



- (51) International Patent Classification:
C07C 43/12 (2006.01)
- (21) International Application Number:
PCT/US2024/052749
- (22) International Filing Date:
24 October 2024 (24.10.2024)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
63/593,182 25 October 2023 (25.10.2023) US
- (71) Applicant: **VERSUM MATERIALS US, LLC** [US/US];
8555 SOUTH RIVER PARKWAY, TEMPE, Arizona
85284 (US).
- (72) Inventors: **KIRSCH, Peer**; c/o VERSUM MATERIALS
US, LLC, 8555 South River Parkway, TEMPE, Ari-
zona 85284 (US). **MERGNER, Thomas**; VERSUM
MATERIALS US, LLC, c/o 8555 SOUTH RIVER PARK-
WAY, TEMPE, Arizona 85284 (US). **BROWN, Forrest**; c/
o VERSUM MATERIALS US, LLC, 8555 SOUTH RIVER
PARKWAY, TEMPE, Arizona 85284 (US). **STENDER,**
Matthias; c/o VERSUM MATERIALS US, LLC, 8555
SOUTH RIVER PARKWAY, TEMPE, Arizona 85284

(US). **FINZE, Maik**; c/o VERSUM MATERIALS US,
LLC, 8555 SOUTH RIVER PARKWAY, TEMPE, Ari-
zona 85284 (US). **IGNATYEV, Nikolai**; c/o VERSUM
MATERIALS US, LLC, 8555 SOUTH RIVER PARK-
WAY, TEMPE, Arizona 85284 (US). **KNUPLEZ, Tan-
ja**; c/o VERSUM MATERIALS US, LLC, 8555 SOUTH
RIVER PARKWAY, TEMPE, Arizona 85284 (US). **SCH-
NEIDER, Leon Niklas**; c/o VERSUM MATERIALS US,
LLC, 8555 SOUTH RIVER PARKWAY, TEMPE, Arizona
85284 (US).

(74) Agent: **DEMARAH, JR., Daniel A.**; VERSUM
MATERIALS US, LLC, 8555 SOUTH RIVER PARK-
WAY, TEMPE, Arizona 85284 (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, CV, CZ, DE, DJ, DK, DM,
DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG,
KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY,
MA, MD, MG, MK, MN, MU, 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,

(54) Title: HYDROFLUOROCARBON COMPOUNDS AND THEIR USE IN INTEGRATED CIRCUIT MANUFACTURING PRO-
CESSES

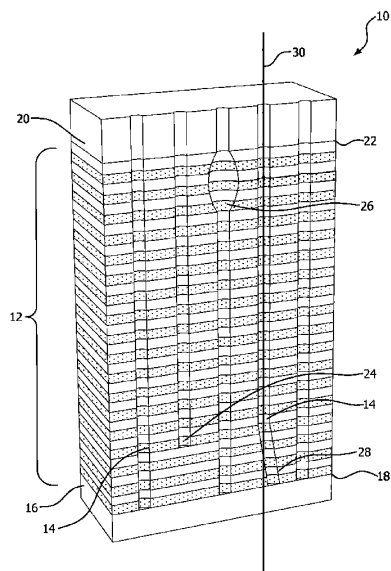


FIG. 1

(57) Abstract: Structural analogs of 2-methyl-2-alkoxy-propane are dis-
closed, and more particularly structural analogs of 1,1,1,3,3,3-hexafluoro-2-tri-
fluoromethyl-2-alkoxy-propane finding usefulness in integrated circuit man-
ufacturing processes, are disclosed. Mixtures configured to etch a thin film
of an integrated circuit material comprising structural analogs of 1,1,1,3,3,3-
hexafluoro-2-trifluoromethyl-2-alkoxy-propane are disclosed too. This appli-
cation additionally describes methods to etch the thin film of the integrated
circuit material utilizing the structural analogs of 1,1,1,3,3,3- hexafluoro-2-tri-
fluoromethyl-2-alkoxy-propane described above, and utilization of these com-
pounds in integrated circuit patterning processes too.

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, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, 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, ME, 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))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*