claims 8-16~~claim 3 or 4, wherein the drying is supercritical drying.