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(54) Title: COBALT-SUBSTITUTED CHROMIUM OXIDE COMPOSITIONS, THEIR PREPARATION, AND THEIR USE AS CATALYSTS AND CATALYST PRECURSORS

(57) Abstract: A crystalline alpha-chromium oxide where from about 0.05 atom % to about 6 atom % of the chromium atoms in the alpha-chromium oxide lattice are replaced by trivalent cobalt (Co³⁺) atoms is disclosed. Also disclosed is a chromium-containing catalyst composition comprising as a chromium-containing component the crystalline cobalt-substituted alpha-chromium oxide; and a method for preparing a composition comprising the crystalline cobalt-substituted alpha-chromium oxide. The method involves (a) co-precipitating a solid by adding ammonium hydroxide to an aqueous solution of a soluble cobalt salt and a soluble trivalent chromium salt that contains at least three moles of nitrate per mole of chromium in the solution and has a cobalt concentration of from about 0.05 mole % to about 6 mole % of the total concentration of cobalt and chromium in the solution; and after at least three moles of ammonium per mole of chromium in the solution has been added to the solution, (b) collecting the co-precipitated solid formed in (a); (c) drying the collected solid; and (d) calcining the dried solid. Also disclosed is a chromium-containing catalyst composition comprising a chromium-containing component prepared by treating the crystalline cobalt-substituted alpha-chromium oxide with a fluorinating agent; and a process for changing the fluorine distribution (i.e., content and/or arrangement) in a hydrocarbon or halogenated hydrocarbon in the presence of a catalyst. The process involves using as the catalyst a composition comprising the crystalline cobalt-substituted alpha-chromium oxide and/or the treated cobalt-substituted alpha-chromium oxide.

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B. FIELDS SEARCHED

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2001/011061 A1 (WATSON MICHAEL JOHN ET AL) 2 August 2001 (2001-08-02) paragraph '0012! - paragraph '0014! paragraph '0017! - paragraph '0019! paragraph '0027! - paragraph '0029! example 1, comparative example B: examples claims 1,2,4,12,16,17 ---	1-5, 11-13
X	EP 0 641 598 A (SHOWA DENKO KK) 8 March 1995 (1995-03-08) claims 1-6,9 figure 1; examples 5-9 page 3, line 13 - line 51 page 6, line 5 -page 7, line 36 --- -/--	1-5, 11-13

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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