



Metal hydride Storage

Storing hydrogen in metal hydrides involves a chemical process where hydrogen gas is absorbed by a metal alloy, forming a solid compound known as a metal hydride.

How It Works

- ≡ **Absorption:** Hydrogen gas is introduced to a metal alloy. Under certain conditions of pressure and temperature, the hydrogen molecules dissociate into atoms and are absorbed into the metal lattice, forming a metal hydride.
- ≡ **Storage:** The hydrogen is stored in a solid state within the metal hydride. This process is reversible, meaning the hydrogen can be released when needed.
- ≡ **Desorption:** To release the hydrogen, the metal hydride is heated or the pressure is reduced, causing the hydrogen atoms to recombine into gas molecules and be released from the metal lattice.

Benefits

- ≡ **Safety:** Metal hydrides store hydrogen at lower pressures compared to compressed gas storage, reducing the risk of leaks and explosions.
- ≡ **Efficiency:** They can store a large amount of hydrogen in a compact space, making them ideal for applications where space is limited.
- ≡ **Reversibility:** The absorption and desorption processes are reversible, allowing for repeated use without significant degradation of the storage material.
- ≡ **Temperature Stability:** Metal hydrides can operate at relatively low temperatures, which is beneficial for various industrial and residential applications.

The following list provides some potentially suitable Metal Hydride Storage Solutions for an Enapter single-core set-up. Before making a decision, please undertake your own due diligence and get in touch with the manufacturers.

Suppliers Overview

Manufacturer	Module	Storage Capacity (kg)	Location	Website
Methydor	Module Hydor S 20	0.6	Italy	www.methydor.com
H2Planet	MyH2 10000 Cluster	2	Italy	www.h2planet.eu/en/detail/myh2%C3%AF%C2%BF%C2%BD_10000_cluster_1
Mahytec	MHT HyCube	0.085	France	www.mahytec.com/en/products/solid-hydrogen-storage