

Automate your processes  
Automate your lab  
Innovate

with **EasyPREP**  
**TITREC**

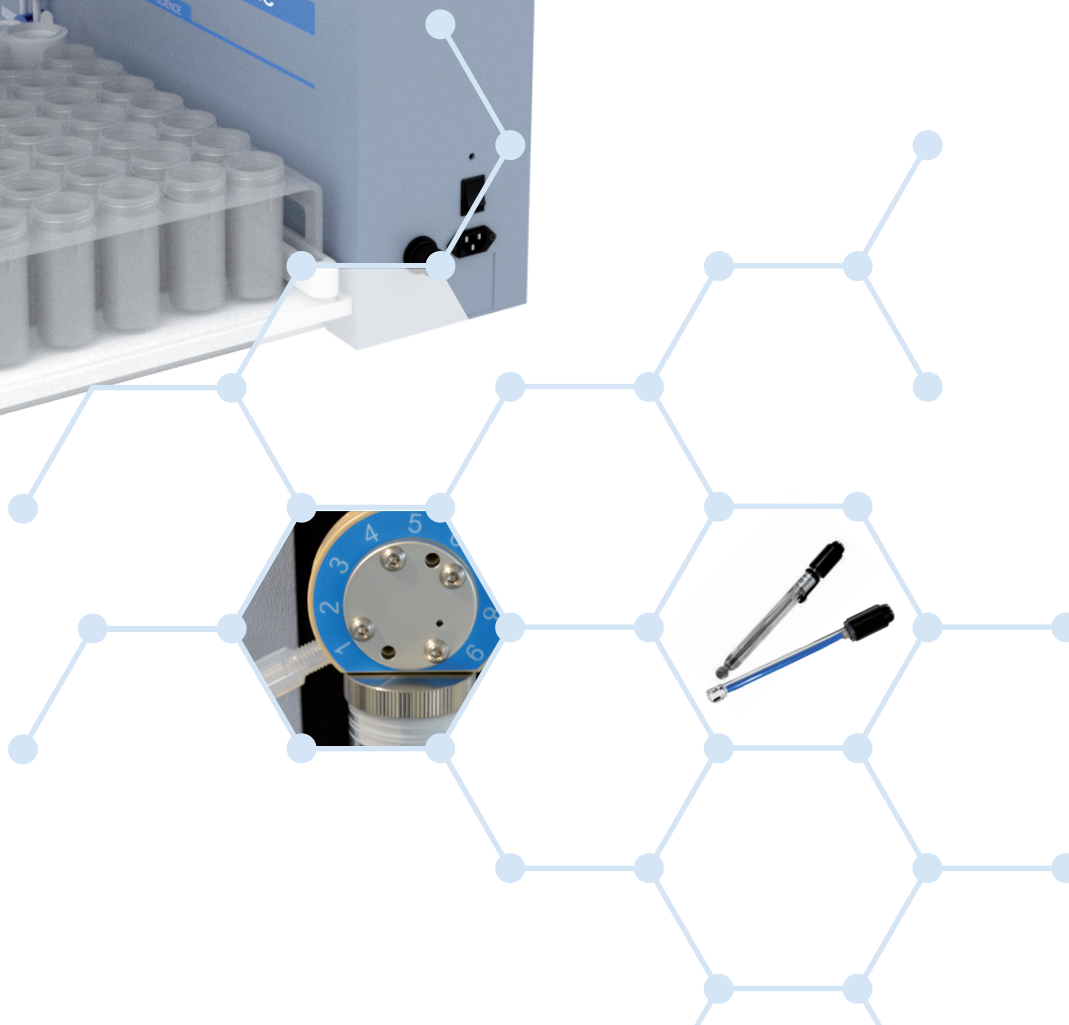
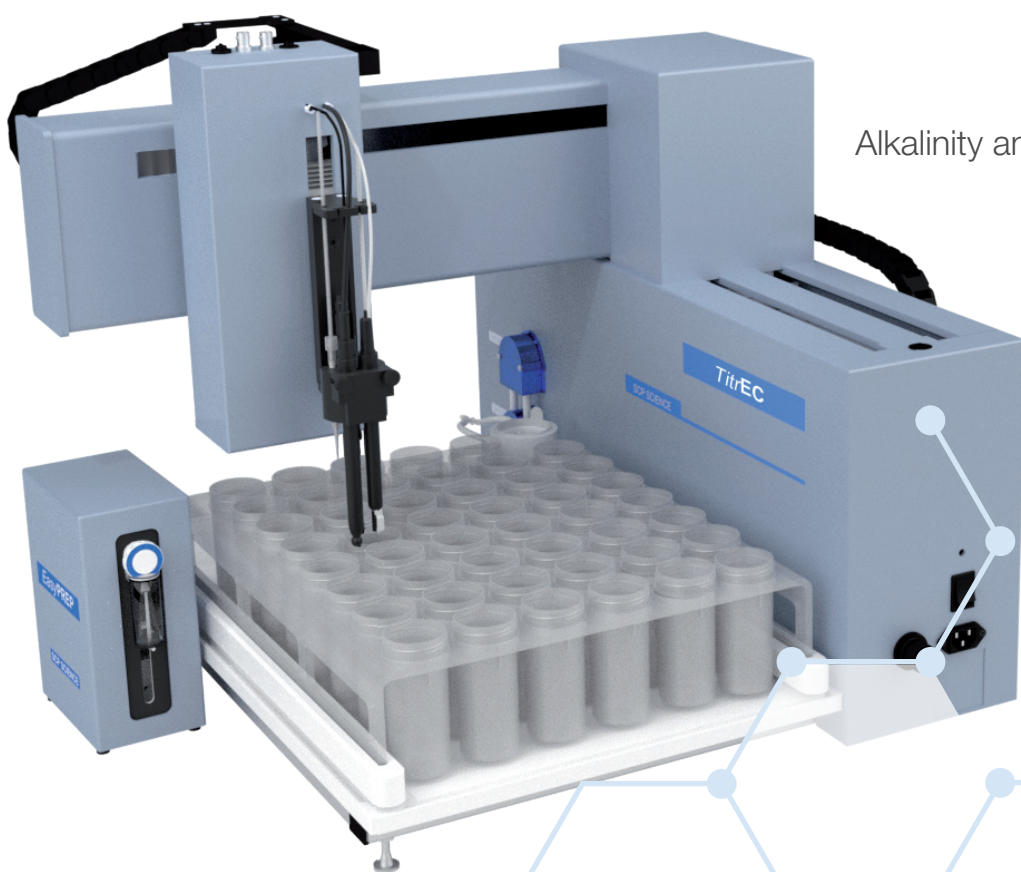
## Automated Electro Chemistry Analyzer

Conductivity Measurement

pH Measurement

pH Adjustment

Alkalinity and Acidity Measurement



# Overview

## DESIGNED FOR CONDUCTIVITY - pH - ALKALINITY MEASUREMENTS WITHIN THE SAME VESSEL

The **TitrEC** is a multi-parameter robotic platform designed for automated electrochemical measurements of large numbers of samples operating under the stringent requirement of regulated environments. Improved operational efficiency allows laboratories to take on new projects and reallocate personnel towards higher value tasks.

## TitrEC IS DESIGNED FOR LABORATORY TESTING OF ENVIRONMENTAL SAMPLES

# Features

- **TitrEC** features corrosion resistant components and is designed for long lasting laboratory operation:
  - Acid resistant housing and components
  - Acid and base dispensing using a chemical resistant switching valve in contact with reagents
  - Electronic cards with special coating to prevent corrosion
- Bidirectional titration of acid and base
- Up to 3 point calibration for pH and EC
- Auto washing station prevents sample cross contamination
- Barcoding capability provides automatic loading of sample ID.
- User friendly software, LIMS compatible accommodates 100 ml sample vessels, 47 positions
- Simultaneous pH & conductivity measurement provides quick generation of results

# Specifications

## pH AND EC PROBE SPECIFICATIONS

| pH Probe                | Specifications    | EC Probe                    | Specifications       |
|-------------------------|-------------------|-----------------------------|----------------------|
| <b>Measuring range:</b> | 1 – 13.4 pH units | <b>Measuring range:</b>     | 5.5-100,000 uS/cm    |
| <b>Precision:</b>       | ≤0.5%             | <b>Precision:</b>           | <2%                  |
| <b>Accuracy:</b>        | 1% of reading     | <b>Accuracy:</b>            | 10% reading          |
| <b>Electrode slope:</b> | 58 mV/pH units    | <b>Working temperature:</b> | <2%                  |
| <b>Asymmetry:</b>       | ±15 mV            | <b>Cell constant:</b>       | 1.0 cm <sup>-1</sup> |

# Dispensing volume accuracy and precision

System calibration of dispensing accuracy conforms to ISO 8655-5 and compliant with ISO 17025.

ISO 8655-4 tolerance limits are:

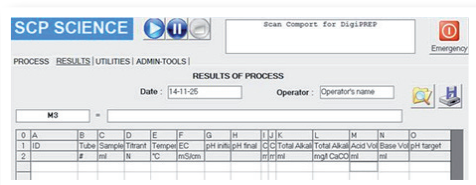
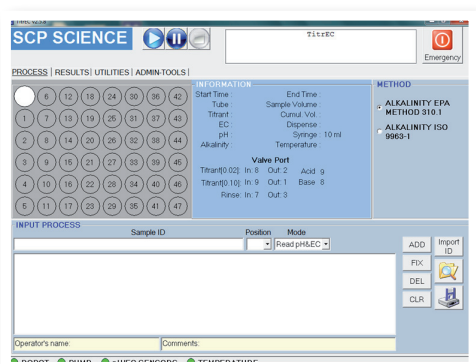
| Syringe Volume<br>ml | Accuracy |                   | Precision        |                   |
|----------------------|----------|-------------------|------------------|-------------------|
|                      | ± %      | ± µl <sup>a</sup> | ± % <sup>b</sup> | ± µl <sup>c</sup> |
| 1                    | 0.6      | 6.0               | 0.2              | 2.0               |
| 5                    | 0.6      | 30.0              | 0.2              | 10.0              |
| 10                   | 0.6      | 60.0              | 0.2              | 20.0              |
| 25                   | 0.6      | 150.0             | 0.2              | 50.0              |
| 50                   | 0.6      | 300.0             | 0.2              | 100               |

### NOTES:

- Calculated as deviation from the mean for 10 replicate measurements.
- Calculated as the coefficient of variation for 10 replicate measurements.
- Calculated as the standard deviation for 10 replicate measurements.



# Software Features



- Load pre-saved methods for fast set-up of routine operations
- Flexible method building
- Real-time visualization of run status
- Allows simultaneous multi-parameter analysis
  - Conductivity, pH, alkalinity and acidity measurements on the same sample
  - pH adjustments as part of sample preparation steps
- Preconfigured and adjustable parameters for alkalinity analysis
  - Allows quick and easy setup according standard methods
  - US EPA 310.1
  - ISO 9963-1
- Intelligent titrant addition algorithm adjusts titrant volume based on sample response
- Dispense up to 2 titrants within a process
- Useful in pH adjustment applications
- Software-controlled pH equilibration time
- Measurements are taken once the electrode has stabilized
- Automatic temperature compensation for pH and conductivity measurements
- Temperature Compensation
  - Report conductivity and pH at 20 °C, 25 °C or other user-defined temperature
- Automatic rinsing of probes between each sample analysis
- Data export in a .csv format
  - Allows to transfer data onto spreadsheets and LIMS
- Bar coding capability
- Load sample ID lists
- Software provides sample traceability

# TitreC Ordering Information

## INSTRUMENT

| Description                              | Catalog #   |
|--|-------------|
| <b>TitreC</b> (110V/230V), with software | 010-410-001 |

## ITEMS INCLUDED IN THE BASIC CONFIGURATION

| Description                                     | Catalog #   |
|---|-------------|
| Platform  | 010-450-030 |
| Rack for 100 ml <b>DigiTUBE</b> s, 47 positions | 010-410-014 |
| Temperature Probe                               | 010-410-011 |
| pH Probe  | 010-410-010 |
| Conductivity Probe                              | 010-410-012 |
| Acid/Base Bidirectional Titrant Delivery Buret  | 010-410-018 |
| Blade Stirrer                                   | 010-410-016 |
| Replacement Dispensing Tubing                   | 010-410-021 |

## DISPENSING PUMP

| Description                      | Catalog #   |
|----------------------------------|-------------|
| *Syringe Pump, 1 ml, 5 ml, 10 ml | 010-400-118 |
| Syringe Pump, 50 ml              | 010-400-019 |

\* Standard

## DISPENSER

| Description    | Catalog #   |
|----------------|-------------|
| Syringe, 1 ml  | 010-400-102 |
| Syringe, 5 ml  | 010-400-104 |
| Syringe, 10 ml | 010-400-108 |

## ACCESSORIES

| Description  | Catalog #   |
|--|-------------|
| Fume Hood, protects samples from environmental contamination and vice versa when using <b>TitreC</b> , Inside dimensions: D 37.2 x W 31 x H 31.7, Outside dimensions: D 43 x W 32.7 x H 35.7 | 010-400-094 |
| PC with Windows OS   | 010-400-008 |

**ISO 17025  
and  
ISO 8655-5  
COMPLIANT**

Request Instrument Certification

SYSTEM CALIBRATION OF DISPENSING  
ACCURACY CERTIFICATION  
Catalog # 010-400-050

## TO LEARN MORE

Please contact one of our sales representatives at [sales@scpscience.com](mailto:sales@scpscience.com) or visit our website [www.scpscience.com](http://www.scpscience.com) or contact one of our regional offices below

## COMPUTER SYSTEM REQUIREMENTS

|                     |                                  |
|---------------------|----------------------------------|
| PC Processor:       | 1GHz or superior                 |
| RAM memory:         | 1 GB RAM                         |
| Disk minimum space: | 1 GB free                        |
| Ports:              | 1 USB port available             |
| Operating System:   | Windows 8, Windows 7, Windows XP |

## INSTRUMENT DIMENSIONS

|        |        |
|--------|--------|
| Length | 27.5"  |
| Depth  | 24.25" |
| Height | 24.25" |

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