Thermo Scientific GCI Series Interface

Driving seamless speciation analysis for every lab

Introduction

Inductively Coupled Plasma Mass Spectrometry (ICP-MS) is a rapid and highly sensitive multi-elemental analytical technique, used routinely in numerous industries for total element quantification. However, additional information about the chemical species of the elements in a sample is increasingly important. This is due to differences in physicochemical properties such as toxicity and mobility that provide a better understanding of the sample and the impact on the environment and human health.

An effective analytical approach to enable separation and quantification of volatile elemental species is to couple Gas Chromatography (GC) with ICP-MS.

The Thermo Scientific™ GCI Series Interface is a range of products that spans the full Thermo Scientific™ ICP-MS portfolio, promoting common consumables across the range of instruments.

Features:

- Unique transferline and housing design
- One size fits all - compatibility with the full range of Thermo Scientific™ ICP-MS systems
- Lightweight transferline, less than 50 g
- Improved chromatographic separation: high performance system for handling high boiling point compounds in several application needs
- Reaches isothermal temperature profile in less than 1 minute
- Simplified user experience with easy implementation, operation and maintenance.
- Full control through the Thermo Scientific™ TRACE™ 1310 GC Touch Pad or via the Thermo Scientific™ Qtegra™ Intelligent Scientific Data Solution™ (ISDS) Software

Figure 1. Coupling is achieved by connecting the GC column directly to the ICP-MS torch using the GCI Series Interface.

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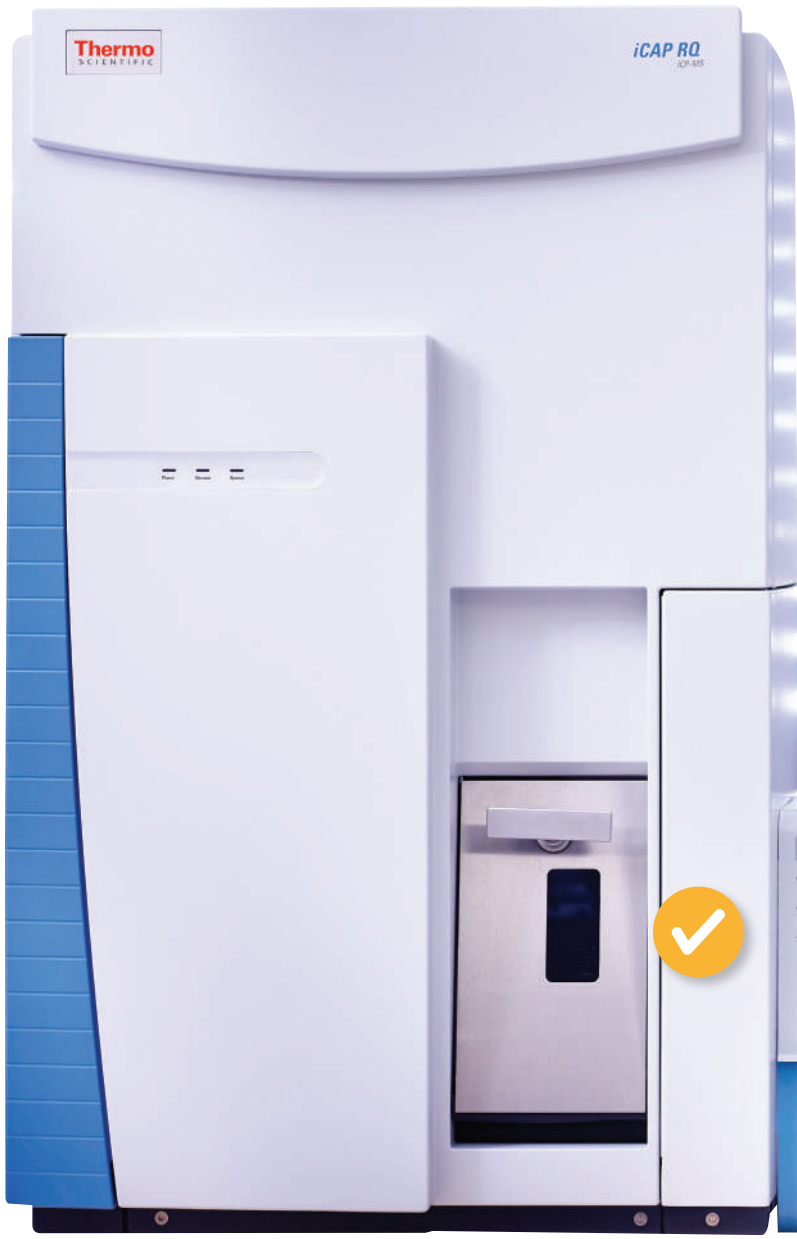
Simplicity

The new GCI Interface is a plug and play device that makes coupling of the TRACE 1310 GC oven with any of the Thermo Scientific™ ICP-MS systems rapid, easy and efficient. The flexible design allows the operator to install the transferline in less than 10 minutes thanks to a simple, gas-tight, push-fit connectivity with the ICP torch.

Integration

The simple, one-plug connection of the GCI Interface to the TRACE 1310 GC provides both connectivity for the power supply and programming of the GCI Interface temperature. The GCI Interface will be an integrated parameter of your GC program, just like injector and auto sampler. For systems running on Qtegra ISDS Software, the Thermo Scientific™ ChromControl plug-in provides full integration of the GC operation and method development into one system workflow, giving you full confidence in unattended operation and superior productivity.



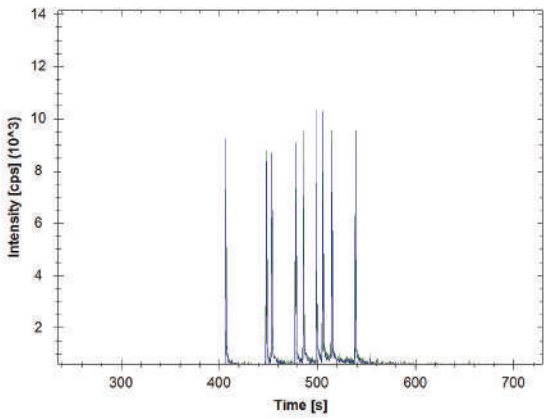


Figure 2. Chromatogram (Br) of Brominated Flame Reterdants 9-component standard mixture obtained with GCI100 Interface and iCAP RQ ICP-MS.

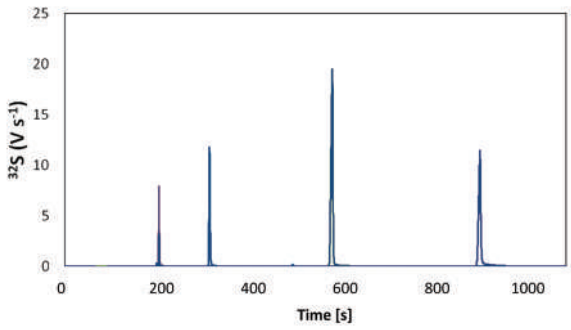


Figure 3. Chromatogram (32S) of Sulfur-containing standards typically found in crude oil obtained with GCI300 Interface and Neptune Plus MC-ICP-MS.

Reliability

The unique, proprietary design provides a homogeneous isothermal temperature profile, with no cold or hot spots that could cause column damage condensation or loss of the target compounds. Rely on reproducible chromatography with base-line separated and quantifiable peaks in every run. A GCI interface interlock and ultrafast cooling/heating of the transferline ensures safe and reliable operation of the system in any laboratory.

Flexibility

Tailor your system to the needs of your application. With a range of TRACE 1300 Series GC options, application specific columns and advanced sample handling functions, you can be sure to meet your application requirements. A range of GC autosamplers gives you flexibility in performing liquid, solid and gas sampling with precision and reliability.

User-friendly Design

The lightweight transferline design eliminates any restriction on movements of the sample introduction system, enabling trouble-free source tuning of the ICP-MS system. Low power requirements mean that the GCI Interface can use the auxiliary power supply in the GC System itself for operation, from 50 °C up to temperatures of 375 °C.

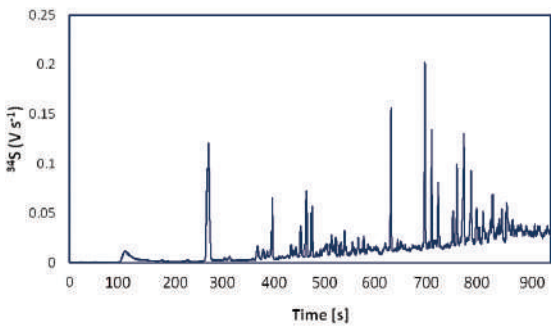


Figure 4. Chromatogram (34S) of a crude oil sample (injected without sample preparation) obtained with GCI300 Interface and Neptune Plus MC-ICP-MS.

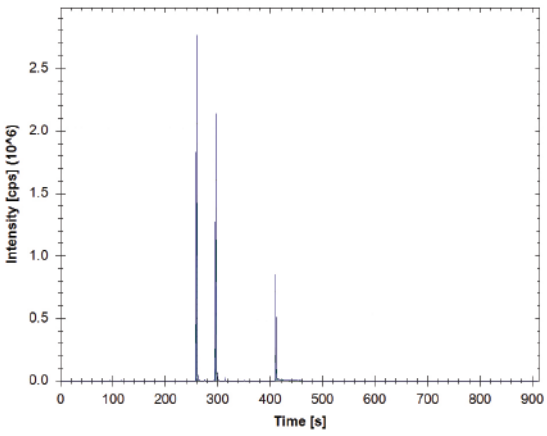
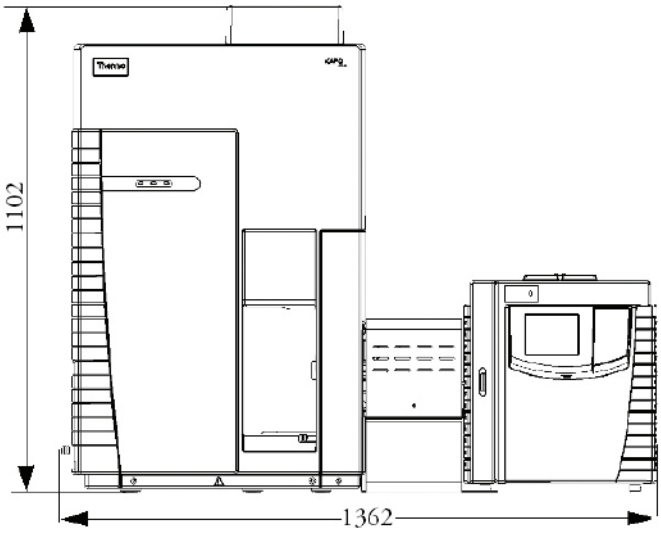
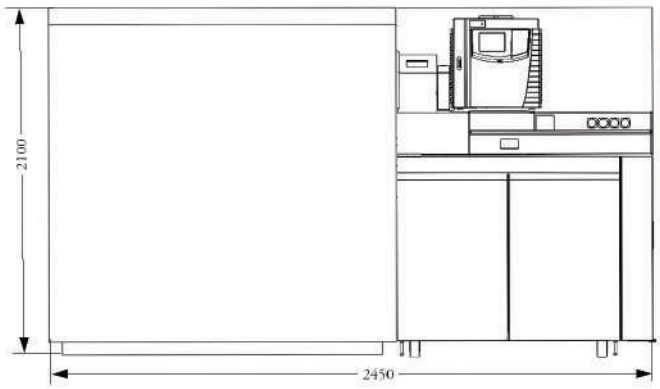


Figure 5. Chromatogram (Sn) of Organotin species standard mixture obtained with GCI100 Interface and iCAP RQ ICP-MS.

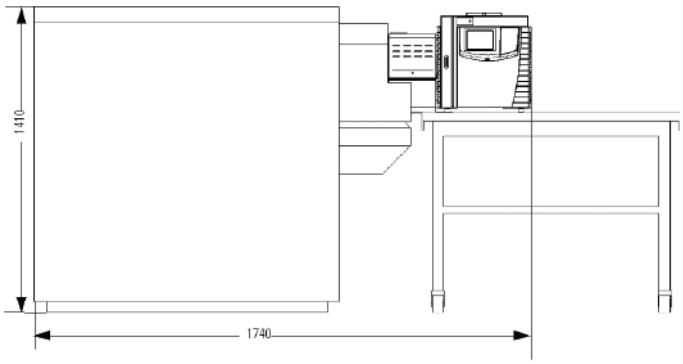
GCI Series	Thermo Scientific GCI 100 Interface	Thermo Scientific GCI 200 Interface	Thermo Scientific GCI 300 Interface
ICP-MS compatibility	**iCAP Q Series ICP-MS iCAP Qnova Series ICP-MS**	**ELEMENT Series HR-ICP-MS**	**NEPTUNE Series MC-ICP-MS**
GCI Interface kit	BRE0008120	BRE0008121	BRE0008122
GCI Interface transferline	BRE0007189	BRE0007189	BRE0007189
GCI Interface torch	1323600	BRE0009163	BRE0009163
Recommended table	On bench adjacent to ICP-MS	1366030	On MC-ICP-MS adjacent to torch inlet area
Software	Thermo Scientific Qtegra ISDS Software ChromControl plug-in	Thermo Scientific Element software for data acquisition. Thermo Scientific™ Chromeleon™ Chromatography Data System (CDS) Software recommended for data processing	Thermo Scientific™ Multi Collector Software Suite with ASCI format export for offline data processing



The Thermo Scientific iCAP RQ ICP-MS coupled to the TRACE 1310 GC with the GCI 100 Interface.



The Thermo Scientific NEPTUNE Series MC-ICP-MS coupled to the TRACE 1310 GC with the GCI 300 Interface.



The Thermo Scientific ELEMENT Series HR-ICP-MS coupled to the TRACE 1310 GC with the GCI 200 Interface.

With the Thermo Scientific GCI Series Interface, your GC and ICP-MS systems are seamlessly integrated, for ultimate ease-of-use in advanced speciation.

Find out more at **thermofisher.com/GCI**