CLAIMS

1. A method for producing an aqueous hydrogen peroxide solution, comprising:

a first step for contacting an aqueous hydrogen peroxide solution with activated alumina which has been cleaned with purified water, and

a second step for, after the first step, contacting the resultant aqueous hydrogen peroxide solution with a cation-exchange resin.

2. The method according to claim 1, wherein the cation-exchange resin is a hydrogen ion-type, strongly acid cation-exchange resin having a sulfonic acid group.

3. The method according to claim 1 or 2, wherein the aqueous hydrogen peroxide solution being in contact with the activated alumina and the cation-exchange resin has a temperature of 30°C or lower.

4. The method according to any one of claims 1 to 3, wherein, in the first step, the aqueous hydrogen peroxide solution is allowed to pass through the activated alumina in a continuous manner, and

wherein, in the second step, the aqueous hydrogen peroxide solution is allowed to pass through the cation-exchange resin in a continuous manner.

5. The method according to claim 4, wherein the aqueous hydrogen peroxide solution passing through the activated alumina has a space velocity (SV) of 0.5 to 50 Hr^{-1}, and

wherein the aqueous hydrogen peroxide solution passing through the cation-exchange resin has a space velocity (SV) of 1 to 300 Hr^{-1}.

6. The method according to any one of claims 1 to 5, further comprising:

a third step for, after the first step, subjecting the resultant aqueous hydrogen peroxide solution to filtration using a filter having an average pore diameter of 1 μm or less.

7. The method according to any one of claims 1 to 6, further comprising:

a fourth step for, after the second step, adding at least one substance selected from phosphoric acid, pyrophosphoric acid, a phosphate, and a pyrophosphate to the aqueous hydrogen peroxide solution, and

a fifth step for, after the fourth step, contacting the resultant aqueous hydrogen peroxide solution with an anion-exchange resin and/or a mixed bed of an anion-exchange resin and a cation-exchange resin.

8. The method according to claim 7, wherein, in the fourth step, the at least one substance selected from phosphoric acid, pyrophosphoric acid, a phosphate, and a pyrophosphate is added to the aqueous hydrogen peroxide solution so that the

concentration of the total of phosphoric acid ions and pyrophosphoric acid ions contained in the aqueous hydrogen peroxide solution becomes 0.01 to 100 ppm.

9. The method according to claim 7 or 8, wherein, in the fifth step, the aqueous hydrogen peroxide solution being in contact with the anion-exchange resin and/or the mixed bed of an anion-exchange resin and a cation-exchange resin has a temperature of 30°C or lower.

10. The method according to any one of claims 7 to 9, wherein, in the fifth step, the aqueous hydrogen peroxide solution is contacted with the anion-exchange resin and/or the mixed bed of an anion-exchange resin and a cation-exchange resin in a continuous manner.

11. The method according to claim 10, wherein, in the fifth step, the aqueous hydrogen peroxide solution being in contact with the anion-exchange resin and/or the mixed bed of an anion-exchange resin and a cation-exchange resin has a space velocity (SV) of 1 to 300 Hr^{-1}.

12. The method according to any one of claims 1 to 11, further comprising:

a sixth step for contacting the aqueous hydrogen peroxide solution with a synthetic adsorbent.

13. The method according to claim 12, wherein, in the sixth step, the aqueous hydrogen peroxide solution is allowed to pass through the synthetic adsorbent in a continuous manner.

14. The method according to claim 13, wherein, in the sixth step, the aqueous hydrogen peroxide solution passing through the synthetic adsorbent has a space velocity (SV) of 1 to 300 Hr^{-1}.

15. The method according to any one of claims 1 to 14, wherein the aqueous hydrogen peroxide solution is an aqueous hydrogen peroxide solution prepared by an anthraquinone method.

CLAIM

1. A method for producing an aqueous hydrogen peroxide solution, comprising:

a first step for contacting an aqueous hydrogen peroxide solution with activated alumina which has been cleaned with purified water to remove a silicon component, and

a second step for, after the first step, contacting the resultant aqueous hydrogen peroxide solution with a cation-exchange resin.

2. The method according to claim 1, wherein the cation-exchange resin is a hydrogen ion-type, strongly acid cation-exchange resin having a sulfonic acid group.

3. The method according to claim 1 or 2, wherein the aqueous hydrogen peroxide solution being in contact with the activated alumina and the cation-exchange resin has a temperature of 30°C or lower.

4. The method according to any one of claims 1 to 3, wherein, in the first step, the aqueous hydrogen peroxide solution is allowed to pass through the activated alumina in a continuous manner, and

wherein, in the second step, the aqueous hydrogen peroxide solution is allowed to pass through the cation-exchange resin in a continuous manner.

5. The method according to claim 4, wherein the aqueous hydrogen peroxide solution passing through the activated alumina has a space velocity (SV) of 0.5 to 50 Hr^{-1}, and

wherein the aqueous hydrogen peroxide solution passing through the cation-exchange resin has a space velocity (SV) of 1 to 300 Hr^{-1}.

6. The method according to any one of claims 1 to 5, further comprising:

a third step for, after the first step, subjecting the resultant aqueous hydrogen peroxide solution to filtration using a filter having an average pore diameter of 1 μm or less.

7. The method according to any one of claims 1 to 6, further comprising:

a fourth step for, after the second step, adding at least one substance selected from phosphoric acid, pyrophosphoric acid, a phosphate, and a pyrophosphate to the aqueous hydrogen peroxide solution, and

a fifth step for, after the fourth step, contacting the resultant aqueous hydrogen peroxide solution with an anion-exchange resin and/or a mixed bed of an anion-exchange resin and a cation-exchange resin.

8. The method according to claim 7, wherein, in the fourth step, the at least one substance selected from phosphoric acid, pyrophosphoric acid, a phosphate, and a pyrophosphate is added to the aqueous hydrogen peroxide solution so that the concentration of the total of phosphoric acid ions and pyrophosphoric acid ions contained in the aqueous hydrogen peroxide solution becomes 0.01 to 100 ppm.

9. The method according to claim 7 or 8, wherein, in the fifth step, the aqueous hydrogen peroxide solution being in contact with the anion-exchange resin and/or the mixed bed of an anion-exchange resin and a cation-exchange resin has a temperature of 30°C or lower.

10. The method according to any one of claims 7 to 9, wherein, in the fifth step, the aqueous hydrogen peroxide solution is contacted with the anion-exchange resin and/or the mixed bed of an anion-exchange resin and a cation-exchange resin in a continuous manner.

11. The method according to claim 10, wherein, in the fifth step, the aqueous hydrogen peroxide solution being in contact with the anion-exchange resin and/or the mixed bed of an anion-exchange resin and a cation-exchange resin has a space velocity (SV) of 1 to 300 Hr^{-1}.

12. The method according to any one of claims 1 to 11, further comprising:

a sixth step for contacting the aqueous hydrogen peroxide solution with a synthetic adsorbent before the first step.

13. The method according to claim 12, wherein, in the sixth step, the aqueous hydrogen peroxide solution is allowed to pass through the synthetic adsorbent in a continuous manner.

14. The method according to claim 13, wherein, in the sixth step, the aqueous hydrogen peroxide solution passing through the synthetic adsorbent has a space velocity (SV) of 1 to 300 Hr^{-1}.

15. The method according to any one of claims 1 to 14, wherein the aqueous hydrogen peroxide solution is an aqueous hydrogen peroxide solution prepared by an anthraquinone method.