US005266675A

United States Patent [19]

[11] Patent Number: 5,266,675

[45] Date of Patent: Nov. 30, 1993

174,082

[54] ENERGETIC POLYMER

[75] Inventors:

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

[21] Appl. No.: 912,420

[22] Filed: Jul. 13, 1992

[51] Int. Cl.[5] C08G 4/00

[52] U.S. Cl. 528/230; 528/244; 528/266; 528/422

[58] Field of Search 528/230, 244, 266, 422

[56] References Cited

U.S. PATENT DOCUMENTS

4,000,730 2/1990 Nock et al. 528/244

4,000,784 6/1990 Adolph et al. 528/241

Primary Examiner—Samuel A. Acquah

Attorney, Agent, or Firm—Roger D. Johnson

[57] ABSTRACT

Energetic dihydroxy-terminated copolyformals which are formed from formaldehyde and dinitraminediol and fluorodiol comonomers wherein the dinitraminediol is

$HOCH_2N(NO_2)CH_2N(NO_2)CH_2N(NO_2)CH_2OH$,

$HOCH_2N(NO_2)CH_2N(NO_2)CH_2N(NO_2)CH_2N(NO_2)CH_2OH$,

or mixtures thereof, and wherein the fluorodiol is

$HOCH_2CF_2CF_2CF_2CH_2OH$,

$HOCH_2CF_2CF_2CF_2CF_2CH_2OH$,

$HOCH_2CF(CF_3)OCF_2CF_2CF_2CH_2OH$,

$HOCH_2CF_2OCF_2CF_2OCF_2CH_2OH$,

$HOCH_2CH_2(CF_2)_2CH_2CH_2OH$,

$HOCH_2CH_2(CF_2)_4CH_2CH_2OH$,

$HOCH_2CH_2(CF_2)_6CH_2CH_2OH$,

$HOCH_2CH_2(CF_2)_8CH_2CH_2OH$,

$HOCH_2CH_2(CF_2)_{10}CH_2CH_2OH$,

or mixtures thereof and

wherein the terminal functional groups are fluorodiol monomer hydroxy groups.

16 Claims, No Drawings