CLAIMS

1. An oral care composition comprising a film entrained in a carrier, a zinc-containing compound contained in the film, a polysaccharide thickening agent, and a maleic anhydride copolymer, wherein the polysaccharide thickening agent has at most 0.5 charged groups per sugar residue unit along the polysaccharide backbone, and wherein the film is present in an amount of 0.1% to 5% by weight of the composition.

2. The oral care composition of claim 1, wherein the film contains 20% to 60% by weight of the zinc-containing compound.

3. The oral care composition of any preceding claim, wherein the zinc-containing compound is at least one zinc containing compound chosen from zinc oxide, zinc sulfate, zinc chloride, zinc citrate, zinc lactate, zinc gluconate, zinc malate, zinc tartrate, zinc carbonate, zinc phosphate, and mixtures thereof.

4. The oral care composition of any preceding claim, wherein the zinc-containing compound comprises zinc oxide.

5. The oral care composition of any preceding claim, further comprising zinc in an amount of 0.5 to 2.5 wt% based on the total weight of the composition.

6. The oral care composition of any preceding claim, wherein the film comprises a combination of two different molecular weights of hydroxypropyl methylcellulose.

7. The oral care composition of any preceding claim, wherein the film further comprises propylene glycol and polysorbate 80.

8. The oral care composition of any preceding claim, wherein the polysaccharide thickening agent comprises xanthan gum.

9. The oral care composition of any preceding claim, wherein the maleic anhydride copolymer comprises a methyl vinyl ether/maleic anhydride copolymer having a molecular weight of 30,000 to 5,000,000 g/mole.

10. The oral care composition of any preceding claim, wherein an amount of polysaccharide thickening agent/maleic anhydride copolymer in the oral care composition is 0.5% to 5% by weight.

11. The oral care composition of claim 1, wherein

a) the film comprises a combination of two different molecular weights of hydroxypropyl methylcellulose, propylene glycol, and polysorbate 80;

b) the film contains 20% to 60% by weight of the zinc-containing compound;

c) the film is present in an amount of 0.1% to 5% by weight of the composition;

d) the zinc-containing compound comprises zinc oxide;

e) the polysaccharide thickening agent comprises xanthan gum;

f) the maleic anhydride copolymer comprises a methyl vinyl ether/maleic anhydride copolymer having a molecular weight of 30,000 to 5,000,000 g/mole; and

g) an amount of polysaccharide thickening agent/maleic anhydride copolymer in the oral care composition is 0.5% to 5% by weight.

12. A method of making the oral care composition of any preceding claim comprising:

a) providing the carrier including the polysaccharide thickening agent and the maleic anhydride copolymer;

b) adding lamellar fragments of the film containing the zinc-containing compound to the carrier to form a mixture; and

c) homogenizing the mixture.

CLAIMS

WHAT IS CLAIMED IS

1. An oral care composition comprising a film entrained in a carrier, a zinc-containing compound contained in the film, a polysaccharide thickening agent, and a maleic anhydride copolymer, wherein the film is present in an amount of 0.1% to 5% by weight of the composition, and the polysaccharide thickening agent has at most 0.5 charged groups per sugar residue unit along the polysaccharide backbone.

2. The oral care composition of any preceding claim, wherein the film contains 20% to 60% by weight of the zinc-containing compound.

3. The oral care composition of any preceding claim, wherein the zinc-containing compound is at least one zinc containing compound chosen from zinc oxide, zinc sulfate, zinc chloride, zinc citrate, zinc lactate, zinc gluconate, zinc malate, zinc tartrate, zinc carbonate, zinc phosphate, and mixtures thereof.

4. The oral care composition of any preceding claim, wherein the zinc-containing compound comprises zinc oxide.

5. The oral care composition of any preceding claim further comprising zinc in an amount of 0.5 to 2.5 wt% based on the total weight of the composition.

6. The oral care composition of any preceding claim, wherein the film comprises a combination of two different molecular weights of hydroxypropyl methylcellulose.

7. The oral care composition of any preceding claim, wherein the film further comprises propylene glycol and polysorbate 80.

8. The oral care composition of any preceding claim, wherein the polysaccharide thickening agent comprises xanthan gum.

9. The oral care composition of any preceding claim, wherein the maleic anhydride copolymer comprises a methyl vinyl ether/maleic anhydride copolymer having a molecular weight of 30,000 to 5,000,000 g/mole.

10. The oral care composition of any preceding claim, wherein an amount of polysaccharide thickening agent/maleic anhydride copolymer in the oral care composition is 0.5% to 5% by weight.

11. The oral care composition of claim 1, wherein

a) the film comprises a combination of two different molecular weights of hydroxypropyl methylcellulose, propylene glycol, and polysorbate 80;

b) the film contains 20% to 60% by weight of the zinc-containing compound;

c) the film is present in an amount of 0.1% to 5% by weight of the composition;

d) the zinc-containing compound comprises zinc oxide;

e) the polysaccharide thickening agent comprises xanthan gum;

f) the maleic anhydride copolymer comprises a methyl vinyl ether/maleic anhydride copolymer having a molecular weight of 30,000 to 5,000,000 g/mole; and

g) an amount of polysaccharide thickening agent/maleic anhydride copolymer in the oral care composition is 0.5% to 5% by weight.

12. A method of making the oral care composition of any preceding claim comprising:

(a) providing the carrier including the polysaccharide thickening agent and the maleic anhydride copolymer;

(b) adding lamellar fragments of the film containing the zinc-containing compound to the carrier to form a mixture; and

(c) homogenizing the mixture.

13. An oral care composition of any claims 1-11 suitable for use in administering a zinc compound to a human or animal subject in need thereof through topical application of the composition of the subject.

14. The oral care composition of claim 13, wherein the film is capable of being disrupted after said topical application.