

Supporting Information

Supplementary Table 1. Commercially available sunscreens with ultra-long wave UVA1 light protection (370-400nm).

Sunscreen	SPF	UVA- SPF >1/3	Active ingredient	Cost in South African Rands (RRP*)	Cost in US dollars (RRP*)
La Roche Posay Anthelios UVMune 400 Invisible Fluid	50+	+	methoxypropylamino cyclohexenylidene ethoxyethylcyanoacetate (Mexoryl)	R395	\$20,46
La Roche Posay Anthelios UVMune 400 Tinted fluid	50+	+	methoxypropylamino cyclohexenylidene ethoxyethylcyanoacetate (Mexoryl)	R395	\$20,46
La Roche Posay Anthelios UVMune 400 Oil control gel- cream	50+	+	methoxypropylamino cyclohexenylidene ethoxyethylcyanoacetate (Mexoryl)	R395	\$20,46
La Roche Posay Anthelios UVMune 400 Hydrating cream	50+	+	methoxypropylamino cyclohexenylidene ethoxyethylcyanoacetate (Mexoryl)	R389	\$20,15
Avène Eau Thermal Fragrance-free fluid	50+	+	Phenylene bis- diphenyltriazine (TriAsorB) Diethylamino hydroxybenzoyl hexyl benzoate Ethylhexyl triazone bis-ethylhexyloxyphenol methoxyphenyl triazine	R370	\$18,96
Avène Eau thermale Cleanance	50+	+	Phenylene bis- diphenyltriazine (TriAsorB) Diethylamino hydroxybenzoyl hexyl benzoate Ethylhexyl triazone bisethylhexyloxyphenol methoxyphenyl triazine	R360	\$18,44

*RRP = recommended retail price as of March 2025.

Supplementary Table 2. Commercially available tinted sunscreens.

	SPF	UVA- PF: SPF ≥ 1/3	Ingredients	Cost in South African Rands (RRP*)	Cost in US dollars (RRP*)
Eucerin Sun Tinted Photoaging control (light and medium)	50+	+	Tinosorb S Avobenzone Diethylamino Hydroxybenzoyl Hexyl Benzoate Ethylhexyl Triazone Ensulizole Iron oxides (CI77491 ; CI77499) Licochalcone A	R370	\$18,96
Heliocare 360° Colour Gel Oil-free	50+	+	IroTitanium Dioxide;Disodium Phenyl Dibenzimidazole Tetrasulfonate;Bis-Ethylhexyloxyphenol Methoxyphenyl Triazine; Diethylamino Hydroxybenzoyl Hexyl Benzoate; Phenylbenzimidazole Sulfonic Acid; Ethylhexyl Triazone; Diethylhexyl Butamido Triazone ; Iron oxide	R551	\$30,34
La Roche Posay Anthelios tinted fluid	50+	+	Iron oxide Titanium dioxide XL protect UVA and UVB filters	R395	\$20,46
Cetaphil Sun Face Fluid Tinted SPF	50+	+	Methylene Bis benzotriazolyl Tetramethylbutylphenol Bis-Ethylhexyloxyphenol Methoxyphenyl triazine Diethylamino Hydroxybenzoyl Hexyl Benzoate Ethylhexyl Triazone Ethylhexyl Methoxycinnamate Iron oxide Pigmentary titanium dioxide Magnesium and aluminum oxide	R289	\$15,91
Bioderma Photoderm Aquafluide Tint (light, golden, brun)	50+	+	Diethylhexyl butamido triazone Diethylamino hydroxybenzoyl hexyl benzoate Bis-ethylhexyloxyphenol methoxyphenyl triazine Butyl methoxydibenzoylmethne Iron oxides	R400	\$20,49
Isdin Fotoprotector Fusion Water Color (light, medium, bronze)	50+	+	Octocrylene, Butyl Methoxybiphenyl methane Avobenzone Ethylhexyl Salicylate Titanium dioxide Ensulizole Tromethamine, bis-ethylhexyloxyphenol Methoxyphenyl Triazine Iron Oxides	R605	\$31,00
Vichy Capital Soleil Tinted dry touch protective face fluid	50+	+	Titanium dioxide Ethylhexyl salicylate Homosalate Methoxydibenzoylmethsne Octocrylene Iron oxides	R405	\$20,98
MartiDerm Proteos Screen Fluid Cream	50+	+	Ethylhexyl Methoxycinnamate, Ethylhexyl Salicylate, Homosalate, Butyl Methoxydibenzoylmethane, Bis-ethylhexyloxyphenol Methoxyphenyl Triazine, Ethylhexyl Triazone, Titanium Dioxide,	R520	\$28,63
Avene Ultrafluid Tinted	50+	+	Diethylamino hydroxybenzoyl hexyl benzoate. Ethylhexyl triazone. Phenylene bis-diphenyltriazine. (TriAbsorb) Bis-ethylhexyloxyphenol methoxyphenyl triazine. Titanium dioxide. Iron oxides	R390	\$19,98

*RRP = recommended retail price as of March 2025.

Supplementary Table 3. Commercially available sunscreens with purely inorganic filter ingredients.

	SPF	UVA-SPF \geq 1/3	Active ingredients	Cost in South African Rands (RRP*)	Cost in US dollars (RRP*)
Heliocare 360° Mineral Tolerance Fluid SPF 50	50	+	Zinc oxide (nano) Titanium dioxide (nano)	R565	\$29,27
Bioderma Photoderm Mineral Fluide SPF50+	50	+	Zinc oxide (nano) Titanium dioxide	R585	\$29,97
Bioderma Photoderm Paediatrics Mineral	50	+	Zinc oxide (nano) Titanium dioxide (nano)	R350	\$17,93
SkinCeuticals Physical Fusion UV Defense SPF 50	50	+	Titanium dioxide Zinc oxide Iron oxide	R1100	\$56,98
Avène Mineral Cream	50	+	Titanium dioxide (nano)	R295	\$15,28
Uriage Bariesun Sun Creme Minerale	50	+	Zinc oxide (nano) Titanium dioxide (nano)	R525	\$27,20
Clinique SPF50 mineral	50	+	Titanium dioxide	R490	\$25,38

sunscreen for the face			Zinc oxide (nano) Iron oxide		
Root 4 mineral sunscreen SPF50	50	+	Zinc oxide (non-nano) Titanium dioxide (non-nano)	R875	\$45,33
Back 2 Nature Face and Body Mineral Sun Shield	30	+	Zinc oxide (non-nano)	R290	\$15,02
Oh- Lief Natural Body Sunscreen SPF30	30	+	Zinc oxide (non-nano)	R99	\$5,13

*RRP = recommended retail price as of March 2025.

Supplementary Table 4. Sunscreen additives with varying levels of evidence for efficacy in preventing or treating photoaging.²⁹

Antioxidant activity	DNA repair enzymes
Vitamin C Vitamin E Niacinamide Ferulic acid Vitamin A Soy extracts Polyphenols Melatonin Algae extract <i>Polypodium leucotomos</i> extract	Photolyases

Supplementary Table 5. Cost-effective, commercially available sunscreens.

	SPF	UVA- SPF ≥ 1/3	Ingredients	Cost in South African Rands (RRP*)	Cost in US dollars (RRP*)
Clicks Sun Protect Sport	50	+	Octocrylene, Ethylhexyl Methoxycinnamate, Butyl Methoxydibenzoylmethane (BMDBM), Diethylamino Hydroxybenzoyl Hexyl Benzoate,	R115	\$6,33
Nivea Sun Protect and Moisture	50+	+	Homosalate, Octocrylene, Butyl Methoxydibenzoylmethane, Ethylhexyl Salicylate, C12-15 Alkyl Benzoate, Titanium Dioxide (nano),	R195	\$10,79
Dermopal	30	+	Ethylhexyl Methoxycinnamate Benzophenone-3 Butyl Methoxydibenzoylmethane 4-Methylbenzylidene Camphor	R129	\$7.10

*RRP recommended retail price as of December 2024.