Claims

1. A sunscreen formulation comprising a metal oxide, squalane, ~~and~~ one or more antioxidants, and a skin protectant.

2. The sunscreen formulation of claim 1, wherein the sunscreen formulation has a higher sun protection factor (SPF) than the metal oxide alone on a per unit mass basis.

3. The sunscreen formulation of claim 1 or 2, wherein the metal oxide is selected from zinc oxide and titanium oxide, optionally wherein the metal oxide is from about 5% w/w to about 25% w/w of the formulation.

4. The sunscreen formulation of any one of the preceding claims, wherein the antioxidant is ethyl ferulate, optionally wherein the antioxidant is from about 0.1% w/w to about 2% w/w of the formulation.

5. The sunscreen formulation of any one of the preceding claims, further comprising a solvent, optionally wherein the solvent is water.

~~6. The sunscreen formulation of claim 5, wherein the solvent is water.~~

~~7~~6. The sunscreen formulation of any one of the preceding claims, further comprising a chelating agent, optionally wherein the chelating agent is selected from sodium gluconate, sodium phytate, EDTA, tetrasodium glutamate diacetate, and trisodium ethylene diamine disuccinate.

~~8. The sunscreen formulation of claim 6, wherein the chelating agent is selected from sodium gluconate, sodium phytate, EDTA, tetrasodium glutamate diacetate, trisodium ethylene diamine disuccinate.~~

~~9~~7. The sunscreen formulation of any one of the preceding claims, further comprising a surfactant, optionally wherein the surfactant is selected from caprylyl/capryl glucoside, coco-glucoside, isostearic acid, cetearyl glucoside, and arachidyl glucoside.

~~10. The sunscreen formulation of claim 8, wherein the surfactant is selected from caprylyl/capryl glucoside, coco-glucoside, isostearic acid, cetearyl glucoside, and arachidyl glucoside.~~

~~11~~8. The sunscreen formulation of any one of the preceding claims, further comprising a humectant, optionally wherein the humectant is selected from glycerin, propanediol, propylene glycol, hexylene glycol, butylene glycol, sorbitol, and xylitol.

~~12. The sunscreen formulation of claim 10, wherein the humectant is selected from glycerin, propanediol, propylene glycol, hexylene glycol, butylene glycol, sorbitol, and xylitol.~~

~~13~~9. The sunscreen formulation of any one of the preceding claims, further comprising an emulsion stabilizer, optionally wherein the emulsion stabilizer is selected from acacia senegal gum, xanthan gum, cellulose gum, and microcrystalline cellulose.

~~14. The sunscreen formulation of claim 13, wherein the emulsion stabilizer is selected from acacia senegal gum, xanthan gum, cellulose gum, microcrystalline cellulose.~~

~~15~~10. The sunscreen formulation of any one of the preceding claims, further comprising a viscosity increasing agent, optionally wherein the viscosity increasing agent is selected from cetyl palmitate, cetearyl alcohol, methyl dihydroabietate, behenyl alcohol, brassica alcohol, arachidyl alcohol, coconut alcohol, and sorbitan palmitate.

~~16. The sunscreen formulation of claim 15, wherein the viscosity increasing agent is selected from cetyl palmitate, cetearyl alcohol, methyl dihydroabietate, behenyl alcohol, brassica alcohol, arachidyl alcohol, coconut alcohol, sorbitan palmitate.~~

~~17~~11. The sunscreen formulation of any one of the preceding claims, further comprising emulsifying agent, optionally wherein the emulsifying agent is selected from sorbitan olivate, polyglyceryl-3 polyricinoleate, lecithin, glyceryl stearate, and cetearyl olivate.

~~18. The sunscreen formulation of claim 17, wherein the emulsifying agent is selected from sorbitan olivate, polyglyceryl-3 polyricinoleate, lecithin, glyceryl stearate, cetearyl olivate.~~

~~19~~12. The sunscreen formulation of any one of the preceding claims, further comprising an additional emollient in addition to squalane, optionally wherein the additional emollient in addition to squalane is selected from caprylic triglyceride and capric triglyceride.

~~20. The sunscreen formulation of claim 19, wherein the additional emollient in addition to squalane is selected from caprylic triglyceride and capric triglyceride.~~

~~21~~13. The sunscreen formulation of any one of the preceding claims, further comprising a dispersing agent, optionally wherein the dispersing agent is selected from polyhydroxystearic acid.

~~22. The sunscreen formulation of claim 21, wherein the dispersing agent is selected from polyhydroxystearic acid.~~

~~23~~14. The sunscreen formulation of any one of the preceding claims, further comprising a skin conditioning agent, optionally wherein the skin conditioning agent is selected from sodium palmitoyl proline, and nymphaea alba flower extract.

~~24. The sunscreen formulation of claim 23, wherein the skin conditioning agent is selected from sodium palmitoyl proline, and nymphaea alba flower extract.~~

~~25~~15. The sunscreen formulation of any one of the preceding claims, further comprising a preservative, optionally wherein the preservative is selected from phenoxyethanol, benzyl

alcohol, hydroxyacetophenone, chlorophensin, potassium sorbate, 1,2-hexanediol, and caprylyl glycol.

~~26. The sunscreen formulation of claim 25, wherein the preservative is selected from phenoxyethanol, benzyl alcohol, hydroxyacetophenone, chlorophensin, potassium sorbate, 1,2-hexanediol, and caprylyl glycol.~~

~~27~~16. The sunscreen formulation of any one of the preceding claims, further comprising a conditioning agent, optionally wherein the conditioning agent is ethylhexylglycerin.

~~28. The sunscreen formulation of claim 27, wherein the conditioning agent is ethylhexylglycerin.~~

~~29. The sunscreen formulation of any one of the preceding claims, further comprising a skin protectant.~~

~~30~~17. The sunscreen formulation of claim ~~29~~1, wherein the skin protectant is physalis angulate extract.

~~31~~18. The sunscreen formulation of any one of the preceding claims, further comprising tocopherol.

~~32. The sunscreen formulation of any one of the preceding claims, wherein the metal oxide is from about 5% w/w to about 25% w/w of the formulation.~~

~~33~~19. The sunscreen formulation of any one of the preceding claims, wherein the squalane is from about 1% w/w to about 25% w/w of the formulation.

~~34. The sunscreen formulation of any one of the preceding claims, wherein the antioxidant is from about 0.1% w/w to about 2% w/w of the formulation.~~

~~35~~20. The sunscreen formulation of any one of the preceding claims, wherein the metal oxide is about 14% w/w, the squalane is about 5% w/w, and the antioxidant is about 0.7% w/w of the formulation.

~~36~~21. A method of preventing UV damage to skin of a subject comprising applying an effective amount of the sunscreen formulation of any one of claims 1 to ~~32~~ 20 to the skin of the subject, optionally wherein the sunscreen formulation is applied to the skin prior to exposure to UV light.

~~37. The method of claim 36, wherein the sunscreen formulation is applied to the skin prior to exposure to UV light.~~