

  
**scion**  
INSTRUMENTS



## SCION SQ Series GC-MS

● The Gas Chromatographer's Detector

# SCION SQ™ GC-MS

SCION SQ series GC-MS systems combine innovative engineering with detailed customer requirements to produce the truly advanced SCION SQ series. By designing these GC-MS systems to exceed the most critical performance and reliability requirements, Scion Instruments delivers systems that are especially for, and all about, the ultimate success of users. The SCION SQ Select and Premium models are designed to provide users with reliable performance, ease-of-use and simple maintenance – all within a bench space saving footprint.



## SCION SQ™ GC-MS Benefits

### Easy to Use and Maintain

- Simple tuning due to “lens-free” ion-path design
- No multiplier calibration required

### Robust

- An inert ion source that requires less frequent cleaning

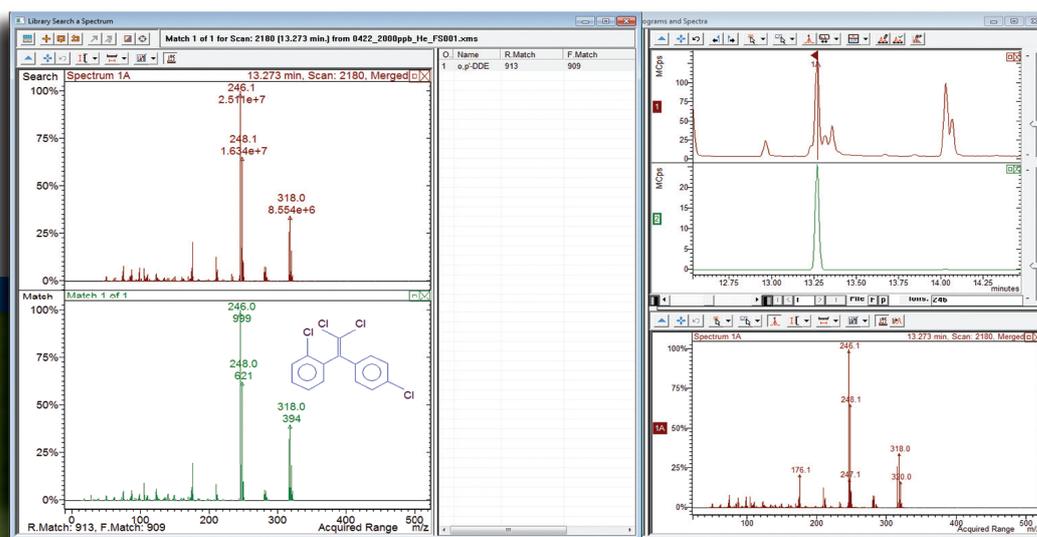
### Sensitive

- Optional active-focusing q0 uses He atoms to focus ionst cleaning

## ● Enhanced Library Searching through Cleaner EI Spectra

SCION SQ models are designed to analyze thousands of samples from complex matrices. With an upper mass limit of  $m/z$  1200, these instruments are capable of handling almost any GC-MS SQ application. The innovative lens-free design, combined with the robustness of the axial ion source, delivers unmatched stability and ultra-high sensitivity on a routine basis.

- One-click search of multiple spectral databases
- User-created spectral libraries and full support of spectral libraries such as NIST, Wiley, and Maurer/Pfleger/Weber (MPW)
- Adjustable spectral search parameters to streamline library searches
- Automated workflow to build a SIM method from a full scan data file
- Flexible and easy to use



Flexible and powerful library search showing matching of sample peak to o,p'-DDE in the NIST library



# Why Choose the SCION SQ?

The SCION SQ series delivers exceptional performance for a single quadrupole mass spectrometer: The robust axial ion source, lens-free design and off axis detector with EDR technology provide ultra-high sensitivity, cleaner spectra, and virtually-zero neutral noise in all models including the SQ Select and Premium GC-MS.

For routine EI-only applications, the **SCION SQ Select** delivers the best value. This unit comes with an industry leading 400 L/s high-capacity turbo pump that enables fast pump-down time for quick maintenance, and the use of high carrier gas flow for fast GC separations.

The **SCION SQ Premium** model comes CI-ready and is the most versatile GC-MS SQ platform. The active-focusing q0 optic is heated for the demanding analysis that require improved robustness.

Effect of active-focusing q0 on SIM of Hexachlorocyclopentadiene

**Extended Dynamic Range (EDR) Detector**

- Integrated-Quad design for maximum sensitivity
- Superior negative ion performance
- No multiplier calibration required

**Lens-Free Ion Path**

- Simplifies tuning
- Increases mass stability
- Reduces maintenance

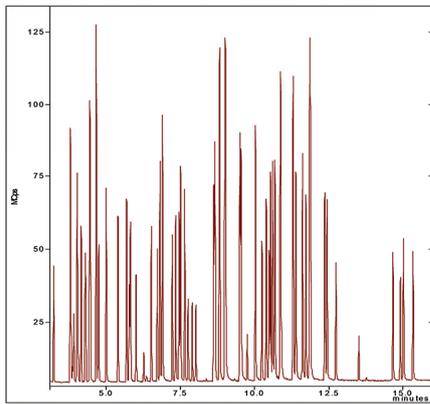
**Axial Ion Source**

- Dual Filament with Rebound Electron Beam technology
- Plug'N'Play for fast exchanges
- Inert for high robustness

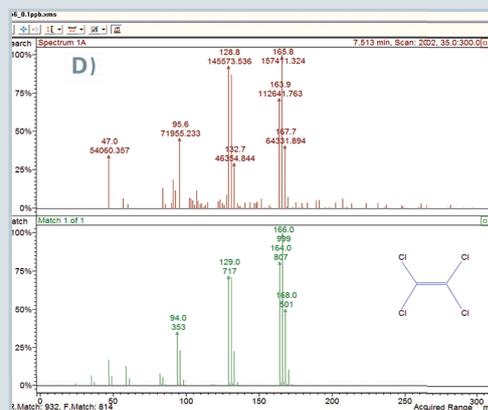
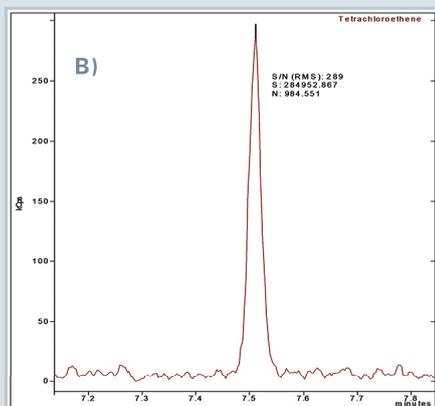
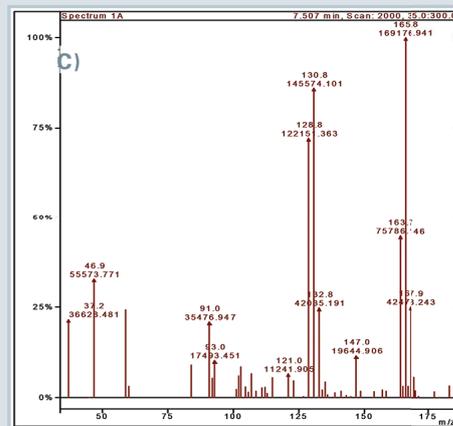
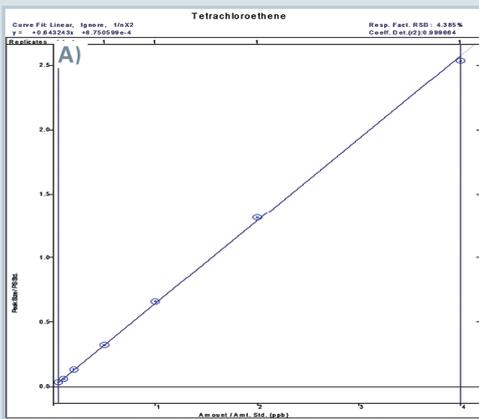
Robustness demonstrated by 350 consecutive injections of 1 pg octafluoronaphthalene (OFN) in 1% Diesel Oil matrix on Scion SQ Select system in Selected Ion Monitoring (SIM) mode

- Linearity, Sensitivity, and Spectral Matching Using the SCION SQ for US EPA Methods

TIC Chromatogram



TIC chromatogram of a 5 mL water sample containing 84 VOCs at 10 µg/L (ppb) by US EPA Method 524.3



(A) Excellent linearity of Tetrachloroethylene from 0.1 to 40 ppb with the purge-and-trap, (B) good sensitivity, (C) high quality spectra, (D) down to 0.1 ppb level and showing good match to the NIST library.

# Gas Chromatographs

## A Legacy of Reliability Infused with Innovation

The GC is essential to the reliability, robustness, and sensitivity of any GC-MS analysis. Scion Instruments' philosophy of innovation continues with the introduction of two new GC models built to support the ultrasensitive SCION SQ. The compact SCION 436-GC and the versatile SCION 456-GC can accommodate multiple columns and are available with new backflush technology and the innovative ChromatoProbe™. These GCs are also equipped with a multi-language touchpad display supporting 13 languages and enabling MS control.

### SCION 436-GC

Compact design for users focused on routine applications requiring maximum throughput utilizing Split/Splitless (SSL) or Programmable Temperature Vaporization (PTV) injectors

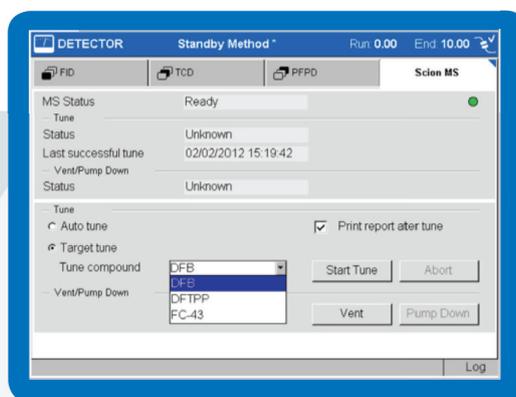
- Select up to 2 capillary inlets: SSL or PTV
- Supports one GC detector and the mass spectrometer
- High precision electronic pressure control
- All temperature zones up to 450°C
- Automated with Model 8400/8410 or CTC liquid autosampler

### SCION 456-GC

Versatile design with additional injector and detector options for laboratories seeking multipurpose analysis utilizing both GC and GC-MS

- Support up to 3 injectors-SSL, PTV, cold On-column, and Purge-Packed
- Add up to 3 GC detectors-FID, ECD, TCD, PFPD, NPD (TSD)
- High precision electronic pressure control
- All temperature zones up to 450°C
- Automated with Model 8400/8410 or CTC liquid autosampler

Scion Instruments GC-MS instruments set the industry standard for ease-of-use: Basic operation of SCION GC-MS systems can be directly controlled from the multi-language touchpad on the gas chromatograph. Automatic tuning, along with tune-to-target for meeting specific USEPA methods can be done with a touch of a button. The MS can be vented and pumped down from the interface for the ultimate in easy maintenance.



SCION 436-GC

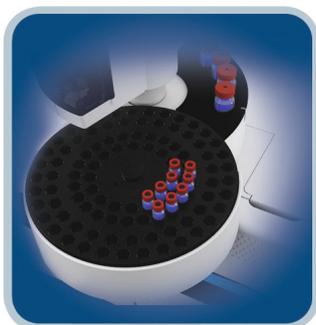


SCION 456-GC

## ● Additions to Enhance System Capability and Performance

### Automated Sample Handling

Regardless of sample type or throughput, the SCION SQ GC-MS series can provide an automated solution that meets requirements. Three standard autosampler sampler options are available, the CP-8410, CP-8400, and the Combi Pal. Each can be tailored to meet specific sampling needs and workloads.



#### CP-8400

- High throughput
- 100 x 2ml sample capacity
- Dual/Duplicate Injection
- SPME



#### CP-8410

- Flexibility
- Accommodates 2, 5, 10 ml vials
- Low cost/high performance
- Ease of use



#### Combi Pal

- High throughput
- Liquid handling capability
- SPME
- ITEX

### Atomx Purge and Trap (P&T) System from Teledyne Tekmar

#### Automated VOC Sample Prep System

- Combine an autosampler and purge and trap concentrator into a single platform
- Unique Automated Methanol Extraction (ME) features for high level soil samples
- 80-position carousel design for optimal throughput
- TekLink™ software with fully optimized user interface including diagnostic tools and benchmark tests for instrument validation

#### PTV Inlet with Back flush

The perfect addition for the SCION SQ PTV inlet is the backflush option. Complex sample matrices can quickly ruin the chromatographic performance of GC columns. However, Programmable Temperature Vaporization inlet, used in conjunction with “backflushing”, can reliably divert higher boiling point sample components away from the column. The benefits of this accessory include:

- Run more samples per day – decrease analysis times as the heavy components are quickly eliminated
- Save time by eliminating column bakeout
- Preserve column performance for extended period of time

# Scion-Certified Consumables for Your SCION GC

Scion GC columns span a broad range of column lengths, diameters, stationary phases, and materials including: Fused Silica (FS) and Inert Steel (IS). Ideal for either routine or research type analyses, Scion GC columns cover a wide range of applications and include:

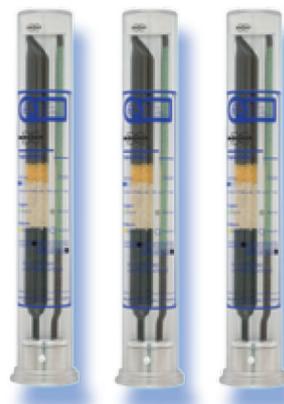
- Standard WCOT (Wall Coated Open Tubular)
- Solid Stationary Phase PLOT (Porous Layer Open Tubular)
- Inert Steel Micro-Packed and Packed



## Super Clean™ Gas Filters

Scion Gas Purification Systems have the range to satisfy your needs from individual to combination filters, from Ultra purity combined with Ultra capacity, to all in one solution kits. Innovative features designed into the product yield extensive benefits to the user.

- Ultra-high capacity for long life, less change and improved productivity
- High-purity output ensures 99.9999% Pure Gas
- "Quick connect" fittings for easy, leak-tight filter changes
- Glass internals prevent diffusion; plastic externally for safety
- Easy-to-read indicators for planned maintenance and improved up-time



For research use only. Not for use in diagnostic procedures.



[www.ScionInstruments.com](http://www.ScionInstruments.com)