

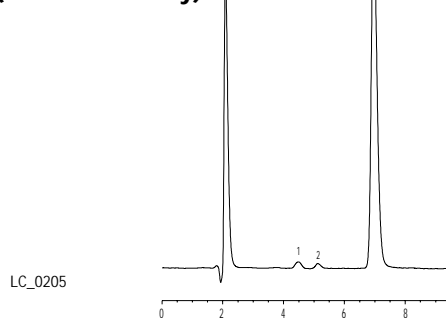
FAST FACTS

At-a-Glance
Product
Information
from Restek

Sugar analysis is important in the generation of nutrition panels, as both the sugar content and the total carbohydrate content must be included. Simple sugars include mono- and disaccharides such as fructose, glucose, sucrose, maltose, and lactose. In foods and beverages, they provide sweetness, texture, and color development. The perceived sweetness of each sugar is different in terms of character, intensity, and duration. Therefore, the ability to profile the individual mono- and disaccharides is important to the food chemist. Methods exist for the quantification of individual sugar species, as well as for the determination of total sugar content. The new Pinnacle II™ Amino column is ideal for these sugar analyses. HPLC analysis using an amino-based stationary phase is the most popular technique for the routine analyses of simple sugars. This analysis uses isocratic elution (e.g., water:acetonitrile, 25:75) and a refractive index detector (RI). Review Figures 1 through 3 to see how the new Pinnacle II™ Amino column can achieve good resolution of common sugars.

Another sugar, lactulose, is a common laxative ingredient. The test method for this compound is prescribed in the United States Pharmacopoeia (USP 25). The assay calls for an analytical column with an L8 (propylamino) stationary phase bonded to 3µm particle silica, and use of refractive index detection. The new Pinnacle II™ Amino column allows excellent quantification and peak shape for lactulose. Observe the lactulose chromatogram analyzed per the USP monograph in Figure 4.

Pure Maple Syrup on Pinnacle II™ Amino (low sensitivity)



Pinnacle II™ Amino HPLC Columns

*Newest phase available in our line of
Pinnacle II™ HPLC Silica*

Features & Benefits

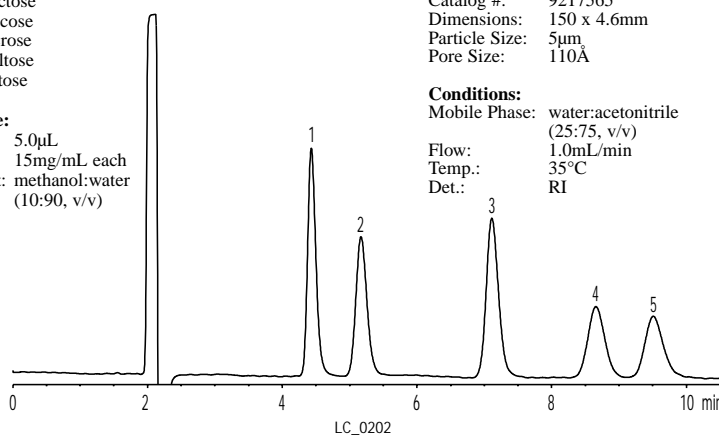
Feature	Benefit
Supported by experienced HPLC technical service.	Free method development assistance.
Product of strictly controlled in-house manufacturing	Column-to-column reproducibility; fast order fulfillment.
Economical.	Same peak shape as higher-priced columns, but at a better value.

Figure 1

5-Sugar Standard on Pinnacle II™ Amino

Peak List:
1. fructose
2. glucose
3. sucrose
4. maltose
5. lactose

Sample:
Inj.: 5.0µL
Conc.: 15mg/mL each
Solvent: methanol:water
(10:90, v/v)



Column: Pinnacle II™ Amino
Catalog #: 9217565
Dimensions: 150 x 4.6mm
Particle Size: 5µm
Pore Size: 110Å

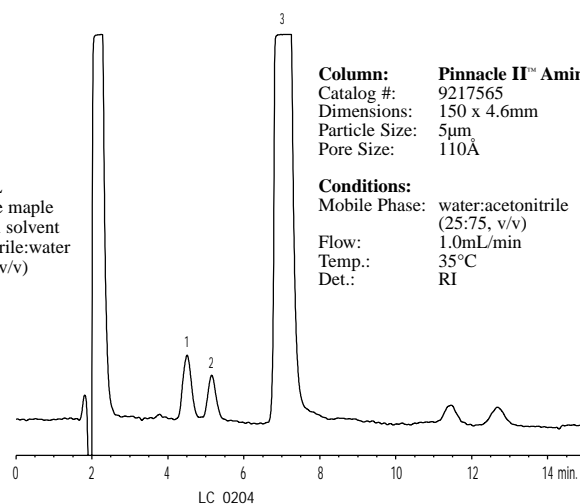
Conditions:
Mobile Phase: water:acetonitrile
(25:75, v/v)
Flow: 1.0mL/min
Temp.: 35°C
Det.: RI

Figure 2

Pure Maple Syrup on Pinnacle II™ Amino (high sensitivity)

Peak List:
1. fructose
2. glucose
3. sucrose

Sample:
Inj.: 100.0µL
Conc.: 1% pure maple
syrup in solvent
Solvent: acetonitrile:water
(70:30, v/v)



Column: Pinnacle II™ Amino
Catalog #: 9217565
Dimensions: 150 x 4.6mm
Particle Size: 5µm
Pore Size: 110Å

Conditions:
Mobile Phase: water:acetonitrile
(25:75, v/v)
Flow: 1.0mL/min
Temp.: 35°C
Det.: RI

RESTEK

HROMalytic +61(0)3 9762 2034
ECHnology Pty Ltd

Australian Distributors
Importers & Manufacturers
www.chromtech.net.au

Website NEW : www.chromalytic.com.au E-mail : info@chromtech.net.au Tel: 03 9762 2034 . . . in AUSTRALIA

Pinnacle II™ Amino

FAST FACTS

At-a-Glance
Product
Information
from Restek

**Restek is your free
technical literature source!**

Application Notes:

(#59177) Analyze Polar Compounds by
Reversed Phase HPLC Using Ultra Aqueous
C18 Column

Fast Facts:

(#59314) Trident™ Direct Guard
Cartridge System

For literature:

- **Call** 814-353-1300 or
800-356-1688, ext. 5
- **Fax** 814-353-1309
- **Online** www.restekcorp.com

Restek (U.S.):

110 Benner Circle
Bellefonte, PA 16823
800-356-1688 • 814-353-1300
fax: 814-353-1309

Restek France:

01-60-78-32-10
fax: 01 6078 70 90
restekfr@club-internet.fr

Restek GmbH:

(49) 06172-2797-0
fax: (49) 06172-2797-77
RESTEK-GMBH@t-online.de

Restek Ireland:

44-28-9081-4576
fax: 44-28-9081-4576
resteurope@aol.com

Thames Restek U.K., Ltd.:

01753-624111
fax: 01753-624666
Sales@Thamesrestek.co.uk

www.restekcorp.com

Restek trademarks: Pinnacle II, Trident,
Restek logo.

© Copyright 2002, Restek Corporation

Lit. Cat. # 59385A

Figure 3: Cola on Pinnacle II™ Amino

Peak List:

1. fructose
2. glucose

Sample:

Inj.: 10.0µL
Conc.: 10% cola in solvent
Solvent: acetonitrile:water
(70:30, v/v)

Column: Pinnacle II™ Amino
Catalog #: 9217565
Dimensions: 150 x 4.6mm
Particle Size: 5µm
Pore Size: 110Å

Conditions:

Mobile Phase: water:acetonitrile
(25:75, v/v)
Flow: 1.0mL/min
Temp.: 35°C
Det.: RI

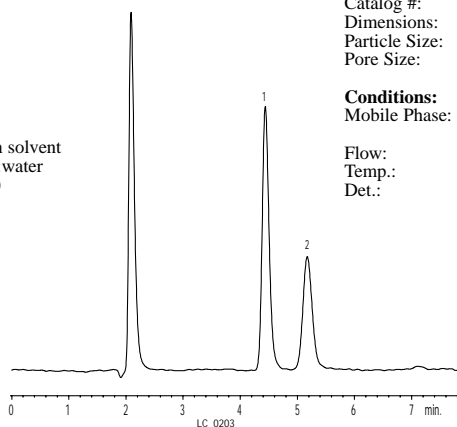


Figure 4: Lactulose Concentrate by USP 25: Resolution Solution on Pinnacle II™ Amino

Peak List:	Conc. (mg/mL)	Ret. Time (min.)	RRT	Res.	Inj. %RSD(n=5)
1. fructose	0.4	4.6	0.44	—	—
2. galactose	6.4	6.1	0.58	—	—
3. epi-lactose	unknown	10.0	0.95	—	—
4. lactulose	40	10.5	1.00	1.1	0.3%
5. lactose	4.8	12.7	1.21	2.9	—

Sample:

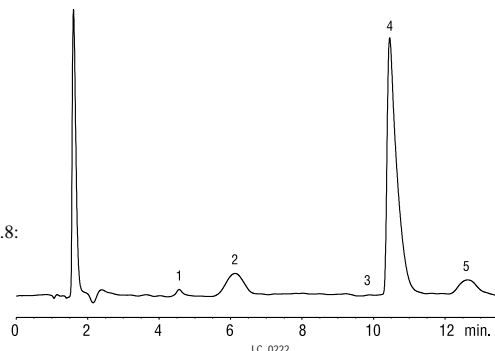
Inj.: 20µL
Sample: resolution standard
Solvent: acetonitrile:water (50:50)

Column:

Pinnacle II™ Amino
Catalog #: 9217365
Dimensions: 150 x 4.6mm
Particle size: 3µm
Pore size: 110Å

Conditions:

Mobile phase: 10mM sodium phosphate
monobasic in water, pH 4.8:
acetonitrile (22:78, v/v)
Flow: 1.3mL/min.
Temp.: 40°C
Det.: refractive index @ 40°C



Pinnacle II™ Amino 3µm Columns

	1.0mm ID	2.1mm ID	3.2mm ID	4.6mm ID
Length	cat.#	cat.#	cat.#	cat.#
30mm	9217331	9217332	9217333	9217335
50mm	9217351	9217352	9217353	9217355
100mm	9217311	9217312	9217313	9217315
150mm	9217361	9217362	9217363	9217365
200mm	9217321	9217322	9217323	9217325

Pinnacle II™ Amino 5µm Columns

	1.0mm ID	2.1mm ID	3.2mm ID	4.6mm ID
Length	cat.#	cat.#	cat.#	cat.#
30mm	9217531	9217532	9217533	9217535
50mm	9217551	9217552	9217553	9217555
100mm	9217511	9217512	9217513	9217515
150mm	9217561	9217562	9217563	9217565
200mm	9217521	9217522	9217523	9217525
250mm	9217571	9217572	9217573	9217575

Pinnacle II™ Amino Guard Cartridges

Dimensions	cat.#	qty.
10 x 2.1mm	921750212	3-pk.
10 x 4.0mm	921750210	3-pk.
20 x 2.1mm	921750222	2-pk.
20 x 4.0mm	921750220	2-pk.

HRMalytic +61(0)3 9762 2034
ECHnology Pty Ltd

Website NEW : www.chromalytic.com.au E-mail : info@chromtech.net.au Tel: 03 9762 2034 . . . in AUSTRALIA

Australian Distributors
Importers & Manufacturers
www.chromtech.net.au