

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
06 January 2022 (06.01.2022)



(10) International Publication Number
WO 2022/006215 A1

(51) International Patent Classification:

A61K 8/02 (2006.01) A61K 8/27 (2006.01)
A61K 8/19 (2006.01)

(21) International Application Number:

PCT/US2021/039788

(22) International Filing Date:

30 June 2021 (30.06.2021)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/045,990 30 June 2020 (30.06.2020) US

(71) Applicant: AMYRIS, INC. [US/US]; 5885 Hollis Street,
Suite 100, Emeryville, CA 94608 (US).

(72) Inventors: MARIANO, Christa, Lynna; 5885 Hollis
Street, Suite 100, Emeryville, CA 94608 (US).
VISWANATHAN, Ramya; 5885 Hollis Street, Suite 100,
Emeryville, CA 94608 (US).

(74) Agent: MOORE, David, E.; Brundidge & Stanger, P.C.,
1925 Ballenger Ave., Suite 560, Alexandria, VA 22314
(US).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ,
CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO,
DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN,
HR, HU, ID, IL, IN, IR, IS, IT, JO, JP, KE, KG, KH, KN,
KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD,
ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO,
NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW,

SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN,
TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

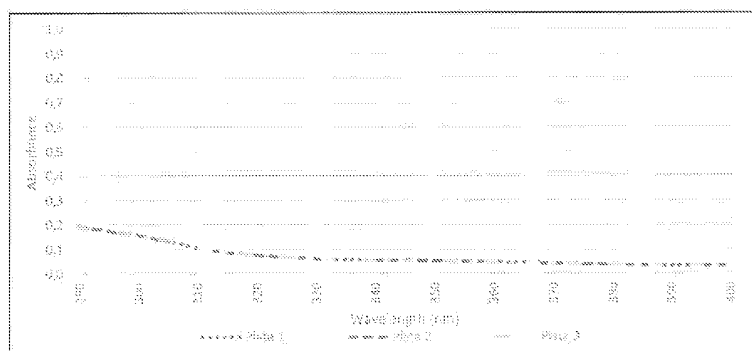
(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ,
UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ,
TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,
MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
KM, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(54) Title: METAL OXIDE SUNSCREEN FORMULATIONS

Figure 1



(57) Abstract: Provided herein are sunscreen formulations containing a metal oxide sunscreen, squalane, and an antioxidant. The sunscreen formulations provided have increased SPF per unit mass of the metal oxide compared to sunscreen formulations that contain metal oxide without the addition of squalane and antioxidant. Also provided are methods of preventing UV damages to skin involving the application of the sunscreen formulation.

WO 2022/006215 A1