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66492

[54] HALO, NITRO, AND HALONITRO S-ALKYL THIOCARBONATES

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[73] Assignee: The United States of America as represented by the Secretary of the Navy, Washington, D.C.

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[22] Filed: Mar. 3, 1982

Related U.S. Application Data

[62] Division of Ser. No. 224,776, Jan. 13, 1981, Pat. No. 4,332,744.

[51] Int. Cl.³ C07C 154/00
 [52] U.S. Cl. 260/455 B; 149/88
 [58] Field of Search 260/455 B, 463

References Cited

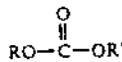
U.S. PATENT DOCUMENTS

3,338,947 8/1967 Berezin et al. 260/455 B

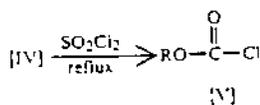
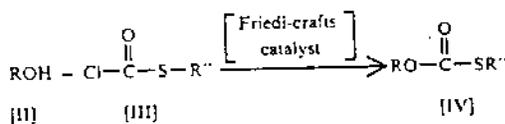
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[57] ABSTRACT

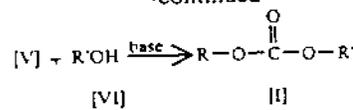
Unsymmetrical carbonates of the formula



are prepared by the following reaction sequence

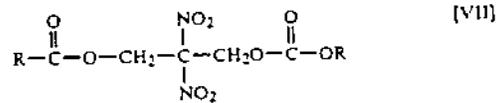


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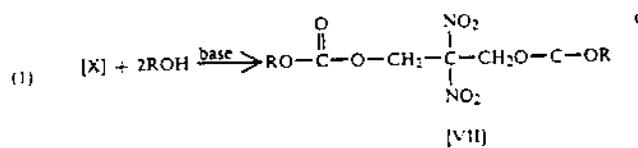
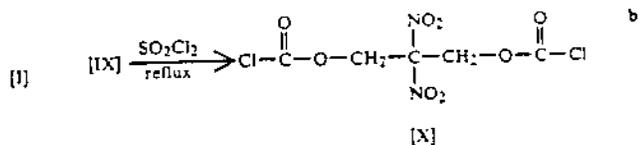
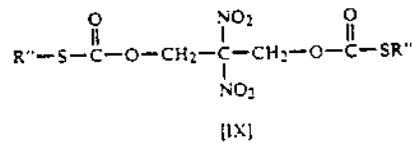
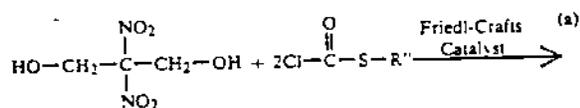


where R and R' can each be —CH₂C(NO₂)₃, —CH₂CF(NO₂)₂, —CH₂CF₂(NO₂), —CH₂CCl(NO₂)₂, —CH₂CF₃, —CH₂CCl₃, —CH₂C(NO₂)₂CH₃, or —CH₂CF₂CF₂H, provided that R≠R' and wherein R'' is a lower alkyl group of from 1 to 6 carbon atoms.

Also included are symmetrical 1,3-bis(halo- and nitroalkyl carbonyldioxy)-2,2-dinitropropanes of the formula



which are synthesis by the following reaction sequence



wherein R and R'' are as defined above.
 The carbonates of this invention are useful as energetic additives to propellants and explosive.

13 Claims, No Drawings