

Welded Stainless Steel Pipes & Speciality Gases Market: USD 5,709.2 Million Outlook with 5.2% CAGR Through 2035

The North American market for welded stainless-steel pipes is driven by infrastructure renewal projects, oil and gas system upgrades

TX, UNITED STATES, August 27, 2026 /EINPresswire.com/ -- The [Welded Stainless Steel Pipes & Speciality Gases Market](#) is gaining importance as industries invest in corrosion-resistant piping, energy infrastructure, petrochemical facilities, municipal water systems, and advanced industrial applications. Welded

stainless-steel pipes are valued for their strength, durability, corrosion resistance, and suitability for demanding operating environments, while specialty gases support precision applications across semiconductor manufacturing, healthcare, and other high-technology industries. According to the latest Market Research Future data, the market was valued at USD 3,229.8 million in 2024 and reached USD 3,441.7 million in 2025. It is projected to reach USD 5,709.2 million by 2035, registering a 5.2% CAGR from 2025 to 2035.

Corrosion Resistance Drives Demand for Stainless-Steel Pipes

The growing preference for corrosion-resistant and long-life materials is a major trend shaping the Welded Stainless Steel Pipes & Speciality Gases Market. Industries such as oil and gas, [petrochemicals](#), desalination, and municipal water treatment operate in environments where pipes can be exposed to chemicals, moisture, saline conditions, pressure, and temperature fluctuations.

Stainless steel offers an important advantage because its chromium-rich oxide layer provides inherent corrosion resistance. This enables welded stainless-steel pipes to maintain structural integrity in challenging environments while potentially reducing maintenance and replacement requirements.



Welded Stainless Steel Pipes & Speciality Gases Market

Grades such as 304, 316, and duplex stainless steels are increasingly selected for applications requiring a combination of strength, corrosion resistance, weldability, and service life. This transition is particularly important for offshore infrastructure, wastewater treatment facilities, and chemical-processing systems.

Oil and Gas Infrastructure Supports Market Expansion

Oil and gas remains one of the most significant demand centers for welded stainless-steel pipes. According to the MRFR report, the sector accounts for approximately 32% of total stainless-steel pipe demand, making it the largest application area.

Welded stainless-steel pipes are used for transporting hydrocarbons, chemicals, steam, and other process fluids under high-pressure and corrosive conditions. Their mechanical strength and corrosion resistance make them suitable for upstream, midstream, refinery, and petrochemical operations.

Expansion of LNG terminals, offshore exploration, refinery capacity, and midstream pipeline networks is creating additional opportunities. Major LNG export terminals can require substantial quantities of stainless-steel pipe for gas processing and liquefaction systems, demonstrating how individual energy projects can significantly influence market demand.

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Petrochemical Applications Maintain Market Leadership

By application, Petrochemical represents the largest segment of the market. Welded stainless-steel pipes ranging from 2.5 to 16 inches are used in process piping, utility systems, product transfer lines, steam systems, cooling-water networks, and facilities handling corrosive substances.

Petrochemical plants require materials capable of maintaining performance under elevated temperatures and aggressive chemical conditions. Stainless-steel pipes provide the necessary combination of corrosion resistance, dimensional accuracy, weld strength, and durability.

The continued expansion of petrochemical capacity, particularly in Asia-Pacific, is therefore expected to provide a strong foundation for future demand.

Single Welded Stainless-Steel Pipes Lead Product Demand

By product type, the market is divided into Single Welded Stainless-Steel Pipes and Double Welded Stainless-Steel Pipes. Single Welded Stainless-Steel Pipes represent the largest

segment.

These pipes are manufactured from stainless-steel coils and can use technologies including tungsten inert gas welding, laser beam welding, plasma welding, and high-frequency electric resistance welding. Their broad applicability makes them suitable for industrial utilities, process systems, and infrastructure applications.

Double Welded Stainless-Steel Pipes are the fastest-growing product segment, benefiting from their higher joint efficiency and enhanced pressure-containment characteristics. These properties make them attractive for higher-stress and safety-critical applications, including chemical processing, high-pressure steam lines, and refinery utilities.

4–6 Inch Diameter Pipes Hold a Strong Position

The market is segmented by diameter into 2.5–4 Inch, >4–6 Inch, >6–8 Inch, >8–12 Inch, >12–16 Inch, and >16–24 Inch categories.

The >4–6 Inch diameter segment is the largest. These pipes occupy an important position between utility piping and larger industrial process systems. They are used for process fluids, cooling systems, compressed air, water treatment, and medium-flow chemical operations.

The 2.5–4 Inch segment is identified as the fastest-growing category. These smaller-diameter pipes are commonly used in utility systems, secondary process lines, HVAC systems, instrumentation loops, and low-to-medium-flow industrial services.

Schedule 40/40S Remains the Standard Choice

By wall thickness and schedule, the market includes Schedule 5/5S, Schedule 10/10S, Schedule 20/20S, Schedule 40/40S, Schedule 80/80S, and Schedule 160/XXS.

Schedule 40/40S represents the largest segment, owing to its broad suitability across industrial and infrastructure applications. These pipes are widely used in chemical plants, oil and gas utilities, power-generation auxiliaries, and municipal water systems.

Schedule 80/80S is the fastest-growing segment, supported by applications requiring greater wall thickness and enhanced strength. These pipes are particularly relevant for high-pressure chemical, energy, and oil and gas applications where operating conditions are more demanding.

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304 Grade Leads Material Demand

By material grade, the market is categorized into 304 Grade, 316 Grade, Duplex Grades, and Other Alloys. 304 Grade holds the largest market position because it provides a balanced combination of corrosion resistance, formability, weldability, and cost efficiency.

304 stainless steel is widely used for atmospheric exposure, water-based media, mild chemicals, process piping, and general industrial applications.

Meanwhile, Duplex Grades are the fastest-growing material category. Their dual-phase microstructure provides greater yield strength and improved resistance to stress-corrosion cracking and localized corrosion compared with conventional stainless-steel grades. These properties make duplex materials particularly attractive for demanding energy, chemical, marine, and offshore applications.

Municipal Water and Wastewater Infrastructure Creates Opportunities

Modernization of municipal water and wastewater infrastructure is emerging as an important growth driver. Cities worldwide are upgrading aging distribution networks, wastewater systems, pumping stations, treatment facilities, and water-reuse infrastructure.

Welded stainless-steel pipes are increasingly used in these systems because of their corrosion resistance, hygienic characteristics, structural stability, and long service life.

The Municipal Water & Wastewater segment is identified as the fastest-growing application category. Infrastructure rehabilitation is particularly important because older underground networks are increasingly vulnerable to leakage, corrosion, and failures.

LNG and Offshore Infrastructure Strengthen Future Demand

The expansion of LNG, offshore energy, and midstream infrastructure represents another significant opportunity. Global energy demand and efforts to diversify supply routes are encouraging investments in gas-processing facilities and pipeline networks.

Stainless-steel pipes are particularly suitable for these applications because they can withstand demanding environmental and operating conditions. Duplex and super-duplex grades are increasingly important where sour gas, marine exposure, and corrosion risks require higher-performance materials.

This trend is expected to remain relevant as energy companies modernize existing infrastructure and develop new LNG and offshore projects.

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Hydrogen and CCUS Open Emerging Applications

The use of welded stainless-steel pipes is also expanding into emerging green-energy applications. The report highlights the integration of stainless-steel piping into hydrogen transportation and carbon capture, utilization, and storage (CCUS) projects.

Hydrogen infrastructure can require materials capable of handling specialized operating conditions, while CCUS systems require reliable pipelines for transporting captured [carbon dioxide](#).

These applications can create new opportunities beyond conventional oil and gas and petrochemical markets, allowing stainless-steel pipe manufacturers to participate in the broader energy-transition infrastructure.

Automated Welding Improves Product Quality

Technological innovation is transforming stainless-steel pipe manufacturing. Automated welding, precision machining, and advanced surface treatments such as electropolishing are improving product consistency and quality.

Automation can provide better control over welding parameters and reduce variations in seam quality. Advanced finishing techniques can also improve surface characteristics, which is especially important for applications involving specialty gases and highly controlled industrial environments.

Manufacturers are therefore investing in production technologies that improve dimensional accuracy, weld integrity, surface quality, and overall manufacturing efficiency.

Specialty Gases Support High-Purity Applications

The specialty-gas component of the market is connected to applications requiring highly controlled and high-purity gases. Argon, helium, nitrogen, and rare gases are important for precision industries, including semiconductor manufacturing and healthcare.

High-purity gas systems require reliable piping infrastructure that minimizes contamination and maintains gas integrity. Stainless-steel piping, particularly when combined with appropriate surface treatments and precision fabrication, can support these demanding requirements.

The expansion of semiconductor manufacturing and advanced industrial production is therefore creating opportunities for specialized pipe systems capable of handling high-purity gases.

North America Leads Regional Demand

North America held the largest regional market share, supported by petrochemical investment, oil and gas infrastructure upgrades, municipal water and wastewater modernization, and industrial development.

Aging pipeline networks are encouraging infrastructure replacement and rehabilitation as operators seek materials that can reduce corrosion-related failures and comply with evolving safety and environmental requirements.

Europe is another important market, with demand driven by industrial modernization, regulatory compliance, chemical and petrochemical facilities, and replacement of aging carbon-steel infrastructure.

In Africa, urbanization, water infrastructure development, energy projects, mining-related processing, and industrial investments are creating selective opportunities for welded stainless-steel pipes.

Competitive Landscape

The Welded Stainless Steel Pipes & Speciality Gases Market includes major companies such as H. BUTTING GmbH & Co. KG, Marcegaglia Specialties, Tenaris, Vallourec, Benteler, Salzgitter Mannesmann, TMK (TMK INOX), Jindal SAW Ltd., Welspun Corp Ltd., Welded Tube of Canada Group, Armetal Stainless Pipe (ASP), and Aperam.

Competition is influenced by product quality, manufacturing efficiency, reliability, pricing, technological capabilities, and compliance with industry standards. Companies are increasingly focusing on automated manufacturing, specialized stainless-steel grades, advanced welding processes, and solutions for high-performance applications.

Strategic developments and operational improvements are also expected to remain important as manufacturers seek to strengthen their positions across energy, petrochemical, water, and industrial markets.

Future Outlook for the Welded Stainless Steel Pipes & Speciality Gases Market

The global Welded Stainless Steel Pipes & Speciality Gases Market is projected to grow from USD 3,441.7 million in 2025 to USD 5,709.2 million by 2035, representing a 5.2% CAGR from 2025 to 2035.

Expansion of oil and gas infrastructure, petrochemical capacity, LNG facilities, municipal water systems, and industrial modernization will remain important growth drivers. At the same time, hydrogen transportation, CCUS, semiconductor manufacturing, and high-purity specialty gas applications can create new avenues for market expansion.

Overall, the combination of corrosion-resistant materials, energy infrastructure investment, petrochemical expansion, water-system modernization, advanced welding technologies, and emerging hydrogen and CCUS projects is expected to support continued development of the global Welded Stainless Steel Pipes & Speciality Gases Market through 2035.

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