Hydrogen Generation Via Sodium Borohydride

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Along with the technological challenges associated with developing fuel cells and hydrogen burning engines, a major issue that must be addressed to ensure the ultimate success of a hydrogen economy is the ability to store and transport hydrogen effectively. To that end, Millennium Cell has developed and patented a proprietary system for storing and generating hydrogen gas called Hydrogen on Demand(tm). The system releases the hydrogen stored in fuel solutions of sodium borohydride as needed through an easily controllable catalytic process. The fuel itself is water-based, non-flammable, storable in plastic containers under no pressure, and is rich in hydrogen content. After the hydrogen from the fuel is consumed, the remaining product, sodium metaborate (related to borax), can either be disposed of or removed and recycled back into fresh fuel. In this paper, an overview of the Hydrogen on Demand(tm) technology will be presented along with data showing the performance characteristics of practical hydrogen generation systems.