

# Industrial Spray Nozzles Market Set to Hit USD 21.2 Billion by 2032, Reveals Persistence Market Research

The industrial spray nozzle market is expanding with hydraulic nozzles leading, metal and ceramic valued for durability, and pneumatic gaining demand.

BRENTFORD, ENGLAND, UNITED KINGDOM, September 30, 2025 /EINPresswire.com/ -- The industrial spray nozzles market is evolving as an essential component across diverse industries such as manufacturing, agriculture, chemical processing, power generation, and food &



beverage. Spray nozzles play a pivotal role in optimizing processes such as cleaning, coating, irrigation, humidification, and gas scrubbing. The market is currently witnessing robust growth, supported by the increasing adoption of automation, advancements in fluid dynamics technology, and rising demand for energy-efficient equipment.

According to Persistence Market Research, the global industrial spray nozzles market is projected to grow steadily, with a valuation expected to reach USD 13.4 billion in 2025 and further expand to USD 21.2 billion by 2032, reflecting a CAGR of 6.8% during 2025–2032. Hydraulic nozzles dominate the market due to their versatility, making them the leading product segment. Regionally, Asia Pacific leads the market, driven by industrial expansion, growing agricultural modernization, and rapid urbanization in countries such as China and India. The region's manufacturing and chemical industries are significantly boosting demand for advanced spray nozzle technologies.

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Key Highlights from the Report

• The global industrial spray nozzles market is projected to reach USD 21.2 billion by 2032.

- Hydraulic spray nozzles hold the largest market share due to their versatility.
- Asia Pacific remains the leading regional market, supported by industrialization and agricultural growth.
- Pneumatic nozzles are experiencing rising demand for cooling and gas scrubbing applications.
- Metal and ceramic nozzles are preferred in high-performance industries for durability and precision.
- The market is expected to grow at a 6.8% CAGR between 2025 and 2032.

## Market Segmentation

## By Product Type

The industrial spray nozzles market can be segmented into hydraulic, pneumatic, electric, manual, and specialized nozzles. Hydraulic spray nozzles are widely used due to their efficiency in liquid atomization, making them a preferred choice for agricultural irrigation and industrial cooling processes. Pneumatic spray nozzles, powered by compressed air, offer fine mist spraying, which is particularly valuable in applications like coating, humidification, and dust suppression. Electric spray nozzles are gaining traction with advancements in automation and precision spraying technologies, especially in manufacturing and automotive painting. Meanwhile, manual spray nozzles remain popular in low-volume applications where cost-effectiveness and flexibility are important. Specialized nozzles, designed for niche applications such as fire suppression, chemical processing, or high-pressure cleaning, add value by catering to industry-specific demands.

## By Application

Based on application, the market is divided into agricultural, industrial, automotive, building & construction, and food & beverage processing uses. Agricultural applications dominate due to the rising need for crop protection and irrigation efficiency. Industrial applications include cooling, dust control, and chemical spraying in sectors like steel, mining, and textiles. In the automotive sector, spray nozzles are critical for painting, coating, and cleaning operations that require uniform coverage. Building and construction applications utilize nozzles in concrete curing, dust suppression, and cleaning activities. The food and beverage processing industry employs specialized nozzles for sanitation, cleaning, and precise liquid distribution, ensuring compliance with hygiene and safety regulations.

# By Material

Spray nozzles are manufactured from a variety of materials to meet specific operational requirements. Plastic spray nozzles are lightweight, corrosion-resistant, and cost-effective, making them suitable for agricultural and cleaning applications. Metal spray nozzles, including stainless steel and brass, provide durability and withstand high-pressure and high-temperature conditions, often used in industrial and oil & gas applications. Ceramic spray nozzles are valued

for their wear resistance, ensuring longer lifespans in abrasive environments like mining and chemical processing. Composite material nozzles combine strength and lightness, offering versatility across multiple industries. Additionally, rubber components are used in certain nozzle types to provide flexibility, sealing, and resistance to chemical exposure.

## By End-use

End-use segmentation highlights the wide range of industries relying on spray nozzle technology. The agricultural sector uses them extensively for irrigation, pesticide spraying, and nutrient application, driving efficiency in crop production. The manufacturing industry depends on nozzles for cooling, coating, cleaning, and lubrication processes, ensuring productivity and quality control. In hospitality and cleaning services, nozzles play a role in sanitation, pressure washing, and disinfection, which has grown in importance post-pandemic. The oil and gas industry employs durable nozzles for chemical injection, cooling, and fire suppression in highly demanding environments. Lastly, the pharmaceutical sector utilizes precision nozzles in applications like tablet coating, sterilization, and controlled spraying of active ingredients to meet strict quality standards.

## Regional Insights

Regionally, the Asia Pacific market commands the largest share, attributed to rapid industrialization, agricultural mechanization, and increased investment in infrastructure. China, India, and Southeast Asia are leading contributors, with a growing demand for both hydraulic and pneumatic spray nozzles.

North America continues to remain a strong market, with a focus on advanced technologies and precision agriculture. The United States is driving adoption in chemical, automotive, and food processing industries.

Europe showcases steady growth, driven by sustainability regulations, automation in manufacturing, and the strong presence of chemical and pharmaceutical industries in countries like Germany and France.

In contrast, Latin America and the Middle East & Africa are emerging markets with significant potential, especially in agriculture and oil & gas sectors. These regions are expected to witness steady growth as industries adopt modern irrigation systems and advanced industrial equipment.

#### **Market Drivers**

The market is primarily driven by the rising need for process efficiency and automation across industries. Manufacturers are increasingly seeking solutions that minimize resource wastage, improve coating uniformity, and enhance productivity. The agricultural sector has been a significant growth driver, with modern irrigation systems heavily reliant on efficient spray nozzles to optimize water use. Additionally, stringent environmental regulations have accelerated the adoption of low-emission spray systems, particularly in chemical and industrial cleaning applications. The integration of spray nozzles with advanced monitoring systems also contributes to market growth.

#### Market Restraints

Despite strong growth prospects, the market faces certain challenges. High initial investment costs for advanced spray nozzle systems may deter adoption, particularly in small and medium enterprises. Furthermore, the risk of clogging, wear, and corrosion in harsh operating environments can limit product lifespan, increasing maintenance costs. Technical limitations in handling varying fluid viscosities and pressure ranges also pose challenges. Moreover, fluctuating raw material prices, particularly for metals and ceramics, add uncertainty to production costs.

#### **Market Opportunities**

The industrial spray nozzles market presents significant opportunities in sustainable and smart technologies. There is growing potential for nozzles equipped with sensors and IoT-enabled systems that can monitor spray patterns, flow rates, and efficiency in real time. Emerging markets such as Africa and Southeast Asia offer untapped opportunities as agriculture and industrialization expand. Moreover, customized nozzle solutions tailored to specific industries, including pharmaceuticals and food processing, are expected to create lucrative prospects. The rising emphasis on green manufacturing practices will also increase demand for energy-efficient, precision-driven spray nozzle technologies.

## Company Insights

Key players operating in the industrial spray nozzles market include:

- Spraying Systems Co.
- BETE Fog Nozzle Inc.
- H.IKEUCHI & Co., Ltd.
- Lechler GmbH
- PNR Italia SRL
- Danfoss A/S
- Delavan Spray Technologies
- Pentair Plc
- Schlick GmbH

John Deere

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## Recent Developments:

Spraying Systems Co. launched a new line of precision hydraulic nozzles designed for energy-efficient irrigation and industrial cleaning in 2024.

BETE Fog Nozzle introduced an advanced pneumatic spray nozzle series in 2023, optimized for gas scrubbing and cooling applications in chemical industries.

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<u>Liquid Ring Vacuum Pumps Market</u>: The global liquid ring vacuum pump market will grow from US\$1,371.6 Mn in 2025 to US\$2,038.9 Mn by 2032 at a 5.8% CAGR, driven by regulations, industrial adoption, and technology upgrades.

<u>Produced Water Treatment System Market</u>: The produced water treatment systems market will grow from US\$5.4 Bn in 2025 to US\$7.5 Bn by 2032 at a 4.7% CAGR, driven by oil & gas growth and stricter environmental regulations.

Ganesh Dukare
Persistence Market Research
+1 646-878-6329
email us here
Visit us on social media:
LinkedIn
Instagram
Facebook
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X

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