

Dionex Chemically Regenerated Suppressor (CRS 500)

Quick Start

1. Important Information

- A. The Thermo Scientific™ Dionex™ CRS™ 500 is installed in the column compartment of the chromatography module right after the analytical column and before the conductivity detector cell. Refer to Section 2, "Installation," for complete installation instructions.
- B. The operation of the Dionex CRS 500 requires a constant flow of the regenerant over the membrane, in a direction that is countercurrent to the flow of the eluent. A standard regenerant flow rate of 5–10 mL/min is recommended for most applications.
- C. 25–50 mN sulfuric acid (H₂SO₄) is the recommended regenerant for use with the Anion Chemically Regenerated Suppressor (Dionex ACRS 500). 100 mN Tetrabutylammonium hydroxide (TBAOH) is the recommended regenerant for use with the Cation Chemically Regenerated Suppressor (Dionex CCRS 500).

2. Safety



CAUTION

The membranes and screens in the Dionex CRS 500 must be completely hydrated to maintain liquid seals and chromatographic performance. To accomplish this, keep the regenerant chambers filled with regenerant solution. This will ensure that the membranes and screens remain properly hydrated.



CAUTION

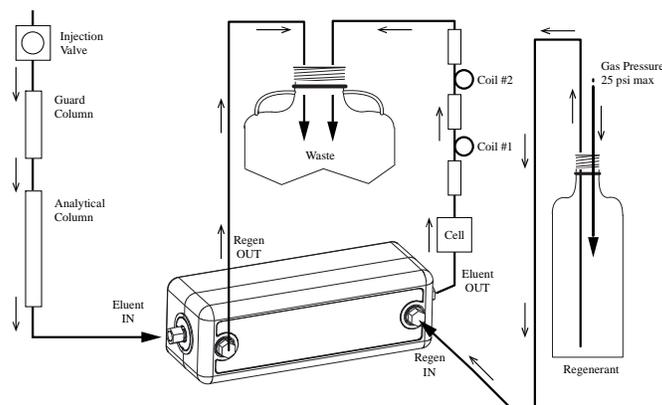
Back pressures over 150 psi after the Dionex CRS 500 can cause irreversible damage! For optimal operation, the correct amount of back pressure on the suppressor and cell is 40 psi. Be sure to install the correct number of back pressure coils after the cell depending on your flow rate.

3. Configuration

- A. Connect eluent lines from the analytical column to the ELUENT IN port of the Dionex CRS 500 and from the ELUENT OUT port of the Dionex CRS 500 to the conductivity detector cell.
- B. Connect a regenerant line to the REGEN IN port of the Dionex CRS 500 from the Regenerant reservoir if in the External Pressurized Bottle Mode.
- C. Connect a line from the REGEN OUT port of the Dionex CRS 500 to the Waste container if in the External Pressurized Bottle Mode.

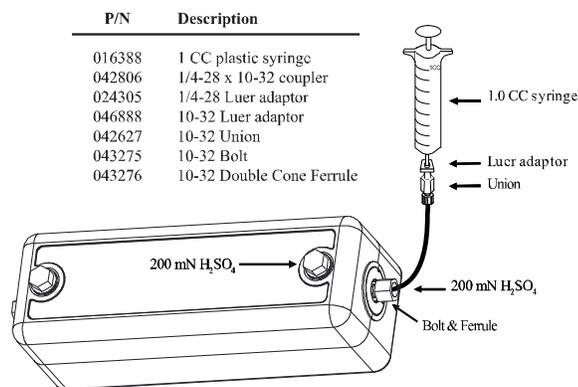
4. Getting Started

- A. Turn on the column eluent flow.
- B. Adjust the regenerant reservoir pressure or flow rate to establish the regenerant flow through the Dionex CRS 500.
- C. Pump approximately 5 mL of eluent through the ELUENT IN port and 5 mL of regenerant through the REGEN IN port of the Dionex CRS 500 respectively.
- D. Stop the liquid flow to the suppressor.
- E. Let the suppressor sit for approximately 15–20 minutes to ensure that the membranes and screens are fully hydrated.
- F. Restart flow and operation and allow the system to equilibrate before beginning analysis.



5. Displacement Chemical Regeneration (DCR) Mode

- A. Using the disposable plastic syringe, found in the detector ship kit do the following:
1. For the Dionex ACRS 500: push approximately 3 mL of 200 mN H₂SO₄ through the eluent out port and 5 mL of 200 mN H₂SO₄ through the regen in port respectively.
 2. For the Dionex CCRS 500: push approximately 3 mL of 200 mM NaOH through the eluent out port and 5 mL of 200 mM NaOH through the regen in port respectively.
- B. Allow the suppressor to sit for approximately 20 minutes to fully hydrate the suppressor screens and membranes.
- C. Connect the suppressor to your system. Follow the instructions in the DCR Kit Manual (P/N 031664).



6. Alternate Quickstart: for the Displacement Regenerant (DCR) Mode



NOTE

The following procedure will regenerate the suppressor online in the DCR mode of operation.

WHEN TO USE: This procedure is recommended after short time system shutdown (several days).

- A. Bypass the eluent line into the suppressor. This can be done by connecting the ELUENT IN line (line from the column) directly to the ELUENT OUT line (line to the cell) using a PEEK union (P/N 042627).
- B. Ensure that the DCR bottle is filled with the recommended regenerant and connected to the system following instructions cited in the DCR kit manual. Document P/N 031664.
- C. Establish eluent flow by turning on the eluent. The eluent will displace the regenerant and push the regenerant back into the suppressor regenerant chamber.
- D. Keep the eluent flow on for 10 minutes to ensure regeneration.
- E. Turn off the flow to the suppressor and let the suppressor fully hydrate for approximately 20 minutes prior to analysis.
- F. Reconnect the lines into the suppressor eluent channel ports
- G. Return to routine operation under DCR mode following the instructions cited in the DCR Kit Manual. Document P/N 031664.