Hydrogen Storage Alloys Market to Reach $4,535.53 Mn by 2028 | Drivers- Surge in Hydrogen Generation and Storage Systems

NEW YORK, UNITED STATES, December 14, 2022 /EINPresswire.com/ -- According to our new research study on "Hydrogen Storage Alloys Market to 2028 – Global Analysis and Forecast – by Type and Application," the Hydrogen Storage Alloys Market Size was valued at US$ 2,406.88 million in 2019 and is projected to reach US$ 4,535.53 million by 2028; it is expected to grow at a CAGR of 7.3% from 2020 to 2028.

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Hydrogen Alloys Market: Competition Landscape and Key Developments

Japan Metals & Chemicals Co Ltd (JMC); AMG Titanium Alloys & Coatings LLC; Jiangmen Kanhoo Industry Co. Ltd; Xiamen Tungsten Co. Ltd; The Merck Group; Ajax Tocco Magnethermic Corporation; Baotou Santoku Battery Materials Co., Ltd.; and American Elements are among the key companies in the hydrogen storage alloys market. The market leaders are continuously focusing on strategies such as mergers and acquisition and product development, as well as expansion of production facilities to expand their footprint worldwide and fulfill the growing demands.

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In 2019, APAC contributed to the largest share in the global hydrogen storage alloys market. The growth of the hydrogen storage alloys market in this region is primarily attributed to the development of new applications such as hydrogen powered fuel cells for transportation. The escalating demand for clean energy generation has increased use of fuel cell-based vehicles,

which is driving the market for hydrogen storage alloys in the region. In addition, hydrogen storage alloys find vast applications in electronics devices such as smartphones, laptops, PDAs, and other consumer electronics. Surge in demand for consumer electronics in developing countries such as India and China is expected to support the growth of hydrogen storage alloys market.

Hydrogen is considered as one of the significant elements and is abundantly available in gaseous state. The potential use of hydrogen as vital source of energy has drawn significant attention in recent years in various applications. According to Fuel Cell & Hydrogen Energy Association, the rising focus on substituting renewables with different dispatchable energy sources has substantially driven the demand for hydrogen generation and storage. As per the association, hydrogen energy storage is a technique of storing surplus energy, generated by renewables, so that it can be used for various purposes such as a fuel for piston engines or gas turbines. As per the International Energy Agency, hydrogen generated with the help of electrolysis mechanism holds great futuristic opportunities and great promise as an economical fuel choice. It also predicts that hydrogen created from wind sources would be comparatively cost-efficient and cheaper than natural gas by 2030. Therefore, the demand for hydrogen generation and storage, potentially in underground caverns for large-scale energy storage or steel containers in smaller scale storage, is expected to rise. The growing focus on hydrogen as a potential renewable energy source, along with expanding requirement for hydrogen energy storage, is expected to stimulate the demand for hydrogen storage alloys in the global market. Correspondingly, several techniques have been significantly used to store hydrogen, including hydrogen storage alloys, high-pressure hydrogen gas storage, and liquid hydrogen storage, at hydrogen refueling stations.

Hydrogen Storage Alloys Market: Segmental Overview

Based on type, the hydrogen storage alloys market is segmented into AB5 and AB2. In 2019, the AB5 segment led the hydrogen storage alloys market with a higher market share. The AB5-type hydrogen storage alloy Mm (Ni, Mn, Co, Al)5 is one of an alloy series which are being extensively used. AB5 alloys combine a hydride forming metal A, usually a rare earth metal such as La, Ce, Nd, Pr, Y, or their mixture known as Mischmetal, with a non-hydride forming element that is nickel. The latter can be doped with other metals, such as Co, Sn, or Al, to improve materials stability or to adjust equilibrium hydrogen pressure and temperature required for its charging discharging with hydrogen. These storage alloys for instance, composition $MmNi_{3.55}Mn_{0.4}Al_{0.3}Co_{0.75}$ are suitable for a battery and similar applications as they meet the minimum requirement with respect to cost, cycle life, and storage capacity.

In terms of application, the hydrogen storage alloys market is segmented into rechargeable batteries, cooling devices, fuel cells, and others. The rechargeable batteries segment held the largest share in the global hydrogen storage alloys market in 2019. Hydrogen storage alloys such as AB2 and AB5 are widely used in rechargeable batteries such as NiMH batteries, lithium-ion based batteries, and metal-air batteries. Though the market for these batteries is currently at a

mature stage and its technology offers limited scope for innovation, they are the vital components of the power source in consumer appliances and industrial applications. For instance, NiMH batteries are installed in several gadgets such as toys, cameras, electronics, hybrid vehicles, and electric cars. Similarly, lithium-ion battery finds its major application in laptops, PDAs, cell phones, and iPods. Enhanced chemical and mechanical stability of hydrogen storage alloys make them a popular choice for these batteries. Thus, the rapid growth of the electrical and electronic sector acts as a major driver for the growth of the rechargeable batteries, which eventually supports the growth of hydrogen storage alloys market.

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