

Market Report

Global Membrane Filtration Market

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Abstract

Global membrane filtration market was valued at approximately US\$28.6 billion in 2021. Growing by 7.2% annually in the coming years, the market is expected to approach US\$28 billion by 2025 and to reach US\$53 billion by 2030.

Membrane technologies experienced significant development in the last decades. Membrane filtration with unique properties, distinct performance characteristics, and technology innovations and developments, presents promising market prospect and huge potential.

The market continues to show strong growth worldwide. Ever stricter environmental regulations, advancements of material science and process technologies, challenges related to water supply and sanitation, exploration of new applications are major factors driving demand in both developed and developing regions.

Water/wastewater treatment presents the largest application market followed by and chemical processing. China as a country with largest population and highest manufacturing output has become the largest single-country market for membrane filtration. India shows the strongest potential for growth in the coming years. North America and Western Europe remain the key technology and market leaders for membrane systems and filtration technologies.

Acmite Market Intelligence has finished a most comprehensive report on the global membrane filtration market. It is ready for order.

The report examines the current products, technologies and application areas, provides extensive market data of 2021, and market forecast through 2025 to 2030. It also outlines the competition landscape, evaluates market chances and risks and anticipates future trends and chances based on a series of influence factors.

- Volume I: 265 pages analyzing the market with 72 data tables
- Volume II: 250 manufacturers of membrane products profiled

With a multi-dimensional and in-depth view of the global membrane filtration market, this report is ideal help for you with decisions about market penetration, business expansion or project feasibility analysis.

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Volume II

Company profiles (250).....1-300

Note:

Regions:

Asia Pacific*: Asia Pacific excluding Japan and China

3.2 Market trends and chances

More researches and innovations on membrane materials and technologies

- **Membrane technology for sustainable water treatment.**
Access to clean and potable water will continue to be a global challenge. Some of the emerging trends in membrane science and technology for sustainable desalination and circular economy solutions include the reuse of membranes, reuse of waste brine or sludge, energy harvesting from wastes, and waste reduction by membrane antifouling approaches.
- **3D and 4D printing.**
3D and 4D printing has attracted recent research attention for rapid prototyping and flexibility in the manufacturing of membrane module materials. Many traditional membrane synthesis methods such as casting, coating, grafting, and vapor deposition do not support rapid prototyping.
- **Greener materials and more sustainable production techniques.**
Membrane technology is gradually moving toward greener chemistry and more sustainable production techniques to effectively minimize the generation of hazardous compounds. Biobased polymers and green solvents are increasingly being employed within the membrane preparation process and to replace traditional ones.
- **Artificial intelligence (AI) and machine learning (ML).**
AI and ML tools have been presented in recent researches as effective future solutions for decision making and for the prediction, operation, and control of membrane-based water treatment processes. AI and ML are increasingly applied to evaluate membrane performance characteristics, such as the prediction of flux and rejection, water recovery, energy consumption, membrane fouling, and gas selectivity. Such techniques would be beneficial to researchers and industrialists in terms of improving performance and better understanding the governance of systems.

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4.2 Inorganic membrane

4.2.1 Products and uses

Synthetic membrane can be produced from inorganic materials. Typical inorganic membrane media include ceramics such as various oxides (alumina, silica, titania, zirconia), zeolites, and metals such as stainless steel, palladium, silver and their alloys.

Inorganic membranes can be classified into two major categories based on their structure:

- Porous inorganic membranes. Microporous inorganic membranes have two different structures: symmetric and asymmetric; and include both amorphous and crystalline membranes. The current commercial inorganic membrane market is dominated by porous membranes.
- Dense (non-porous) inorganic membranes. Application of dense inorganic membranes is primarily for highly selective separation of gases such as hydrogen and oxygen. However, dense membranes have limited industrial application due to their low permeability compared to porous inorganic membranes.

Ceramic membranes

Ceramic membranes are produced from inorganic materials such as aluminium oxides, titanium oxides, silicon carbide, zirconium oxide or some glassy materials. Ceramic membranes are very resistant to the action of aggressive media such as acids and strong solvents. They are very stable chemically, thermally, and mechanically, and biologically inert. Even though ceramic membranes have a high weight and substantial production costs, they are ecologically friendly and have long working life. Ceramic membranes are generally made as monolithic shapes of tubular capillaries

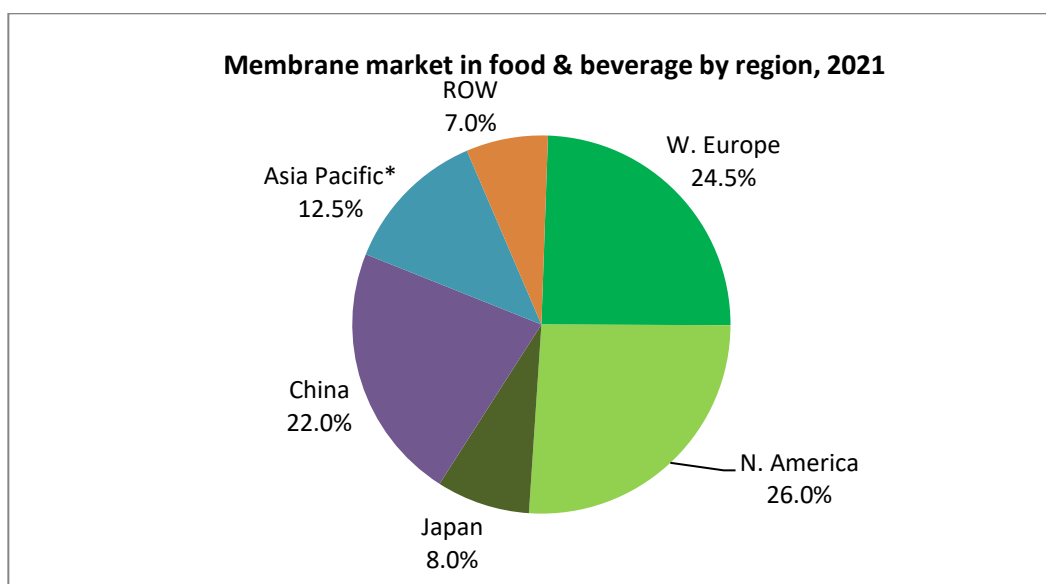
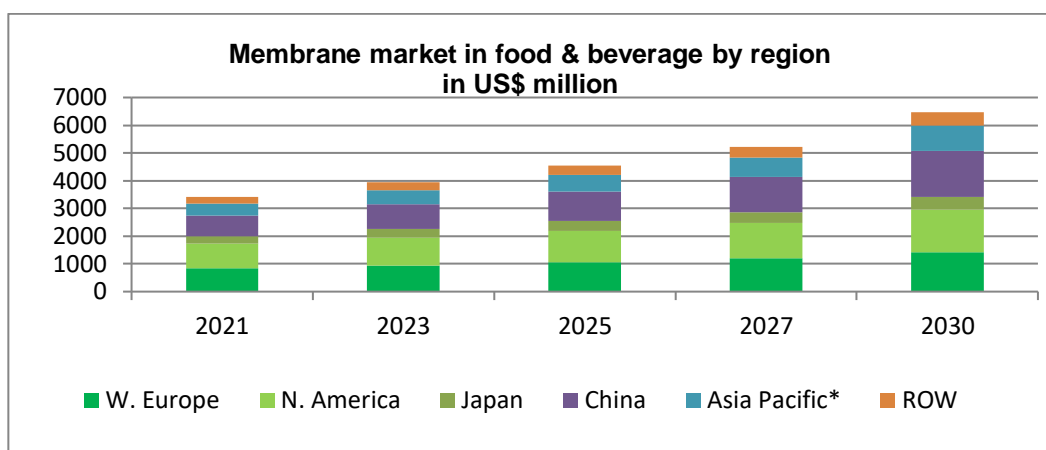
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7.4.2.3 Membrane module demand in food & beverage by region

Membrane module demand in food & beverage by region in US\$ million

	2021	2023	2025	2027	2030	CAGR
W. Europe	838	943	1061	1193	1421	6.0%
N. America	889	1007	1139	1288	1547	6.3%
Japan	274	307	344	385	456	5.8%
China	752	897	1070	1274	1654	9.1%
Asia Pacific*	428	505	597	704	902	8.6%
ROW	239	281	329	386	488	8.2%
Total	3420	3940	4540	5230	6467	7.3%



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JIUWU HI-TECH Membrane Technology (China)

No. 9 Yuansi Road, Pukou

Nanjing, 211808

China

Phone: +86-25-58849045

Fax: +86-25-58749295

Year of foundation: 1997

Number of employees 2021: 386

Revenue 2021: US\$85 Million

Company profile

Founded in 1997, Jiangsu Jiuwu Hi-Tech Co. Ltd. is a major ceramic membrane manufacturer in China. Owing more than 50 patents regarding ceramic membranes, Jiuwu Hi-Tech supplies a series of high-quality ceramic membrane of microfiltration, ultrafiltration and nanofiltration, ceramic membrane module, membrane testing machine and professional ceramic membrane filtration system for industrial use, including solid-liquid separation in food and beverage, biotechnology, water treatment, chemical industry, etc.

Its product offerings include:

- Ceramic Membrane: Ceramic membranes (Porous Ceramic Membrane & tubular ceramic membrane) are available for microfiltration, ultrafiltration and nanofiltration as single-channel or multiple-channel elements with channel diameters between 2 and 16mm
- Organic membrane: JIUWU HI-TECH provides a full series of spiral membrane products with various molecular weights, as well as hollow fiber membrane products

JIUWU HI-TECH can offer solutions and services for trials, design, manufacturing, installation, commissioning, ceramic replacements and after-sales service