

India Water TOC Analyzer Market Assessment, By Offering [Hardware, Software, Services], By Type [Online, Laboratory], By Technology [UV Oxidation, UV Persulphate Oxidation, High-Temperature Combustion, UV Irradiation, Conductivity Detection, Others], By Application [High-Purity Water, Water for Injection, Wastewater Treatment, Surface Water, Industrial Process Water, Source Water, Drinking Water Testing, Others], By End-user [Pharmaceuticals, Environmental, Energy and Power, Semiconductors and Microelectronics, Oil and Gas, Food and Beverages, Others], By Sector [Public Sector, Private Sector], By Region, Opportunities, and Forecast, FY2017-FY2031F

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Abstracts

India Water Total Organic Carbon (TOC) Analyzer Market size was valued at USD 31.59 million in FY2023, which is expected to reach USD 63.55 million in FY2031 with a CAGR of 9.13% for the forecast period between FY2024 and FY2031. The rapid growth of India's water TOC analyzer market is driven by factors that underscore the significance of water quality management and regulatory compliance. Industries, propelled by urbanization and industrialization, are grappling with heightened water consumption and wastewater generation, necessitating effective pollution control measures. TOC analyzers have emerged as vital tools for industries to meet stringent

environmental standards, enabling accurate monitoring and control of organic contaminants in wastewater discharges.

In parallel, a growing recognition of the health and environmental implications of organic pollutants in water has led various sectors to prioritize comprehensive water quality assessment. The simplicity and efficacy of TOC analyzers in quantifying organic substances have accelerated their adoption, benefiting industries such as pharmaceuticals, food and beverages, and environmental monitoring.

Amidst these developments, technological advancements have made TOC analyzers more accessible, user-friendly, and capable of delivering swift results. Consequently, these analyzers empower industries to conduct real-time water quality assessments, aiding in timely decision-making. Government strict regulations and penalties have pressed industries to invest in TOC analyzers to ensure adherence to environmental norms and safeguard their corporate reputation. Moreover, water conservation and pollution reduction initiatives have also contributed significantly to the market's growth. In March 2023, India pledged an investment exceeding USD 240 billion in its water sector. Concurrently, the nation is executing the world's most extensive dam rehabilitation initiative and undertaking ground-level water restoration efforts. These combined endeavors are expected to drive the growth of the online TOC analyzer segment during the projected period.

Increased Demand for Water Quality Management in India

The robust investments and restoration initiatives underscore India's dedication to addressing water-related challenges, particularly in wastewater management. With a significant volume of wastewater being generated in both rural and urban areas, there is a pressing need for effective monitoring and treatment of water, especially in terms of organic contaminants. This heightened focus on water quality is driving the demand for advanced solutions like Total Organic Carbon (TOC) analyzers.

According to the Urban Wastewater Scenario in India report by NITI Aayog, rural regions produce approximately 39,604 million liters per day (MLD) of wastewater. At the same time, urban centers contribute a substantial 72,368 MLD during the 2020-21 period. Increased urbanization is straining freshwater resources in water-scarce regions, which is expected to boost the demand for TOC analyzers.

The Surge of Online TOC Monitoring Solutions

The rise of online monitoring solutions has spurred the demand for water TOC analyzers in India. These solutions offer real-time water quality analysis by integrating TOC analyzers directly into water systems. Continuous monitoring enables instant detection of deviations from quality standards, allowing industries to address issues and prevent contamination risks swiftly. Industries, including pharmaceuticals and manufacturing, are embracing online TOC analyzers for compliance, operational efficiency, and risk mitigation.

Online TOC monitoring goes beyond regulation, enhancing process efficiency, reducing resource consumption, and safeguarding the environment. With real-time insights, industries can make informed decisions, ensuring water quality and minimizing environmental impact. This trend toward online monitoring will further drive the adoption of water TOC analyzers in India's water quality management landscape.

Governmental Role

Government plays a pivotal role in driving the growth of the India water TOC (Total Organic Carbon) analyzer market by setting standards, guidelines, and requirements for water quality monitoring. The regulations and initiatives are designed to ensure safe drinking water, prevent water pollution, and maintain environmental sustainability. The Namami Gange Programme, a flagship endeavor by the Indian Government, was initiated to revive and cleanse the Ganga River. Its core objectives include ecological restoration, uninterrupted flow maintenance, and enhancement of water quality.

The program addresses pollution control, wastewater and solid waste management, biodiversity conservation, riverfront development, and more. A total of 442 projects, costing USD 4.51 billion (Rs. 37,395.51 crore), have been undertaken, with 254 completed. These projects mainly focus on sewage infrastructure to tackle untreated domestic/industrial wastewater pollution. Among them, 193 projects for sewage infrastructure, valued at USD 3.72 billion (Rs. 30,797.24 crores), aim to establish and rehabilitate a Sewage Treatment Plant (STP) capacity of 6029.75 million litres per Day (MLD).

Dominance of the Pharmaceutical Sector

In FY2023, the pharmaceutical sector maintained its market share dominance due to increased healthcare needs and drug manufacturing. Water TOC analyzers are crucial in ensuring the purity and safety of water used in pharmaceutical processes. The Indian government enforces rigorous water quality regulations for the pharmaceutical industry,

necessitating compliance with specific Total Organic Carbon (TOC) standards. These regulations mandate that pharmaceutical companies utilize water, meeting established TOC levels. Within the Indian Pharmacopeia (IP), a dedicated monograph, IP 2.4.30, offers comprehensive directives and specifications for assessing Total Organic Carbon (TOC) in pharmaceutical products. This monograph outlines the requirements and methodologies for analyzing TOC content in pharmaceutical substances, excipients, and finished dosage forms.

Water TOC Analyzers Gain Ground in India's Southern Region

The demand for water TOC analyzers is rising in the Southern region of India due to several converging factors. The Southern part, characterized by higher population density and industrial activity, faces increased pressure on water resources and wastewater management. According to data from the Central Pollution Control Board (CPCB) and the Water and Sanitation Program (WSP), the nation's count of wastewater treatment plants (WWTPs) reached 4,198 by March 2022. Remarkably, the Southern region contributes significantly, housing 1,256 wastewater treatment plants (WWTPs), equivalent to around 30% of the national total. The expansion of WWTPs in this region will directly impact the demand for TOC analyzers, solidifying their position in the Southern market.

Impact of COVID-19

Initially, from April to June 2020, the COVID-19 outbreak caused a notable demand to drop due to disruptions in the global supply chain, impacting water TOC analyzer manufacturing and distribution. Offline customers turned to online purchases for the first time due to pandemic uncertainty, focusing on increased demand for online water testing. This shift benefited online water testing service providers and water TOC analyzer manufacturers. Furthermore, the pandemic-driven pharmaceutical focus increased production, spurring demand for water TOC analyzers to ensure quality. Regulatory bodies like the Central Drugs Standard Control Organization (CDSCO) emphasized hygiene, requiring TOC analyzers for safe pharmaceutical production.

Impact of Russia-Ukraine War

The global economy felt the repercussions of the Russia-Ukraine conflict, and the Indian water TOC analyzer sector was not exempt. The conflict disrupted the supply chain for these analyzers, mainly due to components sourced from Russia and Ukraine, which led to an escalation in the prices of water TOC analyzers. Notably, in March 2022,

rhodium, a key raw material, jumped from USD 8645.1/t oz. to USD 17709.8/t oz due to the war . These factors raised costs, impeded trade, and affected market competitiveness. Furthermore, the conflict-induced economic fluctuations affected currency exchange rates, impacting the pricing and profitability of imported water TOC analyzers. Indian importers and exporters faced sourcing uncertainties and delivery challenges. To navigate these challenges, Indian water TOC analyzer businesses should vigilantly monitor the situation, diversify supply chains, explore alternative sources, and adapt to evolving trade dynamics.

Key Players Landscape and Outlook

Companies continuously invest in research and development to create more advanced, accurate, and user-friendly TOC analyzers. This includes incorporating new sensor technologies, automation features, and data analysis capabilities.

In March 2023, HORIBA Tocadero, a prominent provider in India Water TOC analyzer market, bolstered its Tocadero ONE online TOC analyzer by integrating an extra detector. This addition facilitates direct Volatile Organic Carbon (POC/VOC) analysis, resulting in quicker and more precise Total Organic Carbon (TOC) content determination. This enhancement holds specific advantages for environmental monitoring and evaluating industrial facilities. Similarly, in 2022, Beckman Coulter India Private Limited introduced the Anatel TOC 7000 Plus TOC Analyzer, representing a new generation of TOC analyzers with heightened accuracy and sensitivity compared to its previous models. Additionally, it offers enhanced user-friendliness and simplified maintenance.

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*Companies mentioned above DO NOT hold any order as per market share and can be changed as per information available during research work

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