Acclaim® Reversed-Phase Columns Care and Use Instructions

Introduction

Dionex Acclaim high performance silica columns are designed to meet the high standards required by modern HPLC applications. These columns use high-purity, porous, spherical silica particles and provide efficiencies that exceed industry standards.

The Acclaim 120 C18 and C8 columns exhibit excellent peak shapes for a variety types of analytes, which result in high sensitivity and reliable quantification for a broad range of applications including pharmaceutical and environmental analysis.

Acclaim 300 C18 columns are suited to the high resolution separation of peptides and small proteins, as well as small molecules.

Acclaim PolarAdvantage (PA) columns are based on sulfonamide-embedded reversed-phase material, featuring excellent aqueous compatibility, high shape selectivity, excellent peak shape for basic analytes, selectivity complementary to conventional reversed-phase C18 columns, etc.

Acclaim PolarAdvantage II (PA2) columns feature amide-embedded reversed-phase column chemistry, with extended operating pH range (pH1.5 to 10.5). The unique selectivity and 100% aqueous compatibility make them good complements to other HPLC columns.

Acclaim guard cartridges should be used to protect the analytical column from particulate and contaminants which could decrease performance.

The manufacture of all Acclaim columns is controlled and documented according to ISO 9001 guidelines at the Dionex Sunnyvale manufacturing facility. Certificates of Quality Assurance accompany each analytical column.

Monitoring Column Performance

Using the conditions described on the Quality Assurance Certificate, test the Acclaim column prior to use and confirm it performs as indicated. Repeat this test procedure periodically to ensure performance is still optimal.

Selecting a Mobile Phase

Acclaim columns are compatible with all commonly used HPLC mobile phases, such as water/acetonitrile or water/methanol mobile phase systems. Acclaim 120 C18 and C8 columns may be used in a mobile phase containing 5 to 100% organic solvent. But it should be noted that when under high aqueous mobile phases, these columns may suffer from “de-wetting”, causing retention loss for the analytes under certain circumstances. De-wetting can be reversed by purging the column with 100% organic solvent (acetonitrile, acetone, isopropanol, etc.) in order to restore column performance. Acclaim PolarAdvantage (PA) and PA2 columns are compatible with 100% aqueous conditions. Acclaim 300 columns may be used with 95% aqueous condition without problem.

Any HPLC buffer salts may be used for control of mobile phase pH. Always check and flush the column with compatible solution before switching to a new mobile phase, especially when buffers are involved. Failing to do so may result in precipitation of the salt in the column, leading to possible damage to the column.

Mobile Phase Preparation

Filtering

Buffer salts used for mobile phases should be in highest available quality and free of insoluble particulates. It is a good practice to filter the mobile phase through a 0.45 µm or finer porosity filter media before use.

Degassing

In order to avoid problems associated with the loss of prime in the pump, mobile phases should be degassed prior to use.

Installing the Column

Before installing the column, purge all the pump lines with liquid to remove air and ensure the system is clean.

Connect the column between the injection valve and the detector, with the flow arrow on the label pointing towards the detector. The column end-fittings are compatible with standard 10-32 fittings and Parker ferrule dimensions. Use the shortest lengths of tubing practical to minimize system volume. The tubing i.d. should not exceed 0.010 inches (0.25 mm) for 4.6 mm i.d. columns, or 0.007 inches (0.17mm) for 3.0mm columns, and 0.005 inches (0.12 mm) for 2.1 mm i.d. columns. If using a guard column, install it according to the instructions in the guard packet, using the low dead volume column coupler (P/N 059457).

Equilibrating the Column

Once the column is installed, pump at least 10 column volumes of mobile phase through the column, and up to 200 column volumes if additives such as ion pairing reagents are present in the mobile phase. The column is equilibrated when the baseline is stable and several injections produce stable retention times.

Troubleshooting

The inability to reproduce the efficiency of the test chromatogram may be indicative of excess tubing and/or too large a flow cell. When using a 2.1 mm i.d. column, the detector cell volume should be 3 µL or less and the tubing should be 0.005 inches (0.12 mm) or smaller. For a 4.6 mm i.d. column, use 0.010 inches (0.25 mm) i.d. tubing or smaller. Keep tubing lengths to a minimum.

The inability to reproduce the peak asymmetry of the test chromatogram may be indicative of improperly cut or fitted tubing. All tubing must have straight ends and be fitted with well-seated and properly positioned ferrules.

An increase in backpressure may indicate the guard is plugged with particulates. Replace the guard.

An increase in peak tailing for metal sensitive analytes, such as chelators and some amines, may be indicative of metal accumulation on the column from the system or mobile phase. Use a metal-free system for these analytes.

Long-Term Storage

If the column will not be used for a week or more, flush the column with 10 column volumes of a solvent to deionized water mobile phase such as 70:30 acetonitrile:deionized water. Plug the column to keep the bed wetted. Do not allow the column to dry out.

Warranty

Dionex warrants all products sold by them will be of good quality and workmanship. The products will be fit for their intended purposes when used in accordance with Dionex instructions. Dionex reserves the right not to honor this warranty if the products are abused or modified by the customer. The foregoing warranty is exclusive and in lieu of all other express and implied warranties including, but not limited to, fitness for any other purpose(s). In no event will Dionex be liable for consequential, economic or incidental damages of any nature.

Acclaim 120 Analytical Columns

P/N	Description
059128	C18, 3 µm, 2.1 x 50 mm
059129	C18, 3 µm, 2.1 x 100 mm
059130	C18, 3 µm, 2.1 x 150 mm
066272	C18, 3 µm, 3.0 x 33 mm
068971	C18, 3 µm, 3.0 x 50mm
066273	C18, 3 µm, 3.0 x 75 mm
068691	C18, 3 µm, 3.0 x 150mm
070077	C18, 3 µm, 3.0 x 250mm
059131	C18, 3 µm, 4.6 x 50 mm
059132	C18, 3 µm, 4.6 x 100 mm
059133	C18, 3 µm, 4.6 x 150 mm
059142	C18, 5 µm, 2.1 x 50 mm
059143	C18, 5 µm, 2.1 x 100 mm
059144	C18, 5 µm, 2.1 x 150 mm
059145	C18, 5 µm, 2.1 x 250 mm
059146	C18, 5 µm, 4.6 x 50 mm
059147	C18, 5 µm, 4.6 x 100 mm
059148	C18, 5 µm, 4.6 x 150 mm
059149	C18, 5 µm, 4.6 x 250 mm
059122	C8, 3 µm, 2.1 x 50 mm
059123	C8, 3 µm, 2.1 x 100 mm
059124	C8, 3 µm, 2.1 x 150 mm
068970	C8, 3 µm, 3.0 x 150mm
070078	C8, 3 µm, 3.0 x 250mm
059125	C8, 3 µm, 4.6 x 50 mm
059126	C8, 3 µm, 4.6 x 100 mm
059127	C8, 3 µm, 4.6 x 150 mm
059134	C8, 5 µm, 2.1 x 50 mm
059135	C8, 5 µm, 2.1 x 100 mm
059136	C8, 5 µm, 2.1 x 150 mm
059137	C8, 5 µm, 2.1 x 250 mm
059138	C8, 5 µm, 4.6 x 50 mm
059139	C8, 5 µm, 4.6 x 100 mm
059140	C8, 5 µm, 4.6 x 150 mm
059141	C8, 5 µm, 4.6 x 250 mm

Acclaim 300 Analytical Columns

P/N	Description
060263	300, C18, 3 µm, 2.1 x 50 mm
060264	300, C18, 3 µm, 2.1 x 150 mm
063684	300, C18, 3 µm, 3.0 x 150mm
060265	300, C18, 3 µm, 4.6 x 50 mm
060266	300, C18, 3 µm, 4.6 x 150 mm

Acclaim PolarAdvatange (PA) Analytical Columns

P/N	Description
063174	PA, C16, 3 µm, 2.1 x 50 mm
061316	PA, C16, 3 µm, 2.1 x 100 mm
061317	PA, C16, 3 µm, 2.1 x 150mm
066274	PA, C16, 3 µm, 3.0 x 33 mm
068972	PA, C16, 3 µm, 3.0 x 50mm
066275	PA, C16, 3 µm, 3.0 x 75 mm
063693	PA, C16, 3 µm, 3.0 x 150mm
070079	PA, C16, 3 µm, 3.0 x 250mm
061318	PA, C16, 3 µm, 4.6 x 150 mm
061319	PA, C16, 5 µm, 4.6 x 50 mm
061320	PA, C16, 5 µm, 4.6 x 150 mm
061321	PA, C16, 5 µm, 4.6 x 250 mm

Acclaim PolarAdvantage II (PA2) Analytical Columns

P/N	Description
063187	PA2, C18, 3 µm, 2.1 x 150 mm
066276	PA2, C18, 3 µm, 3.0 x 33 mm
068973	PA2, C18, 3 µm, 3.0 x 50mm
066277	PA2, C18, 3 µm, 3.0 x 75 mm
063705	PA2, C18, 3 µm, 3.0 x 150 mm
070080	PA2, C18, 3 µm, 3.0 x 250 mm
063189	PA2, C18, 3 µm, 4.6 x 50 mm
063191	PA2, C18, 3 µm, 4.6 x 150 mm
063197	PA2, C18, 5 µm, 4.6 x 150 mm
063199	PA2, C18, 5 µm, 4.6 x 250 mm

Acclaim Guards

P/N	Description
069689	120, C18, 5 µm, 2.1 x 10 mm, 2 ea.
071981	120, C18, 5 µm, 3.0 x 10 mm, 2 ea
059446	120, C18, 5 µm, 4.3 x 10 mm, 2 ea.
069688	120, C8, 5 µm, 2.1 x 10 mm, 2 ea.
071979	120, C8, 5 µm, 3.0 x 10mm, 2ea
059448	120, C8, 5 µm, 4.3 x 10 mm, 2 ea.
069690	300, C18, 3 µm, 2.1 x 10 mm, 2 ea.
060393	300, C18, 3 µm, 4.3 x 10 mm, 2 ea.
069691	PA, C16, 5 µm, 2.1 x 10 mm, 2 ea.
071983	PA, C16, 5 µm, 3.0 x 10mm, 2 ea
061332	PA, C16, 5 µm, 4.3 x 10 mm, 2 ea.
069692	PA2, C18, 5 µm, 2.1 x 10 mm, 2 ea.
071985	PA2, C18, 5 µm, 3.0 x 10mm, 2 ea
063195	PA2, C18, 5 µm, 4.3 x 10 mm, 2 ea.

Acclaim Guard Accessories

P/N	Description
059456	SST Guard Cartridge Holder (for all 4.3mm guards)
069580	SST Guard Cartridge Holder V-2 (for all 2mm and 3mm guards)
059457	Guard to Analytical Coupler (for all 4.3mm guards)
059526	Guard Kit (holder and coupler) (for all 4.3mm guards)