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North America Corrosion Monitoring Market By Type (Intrusive Techniques, Non-Intrusive Techniques), By Technique (Corrosion Coupons, Electrical resistance, Linear Polarization Resistance, Galvanic, Ultrasonic Thickness Measurement), By End-User (Oil & Gas, Chemical, Manufacturing), By Country, Competition, Forecast and Opportunities, 2020-2030F

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Abstracts

Market Overview

The North America Corrosion Monitoring Market was valued at USD 1.75 Billion in 2024 and is projected to reach USD 2.91 Billion by 2030, growing at a CAGR of 8.85% during the forecast period. Corrosion monitoring in the region involves the use of advanced technologies and systems—such as corrosion coupons, ultrasonic thickness gauges, hydrogen probes, and electrical resistance sensors—to assess and mitigate material degradation in infrastructure and industrial assets. These tools enable real-time or scheduled evaluations that help protect critical systems, reduce downtime, and improve safety across sectors including oil & gas, power generation, water distribution, and manufacturing. Market growth is being fueled by aging infrastructure, particularly pipelines, bridges, and utility systems built in the mid-20th century, which now require proactive integrity management. Regulatory agencies such as the U.S. EPA and the Department of Transportation mandate stringent inspection protocols for corrosion-prone assets, further boosting demand. Additionally, the integration of IoT and analytics has modernized corrosion monitoring by enabling remote access and predictive capabilities, reducing operational costs and improving reliability. Environmental stressors such as increased humidity and salt exposure—especially in coastal areas—are also amplifying the need for continuous corrosion monitoring, supporting long-term

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market expansion as industries focus on sustainability and risk mitigation.

Key Market Drivers

Aging Infrastructure Demands Proactive Maintenance Strategies

The increasing age of vital infrastructure across North America is significantly driving the need for advanced corrosion monitoring systems. Many of the region's energy grids, water lines, and transportation assets were built over 50 years ago, with some components like pipelines and bridges far exceeding their design lifespans. For example, a substantial portion of U.S. pipeline infrastructure predates 1970 and lacks modern corrosion-resilient materials and embedded monitoring capabilities. As these assets continue to degrade, the risk of catastrophic failures, environmental hazards, and operational disruptions grows. To prevent such outcomes, asset owners are turning to proactive maintenance strategies enabled by corrosion monitoring technologies. These systems detect early signs of deterioration, allowing timely repairs and reducing emergency intervention costs. Government and private sector investment is increasing in asset integrity programs to extend infrastructure life and meet compliance standards. In civil sectors alone, over 47% of U.S. bridges were classified as over 50 years old in 2023, highlighting the urgent need for robust corrosion detection in infrastructure maintenance planning.

Key Market Challenges

High Capital and Operational Costs of Advanced Monitoring Systems

Despite the long-term benefits, the adoption of advanced corrosion monitoring systems is hindered by significant upfront and ongoing costs. High-end solutions—such as electrochemical sensors, wireless monitoring units, and data analytics platforms—require considerable capital for procurement, installation, and customization. Integrating these technologies into legacy infrastructure often involves retrofitting, staff training, and system calibration, all of which contribute to elevated project costs. For small and medium-sized enterprises or municipalities operating on tight budgets, these expenses can be prohibitive. Operational expenditures, including maintenance, sensor replacement, and software licensing for cloud-based systems, further compound the challenge. In remote or distributed asset networks like pipelines or offshore rigs, logistical complexities and the need for continuous technical support increase the overall burden. Consequently, organizations may delay adoption or rely on outdated manual inspection methods, which limits the broader deployment of modern corrosion

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monitoring technologies across North America.

Key Market Trends

Integration of Artificial Intelligence in Corrosion Data Analysis

A major trend reshaping the North America corrosion monitoring market is the incorporation of artificial intelligence into data analysis processes. As monitoring systems generate large volumes of real-time data—including stress profiles, chemical readings, and environmental inputs—AI is being leveraged to analyze these data streams and identify predictive patterns of material failure. Machine learning models, trained on historical corrosion behavior, are enhancing early detection accuracy and enabling more precise maintenance scheduling. This evolution supports a shift from reactive to proactive asset management, reducing unscheduled outages and optimizing resource use. The integration of AI is especially impactful in sectors like oil & gas, marine infrastructure, and water utilities, where corrosion risks are varied and dynamic. As cloud computing becomes more accessible, even mid-sized companies are adopting intelligent corrosion monitoring solutions to extend asset life and improve operational efficiency. The fusion of AI with real-time monitoring systems is becoming a cornerstone of innovation in the region’s industrial maintenance strategies.

Key Market Players

Honeywell International Inc.

Emerson Electric Co.

General Electric Company

Rohrback Cosasco Systems, Inc.

Intertek Group plc

SGS Soci?t? G?n?rale de Surveillance SA

Tinker & Rasor, Inc

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Applied Corrosion Monitoring, Inc.

Report Scope:

In this report, the North America Corrosion Monitoring Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

North America Corrosion Monitoring Market, By Type:

Intrusive Techniques

Non-Intrusive Techniques

North America Corrosion Monitoring Market, By Technique:

Corrosion Coupons

Electrical Resistance

Linear Polarization Resistance

Galvanic

Ultrasonic Thickness Measurement

North America Corrosion Monitoring Market, By End-User:

Oil & Gas

Chemical

Manufacturing

North America Corrosion Monitoring Market, By Country:

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United States

Canada

Mexico

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the North America Corrosion Monitoring Market.

Available Customizations:

North America Corrosion Monitoring Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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