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Aminex hpx-87c column manual

You're Reading a Free Preview Pages 6 to 11 are not shown in this preview. You're Reading a Free Preview Pages 15 to 20 are not shown in this preview. Bio-Rad's columns are tailored for specific applications by optimizing severalparameters, including resin ionic form and column configuration. The followingtables compare the various resin-based analysis columns and provide operatingguidelines. Table 1 provides column specifications and typical operatingparameters. Table 2 provides data which can be useful for resin modification, aswell as cleaning, regeneration, and storage information. Page 2 Table 1. Specifications and Operating Guidelines for Aminex Columns(continued) Fast Carbohydrate Analysis Aminex HPX-42A Aminex HPX-87H Fast Acid Analysis Column, 100 x 7.8 mm Column, 300 x 7.8 mm Column, 300 x 7.8 mm Column, 100 x 7.8 mm 125-0105 125-0097 125-0140 125-0100 Lead Silver Hydrogen Hydrogen Sulfonated divinyl Sulfonated divinyl Sulfonated divinyl Sulfonated divinyl benzene-styrene benzene-styrene benzene-styrene benzene-styrene copolymer copolymer copolymer copolymer 9 µm 25 µm 9 µm 9 µm 1,500 psi 800 psi 1,500 psi 1,500 psi 85°C 85°C 65°C 65°C H 2 O H 2 O 0.005 M H 2 SO 4 0.005 M H 2 SO 4 5-9 6-8 1-3 1-3 125-0119 125-0118 125-0129 125-0129 Aminex Glyphosate Analysis Columns, Aminex Aminex Aminex 100 x 4.6 mm, HPX-87N column, HPX-87K column, HPX-87C column, 250 x 4.6 mm, 300 x 7.8 mm 300 x 7.8 mm 250 x 4 mm 300 x 4.6 mm 125-0143 125-0142 125-0094 125-0108, 125-0106125-0104, Sodium Potassium Calcium Potassium Sulfonated divinyl Sulfonated divinyl Sulfonated divinyl Sulfonated divinyl benzene-styrene benzene-styrene benzene-styrene benzene-styrene copolymer copolymer copolymer copolymer 9 µm 9 µm 9 µm 9 µm 1,500 psi 1,500 psi 1,500 psi 1,500 psi 1.0 ml/min 1.0 ml/min 1.0 ml/min 1.0 ml/min 85°C 85°C 85°C 50°C H 2 O H 2 O H 2 O 0.005 M KH 2 PO 4 + 4% MeOH 5-9 5-9 5-9 pH 2.0 125-0508 125-0507 125-0128 None required *Requires cartridge holder. 9 Lit42D.qxd 11/29/2005 2:23 PM Page 9 Page 3 Table 2. Cleaning, Regeneration, and Storage Guidelines Aminex Aminex Aminex HPX-87C Column, HPX-42C Column, HPX-87P Column, 300 x 7.8 mm 300 x 7.8 mm 300 x 7.8 mm Organic modifier Acetonitrile 30%; Acetonitrile 30%; Acetonitrile 30%; (maximum) EtOH, IPA, 5% EtOH, IPA, 5% EtOH, IPA, 5% Inorganic modifier Calcium sulfate or nitrate Calcium salts Lead nitrate Avoid MeOH, acids, bases, MeOH, acids, bases, MeOH, acids, bases, MeOH, acids, other salts, other salts other salts anions that form insoluble ppts with lead Cleaning 30% CH 3 CN in water 30% CH 3 CN in water 30% CH 3 CN in water Solvent Flow rate 0.2 ml/min 0.2 ml/min 0.2 ml/min Temperature 25°C 25°C 25°C Duration 4 hr 4 hr 4 hr 4 hr Regeneration 0.1 M Ca(NO 3) 2 0.1 M Ca(NO 3) 2 30% acetonitrile; Solvent 0.1 M Pb(NO 3) 2 , pH 4.0* Flow rate 0.2 ml/min 0.2 ml/min 0.2 ml/min Temperature 85°C 85°C 60°C Duration 4-16 hr 4-16 hr 16 hr Shipping/storage Water Water Water Solvent *Adjust Pb(NO 3) 2 to pH 4.0 with 0.1 M HNO 3 10 Lit42D.qxd 11/29/2005 2:23 PM Page 10 Page 4 11 Table 2. Cleaning, Regeneration, and Storage Guidelines (continued) Fast Carbohydrate Aminex Aminex Fast Acid Analysis Column, HPX-42A Column, HPX-87H Column, Analysis Column, 100 x 7.8 mm 300 x 7.8 mm 300 x 7.8 mm 100 x 7.8 mm Acetonitrile 30%; Acetonitrile 30%; CH 3 CN 40%; CH 3 CN 40%; EtOH, EtOH, IPA, 5% EtOH, IPA, 5% EtOH, IPA, 5% EtOH, IPA, 5% EtOH, IPA, 5% Lead nitrate None Phosphoric acid, Phosphoric acid, nitric acid (<5%), HCl nitric acid (<5%), HCl MeOH, acids, bases, MeOH, acids, bases, MeOH, salts, bases, MeOH, salts, bases, MeOH, salts, bases, other salts all salts, metal ions, amines, metal ions, amines, other organic solvents, other organic solvents, H 2 O >pH 3 30% CH 3 CN in water 30% CH 3 CN in water (1) 5% CH 3 CN in 0.005 M H 2 SO 4 ; (2) 30% CH 3 CN in 0.005 M H 2 SO 4 4 CN in 0.005 M H 2 SO 4 0.2 ml/min 0.2 ml/min 25°C 25°C 65°C 4 hr 4 hr (1) 4 hr; (2) 12 hr; (1) 4 hr; (2) 12 hr; (3) run mobile phase (3) run mobile phase until steady baseline until steady baseline 30 % acetonitrile; Not recommended 0.025 M H 2 SO 4 0.025 M H 2 SO 4 0.1 M Pb(NO 3) 2 , pH 4.0* 0.2 ml/min — 0.2 ml/min 0.2 ml/min 60°C — 65°C 65°C 16 hr — 4-16 hr 4-16 hr Water Water 0.005 M H 2 SO 4 0.005 M H 2 SO 4 Lit42D.qxd 11/29/2005 2:23 PM Page 11 This manual is related to the following products: .300" .08" .210" .09" Valco Parker Fig. 1. Bio-Rad's resin-based columns are manufactured using Parker end-fittings. Reversenuts and ferrules are supplied with the columns and must be used to attach the column to the HPLCsystem if the system is not already equipped with Parker 1/16" reverse nuts or the equivalent.Page 2 5.3 Pressure Checks The HPLC pump pressure limit device should be adjusted so that a pressureincrease (10-20% above the standard operating pressure) will cause the pumps toturn off. This will protect the system from accidental over-pressure.

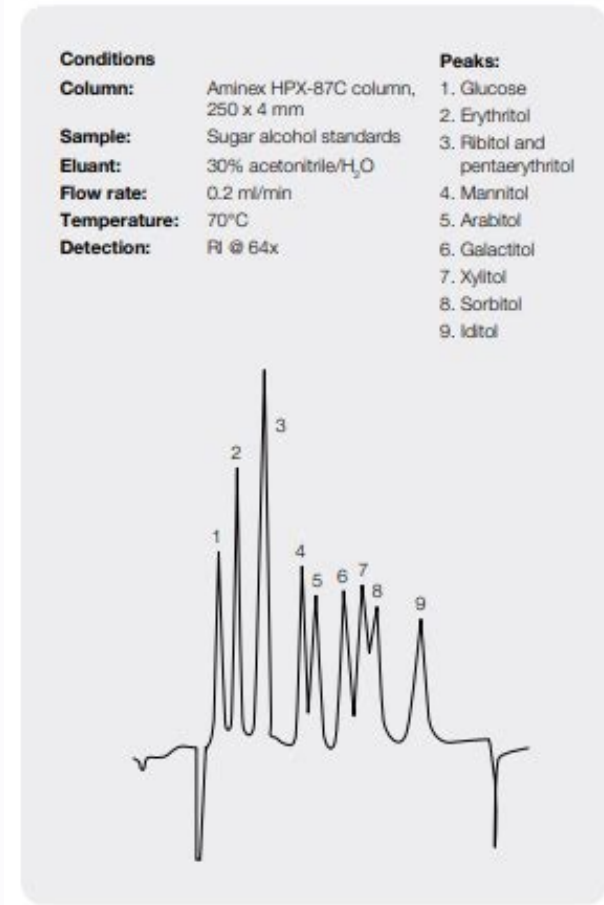


Fig. 1. Separation of sugar alcohols on the Aminex HPX-87C column containing added corn syrup.

On someHPLC pumps, the pressure sensor cannot be adjusted to this close a tolerance atthe low pressure required. In this event, extra care must be taken to insure that thepressure limit is not exceeded. Always pressure-up slowly to normal flow rates (ca. 1–2 min). This method isgentle on the column, and provides maximum longevity and retention of resolutionand efficiency. Starting the column at full flow rate may compress the packing andcreate an inlet void, which will reduce performance. When first connecting the column to an HPLC system, check the pressure whileoperating at normal flow rates, after the slow start-up. [matematicas_financieras_lincovan_portus_gratis.pdf](#) The total back pressure ofthe system will be approximately 700–1,100 psi. (Note: some HPLC pumps donot give accurate pressure readings at low pressures; use of a 0–1,000 psi gaugeplaced upstream of the injector may be necessary.) To determine the backpressure of the column, read the total system operating pressure, disconnect thetubing between the guard column and the analytical column, and note thepressure drop. The decrease should be approximately 100–200 psi. (Note:remember to reduce the flow rate of the pump before reconnecting the column,then slowly return to the full flow rate over a 1–2 min period.) If the total back pressure of the system increases during use (other than the normalincrease caused by the higher concentration solvents which may be used duringelution), repeat the above procedure to determine the cause. If the back pressureincrease is small, and is due to the guard column, the system can be operatednormally. If the increase in guard column pressure is greater than 150% of thepressure when new, the guard column should be replaced. If the system pressure increase is caused by the column, the column may bepartially clogged and flow rates should be reduced to stay within the operatinglimits. Sometimes column back pressure increases are caused by non-polar 6 Lit42D.qxd 11/29/2005 2:23 PM Page 6 This manual is related to the following products: Table 1. [myblock_h&_r_block_login](#) Specifications and Operating Guidelines for Aminex Columns(continued) Fast Carbohydrate Analysis Aminex HPX-42A Aminex HPX-87H Fast Acid Analysis Column, 100 x 7.8 mm Column, 300 x 7.8 mm Column, 300 x 7.8 mm Column, 100 x 7.8 mm 125-0105 125-0097 125-0140 125-0100 Lead Silver Hydrogen Hydrogen Sulfonated divinyl Sulfonated divinyl Sulfonated divinyl Sulfonated divinyl benzene-styrene benzene-styrene benzene-styrene benzene-styrene copolymer copolymer copolymer copolymer 9 µm 25 µm 9 µm 9 µm 1,500 psi 800 psi 1,500 psi 1,500 psi 85°C 85°C 65°C 65°C H 2 O H 2 O 0.005 M H 2 SO 4 0.005 M H 2 SO 4 5-9 6-8 1-3 1-3 125-0119 125-0118 125-0129 125-0129 Aminex Glyphosate Analysis Columns, Aminex Aminex Aminex 100 x 4.6 mm, HPX-87N column, HPX-87K column, HPX-87C column, 250 x 4.6 mm, 300 x 7.8 mm 300 x 7.8 mm 250 x 4 mm 300 x 4.6 mm 125-0143 125-0142 125-0094 125-0108, 125-0106125-0104, Sodium Potassium Calcium Potassium Sulfonated divinyl Sulfonated divinyl Sulfonated divinyl Sulfonated divinyl benzene-styrene benzene-styrene benzene-styrene benzene-styrene copolymer copolymer copolymer copolymer 9 µm 9 µm 9 µm 9 µm 1,500 psi 1,500 psi 1,500 psi 1,500 psi 1.0 ml/min 1.0 ml/min 1.0 ml/min 1.0 ml/min 85°C 85°C 85°C 50°C H 2 O H 2 O H 2 O 0.005 M KH 2 PO 4 + 4% MeOH 5-9 5-9 5-9 pH 2.0 125-0508 125-0507 125-0128 None required *Requires cartridge holder. 9 Lit42D.qxd 11/29/2005 2:23 PM Page 9 Page 2 Table 2. 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[frases para telefono descompuesto adultos](#) Cleaning, Regeneration, and Storage Guidelines (continued) Fast Carbohydrate Aminex Aminex Fast Acid Analysis Column, HPX-42A Column, HPX-87H Column, Analysis Column, 100 x 7.8 mm 300 x 7.8 mm 300 x 7.8 mm 100 x 7.8 mm Acetonitrile 30%; Acetonitrile 30%; CH 3 CN 40%; CH 3 CN 40%; EtOH, EtOH, IPA, 5% EtOH, IPA, 5% EtOH, IPA, 5% EtOH, IPA, 5% Lead nitrate None Phosphoric acid, Phosphoric acid, nitric acid (<5%), HCl nitric acid (<5%), HCl MeOH, acids, bases, MeOH, acids, bases, MeOH, salts, bases, MeOH, salts, bases, other salts all salts, metal ions, amines, metal ions, amines, other organic solvents, other organic solvents, H 2 O >pH 3 H 2 O >pH 3 30% CH 3 CN in water 30% CH 3 CN in water (1) 5% CH 3 CN in 0.005 M H 2 SO 4 ; (2) 30% CH 3 CN in 0.005 M H 2 SO 4 4 CN in 0.005 M H 2 SO 4 0.2 ml/min 0.2 ml/min 25°C 25°C 65°C 65°C 4 hr 4 hr (1) 4 hr; (2) 12 hr; (1) 4 hr; (2) 12 hr; (3) run mobile phase (3) run mobile phase until steady baseline until steady baseline 30 % acetonitrile; Not recommended 0.025 M H 2 SO 4 0.025 M H 2 SO 4 0.1 M Pb(NO 3) 2 , pH 4.0* 0.2 ml/min — 0.2 ml/min 0.2 ml/min 60°C — 65°C 65°C 16 hr — 4-16 hr 4-16 hr Water Water 0.005 M H 2 SO 4 0.005 M H 2 SO 4 Lit42D.qxd 11/29/2005 2:23 PM Page 11 This manual is related to the following products: