

Model 5030 Electrochemical Cell

Low Volume Electrochemical Cell

The Model 5030 cell is a low volume electrochemical cell optimized for the low flow rates of electrospray ionization mass spectrometry (ESI-MS).

- Optimized for incorporation into low flow rate LC-MS applications.
- Provides high efficiency electrochemical conversion with minimal peak dispersion.

Proven Coulometric Design

The Model 5030 cell utilizes the proven porous graphite flow-through design pioneered by ESA. It is optimized for incorporation into an LC-MS system as a reactor cell to enhance ionization of analytes or to provide data relevant to processes in drug development. The solid-state design is virtually maintenance free with no special filling solutions or polishing required.

Designed for LC-MS

When combined with an MS system, the Model 5030 cell has been shown to enhance the sensitivity and applicability of mass spectrometers by providing enhanced ionization and increased signal from difficult-to-ionize molecules for MS analysis, including:

- Aryl amines
- Phenols
- Catechols
- Other oxidizable structures

The Model 5030 cell is designed for applications requiring high electrochemical conversion at lower flow rates, such as assisted ionization with MS when controlled by the Coulochem® III Electrochemical system. The cell is also compatible with, and easily integrated into, most MS and LC-MS systems.

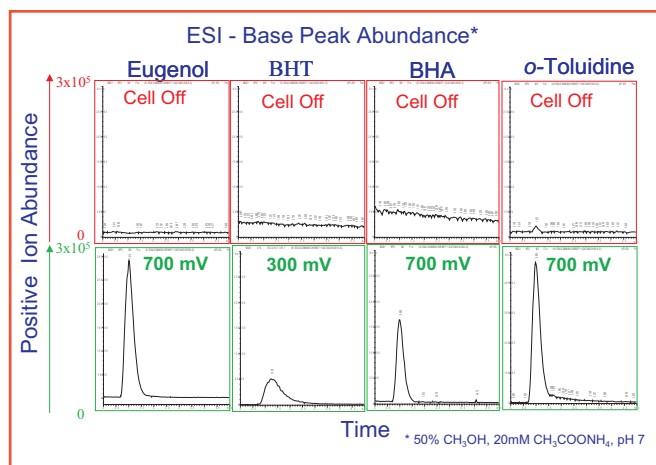


Typical Uses

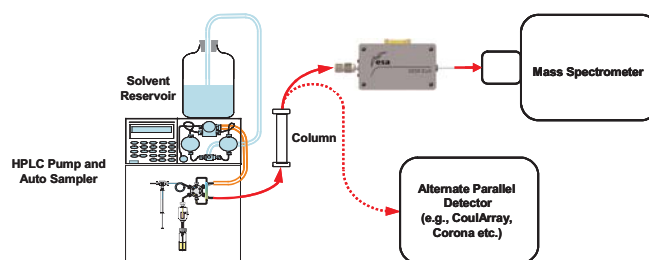
With its low volume (1 μ L), high efficiency at low flow rates and low noise, the Model 5030 cell can be used for many low flow applications:

- On-line synthesis of possible metabolites and degradants (useful in pharmaceutical research)
- Electrochemical reactions (monitor redox products of electrochemically active substrates)
- Discriminate between isobaric species (based on differences in redox potentials, E°)
- Additional confirmation of analyte identity (E° and redox products from substrate electrolysis can aid in analyte identity confirmation)

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EC Assisted Ionization. Eugenol, butylated hydroxytoluene (BHT), butylated hydroxy-anisole (BHA) and ortho-toluidine were separated and passed through a Model 5030 cell controlled by a Coulochem Detector connected to an LC-MS system. With no potential applied to the 5030 cell, the compounds did not exhibit a detectable ESI-MS response (top row). However, when a potential is applied a positive ion ESI-MS response is observed for the oxidized product of each compound (bottom row).



Specifications

Maximum Operating Pressure at the inlet:	41 bar (600 psi)
Maximum Operating Temperature:	45° C
Optimal Flow Range:	Less than 250 µL/min
Volume (from inlet to sensor):	0.3 µL
Volume (from inlet to end of outlet tubing):	3.1 µL
Operating Potential Range:	-300 to +1000 mV (typically)

Specifications subject to change without notice.

Ordering Information

ESA Model 5030 Electrochemical Cell

Includes: Cell, cable, PEEK microfilter assembly and high-voltage ground decoupler kit

High-voltage Ground Decoupler Kit

Replacement PEEK Microfilter Assembly with Filters (5 each)

Replacement PEEK Microfilter Elements (10/pkg)

Coulochem III System for MS

Includes: Controller with DC and Pulse/Scan modes, thermal enabled, Model 5030 Electrochemical and 5021 Conditioning Cells, and high-voltage decoupler kit

Part Number

70-6069

70-5971

70-6570

70-6568

70-6045A

Contact your local ESA representative to configure a complete system.



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