United States Patent [19]

[11] 4,453,021

[45] Jun. 5, 1984

66983

[54] DINITROPROPYL FLUORODINITROETHYL FORMAL PLASTICIZER AND METHOD OF PREPARATION

[75] Inventor:

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

[21] Appl. No.: 453,674

[22] Filed: Dec. 27, 1982

[51] Int. Cl.[3] C07C 43/00; C07C 79/34

[52] U.S. Cl. 568/590; 149/88

[58] Field of Search 149/88; 568/590

[56] References Cited

U.S. PATENT DOCUMENTS

3,705,197 12/1972 Kaplan et al. ..... 149/88 X

3,873,626 3/1975 Adolph ..... 149/88 X

OTHER PUBLICATIONS

Fremenko et al., Chem. Abs., 87275t, pp. 383 to 384.

Primary Examiner—Leland A. Sebastian

Attorney, Agent, or Firm—Robert F. Beers; Kenneth E. Walden; Roger D. Johnson

[57] ABSTRACT

2,2-dinitropropyl 2-fluoro-2,2-dinitroethyl formal which is prepared by the following processes:

$$CH_3C(NO_2)_2CH_2OH + CF(NO_2)_2CH_2OH + CH_2O \xrightarrow[H_2SO_4]{75\text{-}80\%} CH_3C(NO_2)_2CH_2OCH_2OCH_2CF(NO_2)_2 \quad (1)$$

or

$$CH_3C(NO_2)_2CH_2OH + CH_2O \xrightarrow{ALCl_3} CH_3C(NO_2)_2CH_2OCH_2Cl \xrightarrow[TiCl_4\ (catalyst)]{CF(NO_2)_2CH_2OH} CH_3C(NO_2)_2CH_2OCH_2OCH_2CF(NO_2)_2 \quad (2)$$

6 Claims, No Drawings