

Global Ester-Based Immersion Cooling Fluid Market 2026 by Manufacturers, Regions, Type and Application, Forecast to 2032

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Abstracts

According to our (Global Info Research) latest study, the global Ester-Based Immersion Cooling Fluid market size was valued at US\$ 128 million in 2025 and is forecast to a readjusted size of US\$ 252 million by 2032 with a CAGR of 10.3% during review period.

Ester-based immersion cooling fluids are a class of dielectric thermal management fluids formulated from ester compounds (including synthetic or natural esters). They are utilized in direct immersion cooling systems for data centers, energy storage systems, and high-power electronic equipment, achieving efficient heat transfer and dissipation by directly submerging heat-generating electronic components or entire units in the fluid. The upstream segment of the industry chain primarily comprises vegetable oil feedstocks for natural esters (such as soybean, rapeseed, and palm oils), basic chemical raw materials for synthetic esters (including fatty acids, alcohols, and anhydrides), catalysts, and additive systems, involving producers of both basic chemicals and bio-based chemicals. The midstream segment focuses on formulation development and large-scale production; specialized chemical companies and electrical insulation fluid manufacturers employ processes such as esterification, molecular structure optimization, control of stability and viscosity, and modification techniques (e.g., enhancing oxidation and hydrolysis resistance) to produce natural or synthetic ester coolants tailored to varying thermal loads and electrical safety requirements. Downstream applications primarily include data centers, electric vehicle (EV) drive systems, battery packs, and power electronic devices. In 2025, the global sales volume of ester-based immersion cooling fluids is projected to reach 16,000 tons, with a production capacity of approximately 22,000 tons, an average selling price of \$7,750 per ton, and an average gross margin of 30%-40%.

Regarding the policy environment and industry trends, global data center energy efficiency standards and carbon neutrality goals are accelerating the adoption of liquid cooling technology. Both the European Union and the United States are progressively tightening energy consumption constraints within their green data center certification frameworks, while China is driving energy-saving upgrades for high-performance computing centers in alignment with its "dual carbon" goals. As a means to significantly reduce the energy consumption of IT equipment, liquid cooling technology has been incorporated into various regional initiatives supporting green infrastructure. Furthermore, collaboration between cloud service providers and chip manufacturers is intensifying; for instance, the design of high-power GPUs and ASIC chips is driving the standardization of liquid cooling solutions.

This report is a detailed and comprehensive analysis for global Ester-Based Immersion Cooling Fluid market. Both quantitative and qualitative analyses are presented by manufacturers, by region & country, by Type and by Application. As the market is constantly changing, this report explores the competition, supply and demand trends, as well as key factors that contribute to its changing demands across many markets. Company profiles and product examples of selected competitors, along with market share estimates of some of the selected leaders for the year 2025, are provided.

Key Features:

Global Ester-Based Immersion Cooling Fluid market size and forecasts, in consumption value (\$ Million), sales quantity (Tons), and average selling prices (US\$/Ton), 2021-2032

Global Ester-Based Immersion Cooling Fluid market size and forecasts by region and country, in consumption value (\$ Million), sales quantity (Tons), and average selling prices (US\$/Ton), 2021-2032

Global Ester-Based Immersion Cooling Fluid market size and forecasts, by Type and by Application, in consumption value (\$ Million), sales quantity (Tons), and average selling prices (US\$/Ton), 2021-2032

Global Ester-Based Immersion Cooling Fluid market shares of main players, shipments in revenue (\$ Million), sales quantity (Tons), and ASP (US\$/Ton), 2021-2026

The Primary Objectives in This Report Are:

To determine the size of the total market opportunity of global and key countries

To assess the growth potential for Ester-Based Immersion Cooling Fluid

To forecast future growth in each product and end-use market

To assess competitive factors affecting the marketplace

This report profiles key players in the global Ester-Based Immersion Cooling Fluid market based on the following parameters - company overview, sales quantity, revenue, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include ExxonMobil, Shell, TotalEnergies, FUCHS, Lubrizol, Castrol, Dick Chemical, Chevron, Perstorp, Engineered Fluids, etc.

This report also provides key insights about market drivers, restraints, opportunities, new product launches or approvals.

Market Segmentation

Ester-Based Immersion Cooling Fluid market is split by Type and by Application. For the period 2021-2032, the growth among segments provides accurate calculations and forecasts for consumption value by Type, and by Application in terms of volume and value. This analysis can help you expand your business by targeting qualified niche markets.

Market segment by Type

Synthetic Ester-Based Immersion Cooling Fluid

Natural Ester-Based Immersion Cooling Fluid

Market segment by Kinematic Viscosity

?10mm²/s

10-20mm²/s

?20mm?/s

Market segment by Phase Change State

Single Phase Synthetic Ester Cooling Fluid

Dual-Phase Synthetic Ester Cooling Fluid

Market segment by Application

Data Centers

EV Electric Drive Systems

Battery Packs

Power Devices

Others

Major players covered

ExxonMobil

Shell

TotalEnergies

FUCHS

Lubrizol

Castrol

Dick Chemical

Chevron

Perstorp

Engineered Fluids

Cargill

M&I Materials

Nyco

TCLAD

Market segment by region, regional analysis covers

North America (United States, Canada, and Mexico)

Europe (Germany, France, United Kingdom, Russia, Italy, and Rest of Europe)

Asia-Pacific (China, Japan, Korea, India, Southeast Asia, and Australia)

South America (Brazil, Argentina, Colombia, and Rest of South America)

Middle East & Africa (Saudi Arabia, UAE, Egypt, South Africa, and Rest of Middle East & Africa)

The content of the study subjects, includes a total of 15 chapters:

Chapter 1, to describe Ester-Based Immersion Cooling Fluid product scope, market overview, market estimation caveats and base year.

Chapter 2, to profile the top manufacturers of Ester-Based Immersion Cooling Fluid, with price, sales quantity, revenue, and global market share of Ester-Based Immersion Cooling Fluid from 2021 to 2026.

Chapter 3, the Ester-Based Immersion Cooling Fluid competitive situation, sales quantity, revenue, and global market share of top manufacturers are analyzed emphatically by landscape contrast.

Chapter 4, the Ester-Based Immersion Cooling Fluid breakdown data are shown at the regional level, to show the sales quantity, consumption value, and growth by regions, from 2021 to 2032.

Chapter 5 and 6, to segment the sales by Type and by Application, with sales market share and growth rate by Type, by Application, from 2021 to 2032.

Chapter 7, 8, 9, 10 and 11, to break the sales data at the country level, with sales quantity, consumption value, and market share for key countries in the world, from 2021 to 2026. and Ester-Based Immersion Cooling Fluid market forecast, by regions, by Type, and by Application, with sales and revenue, from 2027 to 2032.

Chapter 12, market dynamics, drivers, restraints, trends, and Porters Five Forces analysis.

Chapter 13, the key raw materials and key suppliers, and industry chain of Ester-Based Immersion Cooling Fluid.

Chapter 14 and 15, to describe Ester-Based Immersion Cooling Fluid sales channel, distributors, customers, research findings and conclusion.

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