the smallest of surface irregularities and receiving a continued supply of ions from larger nearby particles so that it is able to grow after exhausting its stored ion supply. This is also very useful in sealing pits and fissures, and a much more effective and long lasting seal is obtained.

[0090] The occlusion of these tubules leads to a significant reduction in the amount of sensitivity after, for example, periodontal surgery. In certain embodiments, a mixture of particles less than two microns and larger than 45 microns in diameter are used. It has been found that this combination yields a particularly effective composition.

[0091] In certain embodiments, the bio-acceptable and bioactive glass encompasses glass compositions including the following components by weight:

Ingred.	wt. %
SiO_2	40-60
CaO_2	10-30
Na_2O	10-35
P_2O_5	2-8
CaF_2	0-25
B_2O_3	0-10

[0092] In certain embodiments, the following composition by weight percentage encompasses a bioactive glass:

Ingred.	wt. %
SiO_2	40-60
CaO_2	10-30
Na_2O	10-35
P_2O_5	2-8
CaF_2	0-25

CLAIMS

WHAT IS CLAIMED IS:

1. A dentifrice composition comprising an effective amount of a bioactive and bio-acceptable glass and a desensitizing effective amount of a potassium salt.

2. The composition of claim 1, wherein the bioactive glass is calcium sodium phosphosilicate.

3. The composition of claim 2, wherein the bio-acceptable and bioactive glass comprises the following components by weight percentage:

Ingred.	wt. %
SiO_2	40-60
CaO_2	10-30
Na_2O	10-35
P_2O_5	2-8
CaF_2	0-25
B_2O_3	0-10

4. The composition of claim 1, wherein the potassium salt is potassium bicarbonate, potassium citrate, potassium chloride, or potassium nitrate.

5. The composition of claim 1, wherein the bioactive and biocompatible glass has a particle size range of less than 90 μm.

6. The composition of claim 1, wherein the bioactive and biocompatible glass has a particle size range of less than 70 μm.

7. The composition of claim 1, wherein the bioactive and biocompatible glass has a particle size range of less than 50 μm.

8. The composition of claim 1, wherein the bioactive and biocompatible glass has a particle size range of less than 40 μm.

9. The composition of claim 1, wherein the bioactive and biocompatible glass has a particle size range of less than 30 μm.

10. The composition of claim 1, wherein the bioactive and biocompatible glass has a particle size range of less than 20 μm.

11. The composition of claim 1, wherein the potassium salt is present in an amount of 0.1 wt. % to 10 wt. % based on the total weight of the composition.

12. The composition of claim 1, wherein the potassium salt is present in an amount of 1 wt. % to 5 wt. % based on the total weight of the composition.

13. The composition of claim 1, wherein the potassium salt is present in an amount of 2 wt. % to 4 wt. % based on the total weight of the composition.

14. The composition of claim 1, wherein the potassium salt is present in an amount of 3.75 wt. % based on the total weight of the composition.

15. The composition of claim 1, wherein the composition is incorporated in toothpaste, glycerin gel or mouthwash.

16. The composition of claim 1, wherein the bioactive and biocompatible glass includes an effective dentin tubule occluding amount of particles less than 5 μm.

17. The composition of claim 1, wherein the bioactive and biocompatible glass includes an effective dentin tubule occluding amount of particles less than 2 μm.

18. The composition of claim 1, further comprising one or more sources of fluoride.

19. The composition of claim 1, further comprising one or more antibacterial agents.

20. The composition of claim 1, further comprising one or more tartar control agents.

21. The composition of claim 1, further comprising one or more structure building agents.

22. The composition of claim 1, wherein the bioactive and biocompatible glass is present in an amount of 1 wt. % to 10 wt. % based on the total weight of the composition.

23. The composition of claim 1, wherein the bioactive and biocompatible glass is present in an amount of 3 wt. % to 7 wt. % based on the total weight of the composition.

24. The composition of claim 1, wherein the bioactive and biocompatible glass is present in an amount of 5 wt. % based on the total weight of the composition.

25. A method for treating dental hypersensitivity comprising contacting one or more hypersensitive teeth with an effective amount of a bioactive and biocompatible glass; and a desensitizing effective amount of a potassium salt.

26. A method for at least partially occluding dentin tubules comprising contacting said tubules with an effective amount of a bioactive and biocompatible glass; and a desensitizing effective amount of a potassium salt.

27. A method for preventing tooth decay comprising contacting a tooth structure with an effective amount of a bioactive and biocompatible glass; and a desensitizing effective amount of a potassium salt.

28. A method for preventing incipient carries comprising contacting a tooth structure with an effective amount of a bioactive and biocompatible glass; and a desensitizing effective amount of a potassium salt.

29. A method for remineralizing enamel comprising contacting a tooth structure with an effective amount of a bioactive and biocompatible glass; and a desensitizing effective amount of a potassium salt.

30. A method for sealing fissures in tooth structure comprising contacting a tooth structure with an effective amount of a bioactive and biocompatible glass; and a desensitizing effective amount of a potassium salt.

31. A method for sealing pits in tooth structure comprising contacting a tooth structure with an effective amount of a bioactive and biocompatible glass; and a desensitizing effective amount of a potassium salt.

32. A method for lining tooth structure comprising contacting a tooth structure with an effective amount of a bioactive and biocompatible glass; and a desensitizing effective amount of a potassium salt.

33. A method for capping pulp comprising contacting a tooth structure with an effective amount of a bioactive and biocompatible glass; and a desensitizing effective amount of a potassium salt.

34. A method for treating tooth structure after periodontal surgery comprising contacting a tooth structure with an effective amount of a bioactive and biocompatible glass; and a desensitizing effective amount of a potassium salt.

35. A method for preventing tooth decay comprising contacting a tooth structure with an effective amount of a bioactive and biocompatible glass; and a desensitizing effective amount of a potassium salt.

36. A method for treating tooth decay comprising contacting a tooth structure with an effective amount of a bioactive and biocompatible glass; and a desensitizing effective amount of a potassium salt.

37. A method for remineralizing enamel comprising contacting a tooth structure with an effective amount of a bioactive and biocompatible glass; and a desensitizing effective amount of a potassium salt.

38. A method for incipient caries remineralization comprising contacting a tooth structure with an effective amount of a bioactive and biocompatible glass; and a desensitizing effective amount of a potassium salt.

39. A method for sealing fissures in tooth structure comprising contacting a tooth structure with an effective amount of a bioactive and biocompatible glass; and a desensitizing effective amount of a potassium salt.

40. The composition of claim 1, wherein the bioactive and biocompatible glass has a median particle size of less than 90 μm.

41. The composition of claim 1, wherein the bioactive and biocompatible glass has a median particle size of less than 70 μm.

42. The composition of claim 1, wherein the bioactive and biocompatible glass has a median particle size of less than 50 μm.

43. The composition of claim 1, wherein the bioactive and biocompatible glass has a median particle size of less than 40 μm.

44. The composition of claim 1, wherein the bioactive and biocompatible glass has a median particle size of less than 30 μm.

45. The composition of claim 1, wherein the bioactive and biocompatible glass has a median particle size of less than 20 μm.

CLAIMS

1. A dentifrice composition comprising an effective amount of a bioactive and bio-acceptable glass and a desensitizing effective amount of a potassium salt, wherein the bioactive glass is calcium sodium phosphosilicate.

2. The composition of claim 1, wherein the bio-acceptable and bioactive glass comprises the following components by weight percentage:

Ingred.	wt. %
SiO_2	40-60
CaO	10-30
Na_2O	10-35
P_2O_5	2-8
CaF_2	0-25
B_2O_3	0-10

3. The composition of claim 1, wherein the potassium salt is potassium bicarbonate, potassium citrate, potassium chloride, or potassium nitrate.

4. The composition of claim 1, wherein the bioactive and biocompatible glass has a particle size range of less than 90 μm.

5. The composition of claim 1, wherein the bioactive and biocompatible glass has a particle size range of less than 70 μm.

6. The composition of claim 1, wherein the bioactive and biocompatible glass has a particle size range of less than 50 μm.

7. The composition of claim 1, wherein the bioactive and biocompatible glass has a particle size range of less than 40 μm.

8. The composition of claim 1, wherein the bioactive and biocompatible glass has a particle size range of less than 30 μm.

9. The composition of claim 1, wherein the bioactive and biocompatible glass has a particle size range of less than 20 μm.

10. The composition of claim 1, wherein the potassium salt is present in an amount of 0.1 wt. % to 10 wt. % based on the total weight of the composition.

11. The composition of claim 1, wherein the potassium salt is present in an amount of 1 wt. % to 5 wt. % based on the total weight of the composition.

12. The composition of claim 1, wherein the potassium salt is present in an amount of 2 wt. % to 4 wt. % based on the total weight of the composition.

13. The composition of claim 1, wherein the potassium salt is present in an amount of 3.75 wt. % based on the total weight of the composition.

14. The composition of claim 1, wherein the composition is incorporated in toothpaste, glycerin gel or mouthwash.

15. The composition of claim 1, wherein the bioactive and biocompatible glass includes an effective dentin tubule occluding amount of particles less than 5 μm.

16. The composition of claim 1, wherein the bioactive and biocompatible glass includes an effective dentin tubule occluding amount of particles less than 2 μm.

17. The composition of any one of the preceding claims, further comprising one or more sources of fluoride.

18. The composition of any one of the preceding claims, further comprising one or more antibacterial agents.

19. The composition of any one of the preceding claims, further comprising one or more tartar control agents.

20. The composition of any one of the preceding claims, further comprising one or more structure building agents.

21. The composition of claim 1, wherein the bioactive and biocompatible glass is present in an amount of 1 wt. % to 10 wt. % based on the total weight of the composition.

22. The composition of claim 1, wherein the bioactive and biocompatible glass is present in an amount of 3 wt. % to 7 wt. % based on the total weight of the composition.

23. The composition of claim 1, wherein the bioactive and biocompatible glass is present in an amount of 5 wt. % based on the total weight of the composition.

24. Use of an effective amount of a composition according to any one of claims 1 to 23, in the manufacture of a medicament for treating dental hypersensitivity.

25. Use of an effective amount of composition according to any one of claims 1 to 23, in the manufacture of a medicament for at least partially occluding dentin tubules.

26. Use of an effective amount of composition according to any one of claims 1 to 23, in the manufacture of a medicament for preventing tooth decay.

27. Use of an effective amount of composition according to any one of claims 1 to 23, in the manufacture of a medicament for preventing incipient carries.

28. Use of an effective amount of composition according to any one of claims 1 to 23, in the manufacture of a medicament for remineralizing enamel.

29. Use of an effective amount of composition according to any one of claims 1 to 23, in the manufacture of a medicament for sealing fissures in tooth structure.

30. Use of an effective amount of composition according to any one of claims 1 to 23, in the manufacture of a medicament for sealing pits in tooth structure.

31. Use of an effective amount of composition according to any one of claims 1 to 23, in the manufacture of a medicament for lining tooth structure.

32. Use of an effective amount of composition according to any one of claims 1 to 23, in the manufacture of a medicament for capping pulp.

33. Use of an effective amount of composition according to any one of claims 1 to 23, in the manufacture of a medicament for treating tooth structure after periodontal surgery.

34. Use of an effective amount of composition according to any one of claims 1 to 23, in the manufacture of a medicament for treating tooth decay.

35. Use of an effective amount of composition according to any one of claims 1 to 23, in the manufacture of a medicament for incipient caries remineralization.

36. The composition of claim 1, wherein the bioactive and biocompatible glass has a median particle size of less than 90 μm.

37. The composition of claim 1, wherein the bioactive and biocompatible glass has a median particle size of less than 70 μm.

38. The composition of claim 1, wherein the bioactive and biocompatible glass has a median particle size of less than 50 μm.

39. The composition of claims 1, wherein the bioactive and biocompatible glass has a median particle size of less than 40 μm.

40. The composition of claims 1, wherein the bioactive and biocompatible glass has a median particle size of less than 30 μm.

41. The composition of claims 1, wherein the bioactive and biocompatible glass has a median particle size of less than 20 μm.