Brief instructions on maintaining your Metrohm ion chromatograph

This leaflet describes the basic conditions for troublefree operation of your Metrohm ion chromatograph. The most important maintenance steps are listed in the form of a guide, which answers the following questions:

- What components need to be maintained?
- What maintenance steps are required for this?
- How often should maintenance be carried out?

A detailed description of maintenance can be found in the instrument manual, where the various steps are explained in detail and illustrated with detailed drawings.

Metrohm

General

- Short capillaries equate to a small dead volume
- Eluent flow after high pressure pump: only PEEK capillaries with an inner diameter of 0.25 mm should be used
- Use ultrapure water (resistance > 18.2 MΩ* cm 25 °C) and p.a. chemicals to prepare reagents
- Filter samples (0.45 µm)
- Ensure samples are fed in without any air bubbles
- If the system is not used (> 2 weeks), the column should be removed and the system rinsed with 20% methanol

Eluent

- Should be free of particles, algae and bacteria
- Degassing; no air bubbles in the aspiration tube and eluent
- The aspiration filter should be exchanged every 3 months or when it becomes yellow
- When changing the eluent, measures must be taken to prevent precipitations

IC pump

- Carry out maintenance on pistons, seals and check valves at least once a year

Inline filters

- Should be replaced every 3 months or when there is a high backpressure and/or when exchanging the eluent. Check eluent flow twice a year.

Pulsation absorber

- A faulty pulsation absorber can cause long, flat waves in the baseline and must then be replaced

Injection valve

- If there are problems with precision, check the installation of the sample loop
- Open and clean a valve if it is blocked by particles (service technician)

Separation column

- Comply with flow direction
- Use precolumn and replace it regularly. Typically 3-4 precolumns are recommended per lifetime of an analytical column.
- To increase column lifetime: check the quality of chemicals, ultrapure water and use sample preparation (e.g., Inline Dialysis)

Suppressor

- PTFE capillaries are very soft; pressure screws should not be overtightened; shorten crushed capillaries with the help of a capillary cutter
- Do not switch the suppressor rotor in the dry state
- If the conductivity is too high, check the flow of the regenerant and rinsing solution

CO_2 suppressor

- CO_2 adsorber cartrige CW must be used
- CO_2 adsorber material must be replaced when the indicator colors the adsorption material violet (3/4 of the cartridge), however at least once a year

IC conductivity detector

- In the event of any blockage ➔ shorten the inlet capillary by a few millimeters; back-flush with the help of the high pressure pump; take care: pressure must be < 5 MPa

Dual-channel peristaltic pump

- Pump tubing should be replaced regularly – at least every 2 months
- Contact pressure level should not be too high: increase contact pressure step by step until flow is visible, then increase contact pressure by a further 2 ratchet increments
- Use long-life pump tubing: 6.1826.3X0 or 6.1826.420
- Use inline filters and replace them every 3 months or when there is a high backpressure

Backpressure without column with 1 mL/min flow rate:	
Nonsuppressed IC system:	< 1.0 MPa
IC system with chemical suppression:	< 1.5 MPa
IC system with sequential suppression:	< 2.5 MPa

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Subject to change
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