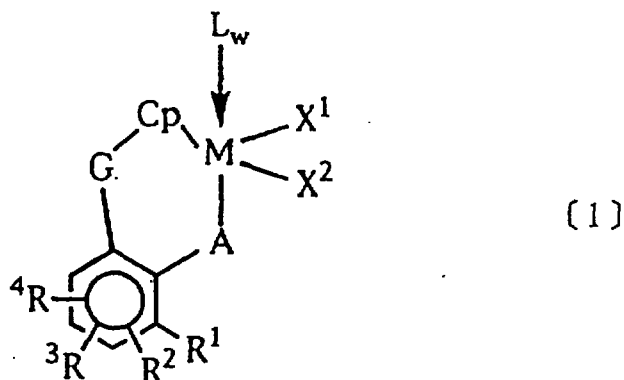


ABSTRACT

A transition metal complex represented by the formula [1]



wherein M is a transition metal atom of the group 4 of
 5 the periodic table of elements; Cp is a group having a
 cyclopentadiene type anionic skeleton; A and G are each
 a divalent residue containing an atom of the group 15 or
 16 of the periodic table of elements and may be the same
 with or different from each other; X¹, X², R¹, R², R³ and
 10 R⁴ are each independently a hydrogen atom, halogen atom,
 alkyl group with the number of carbon atoms of 1-20
 optionally substituted with at least one halogen atom,
 aralkyl group with the number of carbon atoms of 7-20
 optionally substituted with at least one halogen atom,
 15 aryl group with the number of carbon atoms of 6-20
 optionally substituted with at least one halogen atom,

substituted silyl group with the number of carbon atoms of 1-20 optionally substituted with at least one halogen atom, alkoxy group with the number of carbon atoms of 1-20 optionally substituted with at least one halogen atom, aralkyloxy group with the number of carbon atoms of 7-20 optionally substituted with at least one halogen atom, aryloxy group with the number of carbon atoms of 6-20 optionally substituted with at least one halogen atom or a di-substituted amino group with the number of carbon atoms of 2-20, provided that R^1 , R^2 , R^3 and R^4 may optionally combine with each other to form a ring; L is a Lewis base and w is an integer of 0-2,

an olefin polymerization catalyst and a process for producing olefin polymers which uses the catalyst.