Claims

1. Use of a zinc salt or a zinc complex for manufacturing a silver anti-tarnish agent containing at least either a zinc salt or a zinc complex as an effective component.

2. The use according to Claim 1, wherein the silver anti-tarnish agent is a silver anti-tarnish agent for a light-emitting diode.

3. The use according to Claim 2, wherein the silver anti-tarnish agent is a silver anti-tarnish agent containing at least one kind selected from the group consisting of a carboxylic acid compound zinc salt having a carbon atom number of 3 to 20, a phosphoric acid zinc salt, a phosphate ester zinc salt and a carbonyl compound zinc complex, as an effective component.

4. The use according to Claim 2, wherein the silver anti-tarnish agent is a silver anti-tarnish agent containing an aliphatic carboxylic acid zinc salt having a carbon atom number of 3 to 20 as an effective component.

5. The use according to Claim 4, wherein said aliphatic carboxylic acid zinc salt is a saturated or unsaturated fatty acid zinc salt.

6. The use according to Claim 4, wherein said aliphatic carboxylic acid zinc salt is at least one kind selected from the group consisting of zinc 2-ethylhexylate, zinc neodecanoate, zinc laurate, zinc ricinoleate, zinc stearate, zinc undecylenate and zinc naphthenate.

7. The use according to Claim 4, wherein said aliphatic carboxylic acid zinc salt is a zinc salt of an alicyclic carboxylic acid having at least either a cyclopentane or cyclohexane skeleton.

8. The use according to Claim 2, wherein the silver anti-tarnish agent is a silver anti-tarnish agent containing a zinc salt of a phosphate ester and/or a phosphoric acid as an effective component.

9. The use according to Claim 2, wherein the silver anti-tarnish agent is a silver anti-tarnish agent containing a zinc acetylacetonate complex as an effective component.

10. The use according to Claim 2, wherein the silver anti-tarnish agent further contains a solvent, and contains 0.005 to 1% by weight of at least either a zinc salt or a zinc complex as an effective component in said solvent.

11. A silver anti-tarnish resin composition for a light-emitting diode, which contains at least either a zinc salt or a zinc complex and a sealing resin, said at least either a zinc salt or a zinc complex being contained in an amount of 0.05 to 10 parts by weight based on 100 parts by weight of said resin.

12. The silver anti-tarnish resin composition according to Claim 11, wherein a cured product of the resin composition has a hardness of over 70 as measured by Durometer Type A of JIS K 7215.

13. The silver anti-tarnish resin composition according to Claim 11, wherein the cured product of the resin composition has a refractive index of over 1.45.

14. The silver anti-tarnish resin composition according to Claim 11, wherein the sealing resin is a sealing resin containing a silicone skeleton.

15. A silver anti-tarnish method, wherein the silver anti-tarnish agent according to Claim 1 is applied to a silver surface.

16. The silver anti-tarnish method according to Claim 15, the silver surface is a silver surface of a light-emitting diode.

17. The silver anti-tarnish method according to Claim 15, wherein the silver anti-tarnish agent according to Claim 1 further contains a solvent, and contains 0.005 to 1% by weight of at least either a zinc salt or a zinc complex as an effective component in said solvent.

18. A silver anti-tarnish method, wherein the silver anti-tarnish resin composition according to Claim 11 is applied to a silver surface of a light-emitting diode.

19. A light-emitting diode having, on the silver surface, a dried film or a cured product coat of a silver anti-tarnish agent containing at least either a zinc salt or a zinc complex.

20. The light-emitting diode according to Claim 19, which is sealed with a sealing resin on the dried film or the cured product coat of the silver anti-tarnish agent.

21. A light-emitting diode having a silver surface sealed with the silver anti-tarnish resin composition according to Claim 11.

22. The light-emitting diode according to Claim 19 or 20, the sealing resin is a silicone resin which is curable by addition reaction, and after curing forms, a cured product having a hardness of over 70 as measured by Durometer Type A of JIS K 7215 after curing.

23. A silver anti-tarnish agent containing at least either a zinc salt or a zinc complex as an effective component, said effective component being contained in a ratio of 0.005 to 1 part by weight based on 100 parts by weight of a diluent.

24. The silver anti-tarnish agent according to Claim 23, wherein the diluent is an organic solvent.

25. The silver anti-tarnish agent according to Claim 23, wherein the diluent is a silicone resin.

CLAIMS:

1. A silver anti-tarnish resin composition for a light-emitting diode, which contains either a zinc salt or a zinc complex that is at least one kind selected from the group consisting of a carboxylic acid compound zinc salt, a phosphoric acid zinc salt, a phosphate ester zinc salt and a carbonyl compound zinc complex; and a sealing resin containing a silicone skeleton,

wherein said at least either a zinc salt or a zinc complex is contained in an amount of 0.05 to 10 parts by weight based on 100 parts by weight of said resin.

2. The silver anti-tarnish resin composition according to claim 1, wherein either the zinc salt or the zinc complex is an aliphatic carboxylic acid zinc salt having a carbon atom number of 3 to 20.

3. The silver anti-tarnish resin composition according to claim 2, wherein the aliphatic carboxylic acid zinc salt is a saturated or unsaturated fatty acid zinc salt.

4. The silver anti-tarnish resin composition according to claim 2, wherein the aliphatic carboxylic acid zinc salt is at least one kind selected from the group consisting of zinc 2-ethylhexylate, zinc neodecanoate, zinc laurate, zinc ricinoleate, zinc stearate, zinc undecylenate and zinc naphthenate.

5. The silver anti-tarnish resin composition according to claim 2, wherein the aliphatic carboxylic acid zinc salt is a zinc salt of an alicyclic carboxylic acid having at least either a cyclopentane or cyclohexane skeleton.

6. The silver anti-tarnish resin composition according to claim 1, which contains a zinc salt of a phosphate ester and/or a phosphoric acid as either the zinc salt or the zinc complex.

7. The silver anti-tarnish resin composition according to claim 1, which contains a zinc acetylacetonate complex as either the zinc salt or the zinc complex.

8. The silver anti-tarnish resin composition according to claim 1, wherein a cured product of the resin composition has a hardness of over 70 as measured by Durometer Type A of JIS K 7215.

9. The silver anti-tarnish resin composition according to claim 1, wherein a cured product of the resin composition has a refractive index of over 1.45.

10. A silver anti-tarnish method, wherein the silver anti-tarnish resin composition according to claim 1 is applied to a silver surface of a light-emitting diode.

11. A light-emitting diode having a silver surface sealed with the silver anti-tarnish resin composition according to claim 1.

12. The light-emitting diode according to claim 11, wherein the sealing resin is a silicone resin which is curable by addition reaction, and after curing forms, a cured product having a hardness of over 70 as measured by Durometer Type A of JIS K 7215.