

Global Ion Exchange Membrane of All-Vanadium Redox Flow Battery Market Insights, Forecast to 2026

<https://marketpublishers.com/r/GEA1623A13F1EN.html>

Date: June 2020

Pages: 119

Price: US\$ 4,900.00 (Single User License)

ID: GEA1623A13F1EN

Abstracts

The vanadium redox battery (VRB) (or Vanadium flow battery) is a type of rechargeable flow battery that employs vanadium ions in different oxidation states to store chemical potential energy. The vanadium redox battery exploits the ability of vanadium to exist in solution in four different oxidation states, and uses this property to make a battery that has just one electroactive element instead of two.

As the schematic shown in Fig, a vanadium redox-flow battery has two chambers, a positive chamber and a negative chamber, separated by an ion-exchange membrane. These two chambers are circulated with electrolytes containing active species of vanadium in different valence states, VO_2^+/VO_2^+ in the positive electrolyte and V^{2+}/V^{3+} in the negative electrolyte. During discharge process, VO_2^+ is reduced to VO_2 at the positive electrode and V^{2+} is oxidized to V^{3+} at the negative electrode, as shown in Equation(1) and (2). The reactions proceed in the opposite direction during charge process. The active species are normally dissolved in a strong acid, and the protons transport across the ion-exchange membrane to balance the charge.

In our report, we cover the ion exchange membrane of all-vanadium redox flow battery. Commercial ion-exchange membranes should have high proton conductivity, good selectivity, and especially low cost. At present, ion-exchange membrane prices are still too high. This affects the installed capacity of vanadium redox flow battery.

Since the COVID-19 virus outbreak in December 2019, the disease has spread to almost 100 countries around the globe with the World Health Organization declaring it a public health emergency. The global impacts of the coronavirus disease 2019 (COVID-19) are already starting to be felt, and will significantly affect the Ion Exchange Membrane of All-Vanadium Redox Flow Battery 4900 market in 2020.

COVID-19 can affect the global economy in three main ways: by directly affecting production and demand, by creating supply chain and market disruption, and by its financial impact on firms and financial markets.

The outbreak of COVID-19 has brought effects on many aspects, like flight cancellations; travel bans and quarantines; restaurants closed; all indoor events restricted; over forty countries state of emergency declared; massive slowing of the supply chain; stock market volatility; falling business confidence, growing panic among the population, and uncertainty about future.

This report also analyses the impact of Coronavirus COVID-19 on the Ion Exchange Membrane of All-Vanadium Redox Flow Battery 4900 industry.

Based on our recent survey, we have several different scenarios about the Ion Exchange Membrane of All-Vanadium Redox Flow Battery 4900 YoY growth rate for 2020. The probable scenario is expected to grow by a xx% in 2020 and the revenue will be xx in 2020 from US\$ 15 million in 2019. The market size of Ion Exchange Membrane of All-Vanadium Redox Flow Battery 4900 will reach xx in 2026, with a CAGR of xx% from 2020 to 2026.

With industry-standard accuracy in analysis and high data integrity, the report makes a brilliant attempt to unveil key opportunities available in the global Ion Exchange Membrane of All-Vanadium Redox Flow Battery market to help players in achieving a strong market position. Buyers of the report can access verified and reliable market forecasts, including those for the overall size of the global Ion Exchange Membrane of All-Vanadium Redox Flow Battery market in terms of both revenue and volume. Players, stakeholders, and other participants in the global Ion Exchange Membrane of All-Vanadium Redox Flow Battery market will be able to gain the upper hand as they use the report as a powerful resource. For this version of the report, the segmental analysis focuses on sales (volume), revenue and forecast by each application segment in terms of sales and revenue and forecast by each type segment in terms of revenue for the period 2015-2026.

Production and Pricing Analyses

Readers are provided with deeper production analysis, import and export analysis, and pricing analysis for the global Ion Exchange Membrane of All-Vanadium Redox Flow Battery market. As part of production analysis, the report offers accurate statistics and figures for production capacity, production volume by region, and global production and production by each type segment for the period 2015-2026.

In the pricing analysis section of the report, readers are provided with validated statistics and figures for price by manufacturer and price by region for the period 2015-2020 and price by each type segment for the period 2015-2026. The import and export analysis for the global Ion Exchange Membrane of All-Vanadium Redox Flow Battery market has been provided based on region.

Regional and Country-level Analysis

The report offers an exhaustive geographical analysis of the global Ion Exchange Membrane of All-Vanadium Redox Flow Battery market, covering important regions, viz, North America, Europe, China, Japan and South Korea. It also covers key countries (regions), viz, U.S., Canada, Germany, France, U.K., Italy, Russia, China, Japan, South Korea, India, Australia, Taiwan, Indonesia, Thailand, Malaysia, Philippines, Vietnam, Mexico, Brazil, Turkey, Saudi Arabia, UAE, etc.

The report includes country-wise and region-wise market size for the period 2015-2026. It also includes market size and forecast by each application segment in terms of volume for the period 2015-2026.

Competition Analysis

In the competitive analysis section of the report, leading as well as prominent players of the global Ion Exchange Membrane of All-Vanadium Redox Flow Battery market are broadly studied on the basis of key factors. The report offers comprehensive analysis and accurate statistics on sales by the player for the period 2015-2020. It also offers detailed analysis supported by reliable statistics on price and revenue (global level) by player for the period 2015-2020.

On the whole, the report proves to be an effective tool that players can use to gain a competitive edge over their competitors and ensure lasting success in the global Ion Exchange Membrane of All-Vanadium Redox Flow Battery market. All of the findings, data, and information provided in the report are validated and revalidated with the help of trustworthy sources. The analysts who have authored the report took a unique and industry-best research and analysis approach for an in-depth study of the global Ion Exchange Membrane of All-Vanadium Redox Flow Battery market.

The following manufacturers are covered in this report:

Chemours Company

FuMa-Tech

Golden Energy Fuel Cell

Dalian Institute of Chemical Physics

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Ion Exchange Membrane of All-Vanadium Redox Flow Battery Breakdown Data by Type

Full-fluorination Ion Exchange Membrane

Non-fluorination Ion Exchange Membrane

Others

Ion Exchange Membrane of All-Vanadium Redox Flow Battery Breakdown Data by Application

Renewable Power Supply

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