

Title (en)
ASYMMETRIC GROUP 8 (VIII) METALLOCENE COMPOUNDS

Title (de)
ASYMMETRISCHE GRUPPE-8-(VIII-)METALLOCENVERBINDUNGEN

Title (fr)
COMPOSES METALLOCENE ASYMETRIQUES DU GROUPE 8 (VIII)

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Abstract (en)
[origin: WO2004042354A2] A method for producing Group 8 (VIII) metallocene or metallocene-like compounds employs a compound that includes a Cp' anion, such as found, together with a counterion, in a cyclopentadienide or cyclopentadienide-like salt. In one embodiment, the method includes reacting a metal salt, a (Cp) compound, such as a substituted or unsubstituted cyclopentadiene or indene, and a ligand (L) to form an intermediate compound and reacting the intermediate compound with a Cp' compound, eg., a cyclopentadienide or cyclopentadienide-like salt, where the metal salt can be is a ruthenium, an osmium or an iron halide or nitrate and L is an electron pair donor. Unsubstituted, mono-substituted as well as symmetrically or asymmetrically di- or multi-substituted metallocenes or metallocene-like compounds can be produced. In another embodiment, unsubstituted or symmetrically substituted metallocenes are formed by reacting MX₂(PPh₃)_m with a Cp' compound, where m = 3 or 4. The method can be used to form precursors for chemical vapor deposition of thin films.

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Citation (search report)

- [X] US 6207232 B1 20010327 - KADOKURA HIDEKIMI [JP]
- [X] KAUFFMANN, THOMAS ET AL: "Multi electron ligands. XV. The reactivity of spiro[2.4]hepta-4,6-diene toward organolithium and organoelementlithium compounds", CHEMISCHE BERICHTE , 118(11), 4517-30 CODEN: CHBEAM; ISSN: 0009-2940, 1985, XP002463776
- [X] SATO, MASARU ET AL: "Syntheses and NMR spectra of the substituted methylferrocenes", BULLETIN OF THE CHEMICAL SOCIETY OF JAPAN , 43(4), 1142-7 CODEN: BCSJA8; ISSN: 0009-2673, 1970, XP002463777
- [X] DATABASE CA [online] CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; PATIN, HENRI ET AL: "Metallocenes. VIII. Clemmensen reduction of benzoylferrocene and 1,1-diacylferrocenes. Structure of the dimerization compounds", XP002463779, retrieved from STN Database accession no. 79:137262
- [X] HUFFMAN, J. W. ET AL: "Reactions of 2-methylchloroferrocene. Evidence for the ferrocene intermediate", JOURNAL OF ORGANIC CHEMISTRY , 36(26), 4068-72 CODEN: JOCEAH; ISSN: 0022-3263, 1971, XP002463778
- [PX] DATABASE CA [online] CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; ATWOOD, JIM D. ET AL: "Novel precursors for high k dielectrics and metal electrodes Part II: Deposition", XP002463780, retrieved from STN Database accession no. 140:21747 & BULLETIN DE LA SOCIETE CHIMIQUE DE FRANCE , (7-8)(PT. 2), 2413-17 CODEN: BSCFAS; ISSN: 0037-8968, 1973 & PROCEEDINGS - ELECTROCHEMICAL SOCIETY , 2003-8(CHEMICAL VAPOR DEPOSITION XVI AND EUROCVI 14, VOLUME 2), 847-854 CODEN: PESODO; ISSN: 0161-6374, 2003
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