

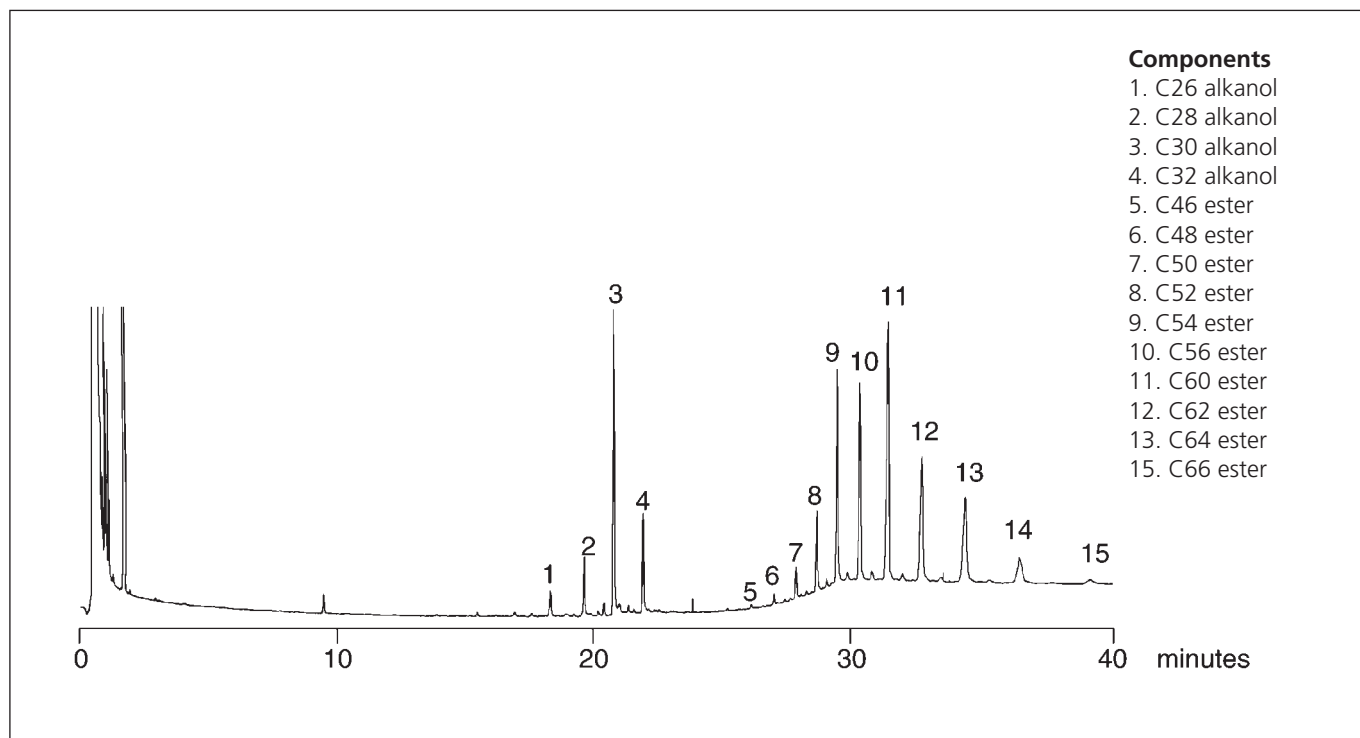
# ANALYSIS OF CARNAUBA WAX ON BPX5

## CARNAUBA WAX

<b>Column Part No.:</b>	<b>054118</b>	Final Temp:	350 °C, 20 min
Phase:	BPX5, 0.25 µm film	Detector:	FID
Column:	12 m x 0.32 mm ID	Sensitivity:	40 x 10 <sup>-12</sup> AFS
Initial Temp:	100 °C, 2 min	Injection Mode:	On Column
Rate:	10 °C/min	Carrier Gas:	H2, 10 psi.

Notes: The high temperature capability of the BPX5 made this analysis reproducible.

On-column injection is recommended to reduce discrimination of high molecular weight compounds.

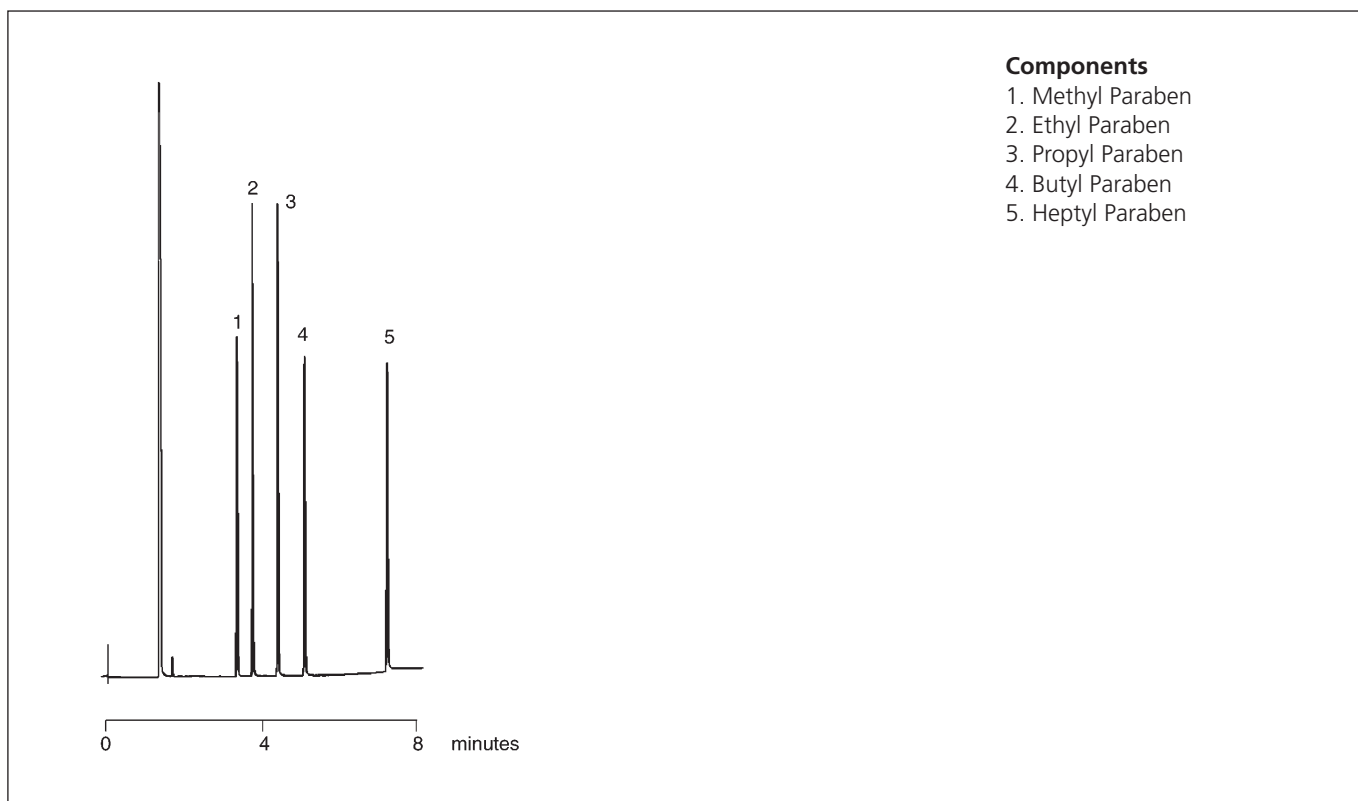


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# ANALYSIS OF FOOD ADDITIVES ANTIMICROBIALS ON BP5

## FOOD ADDITIVES - ANTIMICROBIALS

<b>Column Part No.:</b>	<b>054186</b>	Final Temp:	280 °C, 0 min
Phase:	BP5, 0.5 µm film	Detector:	FID
Column:	25 m x 0.32 mm ID	Sensitivity:	256 x 10 <sup>-12</sup> AFS
Initial Temp:	160 °C, 0 min	Injection Mode:	Split
Rate:	15 °C/min		

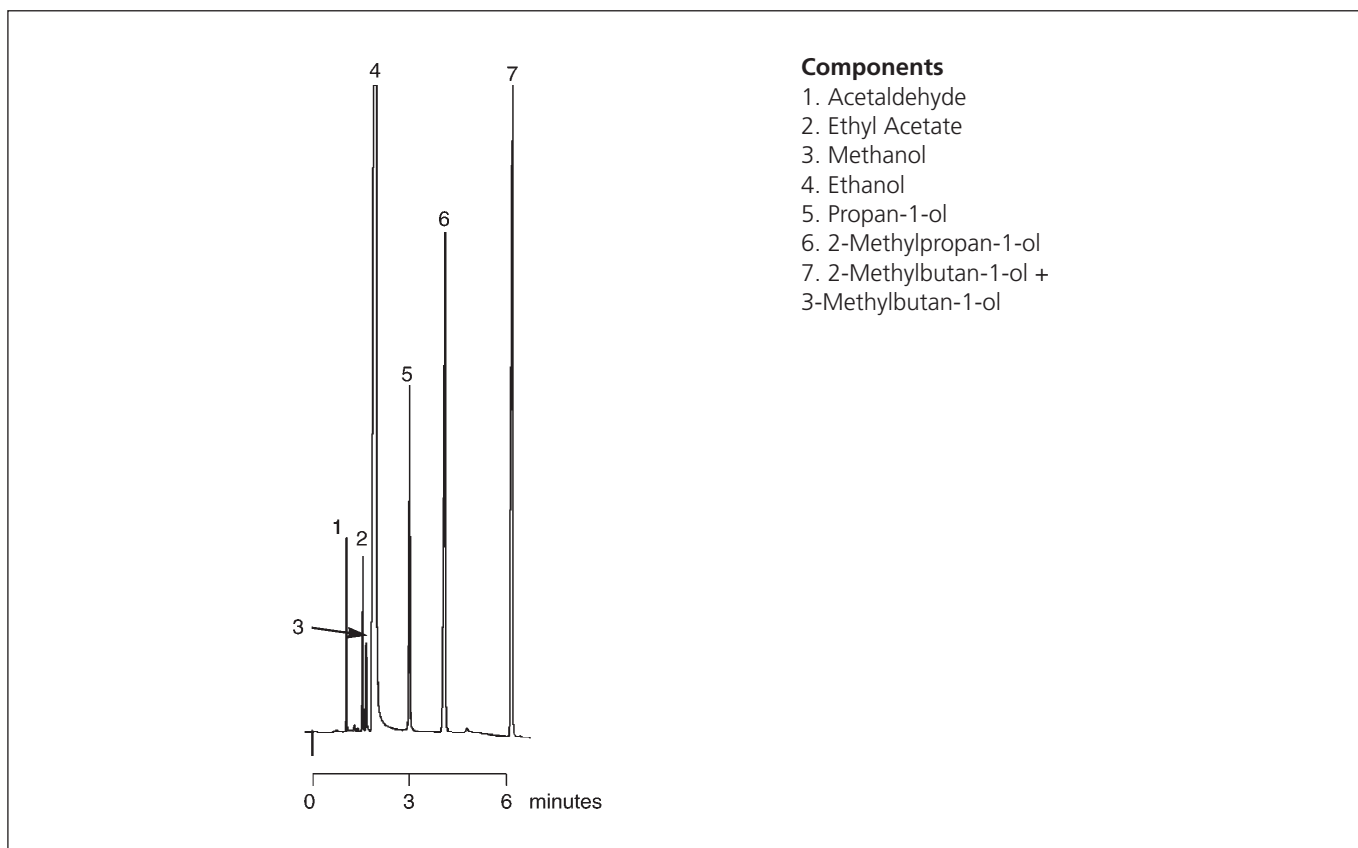


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# ANALYSIS OF SCOTCH WHISKY ON BP20

## SCOTCH WHISKY

<b>Column Part No.:</b>	<b>054447</b>	Final Temp:	120 °C, 0 min
Phase:	BP20, 1.0 µm film	Detector:	FID
Column:	12 m x 0.53 mm ID	Sensitivity:	128 x 10 <sup>-12</sup> AFS
Initial Temp:	55 °C, 3 min	Injection Mode:	Split
Rate:	10 °C/min		



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# ANALYSIS OF 13 SUGAR COMPONENT ALDITOL ACETATE MIXTURE ON BPX70

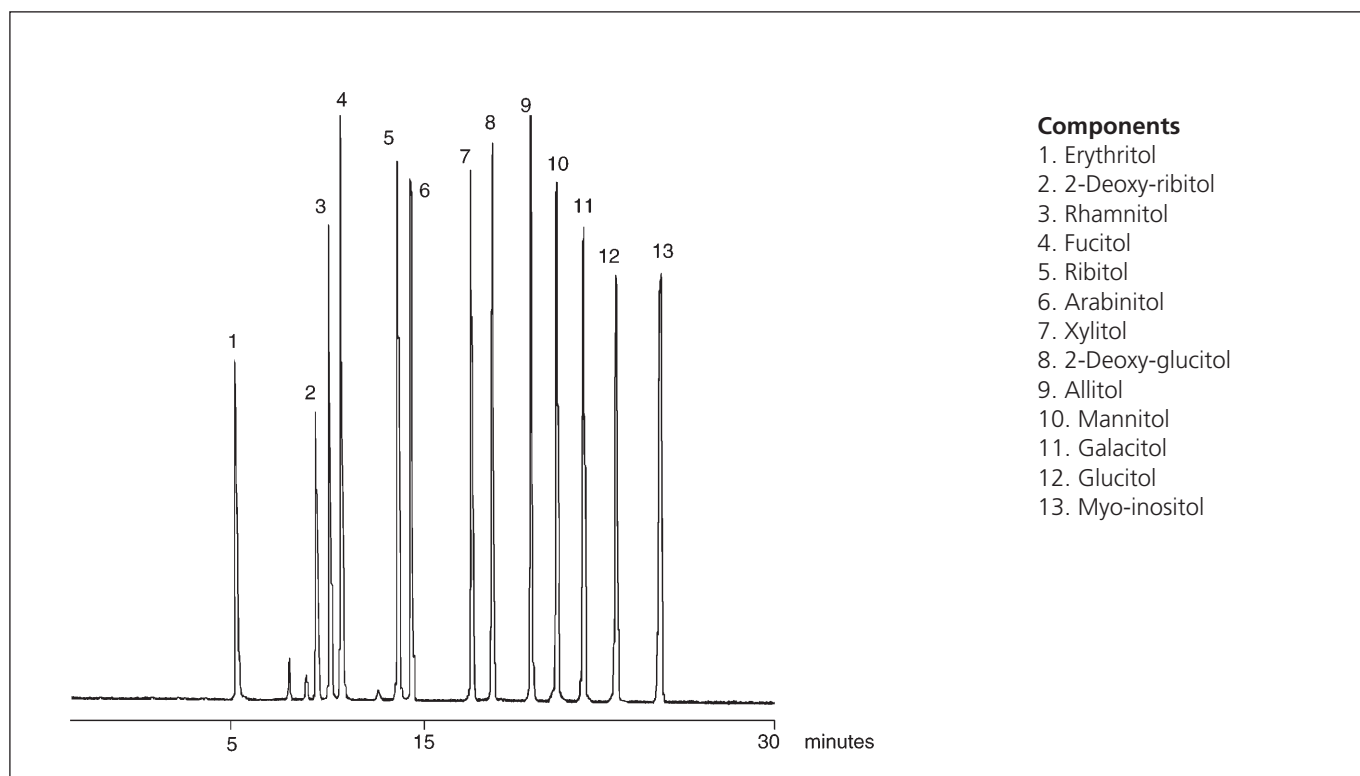
## 13 Component Alditol Acetate Mixture

### Column Part No.: 054622

Phase: BPX70, 0.25 µm film  
Column: 30 m x 0.25 mm I.D.  
Initial Temp.: 190 °C, 1 min.  
Program Rate: 3 °C/min.  
Final Temp: 260 °C, 10min.  
Carrier Gas: He, 50 kPa

Detector: MS (Electron Impact Ionisation,  
Ionisation Potential 70 eV)  
Scan 100 m/z to 350 m/z in 0.3 s.  
Injection Mode: Split 50:1

*Notes: BPX70 column, though a very polar phase, is compatible with GC/MS systems*



### Components

1. Erythritol
2. 2-Deoxy-ribitol
3. Rhamnitol
4. Fucitol
5. Ribitol
6. Arabinitol
7. Xylitol
8. 2-Deoxy-glucitol
9. Allitol
10. Mannitol
11. Galacitol
12. Glucitol
13. Myo-inositol

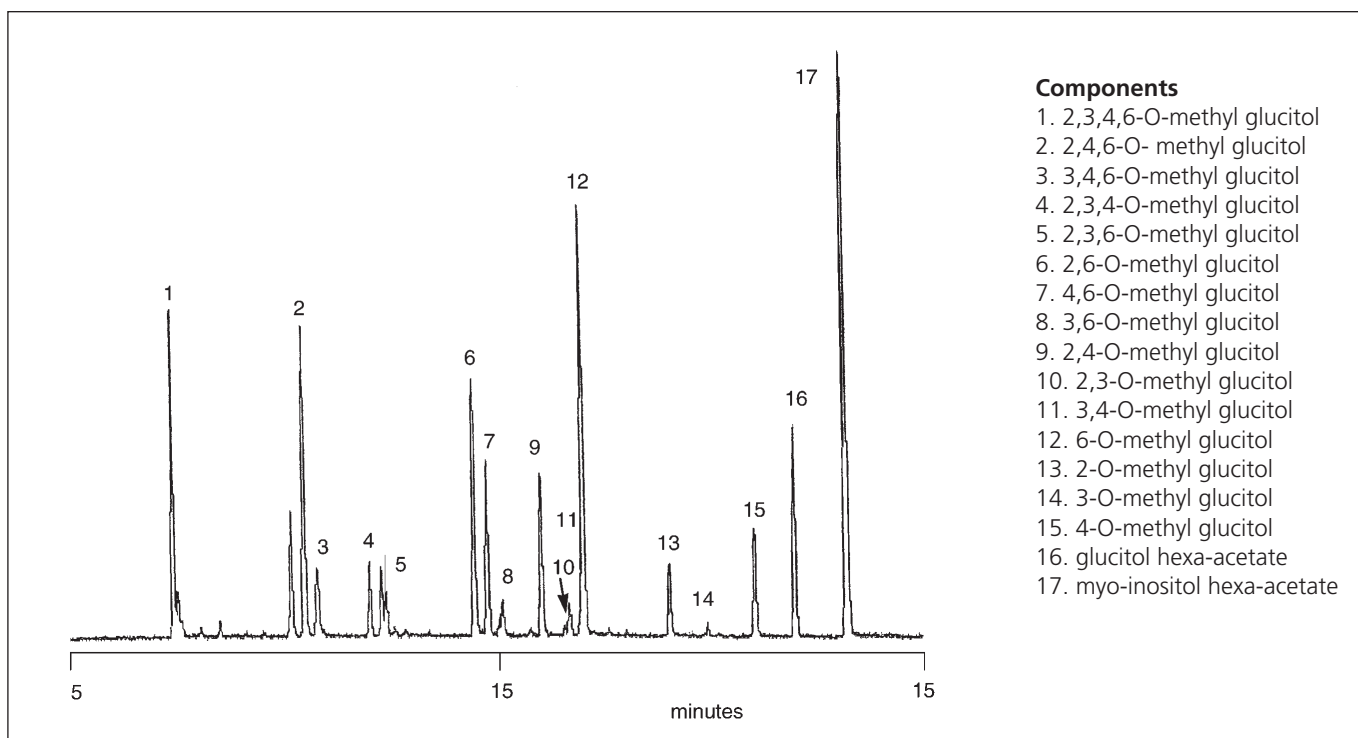
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# ARABINO GALACTAN PROTEIN FROM PLANT CELL SUSPENSION CULTURE ON BPX70

## ARABINO GALACTAN PROTEIN FROM PLANT CELL SUSPENSION CULTURE

<b>Column Part No.:</b>	<b>054622</b>	Final Temp:	260 °C, 10min.
Phase:	BPX70, 0.25 µm film	Carrier Gas:	He, 50 kPa
Column:	30 m x 0.25 mm I.D.	Detector:	HP5790MSD.
Initial Temp.:	190 °C, 1 min.	Injection Mode:	Split
Program Rate:	3 °C/min.		

Notes: BPX70 is the only polar column commercially available suitable for GC/MS application



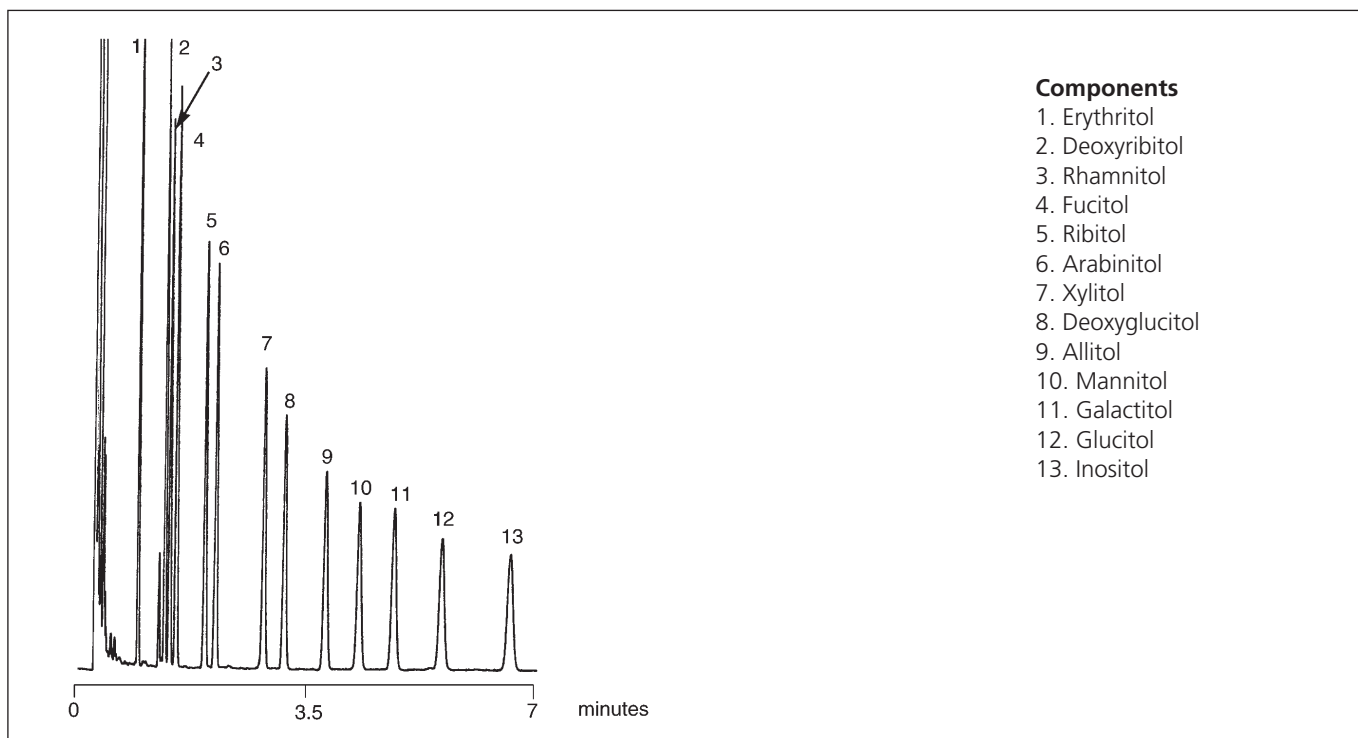
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# ANALYSIS OF SUGAR ALDITOL ACETATES ON A 12M BPX70 COLUMN

## ALDITOL ACETATES

**Column Part No.:** 054605  
**Phase:** BPX70, 0.25 µm film  
**Column:** 12 m x 0.32 mm I.D.  
**Temp.:** Isothermal at 210 °C  
**Carrier Gas:** H<sub>2</sub>  
**Detector:** F.I.D.  
**Sensitivity:** 16 x 10<sup>-12</sup> AFS  
**Injection Mode:** Split, 50:1

*Notes: The polarity of BPX70 enables rapid analysis of Alditol Acetates. BPX70 is the only highly polar column compatible with GC/MS*



### Components

1. Erythritol
2. Deoxyribitol
3. Rhamnitol
4. Fucitol
5. Ribitol
6. Arabinitol
7. Xylitol
8. Deoxyglucitol
9. Allitol
10. Mannitol
11. Galactitol
12. Glucitol
13. Inositol

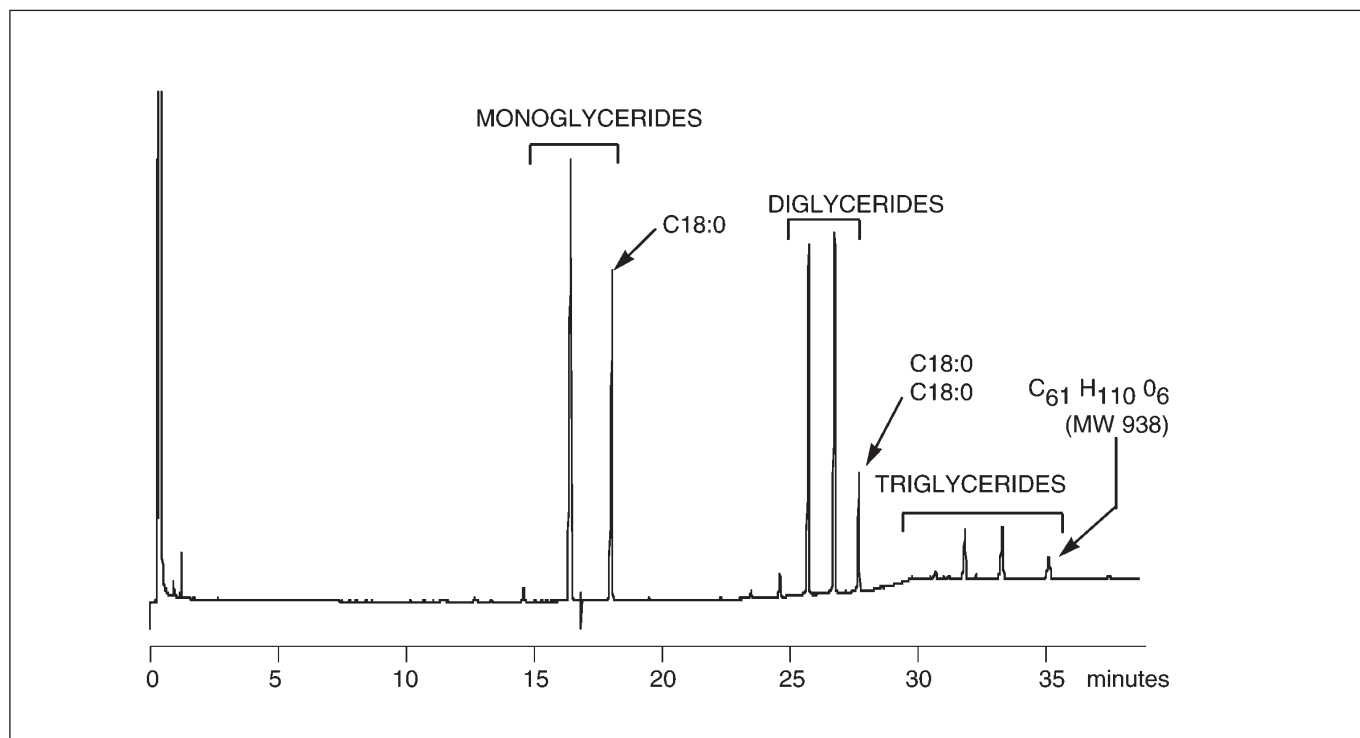
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# ANALYSIS OF MONO, DI, & TRIGLYCERIDES ON BPX5

## ANALYSIS OF MONO, Di & TRIGLYCERIDES

<b>Column Part No.:</b>	<b>054118</b>	Rate:	10 °C/min
Phase:	BPX5, 0.25 µm	Final Temp.:	365 °C, 10 min
Column:	12 m x 0.32 mm I.D.	Detector:	FID
Initial Temp.:	80 °C, 1 min	Injector Mode:	On-Column (SGE OCI-5)
		Carrier:	He, 10 psi

Notes: BPX5 column allows this analysis to be performed on a routine basis.  
On-column injection is recommended to ensure no loss of high MW fraction.

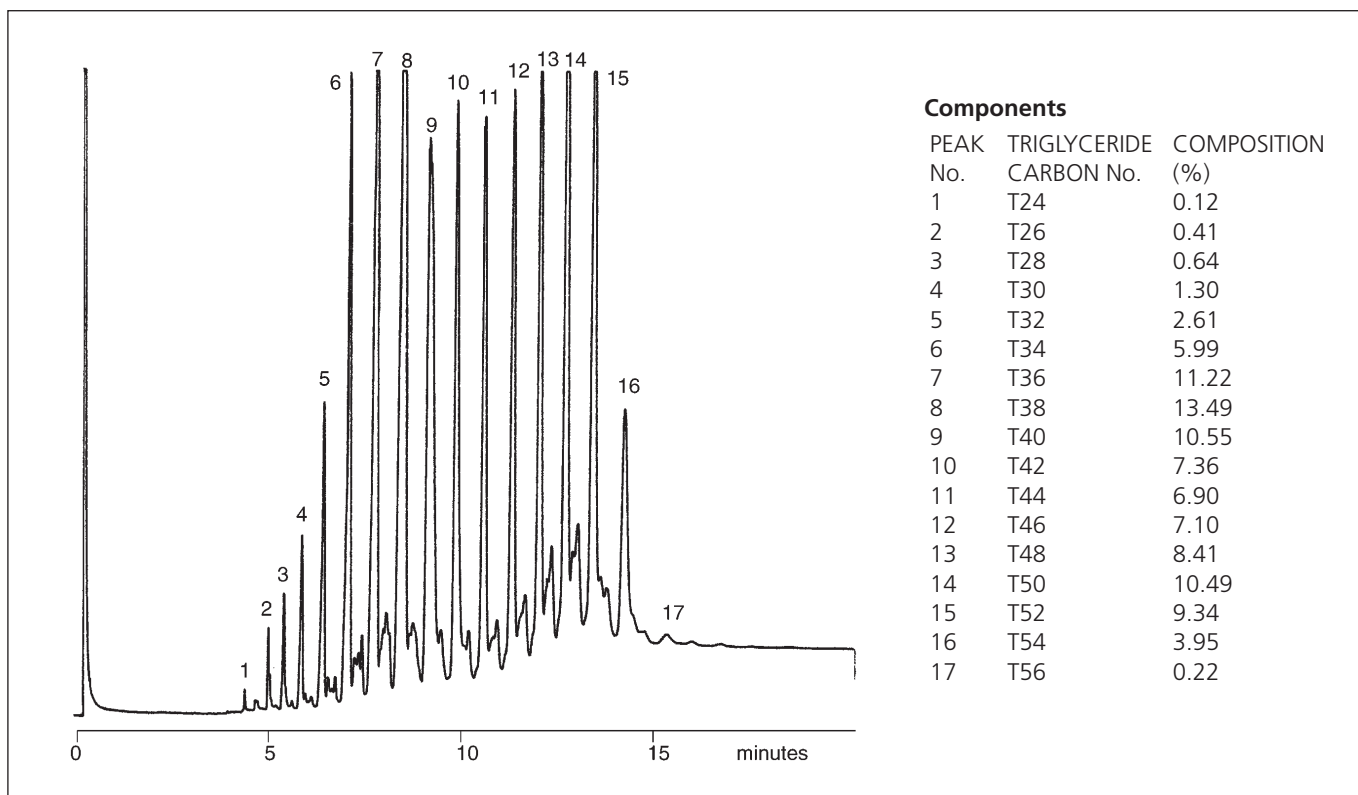


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# TRIGLYCERIDE DISTRIBUTION IN MILK FAT ON BPX5

## TRIGLYCERIDE DISTRIBUTION IN MILK FAT

<b>Column Part No.:</b>	<b>054133</b>	Temp.:	280 °C
Phase:	BPX5, 0.25 µm	Rate 2:	10 °C/min.
Column:	12 m x 0.53 mm I.D.	Final Temp:	360 °C, 5 min.
Initial Temp.:	100 °C, 0.5 min.	Carrier Gas:	He, 6 psi
Rate 1:	50 °C/min.	Injection Mode:	On-column (OCI-5)
		Injection Volume:	1 µL



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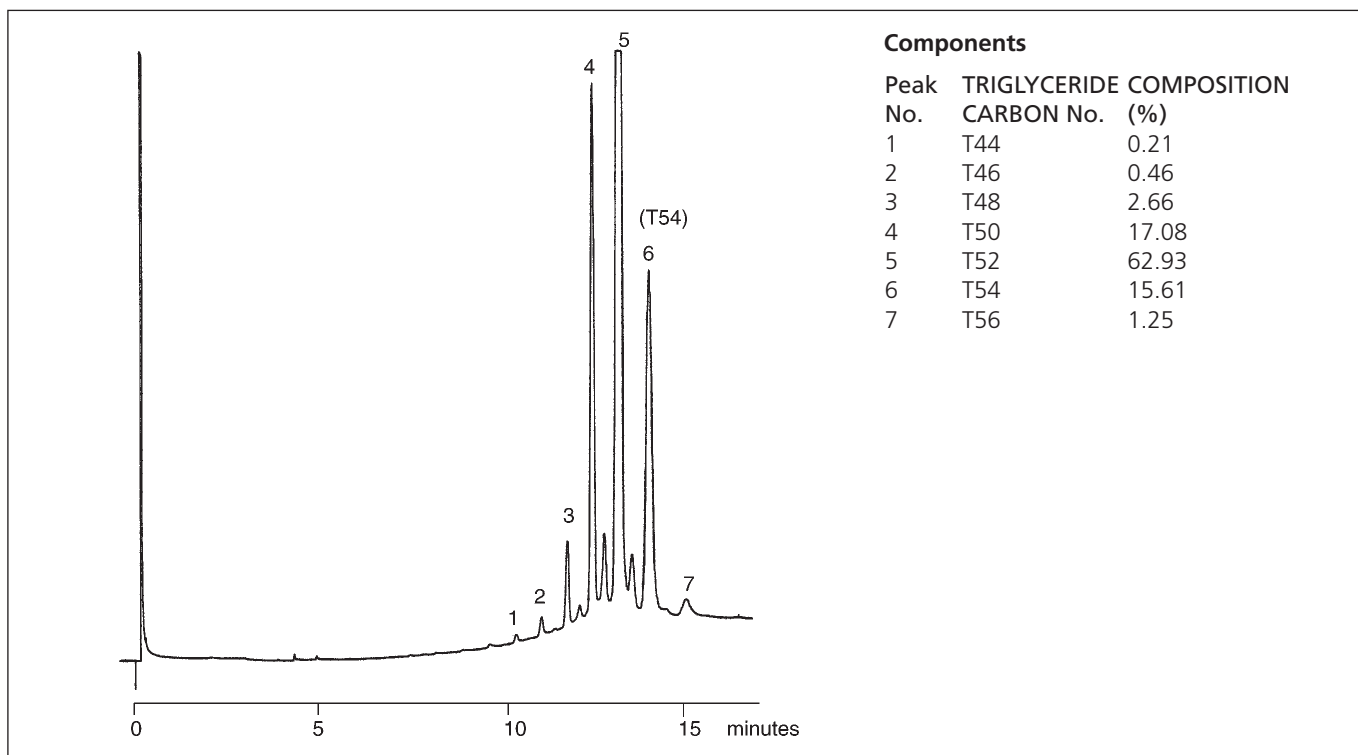
# ANALYSIS OF TRIGLYCERIDE DISTRIBUTION IN LARD ON BPX5

## TRIGLYCERIDE DISTRIBUTION IN LARD

<b>Column Part No.:</b>	<b>054133</b>	Temp.:	280 °C
Phase:	BPX5, 0.25 µm	Rate 2:	10 °C/min.
Column:	12 m x 0.53 mm I.D.	Final Temp:	360 °C, 5 min.
Initial Temp.:	100 °C, 0.5 min.	Carrier Gas:	He, 6 psi
Rate 1:	50 °C/min.	Injection Mode:	On-column (OCI-5)
		Injection Volume:	1 µL

Notes: Recommended Operating Conditions  
 Carrier Gas Velocity (Helium): 100-150 cm/sec approx.,  
 Pressure: 5-7 psi Sample Concentration

On-column: - Olive oil, lard and cocoa butter : 0.5-1.0 mg/ml  
 (0.05 - 0.1 % solution)  
 Injection Temp.: 100 °C, solution dissolved in iso-octane



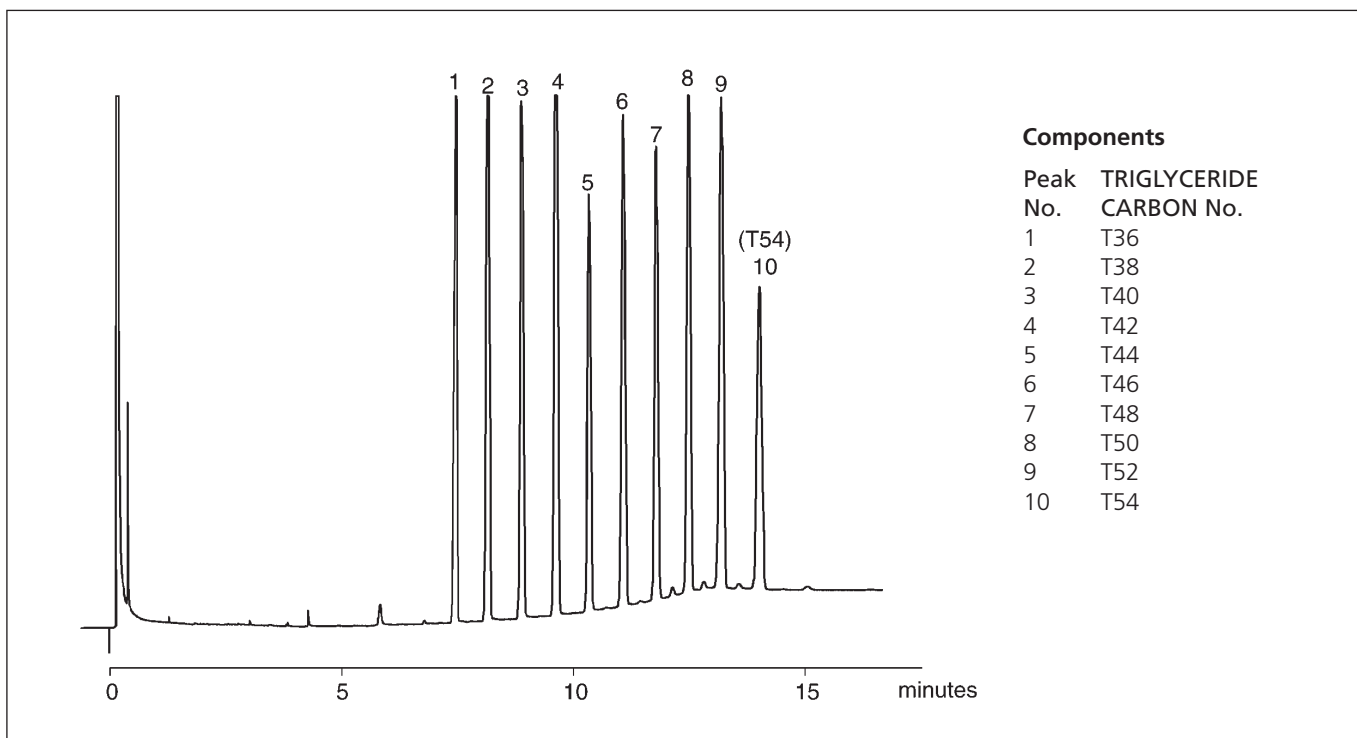
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# STANDARD MIXTURE OF TRIGLYCERIDES ON BPX5

## STANDARD MIXTURE OF TRIGLYCERIDES

<b>Column Part No.:</b>	<b>054133</b>	Temp.:	280 °C
Phase:	BPX5, 0.25 µm	Rate 2:	10 °C/min.
Column:	12 m x 0.53 mm I.D.	Final Temp:	360 °C, 5 min.
Initial Temp.:	100 °C, 0.5 min.	Carrier Gas:	He, 6 psi
Rate 1:	50 °C/min.	Injection Mode:	On-column (OCI-5)
		Injection Volume:	1 µl

Notes: This analysis requires on-column injection to provide quantitative results



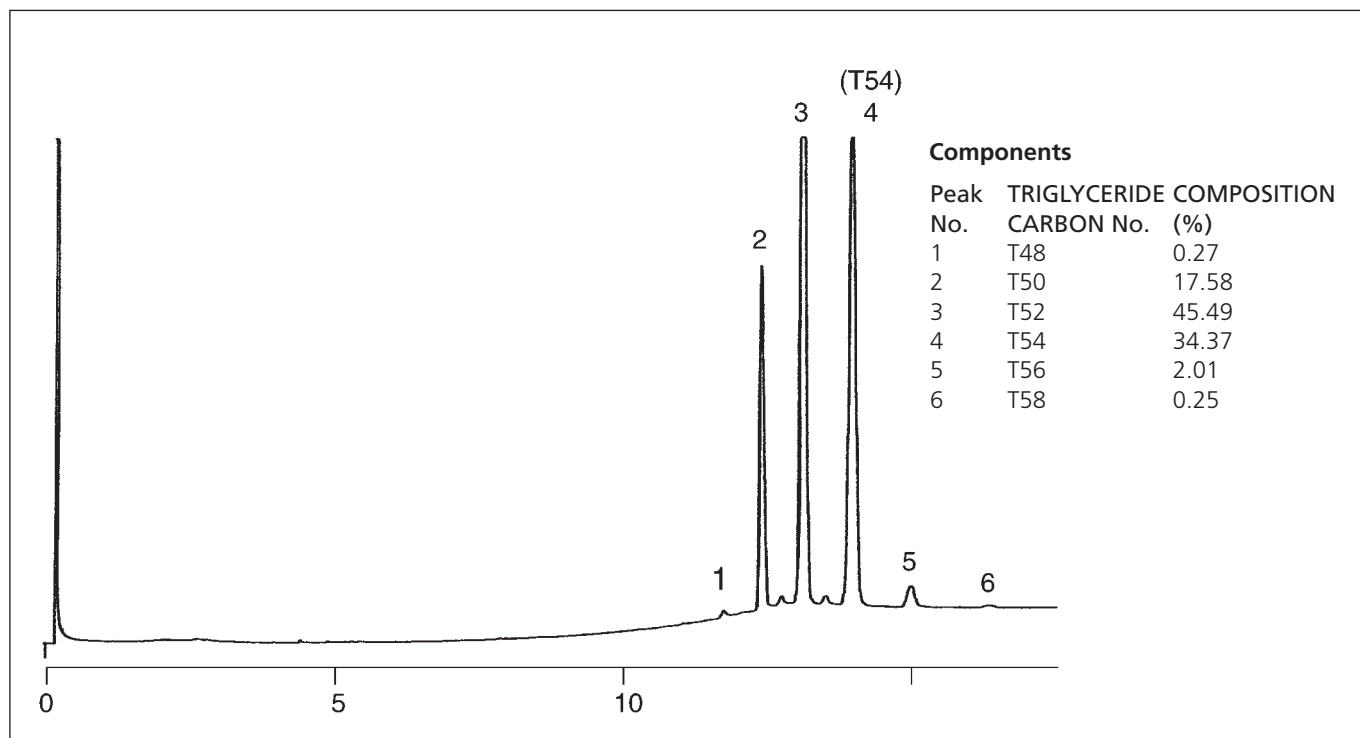
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# ANALYSIS OF TRIGLYCERIDE DISTRIBUTION IN COCOA BUTTER ON BPX5

<b>Column Part No.:</b>	<b>054133</b>	Rate 2:	10 °C/min
Phase:	BPX5, 0.25 µm	Final Temp.:	360 °C, 5 min
Column:	12 m x 0.53 mm I.D.	Detector:	FID
Initial Temp.:	100 °C, 0.5 min	Injector Mode:	On-Column (SGE OCI-5)
Rate 1:	50 °C/min	Carrier:	He, 6 psi
Temp:	280 °C	Injection Volume:	1 µL

Notes: Recommended Operating Conditions  
Carrier Gas Velocity (Helium): 100-150 cm/sec approx.,  
Pressure: 5-7 psi Sample Concentration

On-column: - cocoa butter: 0.5 - 1.0 mg/ml  
(0.05 - 0.1 % solution)  
Injection Temp.: 100 °C, solution dissolved in iso-octane



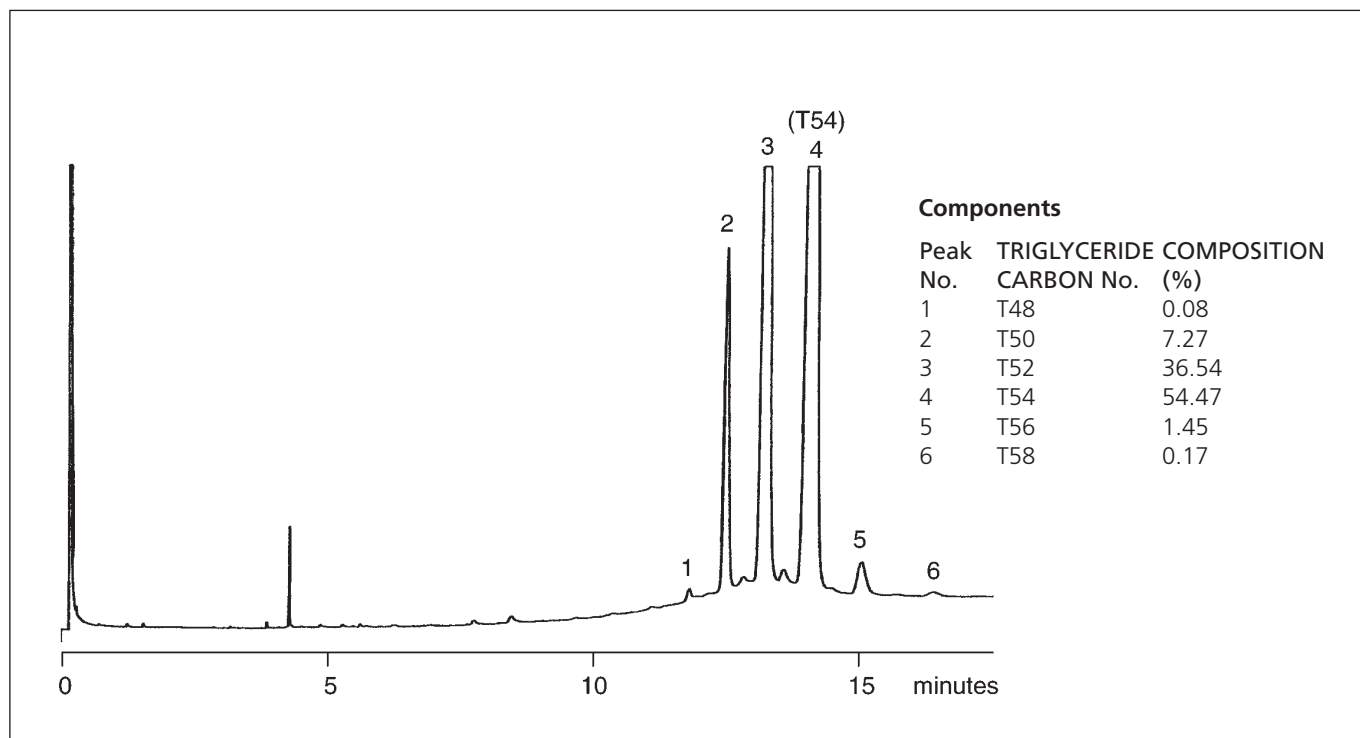
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# TRIGLYCERIDE DISTRIBUTION IN OLIVE OIL ON BPX5

<b>Column Part No.:</b>	<b>054133</b>	Rate 2:	10 °C/min
Phase:	BPX5, 0.25 µm	Final Temp.:	360 °C, 5 min
Column:	12 m x 0.53 mm I.D.	Detector:	FID
Initial Temp.:	100 °C, 0.5 min	Injector Mode:	On-Column (SGE OCI-5)
Rate 1:	50 °C/min	Carrier:	He, 6 psi
Temp:	280 °C	Injection	Volume: 1 µL

Notes: Recommended Operating Conditions  
 Carrier Gas Velocity (Helium): 100-150 cm/sec approx.,  
 Pressure: 5-7 psi Sample Concentration

On-column: - Olive oil : 0.5-1.0 mg/ml (0.05 - 0.1 % solution)  
 Injection Temp.: 100 °C, solution dissolved in iso-octane



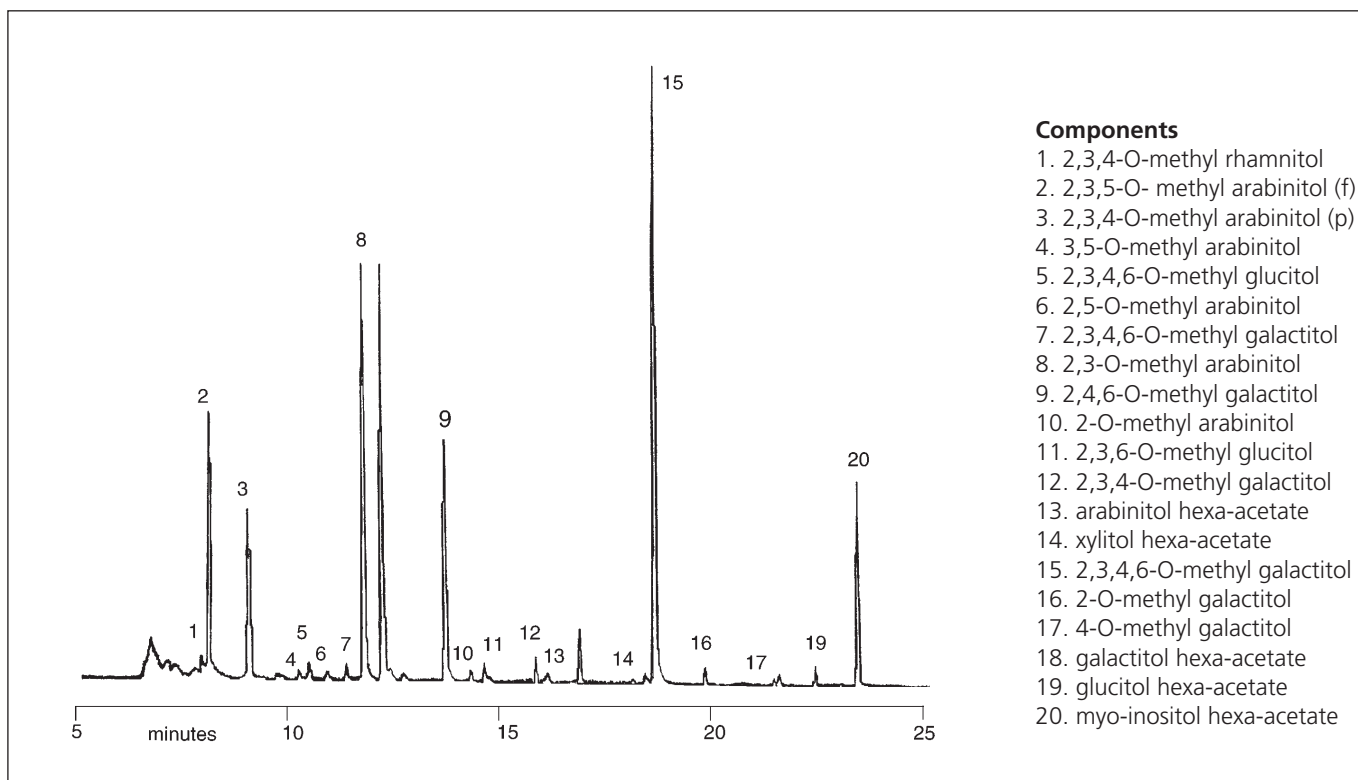
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# ANALYSIS OF PARTIALLY METHYLATED GLUCOSE ON BPX70

## PARTIALLY METHYLATED GLUCOSE

<b>Column Part No.:</b>	<b>054602</b>	<b>Final Temp:</b>	260 °C, 10min.
<b>Phase:</b>	BPX70, 0.25 µm film	<b>Carrier Gas:</b>	He, 50 kPa
<b>Column:</b>	25 m x 0.22 mm I.D.	<b>Detector:</b>	MS (Electron Impact Ionisation, Ionisation Potential 70eV)
<b>Initial Temp.:</b>	185 °C, 1min.		Scan 100m/z to 350 m/z in 0.3s.
<b>Program Rate:</b>	3 °C/min.	<b>Injection Mode:</b>	Split

Notes: BPX70 is compatible with GC/MS systems.

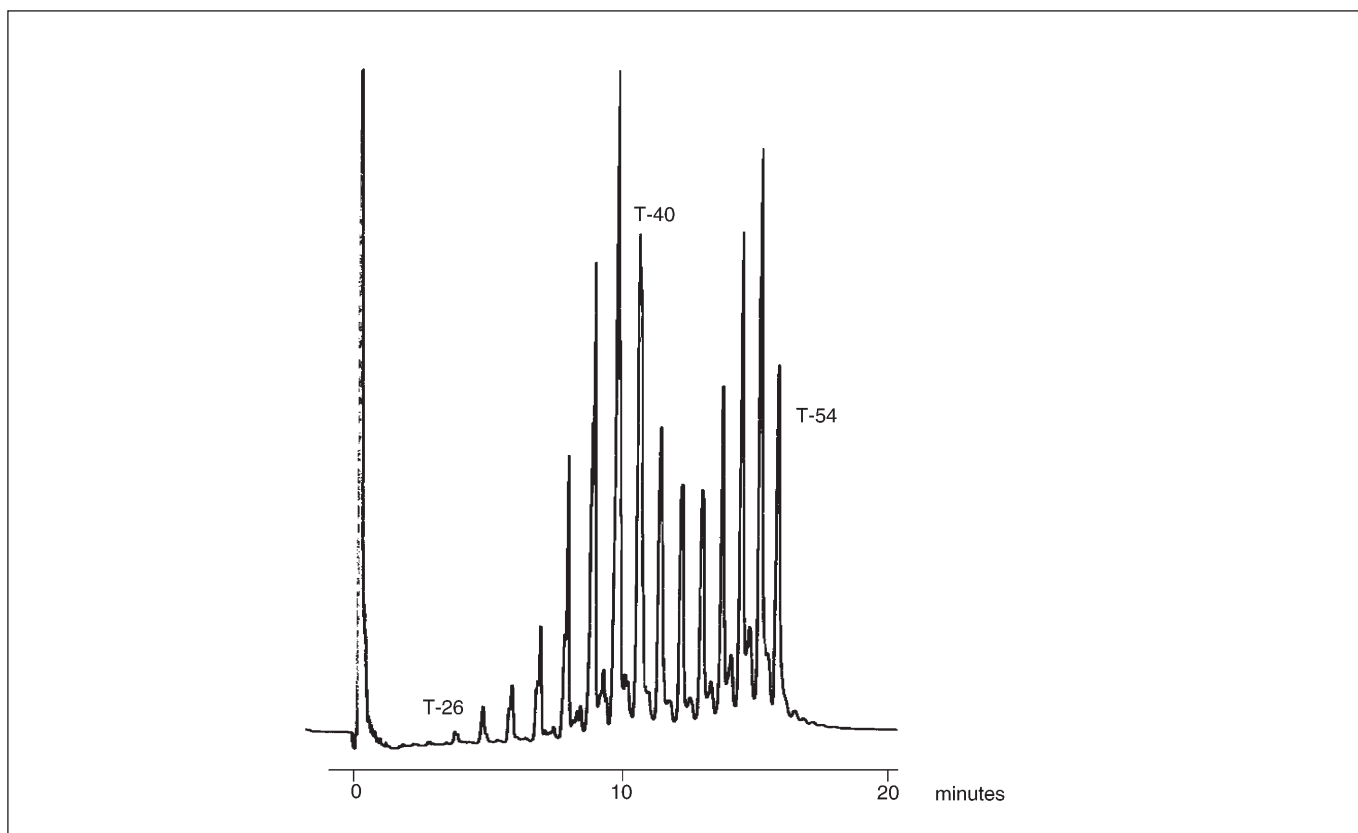


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# ANALYSIS OF BUTTER FAT ON HT5

## ANALYSIS OF BUTTER FAT

<b>Column Part No.:</b>	<b>054661</b>	Program Rate:	10 °C/min
Phase:	HT5, 0.1 µm	Final Temp.:	370 °C, 5 min
Column:	6 m x 0.53 mm I.D. (Aluminum Clad)	Carrier Gas:	H <sub>2</sub> , 2 psi
Initial Temp.:	200 °C, 0 min	Detector:	F.I.D.
		Sensitivity:	32 x 10 <sup>-12</sup> AFS
		Injection Mode:	On-column



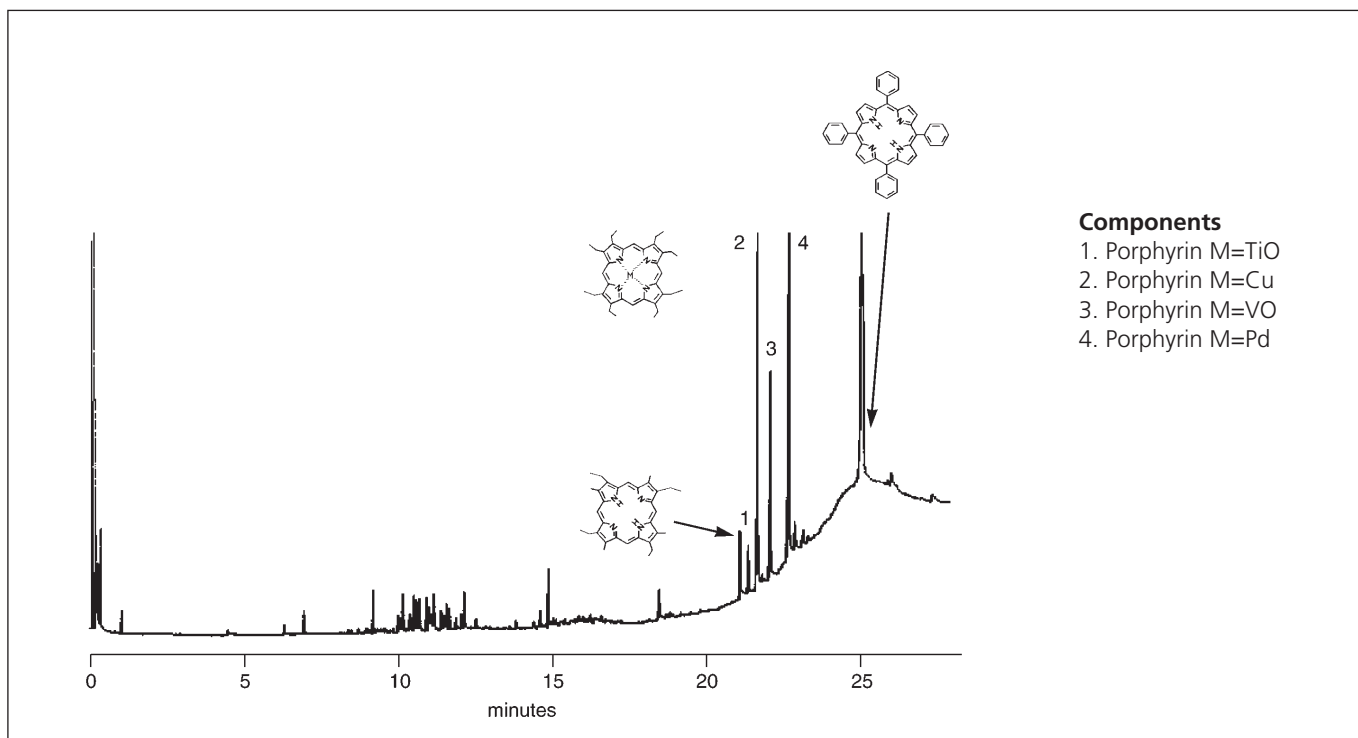
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# FREE BASE AND METAL COMPLEXED PORPHYRINS ANALYSIS ON HT5

## FREE BASE AND METAL COMPLEXED PORPHYRINS

<b>Column Part No.:</b>	<b>054651</b>	Program Rate 1:	20 °C/min to 300 °C
Phase:	HT5, 0.1 µm	Program Rate 2:	10 °C/min
Column:	12 m x 0.32 mm I.D. (Aluminium Clad)	Final Temp.:	430 °C, 5 min
Initial Temp.:	60 °C, 0 min	Carrier Gas:	H <sub>2</sub> , 15 psi
		Detector:	F.I.D.
		Sensitivity:	16 x 10 <sup>-12</sup> AFS
		Injection Mode:	On-column

*Notes: The high temperature nature of HT5 makes it the best column available for this analysis*



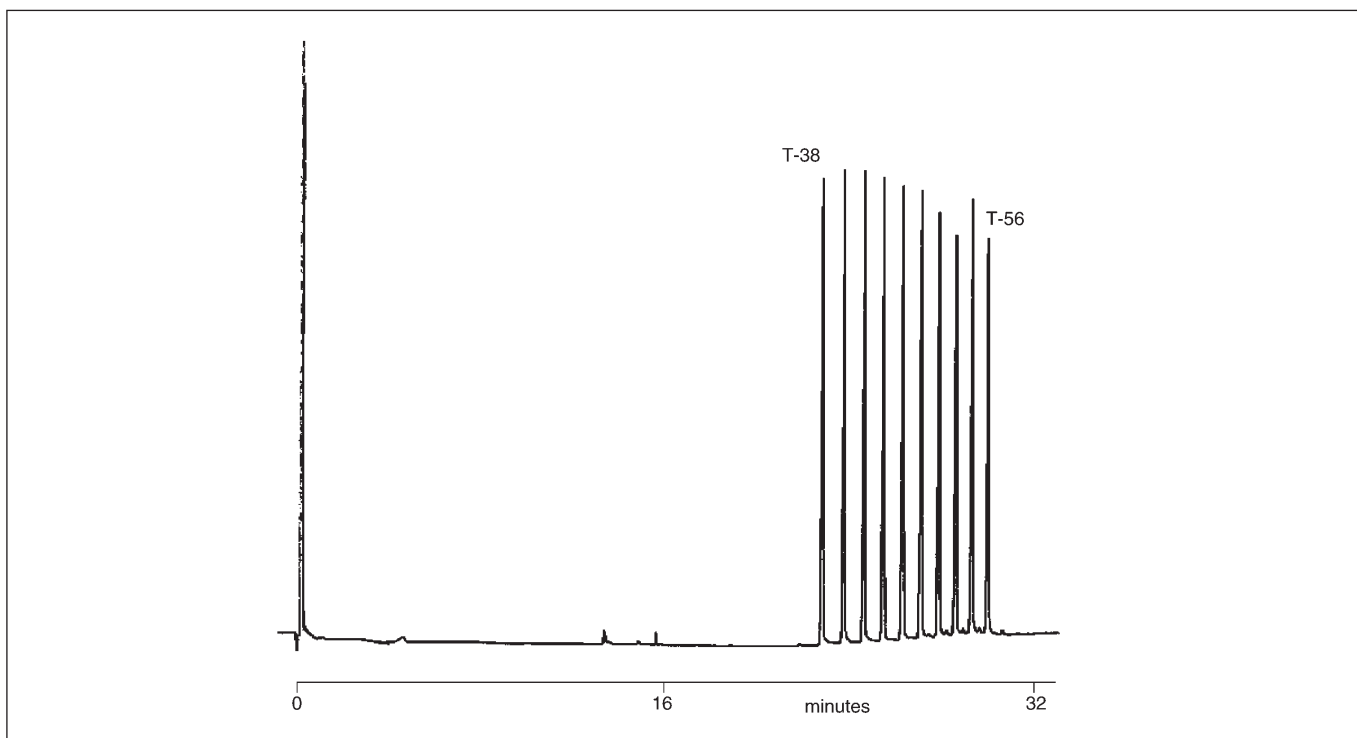
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# ANALYSIS OF TRIGLYCERIDE STANDARDS ON HT5

## ANALYSIS OF TRIGLYCERIDE STANDARDS

<b>Column Part No.:</b>	<b>054661</b>	Final Temp.:	370 °C, 5 min
Phase:	HT5, 0.1 µm	Carrier Gas:	H <sub>2</sub> , 2 psi
Column:	6 m x 0.53 mm I.D. (Aluminium Clad)	Detector:	F.I.D.
Initial Temp.:	60 °C, 0 min	Sensitivity:	32 x 10 <sup>-12</sup> AFS
Program Rate:	10 °C/min	Injection Mode:	On-column

Notes: For the analysis of triglycerides, on-column injection is recommended.  
Temperatures above 380 °C are not recommended as triglycerides can degrade.

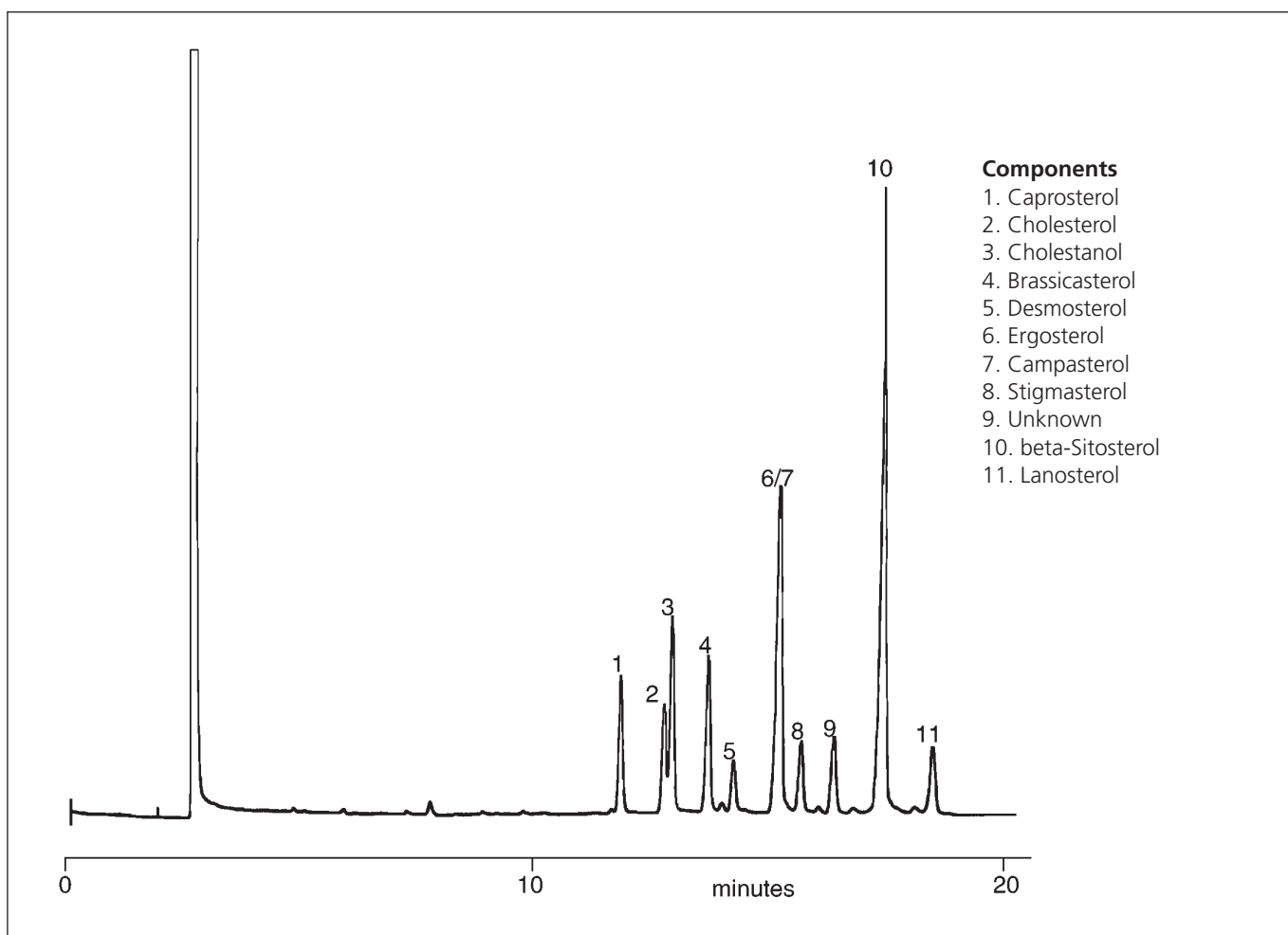


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# THE ANALYSIS OF PLANT STEROLS ISOTHERMALLY ON BPX35

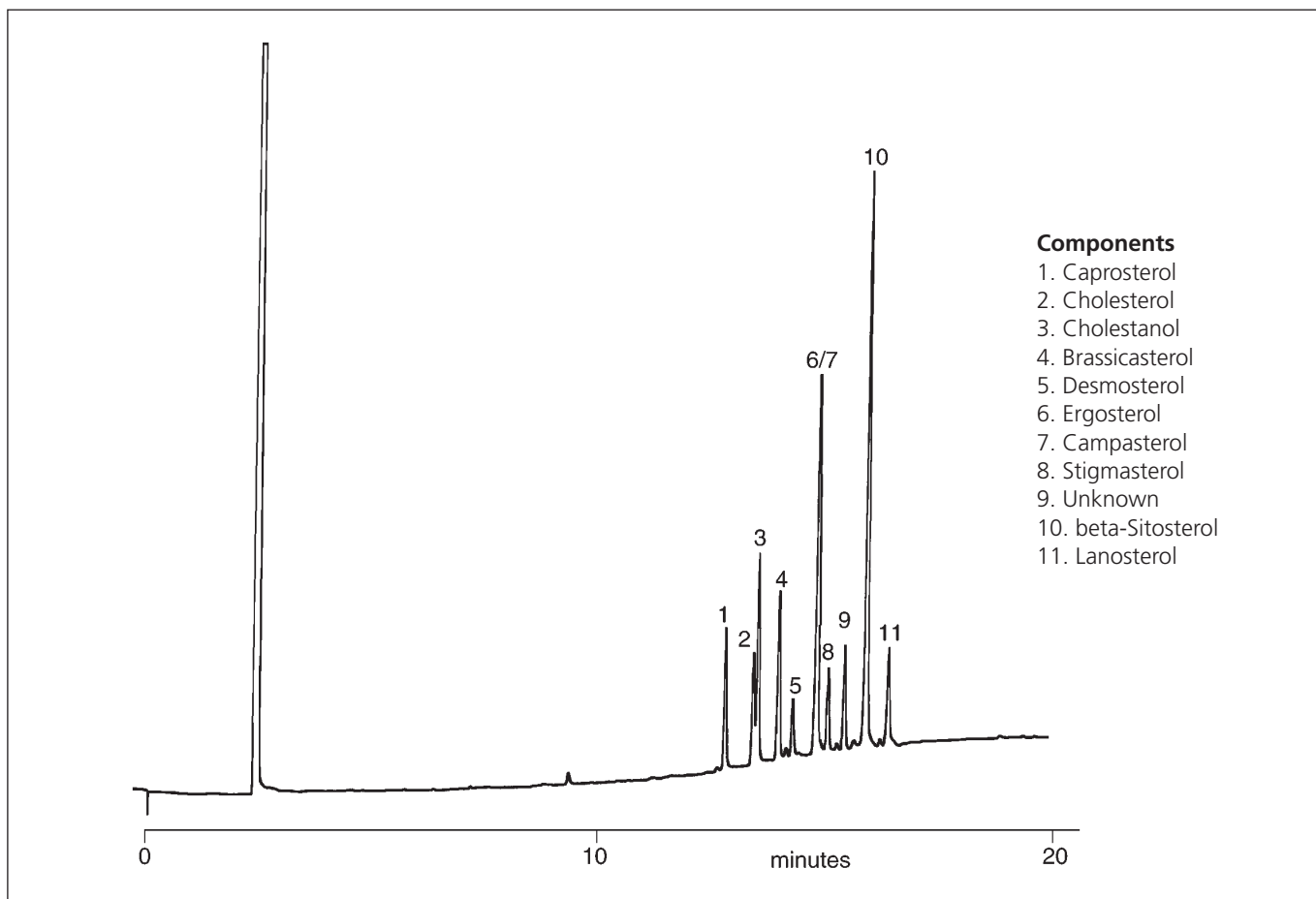
<b>Column Part No.:</b>	<b>054714</b>	Detector:	FID, 360 °C
Phase:	BPX35, 0.25 µm	Injector Mode:	Split, 100:1
Column:	30 m x 0.22 mm ID	Carrier Gas:	He, 20 psi
Temp.:	310 °C	Injection Volume:	1 µL



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# THE ANALYSIS OF PLANT STEROLS WITH TEMPERATURE PROGRAM ON BPX35

<b>Column Part No.:</b>	<b>054701</b>	Final Temp.:	350 °, 5 min
Phase:	BPX35, 0.25 µm	Detector:	FID, 360 °C
Column:	30 m x 0.25 mm ID	Injector Mode:	Split, 100:1
Initial Temp.:	280 °C, 1 min	Carrier Gas:	He, 20 psi
Rate 1:	4 °C/min	Injection Volume:	1 µL

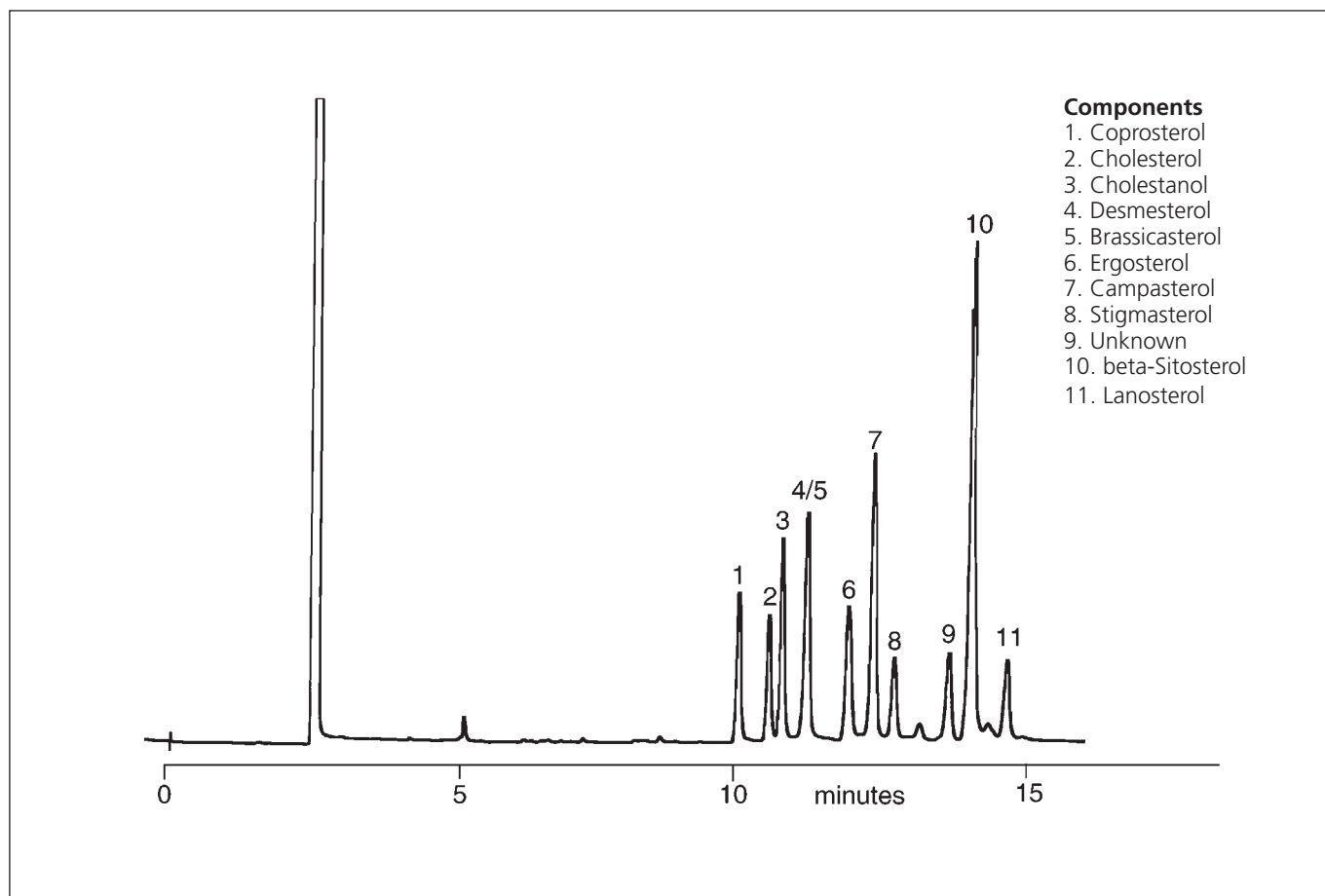


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## PLANT STEROLS ISOTHERMALLY ON BPX5

**Column Part No.:** 054142  
**Phase:** BPX5, 0.25 µm  
**Column:** 30 m x 0.22 mm ID  
**Initial Temp.:** 310 °C

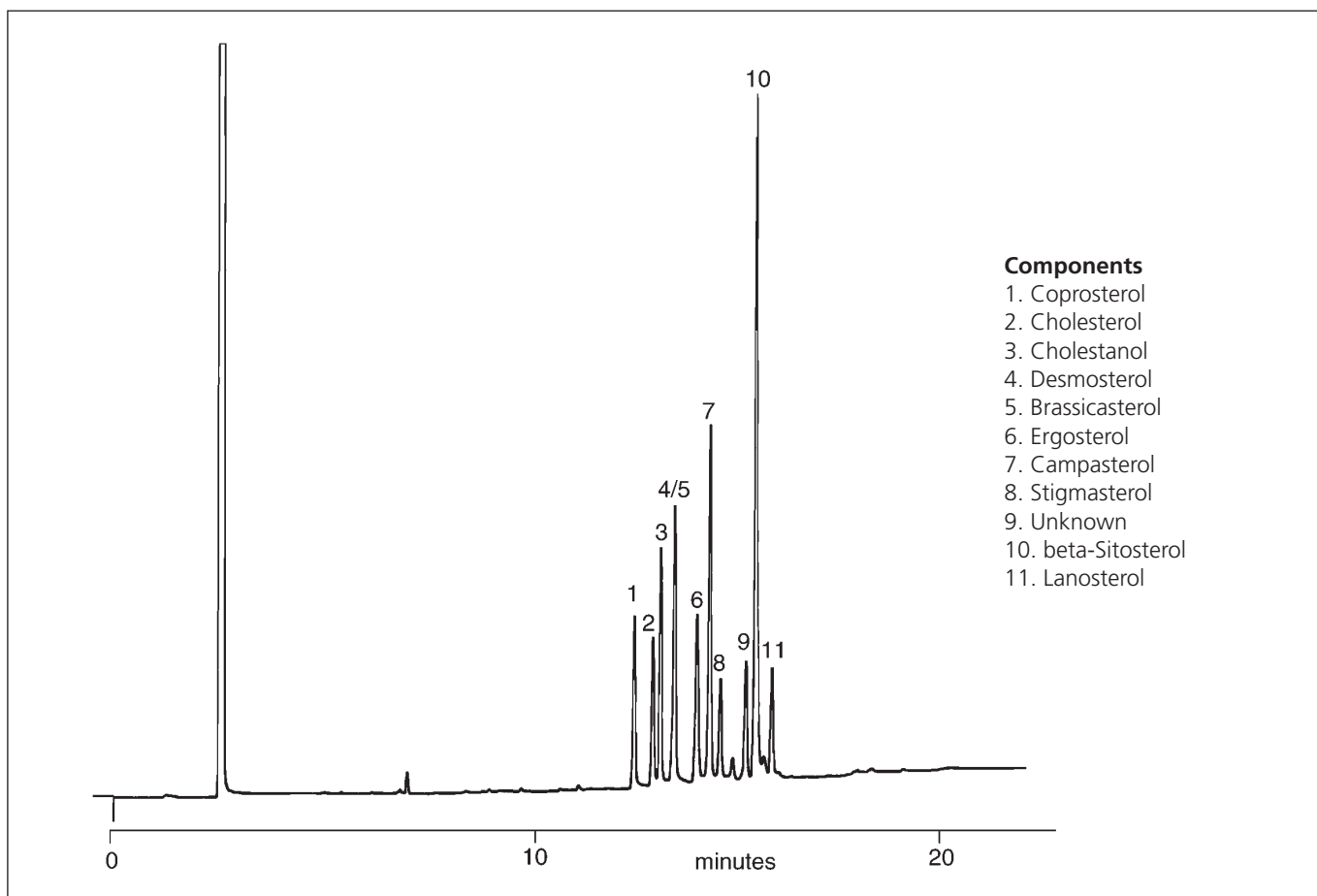
**Detector:** FID, 360 °C  
**Injector Mode:** Split, 100:1  
**Carrier Gas:** He, 20 psi  
**Injection Volume:** 1 µL



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# PLANT STEROLS WITH TEMPERATURE PROGRAM ON BPX5

<b>Column Part No.:</b>	<b>054142</b>	<b>Final Temp.:</b>	350 °C, 5min
<b>Phase:</b>	BPX5, 0.25 µm	<b>Detector:</b>	FID, 360 °C
<b>Column:</b>	30 m x 0.22 mm ID	<b>Injector Mode:</b>	Split 100:1
<b>Initial Temp.:</b>	280 °C, 1min	<b>Carrier Gas:</b>	He, 20 psi
<b>Rate 1:</b>	4 °C/min	<b>Injection Volume:</b>	1 µL

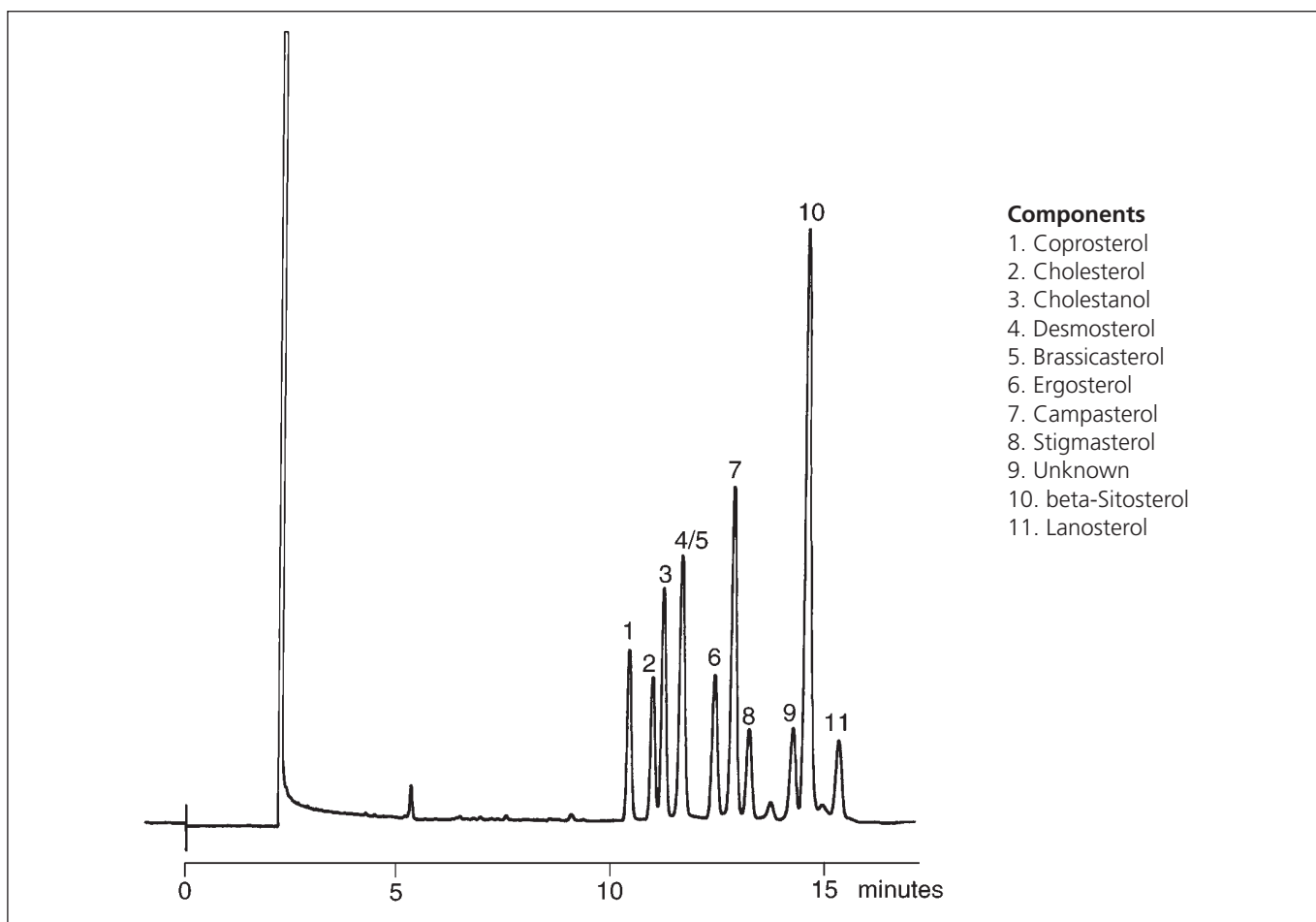


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# PLANT STEROLS ON A 0.53 MM ID BPX5 COLUMN

**Column Part No.:** 054148  
**Phase:** BPX5, 1.0  $\mu\text{m}$   
**Column:** 30 m x 0.53 mm ID  
**Initial Temp.:** 320  $^{\circ}\text{C}$

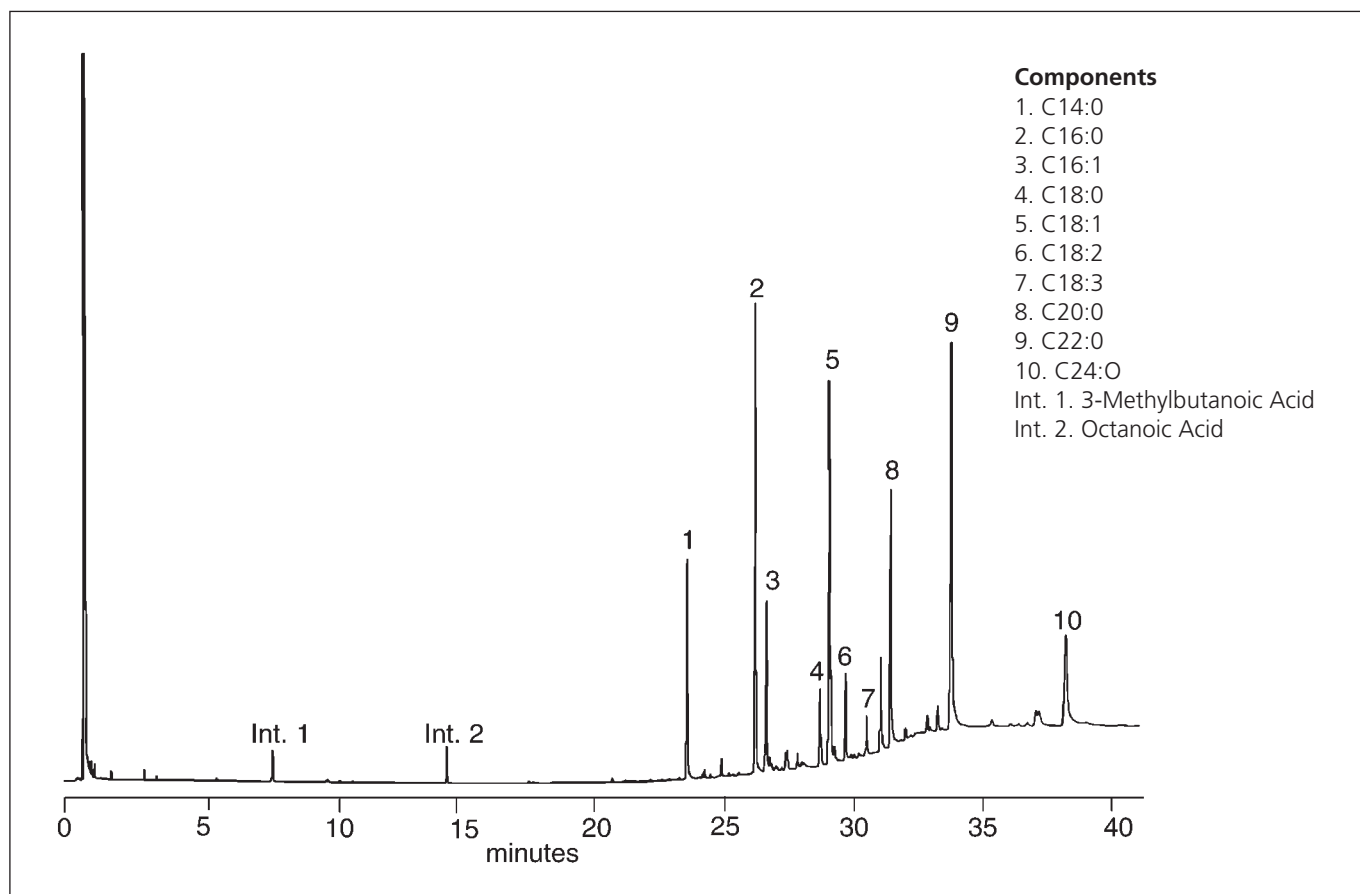
**Detector:** FID, 360  $^{\circ}\text{C}$   
**Injector Mode:** split 100:1  
**Carrier Gas:** He, 3 psi  
**Injection Volume:** 1  $\mu\text{L}$



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# COD OIL FATTY ACIDS (UNDERIVATISED) ON BP21

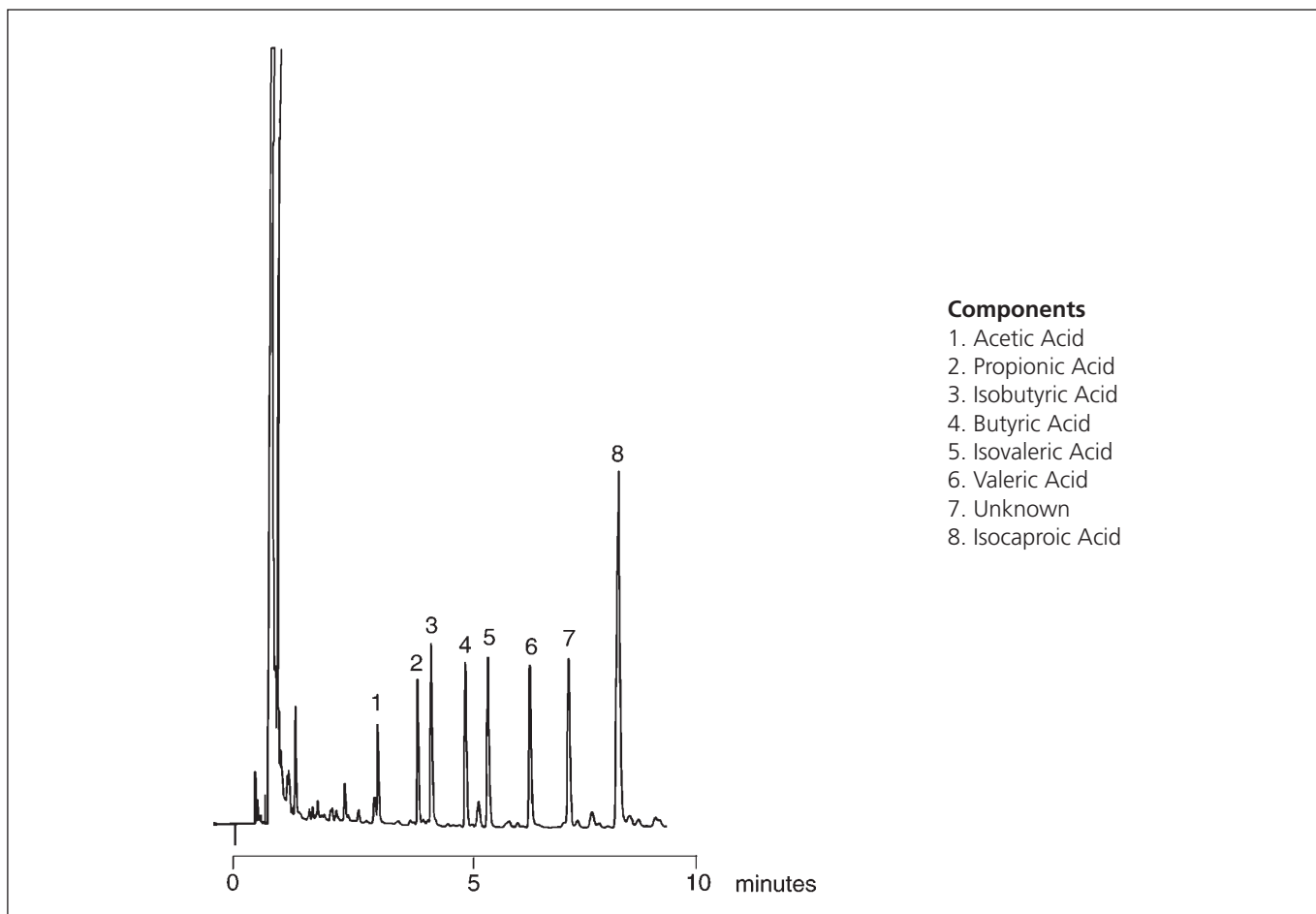
<b>Column Part No.:</b>	<b>054468</b>	Detector:	FID, 280 °C
Phase:	BP21, 0.25 µm	Injector Mode:	Split, 50:1
Column:	25 m x 0.32 mm ID	Carrier Gas:	He, 15 psi
Initial Temp.:	70 °C, 0.5 min	Injection Volume:	1 µL
Rate 1:	6 °C/min	Injection Temp:	280 °C
Final Temp.:	260 °C, 10 min		



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## FREE FATTY ACID ANALYSIS ON BP21

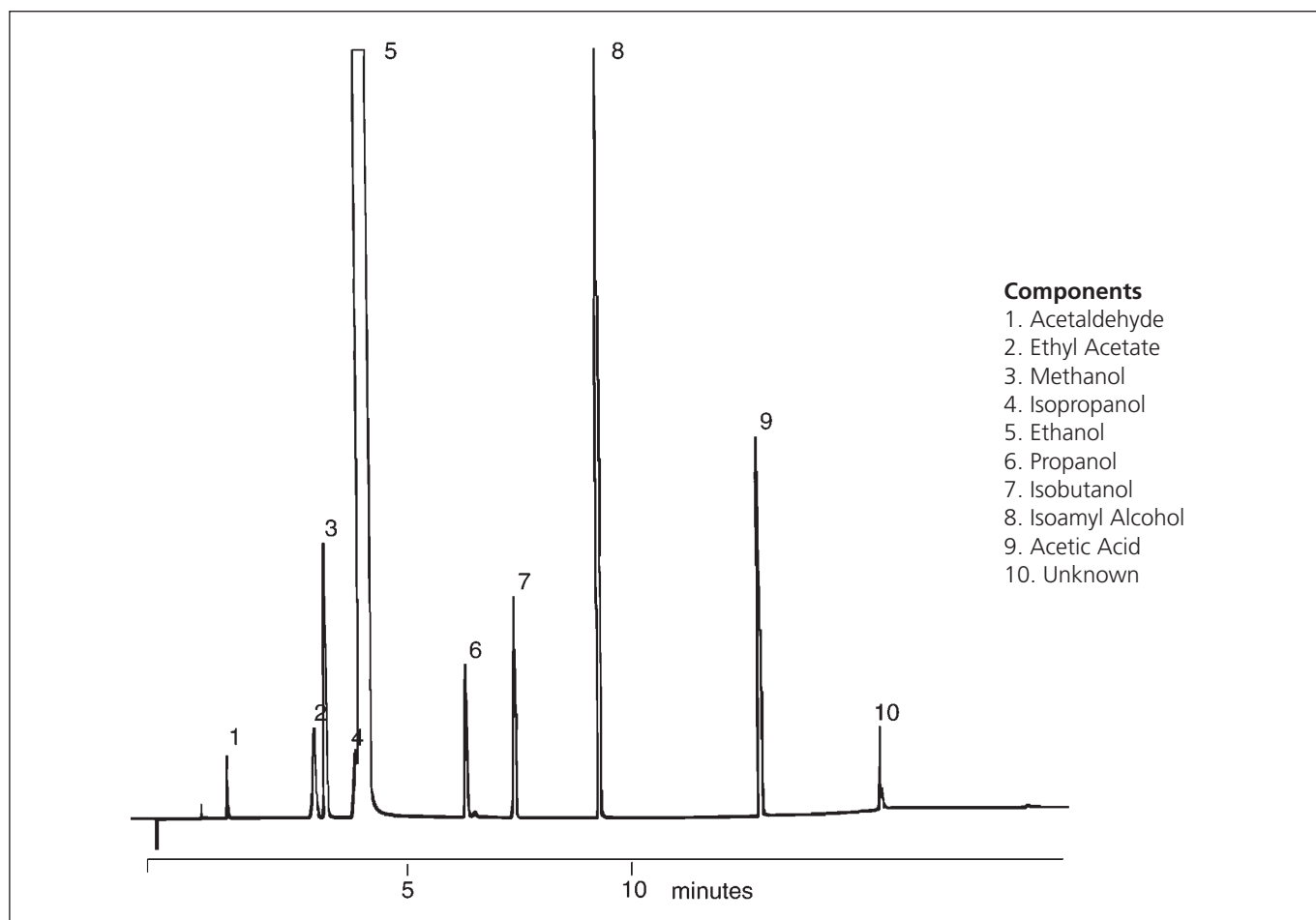
<b>Column Part No.:</b>	<b>054474</b>	Final Temp.:	160 °C
Phase:	BP21, 0.5 µm Film	Detector:	FID, 300 °C
Column:	25 m x 0.53 mm ID	Injector Mode:	Split, 100:1
Initial Temp.:	90 °C, 1 min	Carrier Gas:	He, 5 ml/min
Rate 1:	8 °C/min	Injection Volume:	1 µL



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## ANALYSIS OF WINE ON BP20

<b>Column Part No.:</b>	<b>054442</b>	Temp 2:	50 °C
Phase:	BP20, 1.0 µm	Rate 2:	15 °C/min
Column:	25 m x 0.32 mm ID	Final Temp.:	190 °C
Initial Temp.:	40 °C, 2 min	Carrier Gas:	H <sub>2</sub> , 6 psi
Rate 1:	5 °C/min	Injection Mode:	2 µL

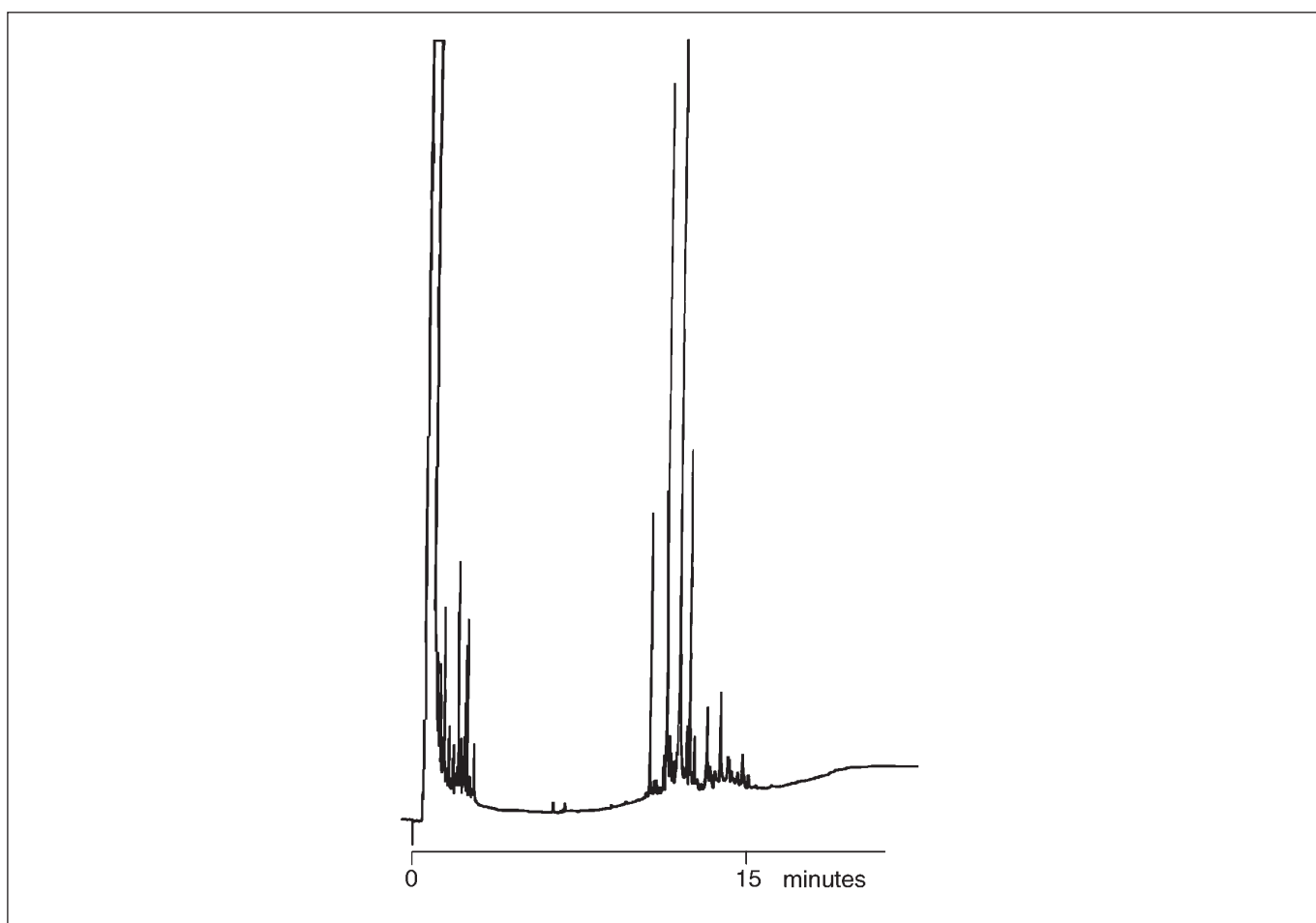


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## TOCOPHEROL ISOMER MIXTURE ON BPX5

<b>Column Part No.:</b>	<b>054144</b>	Rate 2:	5 °C/min
Phase:	BPX5, 0.25 µm	Final Temp.:	330 °C, 5 min
Column:	15 m x 0.32 mm ID	Carrier Gas:	He, 7 psi
Initial Temp.:	70 °C, 1 min	Detector:	F.I.D., 340 °C
Rate 1:	25 °C/min	Injector Mode:	Cool on-column (OCI-5)
Temp 2:	280 °C	Injection Volume:	0.5 µL



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