AST-800S Total Organic Carbon Analyzer

The AST-800S Total Organic Carbon Analyzer is an analytical instrument that utilizes the principle of high-temperature catalytic oxidation - NDIR detection to measure the total organic carbon concentration in water samples. It can detect water samples with TOC concentrations ranging from 0.050 ppm to 35,000.0 ppm. It features high sensitivity, accuracy, and excellent stability.

1. System Overview

The AST-800S is a simple-structured instrument. Its main components are installed on the main unit. Before measurement, the instrument needs to be connected to the gas path and the reagents should be prepared. The instrument is controlled by a specialized software installed on an external computer for data processing tasks such as measurement, calibration, and printing.

2. Working Principle

By using a high-performance oxidation catalyst in the combustion furnace, the sample is fully combusted and decomposed at high temperatures into carbon dioxide and water. The water vapor then passes through…

The condenser is cooled and then removed. The carbon dioxide is measured using a non-dispersive infrared detector (NDIR) to determine the total carbon (TC) content in the sample.

The inorganic carbon in the sample is decomposed into carbon dioxide and water by an

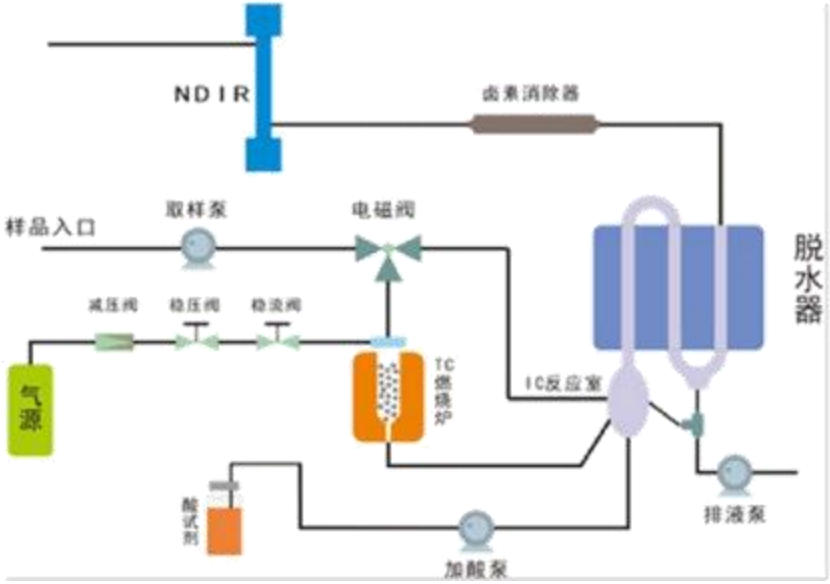
acid reagent. The water vapor is removed after being cooled by a condenser, and the carbon dioxide is removed using a non-porous material.

The total inorganic carbon (TIC) content in the sample was determined by non-dispersive infrared detector (NDIR); total organic carbon (TOC) = TC - TIC.

3. Application Scope

- Tap water, surface water, river water, lake water
- Domestic sewage and industrial wastewater
- Chemical water usage (cleaning water, cooling water, recycled water, etc.)

Laboratory Research



4. Technical Specifications

Operation	Testable items: TC, IC, TOC, NPOC TOC detection range: 0.050 - 35000 mg/L Detection accuracy: 0.050 mg/L Burning furnace temperature: Up to 1100℃ Accuracy error: ≤ ±5% Repeatability error: ≤ 3% Injection volume: 20 - 1000 μl Analysis time: 3 to 8 minutes Zero drift: ≤ ±2% / D Range drift: ≤ ±2% / degree Salt tolerance: 100g/L
Test conditions	Acid reagent: Phosphoric acid solution Carrier gas: High-purity oxygen (≥ 99.999%)
Environmental	Environmental temperature: 0 - 60℃ (Temperature variation within

requirements	±5℃ per day) Relative humidity: ≤ 90%
Power requirements	Power Supply: 220VAC ≤ ±10% 50Hz (Grounding is reliable) Power: 800W
Size	Basic dimensions: 60cm × 43cm × 42cm Weight: 40kg

5. Technical Features

- High-resolution 7-inch touch screen with a user-friendly interface, easy and convenient to operate
- The three-stage electronic condensation dehydration technology ensures the dehydration efficiency of the entire system.
- The highly reflective gold-coated gas chamber, the highly concentrating infrared light source, and the highly sensitive infrared detector ensure the excellent performance of NDIR. Measuring data at the ppb level has sufficient sensitivity and accuracy.