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(21) International Application Number: PCT/US99/02477 (22) International Filing Date: 9 February 1999 (09.02.99) (30) Priority Data: 60/074,259 10 February 1998 (10.02.98) US 09/245,754 5 February 1999 (05.02.99) US (71) Applicant: E.I. DU PONT DE NEMOURS AND COMPANY [US/US]; 1007 Market Street, Wilmington, DE 19898 (US). (72) Inventors: DRULINER, Joe, Douglas ; 33 Bridleshire Road, Newark, DE 19711 (US). HERRON, Norman ; 408 Apple Road, Newark, DE 19711 (US). KOURTAKIS, Kostanti- nos ; 241 Lafayette Drive, Swedesboro, NJ 08085 (US). (74) Agent: SHAY, Lucas, K. ; E.I. du Pont de Nemours and Company, Legal Patent Records Center, 1007 Market Street, Wilmington, DE 19898 (US).		(81) Designated States: BR, CA, CN, CZ, ID, JP, KR, MX, PL, SG, SK, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
(54) Title: DIRECT OXIDATION OF CYCLOALKANES (57) Abstract A catalytic process is disclosed for oxidizing cycloalkanes directly to form, in a single step, a mixture containing the corresponding alcohol and ketone. In particular, the invention relates to oxidizing a cycloalkane by contacting it with a source of oxygen and a catalytic amount of a heterogeneous catalyst. The catalysts of the invention include gold (including gold sol-gel compounds) and sol-gel compounds containing particular combinations of Cr, Co, Zr, Ta, Si, Mg, Nb, Al and Ti, wherein certain of those metals have been combined with an oxide, such as an inorganic matrix of hydroxides or oxides, or combinations thereof. The catalysts may also optionally be supported on a suitable support member.		