



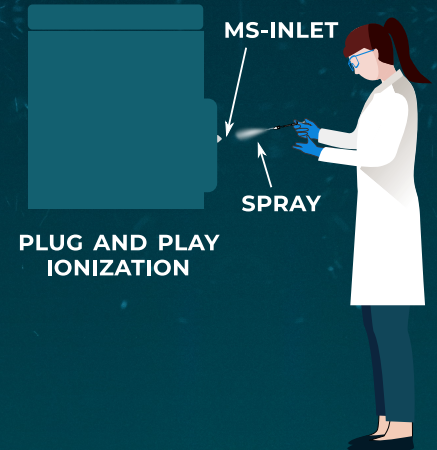
Ion Sprays



ELI-MS BROCHURE

CONTACT US

-  The Netherlands,
Amsterdam
-  www.ionsprays.com
-  info@ionsprays.com



ELECTROLESS IONIZATION MS

Using innovative nanotechnology, both spraying and ionization are achieved inside a single disposable nozzle, without the use of any electronics. A plug and play method available in both positive and negative charging mode.

www.ionsprays.com





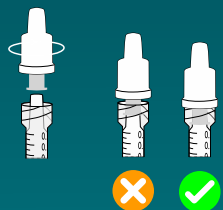
1. SAMPLE PREPARATION

Prepare your sample with one of the recommended solvents (ionsprays.com). The sample should be free of particles and the salt concentration should not exceed 10^{-4} M. The polarity of the spray depends on the nozzle type and solvent (see table).

2. FILLING THE SYRINGE



Fill the syringe with your sample liquid. To prevent the piston of the syringe to bend while spraying, it is recommended to fill the syringe halfway.

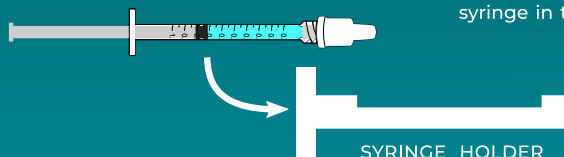


3. CONNECT THE ELI-NOZZLE

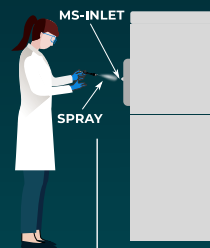
The nozzle and syringe use a luer lock system. Rotate the ELI-nozzle clockwise until it reaches its maximum tightness, at the far end of the luer fitting.

4. PLACE SYRINGE IN HOLDER

For easier use, and to prevent the nozzle from detaching, place the syringe in the syringe holder.

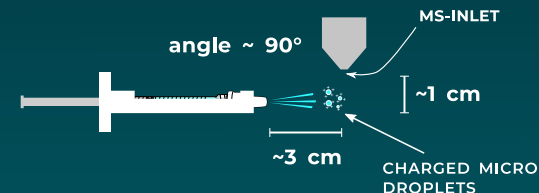


Spray in the direction of the MS-inlet



5. SPRAY SAMPLE

Ionization of your sample is easy, press the syringe until a spray appears. For the low flow nozzles, droplets at the front can prevent a spray from forming, remove these if necessary. The spray should be directed to the MS-inlet at an angle of approximately 90° and a distance of 3 cm (See the illustration). The polarity of the spray can be changed, by changing nozzle type. You can look up in the table below what the polarity is for different solvents and ELI-nozzle types. Repeated use of the ELI-nozzles is not recommended.



POSITIVE AND NEGATIVE MODE EXPLAINED

The electroless charging of the ELI-nozzle relies on the zeta potential of the charge transfer layer (present inside the nozzle) with the sample liquid. To be able to change the polarity of the spray, for the same liquid, a different a nozzle with a different charge transfer layer needs to be used. As for most solvents the charging polarity is the same with the same nozzle, the nozzle types are designated as either "positive" or negative" (see table below). For a detailed explanation go to our publication: "*Self-charging of sprays*" in Scientific Reports.

go to publication



SHORT CHARGING TABLE

Table with some solvent (mixtures) and the charging polarity for the "positive" and "negative" ELI-nozzle. See www.ionsprays.com for more information.

Solvent/Solvent mix	Nozzle type	Polarity spray (+/-)
Acetonitrile	"Positive ELI-nozzle"	+
Water (demineralized)	"Positive ELI-nozzle"	+
Water/Ethanol (%v Water > 25%)	"Positive ELI-nozzle"	+
Water/Methanol (%v Water > 25%)	"Positive ELI-nozzle"	+
Acetonitrile	"Negative ELI-nozzle"	-
Water (demineralized)	"Negative ELI-nozzle"	-
Water/Ethanol (%v Water > 25%)	"Negative ELI-nozzle"	-