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Hypergolic Hydrocarbon Fuel Class

A new class of low-toxicity, liquid hydrocarbon fuels provides stable, spontaneously igniting hypergolic propellants compatible with spacecraft maneuvering systems.

Researchers at Purdue University have developed a new class of hypergolic hydrocarbon fuels. This new fuel class remains in liquid state at room temperature and has low toxicity. Purdue researchers have fine-tuned the boiling and freezing points of their new energetics to allow for stability and safe storage over time. In addition, these hypergolic hydrocarbons exhibit low toxicity, unlike most traditional hypergolic materials.

Recent Publication:

"Hypergolicity of Mixed Oxides of Nitrogen with Solid Fuels for Hybrid Rocket Application"

53rd Annual AIAA/SAE/ASEE Joint Propulsion Conference

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Advantages:

-Reduced toxicity

-Ignites spontaneously

-Compatible with Spacecraft Maneuvering Mechanisms

-Miscible with Kerosene

-Liquid at Room Temperature

Potential Applications:

-Hypergolic propellants

-Rocket Fuel

-Gas Turbine Fuel

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Category
Aerospace & Defense/Hypersonics & Propulsion Systems

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-Space Vehicles, Missiles, and Satellites

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