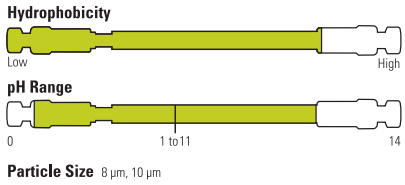
HyperREZ XP HPLC Columns

Polymer-based columns for carbohydrate analysis



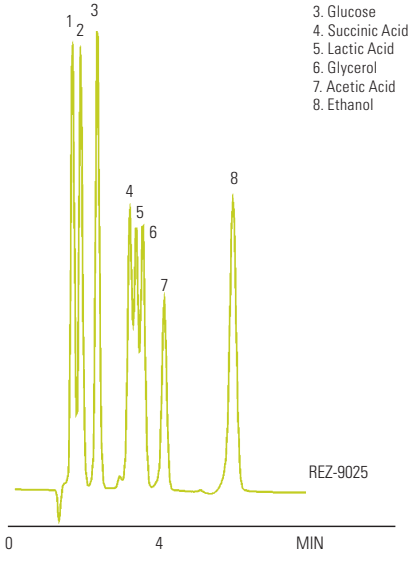
Particle Size 8 µm, 10 µm

- Designed for the determination of carbohydrates, saccharides, organic acids, and alcohols
- Efficient and reproducible monodisperse particles
- Stable for long column lifetimes even at low pH and high temperatures

HyperREZ XP Carbohydrate columns are based on a monodisperse resin with a 4 or 8% divinylbenzene content, and provide an ideal medium for the analysis of carbohydrates and organic acids. Unlike silica based columns they are stable at low pH, allowing the use of dilute acid as a mobile phase. The columns can also be run at elevated temperatures, for faster analysis and improved resolution of some closely eluting analytes. The columns can easily be regenerated for increased column lifetime. Control of the degree of cross-linking of the gel provides a size exclusion mode of operation in addition to the ligand exchange interactions with the metal ion associated with the sulfonated resin. Selectivity differences arise from the interactions of the different counter-ion forms with the hydroxyl groups on the analyte molecules. HyperREZ XP columns are available in H^+, Ca^{2+}, Pb^{2+}, and Na^+ forms, enabling you to choose the appropriate counter-ion to meet your application requirements. Refer to the tables below to help choose the best column based on application area or retention times. HyperREZ XP columns are also available in dedicated organic acid and sugar alcohol forms.

HyperREZ XP Organic Acids, 8µm, 100 x 7.7mm

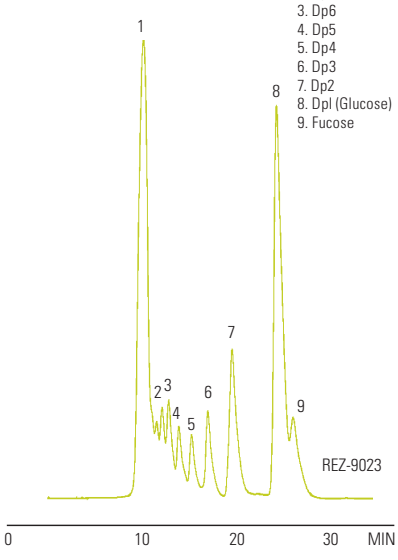
Part Number:	69608-107780
Eluent:	0.0001mM H_2SO_4
Flow Rate:	0.7mL/min
Temperature:	57°C
Detector:	RI
Sample:	1. Maltotriose 2. Maltose 3. Glucose 4. Succinic Acid 5. Lactic Acid 6. Glycerol 7. Acetic Acid 8. Ethanol



Products of fermentation, including organic acids, sugars and alcohols, can be separated using a HyperREZ XP Organic Acids column

HyperREZ XP Carbohydrate Na^+, 10µm, 300 x 7.7mm

Part Number:	69310-307780
Eluent:	H_2O
Flow Rate:	0.3mL/min
Temperature:	80°C
Detector:	RI
Sample:	1. Dp8 2. Dp7 3. Dp6 4. Dp5 5. Dp4 6. Dp3 7. Dp2 8. Dpl (Glucose) 9. Fucose



Analysis of sports drink using a HyperREZ XP Carbohydrate Na^+ column

Phase	Particle Size (µm)	Porosity
HyperREZ XP Carbohydrate H^+ Counter-ion	8	8% cross linkage
HyperREZ XP Carbohydrate Pb^{2+} Counter-ion	8	8% cross linkage
HyperREZ XP Carbohydrate Ca^{2+} Counter-ion	8	8% cross linkage
HyperREZ XP Carbohydrate Na^+ Counter-ion	10	4% cross linkage
HyperREZ XP Organic Acids	8	8% cross linkage
HyperREZ XP Sugar Alcohols	8	8% cross linkage

Column Type	Application Areas
HyperREZ XP Ca^{2+}	Adulteration of food & beverages, confectionary, disaccharides, food additives
	Alcohols, dairy products, fermentation, wine
	Anomer separation
HyperREZ XP Pb^{2+}	Fruit juice, monosaccharides
HyperREZ XP H^+	Alcohols, dairy products, fermentation, wine
	Oligosaccharides, glycoprotein constituents, organic acids, fermentation products
HyperREZ XP Na^+	Corn syrup

HyperREZ XP HPLC Columns

Particle Size (µm)	Description	ID (mm)	Length (mm)	Cat. No.
HyperREZ XP Carbohydrate H^+				
8.0	Analytical	7.7	300	**69008-307780**
	Guard	7.7	50	**69008-057726**
	Guard Catridge (2 pk)	3.0	5	**69008-903027**
HyperREZ XP Carbohydrate Ca^{2+}				
8.0	Analytical	7.7	300	**69208-307780**
	Guard	7.7	50	**69208-057726**
	Guard Catridge (2 pk)	3.0	5	**69208-903027**
HyperREZ XP Carbohydrate Pb^{2+}				
8.0	Analytical	7.7	300	**69108-307780**
	Guard	7.7	50	**69108-057726**
	Guard Catridge (2 pk)	3.0	5	**69108-903027**
HyperREZ XP Carbohydrate Na^+				
10.0	Analytical	7.7	300	**69310-307780**
	Guard	7.7	50	**69310-057726**
	Guard Catridge (2 pk)	3.0	5	**69310-903027**
HyperREZ XP Organic Acids				
8.0	Analytical	7.7	100	**69608-107780**
	Guard	–	–	**Inquire**
	Guard Catridge (2 pk)	–	–	**Inquire**
HyperREZ XP Sugar Alcohols				
8.0	Analytical	4.0	250	**69708-254080**
	Guard	–	–	–
	Guard Catridge (2 pk)	3.0	5	**69208-903027**
Guard Cartridge Holder for HyperREZ XP 3.0 × 5.0mm Guard Cartridges				**60002-354**

Retention Times of Common Saccharides (min)

Saccharide	H^+	Ca^{2+}	Pb^{2+}
Adonitol	11.5	14.9	20.4
Arabinose	11.4	13.6	19.4
Erythritol	12.7	15.6	20.3
Fructose	10.6	13.5	19.3
Fucose	12.2	13.7	17.1
Galactose	1.07	12.2	15.6
Glucose	9.9	11.1	13.9
Glycerol	14.1	16.1	19.5
Lactose	8.6	9.7	12.8
Maltose	8.4	9.5	12.5
Maltotriose	7.7	8.7	11.9
Mannitol	11.0	17.3	28.9
Mannose	1.5	12.5	16.7
Raffinose	8.2	8.6	11.4
Sorbitol	11.1	20.7	N/A
Sucrose	9.8	9.4	11.9
Xylose	10.6	12.0	15.0

Conditions:	**Column: 300 x 7.7mm**
Mobile Phase:	H_2O
Flow Rate:	0.6mL/min
Detection:	RI
Temperature:	75°C (H^+)
	85°C (Ca^{2+})
	80°C (Pb^{2+})

Note: partial hydrolysis may occur with some saccharides using H^+.