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Waters uplc troubleshooting guide

Troubleshooting Split Peaks on ACQUITY UPLC Column, follow these steps: 1. **Column Replacement**: Put a fresh column in place and attach a guard column if necessary. 2. **Benchmarking**: Inject a benchmarking standard to verify the fresh column's peak shape. 3. **Mobile Phase Cycles**: Run the mobile phase conditions through the column without making any injections until split peaks appear. 4. **Peak Verification**: After completing the mobile phase cycles, inject the benchmarking standard again and check if the peak splits. If the peak still splits: * the mobile phase conditions with these injections until the split peaks appear. * **Injector Cleaning**: If the peak still splits after this exercise, the injector is contaminated. Take steps to clean the injector. For more information on troubleshooting split peaks, see application notes id28044 and Split Peaks Seen on an ACQUITY UPLC System. can be directly connected to a low voltage, power-supply network. EC authorized representative Address Waters Corporation Stamford Avenue Altrincham Road Wilmslow SK9 4AX UK Telephone Table of contents General informationii Copyright notice ii Trademarks... ...ii Customer comments... 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Overview can be directly connected to a low voltage ...111 A.5 Warnings that apply to all Waters instruments and devices111 A.6 Warnings that address the replacement of fuses 115 A.7 Electrical symbols117 A.8 Handling symbols118 Specifications....... power-supply network. EC authorized representative Address Waters Corporation Stamford Avenue Altrincham Road Wilmslow SK9 4AX UK Telephone Table of contents General informationii Copyright notice ii Trademarks.. ...ii Customer comments.... ...ii Contacting Waters Page 9 The system stops when its optical sensor detects about 1.5 mL of leaked liquid in the reservoir. It has a two-position, six-port injection valve. The sample compartment has LED lighting that automatically turns on when the door is opened and off when it's closed, and can also be controlled via the console for light-sensitive samples. The flow path through the system is shown in a diagram, illustrating how the SM-FTN functions as part of the ACQUITY UPLC system. The Re positioning mechanism controls the orientation of sample and delivering it to the column, involving the needle, optional extension loop, sample syringe, syringe valve, injection valve, and injection/wash port. During an injection/wash port, with options for pre-injection and post-injection washes to reduce carryover. To prepare the sample manager for operation, the solvent manager must be prepared first, following instructions in the ACQUITY UPLC Binary Solvent Manager Operator's Overview and Maintenance Information. Tips include ensuring tubing is fully bottomed in the connection port before tightening the compression screw, using compression fittings with long flats for easier accessibility, and performing the sample-syringe leak test after replacing or loosening fittings during maintenance. The tube should be inserted into the connection port and the compression screw rotated clockwise until finger-tight. Using a permanent marker, mark the compression screw at the 12-o'clock position and the connection port at the 9-o'clock position. Ensure proper alignment of the tubing with the bottom of the connection port at the 9-o'clock position. the fitting finger-tight for all types of fittings, including flangeless, one-piece PEEK, and stainless steel fittings with long flats. For detailed instructions on assembling new fittings, refer to the Assembling new fittings with long flats. compression screw. Additionally, ensure proper ventilation requirements by maintaining at least 15.2 cm (6.0 inches) clearance at the rear and at least 6.4 cm (2.5 inches) clearance on the right-hand side of the sample manager. For stacking system modules without interlocking features, carefully lower each module so that the feet rest in the indents of the previously added module. Align the front alignment slot to maintain the integrity of the system stack and integrated waste system requirements for proper function. Finally, when connecting the power cord to a wall electricity source, ensure the correct type of power cord (SVT-type in the United States or HAR-type in Europe) and inspect it for damage before use. 1. Connectors to connect the flat-blade screwdriver, attach the positive and negative leads of the signal cable to the connector. 2. Cable connections - Refer to the rear panel label of the module for correct cable connections, especially for input/output signal connectors which need contact closure output connection (Inject Start) from the sample manager to start the MassLynx software control. 3. Installing the lower leak sensor - Warning: Observe Good Laboratory Practice (GLP) while handling hazardous materials and consult Material Safety Data Sheets before use. 4. Leak sensor installation - Align the leak sensor T-bar with the slot, slide the ribbon cable into the leak sensor activation - Select Sample Manager > Control > Reset module in the console and enable the leak sensor for detection capability. 6. Installing the upper leak sensor - Warning: Observe Good Laboratory Practice (GLP) while handling hazardous materials, align the leak sensor T-bar with the slot and attach it to the front port of the device. 7. Calibrating the needle - Open the sample manager door, remove plates from trays, click Maintain > Calibrate needle, start calibration, then OK in confirmation window. Selecting the sample manager and then clicking Control > Prime is one way to proceed, but an alternative method exists within the data application. Right-click in the control panel of the sample manager and choose Prime from the dropdown menu. Table 2-3 lists priming parameter values: For 180 seconds, use a wash solventially application. and purge solvent with the following recommended settings for changing solvents: 100-µL syringe - 50 cycles, or 500-µL syringe - 20 cycles, or 500-µL syringe - 10 cycles. Keep in mind that each cycle takes approximately 30 seconds to complete, and priming is finished when the system status is reported as "Idle". The wash system can be used to clean the needle's exterior while it's inside the injection/wash port. When working with vials, note that positions V1 through V4 on both sides of the sample tray accommodate 4-mL vials. You may need to contact Waters for inserts that allow you to use 2-mL vials in these locations. Required tools and materials include... (Text regarding required tools and materials is not provided in the original text) To load a sample plate onto the sample tray, follow these steps: Place well position A,1 at the rear, left-hand corner of the plate is loaded, slide the tray in until it clicks into place, and then close the sample vials for your samples. When choosing a sample needle, consider the injection volume and sample viscosity to select the most suitable option. The 15-µL needle provides accurate injection volume while the 30-μL needle allows for faster aspiration rates. For calculating the maximum injection volume (μL) + needle volume (μL) + ne the injection valve and extension loop tubing, fully insert the extension-loop fitting while holding the extension-loop fitting while holding the extension loop tubing against the bottom of the port. When choosing a draw rate for the sample syringe, select a rate that accommodates the volume of your samples to avoid repetitive action and prolonged sample spiration time. Looking at sample characteristics such as viscosity and specified cycle time is crucial. The default draw rates are needle size dependent: • 15 µL needle: 30 µL/min In Empower software, under FTN > General tab, you can modify the "Needle Placement (from bottom)" value. Sample vial types include Waters Supplied Screw Cap with needle placement at 12 × 32 mm and Clear Total Rec, as well as Max Rec. For more information, refer to the Waters Sample Vials and Accessories brochure. recommended. Adding too much air can cause extra peaks in chromatography. The standard injection mode cycle time definition shows load-ahead mode after the first injection. Before taking the loop offline during the first gradient change or return to initial conditions, take it off-line. It's essential to consider contamination risks when choosing the load-ahead and loop-offline options. For more information, see Best Practices for controlling contamination in LC/MS systems. 1. Align lower leak sensor connector to leak sensor port on front of device. 3. Before storing system or replacing needle valve, park sample needle and injection valve. Remove wash tubing from clip on sample-compartment wall to avoid damaging adapter fitting. Place seal port's housing in original location on floor to keep spring in position. Loosen and remove locking nut, then replace with new seal and finger-tighten. Hold support sleeve in place using 1/2-inch wrench while ensuring tube remains aligned with threaded hole. Slide tube into slot, seat three prongs of locking nut inside spring, and align fitting wash-tube fitting wash-tube fitting. The inject/wash station assembly was placed back in its original spot on the floor of the sample-compartment. Cables had to be routed so they wouldn't get in the way of the needle-carriage home sensor. This ensured proper functioning. Wash tubing, seal-port tube, and load-cell cable locations were all figured out as well. The seal port's fitting was screwed into port 1 of the injection valve using a wrench. It was then tightened just a little bit more than finger-tight. The access panel got put back on, and two screws were tightened to secure it to the front of the unit with a T20 TORX driver. The seal-port tube and sample-needle tubing had to be routed through the gap in the access panel so they wouldn't cross each other. When handling sample needles, it's crucial to exercise extreme caution to avoid puncture injuries. To prevent damage to the needle assembly, holding it securely in both hands to maintain control within the sample compartment. Insert the needle tip into the needle tip into the needle tubing through the two notches below the Z-flag and secure it properly. Close the needle tatch to lock in place, ensuring the needle assembly is securely seated. To complete the setup, verify that the needle tubing is routed to the left-hand side of the carriage's rails and secured within the guide channel on the clamp with the fitting oriented toward the valve. Tighten the screw on the clamp using a T10 TORX driver, leaving it slightly loose for easy movement. If necessary, gently rotate or twist the needle to ensure straight routing down the screws, ensuring the screw further. Finally, reinstall the access panel and use a T20 TORX driver to secure the panel with two screws, ensuring the screw further. gaps. Page 97 26: Using a rounded tool (such as the T20 TORX driver's shaft), make a bend and connect the needle tubing installation on the injection valve. 27. Needle tubing installation is complete. 3.10 Sample Syringe Replacement Warning: Wear clean gloves when handling hazardous compounds. Wear eye protection when performing this procedure. Perform a sample-syringe leak test whenever replacing the syringe (see console online Help). Page 99 Remove knurled screws from the plunger mounting post. Figure 3-53 shows sample syringe components. Unpack the new syringe and fill it with purge solvent to remove air bubbles. Ensure all air bubbles are removed. Page 101 Warning: Wear clean gloves when handling hazardous compounds. Wear eye protection when performing this procedure. Required tools: Chemical-resistant, powder-free gloves ... Clean areas of the injection port with a nonabrasive wipe (Figure 3-56). Allow water to drip off and remove the wipe carefully. Reinstall the access panel (Page 103). Close sample compartment doors. In the console, select the sample manager and click Control > Reset SM to reset the sample manager. 11. Disconnect the power cord from the AC source and then reorient the new cartridge exactly as the old one was oriented, ensuring it fully slides into the injection-valve cartridge chamber. If it doesn't fit properly, report any issues to Waters Technical Service. 12. Insert the 2-mm hex screw at the 10 o'clock position on the injection-valve cartridge. Tighten all fittings associated with tubing for the sample needle and seal-port tube using a 1/4-inch open-end wrench. For existing fittings, tighten an additional 1/6-turn beyond finger-tight; for new fittings, tighten an additional 3/4-turn beyond finger-tight. 13. When installing, repairing, or operating any Waters instrument or device, heed all warnings to avoid injury or property damage. Failure to comply with safety precautions may result in liability claims. Warning: L'utilisateur doit être informé que si le matériel est utilisé d'une façon non spécifiée par le fabricant, la protection assurée par le matériel risque d'être défectueuses. - Pour éviter tout risque d'incendie, remplacez toujours les fusibles de l'instrument. Warning: - Zum Schutz gegen Feuer die Sicherungen nur mit Sicherungen ersetzen, deren Typ und Nennwert auf den Tafeln neben den Sicherungsabdeckungen des Geräts gedruckt sind. - 警告:為了避免火災,更換保險絲時,應使用「維護步驟」章節中 . Warning: - 火災予防のために、ヒューズ交換ではメンテナンス項目の「ヒューズの交換」に記載されているタ イプおよび定格のヒューズをご使用ください。 Electrical Symbols and Their Statements: The following electrical symbols and their associated statements can appear in instrument manuals and on 「更換保險絲」所指定的相同類型與規格的保險絲。 - : an instrument's front or rear panels. Handling Symbols and Their Statements: The following handling symbols and their associated statements can appear on labels affixed to the packaging in which instruments, devices, and component parts are shipped. Symbol Description - Keep upright! - Keep dry! - Fragile! - Use no hooks! - Upper limit of temperature - Lower limit of temperature - T 10 °C - Column temperature: 40 °C

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