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Arie [NL/NL]; Badhuisweg 3, NL-1031 CM Amsterdam (NL).

(74) Agent: **ZEESTRATEN, Albertus Wilhelmus Joannes;**
C30, PO Box 384, NL-2501 CJ The Hague (NL).

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(71) Applicant (*for all designated States except US*): **SHELL INTERNATIONALE RESEARCH MAATSCHAPPIJ B.V.** [NL/NL]; Carel Van Bylandtlaan 30, NL-2596 HR The Hague (NL).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **DE BOER, Eric Johannes Maria** [NL/NL]; Badhuisweg 3, NL-1031 CM Amsterdam (NL). **VAN DER HEIJDEN, Harry** [NL/NL]; Badhuisweg 3, NL-1031 CM Amsterdam (NL). **ON, Quoc An** [NL/NL]; Badhuisweg 3, NL-1031 CM Amsterdam (NL). **SMIT, Johan Paul** [NL/NL]; Badhuisweg 3, NL-1031 CM Amsterdam (NL). **VAN ZON,**

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(54) Title: CATALYTIC OLIGOMERIZATION OF OLEFINIC MONOMERS

(57) Abstract: A catalyst precursor composition comprising: a) a source of chromium, molybdenum or tungsten; b) a first ligand having the general formula (I) ; (R¹) (R²) P-X-P(R³) (R⁴) wherein: X is a bridging group of the formula -N(R⁵)-, wherein R⁵ is selected from hydrogen, a hydrocarbyl group, a substituted hydrocarbyl group, a heterohydrocarbyl group, a substituted heterohydrocarbyl group, a silyl group or derivative thereof; at least three of R¹ to R⁴ are independently selected from optionally substituted aromatic groups, each bearing a polar substituent on at least one of the ortho-positions; and optionally one of R¹ to R⁴ is independently selected from hydrocarbyl, substituted hydrocarbyl, heterohydrocarbyl and substituted heterohydrocarbyl groups with the proviso that when the group is aromatic it does not contain a polar substituent at any of the ortho-positions; c) a second ligand having the general formula (II) ; (R^{1'}) (R^{2'}) P-X'-P(R^{3'}) (R^{4'}) wherein: X' is a bridging group as defined for X of the first ligand, component (b) , of general formula (I) ; at least R^{1'} and R^{2'} of R^{1'} to R^{4'} are independently selected from hydrocarbyl, substituted hydrocarbyl, heterohydrocarbyl and substituted heterohydrocarbyl groups with the proviso that when the group is aromatic it does not contain a polar substituent at any of the ortho-positions; and optionally none, one or both of R^{3'} and R^{4'} are independently selected from an optionally substituted aromatic group bearing a polar substituent on at least one of the ortho-positions. The present invention also relates to a catalyst system comprising the catalyst precursor composition of the present invention and additional component; d) a cocatalyst. The present invention further relates to a process for the trimerization and tetramerization of olefinic monomers, particularly the trimerization and tetramerization of ethylene to 1-hexene and 1-octene, wherein the process comprises contacting at least one olefinic monomer with the catalyst system of the present invention.

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