

Lightweight, Safe Hydrogen Solutions for Powering Mobile Electronics



Low Cost, Low Pressure, On-Demand H₂ Generation

SiGNa's mobile-H₂TM Cartridges deliver clean H₂ gas instantly for a wide array of low power mobile electronic needs. The mobile-H₂ cartridge contains sodium silicide (NaSi) powder that produces H₂ on-demand from its reaction with water. These cartridges are shipped filled with powder and are readily adapted to any low power fuel cell.

H₂ When You Need It

Each mobile-H₂ cartridge runs for 10 hours at 1 W output with almost instant startup and shutdown. Get consistent power output over the entire runtime – no power degradation like batteries.

Low Pressure Output

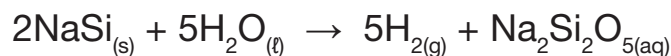
The mobile-H₂ cartridges are configurable and can operate at pressures from 1 to 8 psi with a +/- 0.5 psi variability over its lifetime.

Hot-Swappable

Exchange cartridges to extend runtime without interrupting power.

Safe, Controllable Chemistry

Sodium silicide — a non-flammable, air-stable powder — reacts even with non-potable, non-distilled waters at room temperature to form H₂ in a rapid, stable reaction:



Safe, Eco-Friendly

The sodium silicate (Na₂Si₂O₅) by-product poses no environmental risk and resides completely in the original fuel container which may be easily disposed.



Winner of the
2008 Presidential
Green Chemistry
Challenge Award

Product Specifications



The Mobile-H₂ Cartridge, slightly larger than an inch on each side



Mobile-H₂ Cartridge Specifications

- Energy: Over 10 W-Hrs for each cartridge
- Cartridge Volume: < 30 cc
- Cost: \$0.50 USD per cartridge
- Startup Time: < 1 second
- Exhaust: water vapor only – zero GHG emissions
- Real-time swappable cartridges
- Dynamic, load-following, rapid start/stop H₂ generation
- Orientation independent H₂ generation
- Fully contained micro-control system, including water storage and micro-feeding

Mobile-H₂ Cartridge Uses

- Smartphones
- LED Lighting
- Mobile GPS
- MP3 Players
- Sensors
- Surveillance
- Cameras

At SiGNa, we can customize our hydrogen solutions to meet all your portable power needs.