

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

(19) World Intellectual Property
Organization

International Bureau

(43) International Publication Date
09 December 2021 (09.12.2021)



(10) International Publication Number
WO 2021/247813 A1

(51) International Patent Classification:

C22C 1/04 (2006.01) C23C 14/34 (2006.01)

C23C 14/14 (2006.01)

Published:

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

(21) International Application Number:

PCT/US2021/035627

(22) International Filing Date:

03 June 2021 (03.06.2021)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/035,320 05 June 2020 (05.06.2020) US

(71) Applicant: **MATERION CORPORATION** [US/US];
6070 Parkland Boulevard, Mayfield Heights, Ohio 44124
(US).

(72) Inventors: **VAN HEERDEN, David Peter**; 6070 Park-
land Boulevard, Mayfield Heights, Ohio 44124 (US).
GARDINIER, Katharine S.; 6070 Parkland Boulevard,
Mayfield Heights, Ohio 44124 (US). **BAILEY, Robert S.**;
6070 Parkland Boulevard, Mayfield Heights, Ohio 44124
(US).

(74) Agent: **GENDZWILL, Jeffrey T.** et al.; Cozen O'Connor,
1200 19th Street NW, 3rd Floor, Washington, District of
Columbia 20036 (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).

(54) Title: ALUMINUM-SCANDIUM COMPOSITE, ALUMINUM-SCANDIUM COMPOSITE SPUTTERING TARGET AND METHODS OF MAKING

(57) Abstract: An Al-Sc alloy sputtering target. The target comprising from 1.0 at% to 65 at% scandium and from 35 at% to 99 at% aluminum and having a microstructure including a first aluminum matrix phase and a second phase dispersed uniformly therethrough. The second phase comprises one or more compounds corresponding to the formula Sc_xAl_y , where x is from 1 to 2 and y is from 0 to 3.

WO 2021/247813 A1