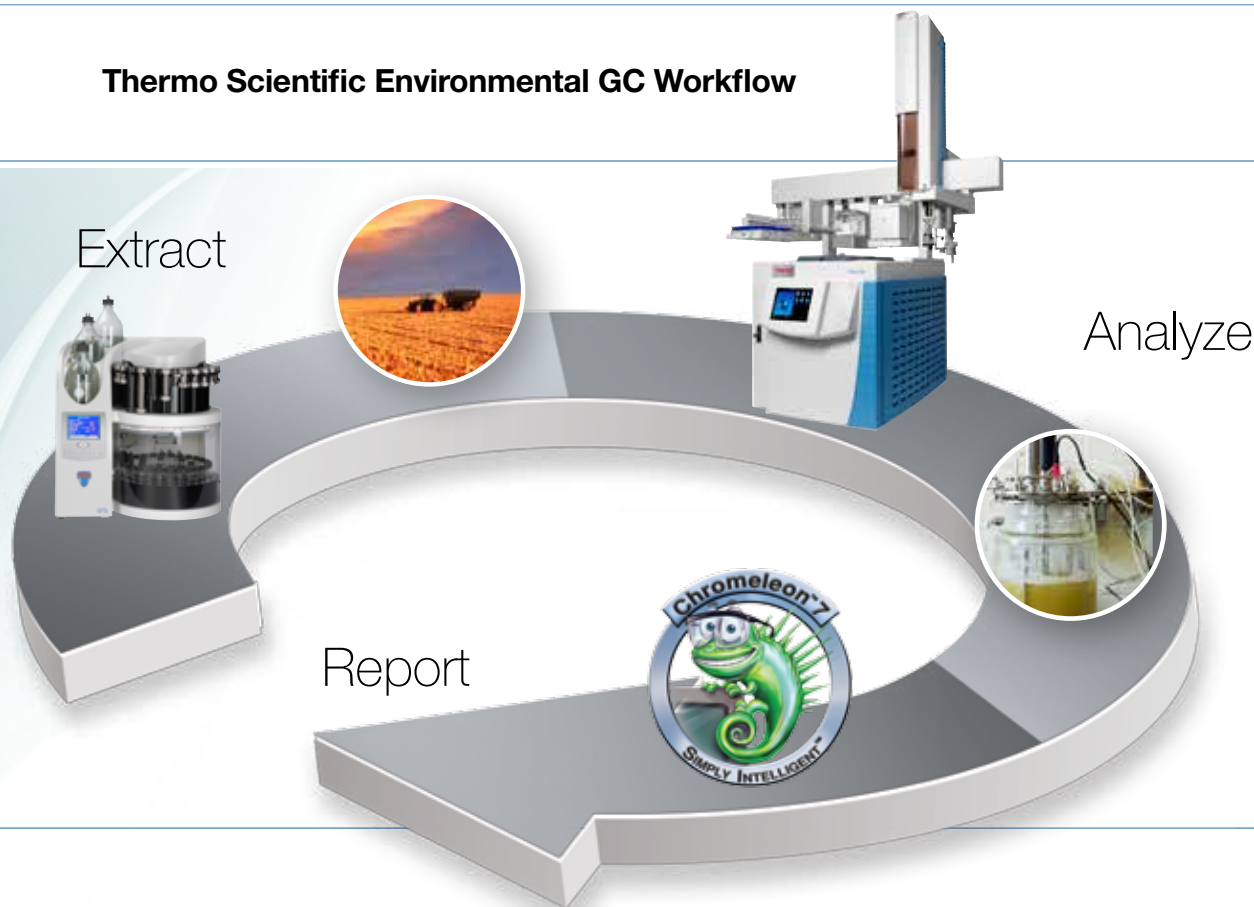


# Comprehensive Environmental GC Workflow

## Sample Preparation, Gas Chromatography, and Data Analysis

When performing environmental analyses, unstoppable productivity is the ideal solution. Lab throughput is dependent upon system reliability and efficiency from sample preparation through data analysis. Enjoy the benefits of a comprehensive environmental workflow, which combines productivity-enhancing solutions from sample preparation to sample analysis and data processing and reporting enabled by the familiar Thermo Scientific Dionex Chromeleon software.

### Thermo Scientific Environmental GC Workflow



#### Extract Sample

- Automated solid-phase extraction for water analysis
- Accelerated solvent extraction for solid or semi-solid samples
- Automated evaporator for rapid "green" concentration

#### Analyze Sample Set by Gas Chromatography

##### Automated Sampling Solutions

- Capable of liquid, HS or SMPE injections
- Dilute standards for calibration curve
- Add internal standards to all samples

##### Gas Chromatography Systems

- Instant connect modularity, to customize GC configuration to match sample load
- Sensitive detection
- Easy maintenance

#### Report Sample Results

##### Comprehensive Chromatography Software

- One familiar, easy to use software solution for GC, HPLC and IC
- Method portability from existing to new instrumentation

## Sample Preparation

The **Thermo Scientific Dionex AutoTrace 280 Solid-Phase Extraction instrument** is a powerful, high-throughput workstation dedicated specifically for automating Solid-Phase Extraction (SPE). The Dionex AutoTrace 280™ SPE instrument automates the cartridge or disk conditioning, sample loading, rinsing, and eluting steps for large volume aqueous solution extractions (20 mL to 20 L). Concentration and evaporation is an important step in achieving accurate analytical results with sample extracts, and the Rocket Evaporator can be used either to dry samples completely, or to concentrate them to a small volume.

### Dionex AutoTrace 280 SPE Instrument Unique Features

- SPE extraction technology to save time, solvent, and labor
- Provides constant flow of liquids through SPE cartridges for improved analytical precision
- No technician involvement to maintain a reservoir of liquid or flow of solvent through the SPE cartridge
- Provides superior analytical precision by automation of the SPE process



The **Thermo Scientific Dionex ASE 350 Accelerated Solvent Extractor** plus the Dionex Rocket Evaporator for automated sample preparation delivers increased productivity and sample throughput – a green solution with less solvent usage and waste, at a lower cost-per-sample. Accelerated solvent extraction for rapid and complete extraction provides true walk-away automation for unattended operations and high productivity to any laboratory.

The Dionex ASE™ 350 offers a lower cost per sample than other techniques, reducing solvent consumption by up to 90%.

### Dionex ASE 350 Accelerated Solvent Extractor Unique Features

- Unattended, automatic extraction of up to 24 samples and sample cell volumes of up to 100 mL
- Faster than Soxhlet, sonication, and other extraction methods
- Reduced solvent consumption using standard accelerated solvent extraction operation or solvent saver mode



## Precise Sample Analysis

The **Thermo Scientific TriPlus RSH autosampler** utilizes robotic sample handling to expand automated capabilities beyond liquid, headspace and solid-phase micro extraction (SPME) injections to basic sample and standard preparation cycles.

### TriPlus™ RSH Autosampler Unique Features

- Automatic tool exchange capability enables unattended injection mode changing to acquire in a single sequence headspace (HS), solid phase micro extraction (SPME) and liquid samples for volatile and semi-volatile analytes
- Dedicate a syringe to standards and another one to real samples to eliminate cross-contaminations
- 2-mL and 20-mL sample capacity for a maximum of 972 2-mL vials or 360 20-mL headspace vials enable week-end long unattended operations
- Excellent repeatability with micro-samples, down to 5 µL in a vial
- Automatic and unattended sample dilution, standard dilution for preparing calibration curves, and internal standards addition save operator time and eliminate possible human errors



The **Thermo Scientific TRACE 1300 Series GC** is the first and only gas chromatograph featuring user-exchangeable miniaturized, instant connect injector and detector modules. Modules are user-installable in only two minutes without the need for special training, dedicated tools or on-site service engineers.



### **TRACE™ 1300 Series GC Unique Features**

- Instant connect modularity for tailored instrument configuration maintains consistent sample turn-around times and adapts the GC configuration to sample workload and analysis
- Easy adoption of standard GC methods to eliminate the difficulties of method development during start-up
- Miniaturized detectors allow lower detection limits, extended linearity ranges, and faster detector acquisition speed, which is ideal for fast GC
- Consumable compatibility with existing standard consumables to reduce inventory costs in the laboratory populated by multiple GC brands
- Shorter sample cycle time to run more samples per day and ensure faster cycle time with low thermal mass oven, injectors and detectors
- Immediate local user interface with icon-based colored touch screen is ideal for direct instrument control and local status updates of the oven, injectors and detectors and real-time chromatograms

## **Complete Chromatographic Data Review and Reporting**

The TRACE 1300 Series GC and TriPlus RSH sampling system are fully controlled by the **Thermo Scientific Dionex Chromeleon Chromatography Data System**, the simply intelligent chromatography package that streamlines your path from samples to results.

### **Chromeleon 7.1 Data System Unique Features**



- Operational Simplicity - everything you need to customize your methods, run your samples, and collect your data is within easy reach and intuitively designed
- Intuitive, easy-to-navigate user interface guides you effectively towards your goals with just a few clicks, enabling the quick training of new users
- Complete control of TriPlus RSH and TRACE 1300 Series GC
- eWorkflows™ accelerate chromatography analysis minimizing operator tasks guiding the user through a minimal number of choices needed to execute the analysis
- Adaptable to your needs with a simplified user interface, innovative workflows, powerful data mining and analysis tools, and unrivaled reporting capabilities
- One scalable, easy to use software platform for GC, HPLC, and IC