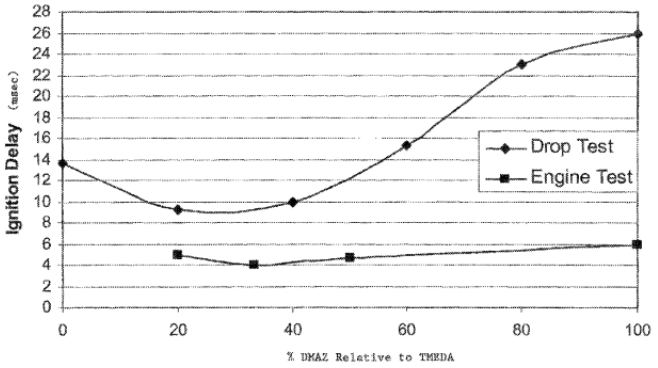
HYPERGOLIC LIQUID OR GEL FUEL MIXTURES

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 invention produces a more efficient engines for high speed trans-continental aircraft.
- More efficient engine.
- Includes mounting surface or platform
- Includes one noise generator connected to the mounting surface.

- U.S. Patent Number: 7,954,754
- Application Number: 12,131,248
- Date of Patent: 7 Jun 2011

POTENTIAL MARKET
- Fuel mixture industry

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