having a water content of lower than 500 ppm and an acid-derived component content of 12000 ppm or lower.

[0012c]

In another aspect, there is provided a nonaqueous solvate of lithium iodide, comprising:

lithium iodide; and

a nonaqueous solvent other than alcohol.

[0012d]

In another aspect, there is provided a method for producing a lithium iodide nonaqueous solution, comprising

reacting metallic lithium and iodine in a nonaqueous solvent to generate lithium iodide in the nonaqueous solvent, thereby obtaining a lithium iodide nonaqueous solution.

[0012e]

In another aspect, there is provided a method for producing lithium iodide, comprising

reacting metallic lithium and iodine in a nonaqueous solvent to generate lithium iodide in the nonaqueous solvent, thereby obtaining a lithium iodide nonaqueous solution, and

drying the lithium iodide nonaqueous solution to obtain lithium iodide having a water content of lower than 500 ppm and an acid-derived component content of 12000 ppm or lower.

[0012f]

In another aspect, there is provided a method for producing a nonaqueous solvate of lithium iodide, comprising

reacting metallic lithium and iodine in a nonaqueous solvent to generate lithium iodide in the nonaqueous solvent, thereby obtaining a lithium iodide nonaqueous solution, and

drying the lithium iodide nonaqueous solution to obtain a nonaqueous solvate of lithium iodide comprising a nonaqueous solvent and lithium iodide.

[0013]

Specifically, a lithium iodide nonaqueous solution according to the present disclosure is a lithium iodide nonaqueous solution containing a nonaqueous solvent and lithium iodide, the lithium iodide nonaqueous solution having

a water content per unit of lithium iodide (Y/X) of 7 or lower and an acid-derived component content of 4000 ppm or lower, the water content per unit of lithium iodide (Y/X) being determined as a ratio of a water content Y

CLAIMS

Claim 1. A lithium iodide nonaqueous solution comprising:

a nonaqueous solvent; and

lithium iodide,

the lithium iodide nonaqueous solution having a water content per unit of lithium iodide (Y/X) of 7 or lower and an acid-derived component content of 4000 ppm or lower, the water content per unit of lithium iodide (Y/X) being determined as a ratio of a water content Y (ppm) of the lithium iodide nonaqueous solution to a lithium iodide concentration X (% by weight) of the lithium iodide nonaqueous solution.

Claim 2. The lithium iodide nonaqueous solution according to claim 1,

wherein the lithium iodide concentration X of the lithium iodide nonaqueous solution is 5 to 70% by weight.

Claim 3. The lithium iodide nonaqueous solution according to claim 1 or 2,

wherein the water content Y of the lithium iodide nonaqueous solution is lower than 200 ppm.

Claim 4. The lithium iodide nonaqueous solution according to any one of claims 1 to 3,

wherein the nonaqueous solvent contains at least one selected from the group consisting of ether solvents, acetal solvents, ester solvents, nitrile solvents, carbonate solvents, ketone solvents, amide solvents, and sulfur-containing solvents.

Claim 5. The lithium iodide nonaqueous solution according to any one of claims 1 to 4,

wherein the nonaqueous solvent is an aprotic solvent.

Claim 6. The lithium iodide nonaqueous solution according to any one of claims 1 to 5,

wherein the nonaqueous solvent contains at least one selected from the group consisting of ether solvents, acetal solvents, ester solvents, and amide solvents.

Claim 7. The lithium iodide according to any one of claims 1 to 6, comprising a nonaqueous solvate of lithium iodide.

Claim 8. The lithium iodide according to claim 7,

wherein a nonaqueous solvent contained in the nonaqueous solvate contains at least one selected from the group consisting of ether solvents, acetal solvents, ester solvents, nitrile solvents, carbonate solvents, ketone solvents, amide solvents, and sulfur-containing solvents.

Claim 9. The lithium iodide according to claim 7 or 8,

wherein a nonaqueous solvent contained in the nonaqueous solvate is an aprotic solvent.

Claim 10. The lithium iodide according to any one of claims 7 to 9,

wherein a nonaqueous solvent contained in the nonaqueous solvate contains at least one selected from the group consisting of ether solvents, acetal solvents, ester solvents, and amide solvents.

Claim 11. A nonaqueous solvate of lithium iodide, comprising:

lithium iodide; and

a nonaqueous solvent other than alcohol.

Claim 12. The nonaqueous solvate of lithium iodide according to claim 11,

wherein the nonaqueous solvent other than alcohol contains at least one selected from the group consisting of ether solvents, acetal solvents, ester solvents, nitrile solvents, carbonate solvents, ketone solvents, amide solvents, and sulfur-containing solvents.

Claim 13. The nonaqueous solvate of lithium iodide according to claim 11 or 12,

wherein the nonaqueous solvent other than alcohol is an aprotic solvent.

Claim 14. The nonaqueous solvate of lithium iodide according to any one of claims 11 to 13,

wherein the nonaqueous solvent other than alcohol contains at least one selected from the group consisting of ether solvents, acetal solvents, ester solvents, and amide solvents.

Claim 15. The nonaqueous solvate of lithium iodide according to any one of claims 11 to 14,

wherein the nonaqueous solvate of lithium iodide has a crystalline structure.

Claim 16. A method for producing a lithium iodide nonaqueous solution, comprising

reacting metallic lithium and iodine in a nonaqueous solvent to generate lithium iodide in the nonaqueous solvent, thereby obtaining a lithium iodide nonaqueous solution.

Claim 17. The method for producing a lithium iodide nonaqueous solution according to claim 16,

wherein the lithium iodide nonaqueous solution obtained has a water content per unit of lithium iodide (Y/X) of 7 or lower and an acid-derived component content of 4000 ppm or lower, where the water content per unit of lithium iodide (Y/X) is determined as a ratio of a water content Y (ppm) of the lithium iodide nonaqueous solution to the lithium iodide concentration X (% by weight) of the lithium iodide nonaqueous solution.

Claim 18. The method for producing a lithium iodide nonaqueous solution according to claim 16 or 17,

wherein the metallic lithium is used in an amount of 2.1 to 20.0 mol per 1 mol of the iodine.

Claim 19. The method for producing a lithium iodide nonaqueous solution according to any one of claims 16 to 18,

wherein the nonaqueous solvent contains at least one selected from the group consisting of ether solvents, acetal solvents, ester solvents, nitrile solvents, carbonate solvents, ketone solvents, amide solvents, and sulfur-containing solvents.

Claim 20. The method for producing a lithium iodide nonaqueous solution according to any one of claims 16 to 19,

wherein the nonaqueous solvent is an aprotic solvent.

Claim 21. The method for producing a lithium iodide nonaqueous solution according to any one of claims 16 to 20,

wherein the nonaqueous solvent contains at least one selected from the group consisting of ether solvents, acetal solvents, ester solvents, and amide solvents.

Claim 22. A method for producing lithium iodide, comprising

reacting metallic lithium and iodine in a nonaqueous solvent to generate lithium iodide in the nonaqueous solvent, thereby obtaining a lithium iodide nonaqueous solution, and

drying the lithium iodide nonaqueous solution to obtain lithium iodide having a water content of lower than 500 ppm and an acid-derived component content of 12000 ppm or lower.

Claim 23. The method for producing lithium iodide according to claim 22,

wherein the drying includes decompressing the lithium iodide nonaqueous solution in an inert gas atmosphere.

Claim 24. The method for producing lithium iodide according to claim 23,

wherein the drying includes decompressing the lithium iodide nonaqueous solution to 0.1 kPa or higher and 5.0 kPa or lower in an inert gas atmosphere and maintaining an atmospheric temperature during the decompressing at 20°C or higher and 100°C or lower.

Claim 25. A method for producing a nonaqueous solvate of lithium iodide, comprising

reacting metallic lithium and iodine in a nonaqueous solvent to generate lithium iodide in the nonaqueous solvent, thereby obtaining a lithium iodide nonaqueous solution, and

drying the lithium iodide nonaqueous solution to obtain a nonaqueous solvate of lithium iodide comprising a nonaqueous solvent and lithium iodide.