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Global Synthetic Cutting and Grinding Fluid Supply, Demand and Key Producers, 2026-2032

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Abstracts

The global Synthetic Cutting and Grinding Fluid market size is expected to reach $ 9804 million by 2032, rising at a market growth of 5.5% CAGR during the forecast period (2026-2032).
In 2025, global sales of Synthetic Cutting and Grinding Fluids reached approximately 2.85 million tons, with an average selling price of about US$2,300 per ton. Synthetic Cutting and Grinding Fluids are water-based metalworking fluids formulated with synthetic surfactants, rust inhibitors, extreme pressure lubricants, corrosion inhibitors, and bactericides. They contain little to no mineral oil and are primarily used in high-precision metalworking processes such as turning, milling, grinding, and drilling. Their core functions are cooling, lubrication, cleaning, rust prevention, and extending tool life. Upstream raw materials include synthetic surfactants, amine neutralizers, corrosion inhibitors and bactericides, extreme pressure additives, and deionized water. Surfactants account for approximately 25% of upstream material consumption, additive systems account for approximately 35%, and the remainder is water and functional additives. Downstream supplies mainly go to automotive parts, aerospace, construction machinery, mold manufacturing, and precision electronics processing companies. The automotive and parts sector accounts for approximately 38% of consumption, general machinery approximately 27%, and aerospace and high-end manufacturing approximately 15%. Global total production capacity is approximately 3.5 million tons, with an overall capacity utilization rate of around 80%. The industry average gross profit margin is approximately 28%?35%, while high-end, low-foaming, long-life, and environmentally friendly products can achieve gross profit margins exceeding 40%. Future prospects lie in areas such as increasingly stringent environmental regulations, the replacement of oil-based cutting fluids, and the increasing stability requirements of precision machining and automated production lines. Demand is significantly driven by the upgrading of high-end manufacturing, and business opportunities are mainly

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reflected in high-performance formulations, localized customization services, and integrated solutions developed in collaboration with machine tool and cutting tool manufacturers.

From an overall market perspective, synthetic cutting and polishing fluids are transitioning from 'optional products' to 'mainstream solutions.' With increasingly stringent environmental regulations and stricter occupational health requirements, low-VOC, mineral oil-free, and easily biodegradable synthetic products are more likely to pass regulatory approvals and are accelerating their replacement of traditional emulsified oils and semi-synthetic cutting fluids, especially in Europe, the US, and some leading Asian manufacturing countries where penetration rates continue to rise.

From a demand structure perspective, the automotive and construction machinery sectors remain the largest application areas, but growth potential is increasingly coming from aerospace, precision molds, 3C metal parts, and high-end equipment manufacturing. These sectors have higher requirements for processing stability, fluid lifespan, and surface quality, making high-performance, long-life, and low-foaming synthetic cutting and polishing fluids the preferred choice, driving product upgrades towards higher added value.

From a competitive landscape perspective, the market exhibits a trend of 'international brands dominating the high-end market, while domestic companies are rapidly catching up.' Multinational corporations still hold advantages in formulation systems, application databases, and global service networks, while domestic manufacturers, relying on cost control, local response speed, and customized services, are continuously expanding their market share in the mid-range and niche markets, resulting in a slow increase in industry concentration.

From a technological and trend perspective, future competition will focus on formula stability, adaptability to extreme operating conditions, and intelligent management capabilities. Integration with online concentration monitoring, automatic replenishment systems, and digital factory management platforms will transform synthetic cutting and polishing fluids from mere 'consumables' into 'part of the processing system,' resulting in higher customer loyalty and long-term service value.

In summary, the synthetic cutting and polishing fluid market represents a growth market with stable demand and continuous structural optimization. Short-term fluctuations due to manufacturing cycles are limited, while in the medium to long term, it benefits from the upgrading of high-end manufacturing and the trend towards green manufacturing. This market is suitable for companies with technological accumulation and service capabilities to continuously cultivate and differentiate themselves in this sector.

This report studies the global Synthetic Cutting and Grinding Fluid production, demand, key manufacturers, and key regions.

This report is a detailed and comprehensive analysis of the world market for Synthetic

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Cutting and Grinding Fluid and provides market size (US$ million) and Year-over-Year (YoY) Growth, considering 2025 as the base year. This report explores demand trends and competition, as well as details the characteristics of Synthetic Cutting and Grinding Fluid that contribute to its increasing demand across many markets.

Highlights and key features of the study

Global Synthetic Cutting and Grinding Fluid total production and demand, 2021-2032, (Kilotons)

Global Synthetic Cutting and Grinding Fluid total production value, 2021-2032, (USD Million)

Global Synthetic Cutting and Grinding Fluid production by region & country, production, value, CAGR, 2021-2032, (USD Million) & (Kilotons), (based on production site)

Global Synthetic Cutting and Grinding Fluid consumption by region & country, CAGR, 2021-2032 & (Kilotons)

U.S. VS China: Synthetic Cutting and Grinding Fluid domestic production, consumption, key domestic manufacturers and share

Global Synthetic Cutting and Grinding Fluid production by manufacturer, production, price, value and market share 2021-2026, (USD Million) & (Kilotons)

Global Synthetic Cutting and Grinding Fluid production by Type, production, value, CAGR, 2021-2032, (USD Million) & (Kilotons)

Global Synthetic Cutting and Grinding Fluid production by Application, production, value, CAGR, 2021-2032, (USD Million) & (Kilotons)

This report profiles key players in the global Synthetic Cutting and Grinding Fluid market based on the following parameters - company overview, production, value, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include ITWProBrands, Master Fluid Solutions, Castrol, ROCOL, HAI LU JYA HE CO..LTD, FUCHS, ValCOOL, LLC, Zhengzhou Chorus Lubricant Additive Co., Ltd, Hi-Tech Petrochem, Chem Arrow, etc. This report also provides key insights about market drivers, restraints, opportunities, new product launches or approvals.

Stakeholders would have ease in decision-making through various strategy matrices used in analyzing the World Synthetic Cutting and Grinding Fluid market

Detailed Segmentation:

Each section contains quantitative market data including market by value (US$ Millions), volume (production, consumption) & (Kilotons) and average price (US$/Ton) by manufacturer, by Type, and by Application. Data is given for the years 2021-2032 by year with 2025 as the base year, 2026 as the estimate year, and 2027-2032 as the forecast year.

Global Synthetic Cutting and Grinding Fluid Market, By Region:

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United States

China

Europe

Japan

South Korea

ASEAN

India

Rest of World

Global Synthetic Cutting and Grinding Fluid Market, Segmentation by Type:

Fully Synthetic Cutting Fluid

Microemulsion Synthetic Fluid

Polymer Solution Type

Global Synthetic Cutting and Grinding Fluid Market, Segmentation by Appearance of Diluent:

Transparent to Slightly Bluish Transparent Solution

Semi-transparent (Milky White) Solution

Milk-like Emulsion

Global Synthetic Cutting and Grinding Fluid Market, Segmentation by Dilution Ratio:

Dilution Ratio: 2% - 5%

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Dilution Ratio: 5% - 10%

Others

Global Synthetic Cutting and Grinding Fluid Market, Segmentation by Application:

Metal Processing

Industrial

Others

Companies Profiled:

ITWProBrands

Master Fluid Solutions

Castrol

ROCOL

HAI LU JYA HE CO..LTD

FUCHS

ValCOOL, LLC

Zhengzhou Chorus Lubricant Additive Co., Ltd

Hi-Tech Petrochem

Chem Arrow

Eastern Petroleum Pvt

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Key Questions Answered:

1. How big is the global Synthetic Cutting and Grinding Fluid market?
2. What is the demand of the global Synthetic Cutting and Grinding Fluid market?
3. What is the year over year growth of the global Synthetic Cutting and Grinding Fluid market?
4. What is the production and production value of the global Synthetic Cutting and Grinding Fluid market?
5. Who are the key producers in the global Synthetic Cutting and Grinding Fluid market?
6. What are the growth factors driving the market demand?

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