

ALKALINITY/DIRECT PROCESS ANALYZER

For use with All Star TOC Analyzers

- Alkalinity/Direct Method
- Avoids Titrimetric/Colorimetric Procedures
- Reports Total & Phenolphthalein Alkalinity
- Requires No Probes



- Integrates with StarTOC Onboard Computer
- Interference – Free Analysis
- Completely Automatic
- Rapid Response (3 - 4 Minutes)



AP-1001

APPLICATIONS:

- Cooling Towers
- Boilers/Steam Generators
- Chemical Process
- Drinking Water
- Waste Water
- Foods & Beverages

ALKALINITY/DIRECT::

Standard Methods use nomographs for **estimating** CO₂ concentrations based on total alkalinity titrations. Alkalinity/Direct actually **measures** the CO₂ Concentrations derived from analysis of Total Inorganic Carbon, using interference-free infrared technology. Both methods are compatible, since each uses the same stoichiometric relationships. For convenience in relating the technologies, phenolphthalein alkalinity is determined.

Description:

The Alkalinity/Direct Method overcomes the limitations of traditional alkalinity tests involving multiple end-point determinations by titration and colorimetric measurements. Burettes, multiple standards, complicated and troublesome rotary valves dispensing metered volumes, etc. are all avoided. This method uses direct analysis of CO₂ and continuously measures the following:

- Total Alkalinity, mg/L as CaCO₃
- Hydroxide Alkalinity, mg/L as CaCO₃
- Carbonate Alkalinity, mg/L as CaCO₃
- Bicarbonate Alkalinity, mg/L as CaCO₃
- Free Carbon Dioxide, mg/L as CO₂

The sample is delivered into a reaction chamber and mixed with acid to lower the pH to 2 – 3, at which point the species listed above are converted to CO₂. The CO₂ is measured by the non-dispersive Infrared Analyzer and displayed as Total Alkalinity and Phenolphthalein Alkalinity.

Technical Info:

Specifications:

Range: 1 to 1000 mg/L as CaCO₃
Sample Temperature: 5 to 50°C
Grab Sample Volume: 10 mL minimum
Sample Flow Rate: 10 mL/min (minimum)
Sample Pressure: Atmospheric +0 – psi (max)

Performance:

Response Time: Less than 4 minutes
Repeatability: Better than 2% of reading or +/- 0.6 mg/L
Accuracy: Better than +/- 5% of reading or +/- 1.0 mg/L