SICRIT® Ionization Set SC-30

Unleash the Full Potential of your Mass Spectrometer

The SICRIT® (Soft Ionization by Chemical Reaction In Transfer) SC-30 Ionization Set is a plug & play flow-through ionization add-on for mass spectrometers with an atmospheric pressure inlet. It can be interfaced with almost all LC-MS systems on the market.
The unique geometry of the SICRIT® Ion Source extends the inlet of the LC-MS instrument and ionizes all molecules drawn in by the MS vacuum. The molecules are ionized in a soft manner by a dielectric barrier discharge (DBDI).
This unique flow-through design provides many advantages over other ionization techniques, enabling leading-edge sensitivity and selectivity:

Increased Sensitivity

Ionizing molecules inside the extended MS inlet capillary minimizes losses due to coulombic repulsion and increases sensitivity.

No Sample Preparation

The decoupling of ionization and sample introduction allows the analysis of solid, liquid, or gaseous samples in room air without sample preparation.

No Fragmentation

A concentric ring-shaped cold plasma enables a soft ionization and avoids fragmentation.

Enhanced Range of Analytes

Three simultaneous ionization mechanisms (ESI-, APCI-, and PI-like) expand the range of detectable analytes, covering polar and non-polar components.

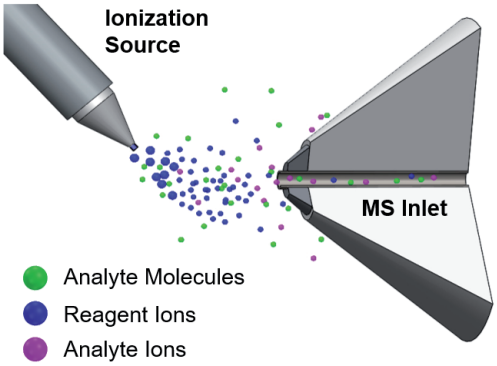
Flexible Coupling

A gas-tight Swagelok fitting provides a seamless coupling with all chromatographic methods such as GC, LC or SFC as well as other applications e.g. breath analysis or laser ablation imaging.

No Consumables

The cold plasma ionization does not require special gases such as N_2 or He.

Conventional Ionization Technologies



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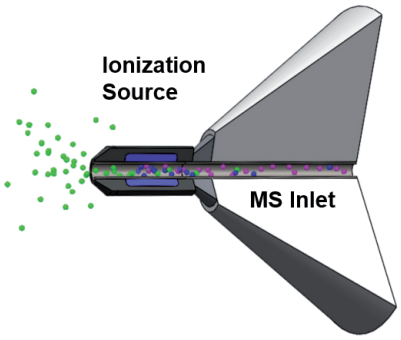
SICRIT® Ionization Technology



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Fields of Application

An universal Ion Source for the Toughest Analytical Challenges

The SICRIT® Ionization is a smart solution for your MS that for the first time enables the combination of different separation and screening techniques in a single system. Using a frequency tuneable high-voltage, the SC-30 Control Unit ensures stable plasma conditions even with ambient air. The control unit also operates the optional add-on modules to enable a smooth connection with all kinds of chromatography or sample enrichment techniques. This provides unmatched analytical flexibility:

Direct and Real-time Measurements

VOC fingerprints of solid or liquid samples can be obtained instantaneously by simply holding the sample in front of the ionization source. This enables sensitive aroma profiling, product classification, or detection of trace contaminants.

Quantitative Screening Experiments*

Direct and quantitative measurements of solids, liquids, and gaseous samples (e.g. by headspace sampling or using SPME fibers) may be performed manually or completely automated in combination with a CTC PAL system.

GC-SICRIT®-MS Coupling*

Soft ionization GC-MS coupling increases sensitivity and is ideal in combination with High Resolution Mass Spectrometry. This provides molecular information by soft ionization and high mass accuracy.

SICRIT® All-in-one Routine Solution*

All-in-one-workflow integration reduces effort and costs in routine analytics as it combines fast pre-screening of samples without chromatography, meaning GC-MS analysis is only needed for positively screened samples.

Breath Analysis*

MS-based breath analysis is one of the youngest research areas in biomedical diagnostics, allowing for online, non-invasive testing of patients.

* Separate modules required/recommended

Technical Specifications

Dimensions (Control Unit)	270 x 200 x 80 mm
Dimensions (Ion Source)	45 x 30 x 20 mm
Weight (Control Unit)	2.1 kg
Weight (Ion Source)	0.1 kg
Supply Voltage	100 - 240 VAC 50 - 60 Hz max. 400 W
Power Connector	Connector Type IEC/EN 60320-1/C14
HV Output	2 x 0 - 1100 VAC (0 - 3000 V_{pp}) 10.0 - 50.0 kHz max. 100 W
Modules Output	24 VDC max. 100 W
Operation Conditions	15 -30 °C room temperature < 80% RH (non condensating)
Make-Up Gas Conditions (Ion Source)	Temperature and Humidity: max. 300 °C (continuous) max. 320 °C (short-term) 0 - 90% RH Possible carrier gases: Air, N_2, CO_2, He Flow rates: typically 0.5 - 1.5 L/min
LC-MS Connection	Dedicated SICRIT® MS-Interfaces required for connection

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