**Total Organic Carbon Analyser**

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| A machine on a blue carpet  AI-generated content may be incorrect. | **Name of the equipment:** Total Organic Carbon Analyser**Make & Model:**Shimadzu H544354 TOC Analyzer**I-Stem Registration ID-** **……………………..** **Category of Instrument**Testing and Characterisation**Types of Analysis / Testing*** Total Organic Carbon (TOC) Measurement
* Total Carbon (TC) Measurement
* Total Nitrogen (TN) Measurement
* Non-Purgeable Organic Carbon (NPOC) Analysis

**Application:** * Pharmaceutical analysis
* Environmental testing (viz. VOC analysis)
* Forensics & toxicology
* Food & flavor analysis
* Petrochemical & industrial chemistry

**Description of Instrument**TC, IC, NPOC and TN measurementMeasurement range from 4 μg/L to 30,000 mg/L680 °C Combustion, Catalytic Oxidation/ NDIRDetection Method for TOC at 720 °C |

**Booking Details**

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| **Book through I-STEM:** <https://www.istem.gov.in/>**Slot Booking Link**[I-STEM Slot Booking link for External User](https://www.istem.gov.in) | **Booking available for**Internal and External Both**Requisition form for** [Internals](https://randc.nitc.ac.in/pdf/instruments/civil/CED-REQUISITION_FORM_Internal.pdf)[Externals](https://randc.nitc.ac.in/pdf/instruments/civil/CED-REQUISITION_FORM_Internal.pdf) |

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**Type of Sample Required for Analysis / Testing (Quantity, Pre-Preparation, State etc.)**

**Features, Working Principle and Specifications**

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| **Features of the equipment*** High-temperature catalytic oxidation (HTCO) method
* Automatic sample dilution and acidification
* Low maintenance with self-cleaning function
* User-friendly software for data analysis
 | **Unique features/Measurement capabilities, if any*** Detection range: 0.001 mg/L – 30,000 mg/L
* Simultaneous TOC & TN (Total Nitrogen) measurement
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| **Instrument Technical Description and Major Specifications***(This Specifications Limited to Major 5)** Measurement Principle: High-temperature combustion (680°C)
* Detection Method: NDIR (Non-Dispersive Infrared) sensor
* Sample Volume: 0.1 – 2 mL (auto-injection)
* Analysis Time: 4-6 minutes per sample
* Calibration: Automatic multi-point calibration
 | **Measurement/Sample specifications:** * Sample State: Liquid (aqueous solutions)
* Particle Size: Must be < 0.45 µm (filtered if necessary)
* pH Range: 2-11 (acidification may be required for NPOC)
* Maximum Salinity: 5% (w/v) (higher levels may require dilution)
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* Quantity: 10-20 mL (volume depends on expected TOC/TN levels)
* Pre-Preparation:
	+ Must be filtered (0.45 µm) to remove suspended solids.
	+ Avoid samples with high volatility (use TC mode if necessary).
* Type of Samples Accepted:
	+ Drinking water, wastewater, industrial effluents, research samples.

**Guidelines for Sample Submission – User Instructions**

* Label samples clearly with expected TOC/TN range.
* Indicate if TN measurement is required (if TN unit is installed).
* Maximum No. of Samples Accepted at a Time: 50 (autosampler capacity).
* Turnaround Time: 1-2 days (varies with sample load).
* Samples exceeding 5% salinity must be pre-diluted.
* No bacterial/fungal samples (instrument is for chemical analysis only).

**User Charges Rs. (GST Extra)**

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| **Internal** | **External Academic Institutes** | **National R&D Lab** | **Industry** |
| 1500 per sample | 3000 per sample | 3000 per sample | 6000 per sample |