



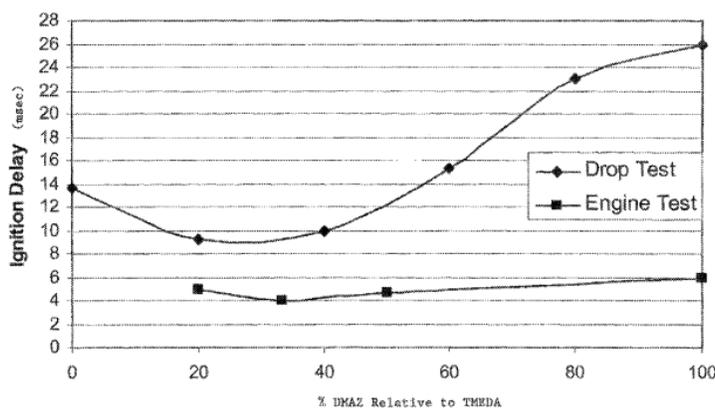
Hypergolic Liquid or Gel Fuel Mixtures

INTRODUCTION

Hypergolic liquid or gel fuel mixtures utilized in bipropellant propulsion systems are disclosed as replacements for fuels containing toxic monomethylhydrazine. The fuel mixtures include one or more amine azides mixed with one or more tertiary diamine, tri-amine or tetra-amine compounds. The fuel mixtures include N,N,N',N'-tetramethylethylenediamine (TMEDA) mixed with 2-N, N-dimethylaminoethylazide (DMAZ), TMEDA mixed with tris(2-azidoethyl)amine (TAEA), and TMEDA mixed with one or more cyclic amine azides. Each hypergolic fuel mixture provides a reduced ignition delay for combining with an oxidant in fuel propellant systems.

CONCEPT

The fuel mixtures have advantages in reduced ignition delay times compared to ignition delay times for each unmixed component, providing a synergistic effect which was not predictable from review of each component's composition. Additional fuel mixtures include various tertiary diamine, tertiary tri-amine or tetra-amine compounds combined with one or more amine azides or imidic amide compounds, to provide clean burning, high performing, and non-toxic fuels.



INVENTION OVERVIEW

The technology is a hypergolic liquid or gel fuel mixture utilized in bipropellant propulsion systems fuel mixture reducing ignition delay times compared to ignition delay times for each unmixed component.

- Improved more efficient and safer fuel mixtures.
- U.S. Patent Number: [8,435,364 B2](#)
- Application Number: 13,189,874
- Date of Patent: 7 May 2013

POTENTIAL MARKET

- Fuel Mixture Industry

DOING BUSINESS WITH AMRDEC

AMRDEC is a leader in partnering with domestic firms. Successfully developed and implemented innovative tools to ease the technology transfer process such as:

- Patent License Agreements
- Cooperative Research and Development Agreements
- Test Services Agreements

CONTACT INFORMATION

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