

# APPLICATION



## FAMES In Peanut Butter by GC/FID Using Zebron™ ZB-FAME

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### Overview

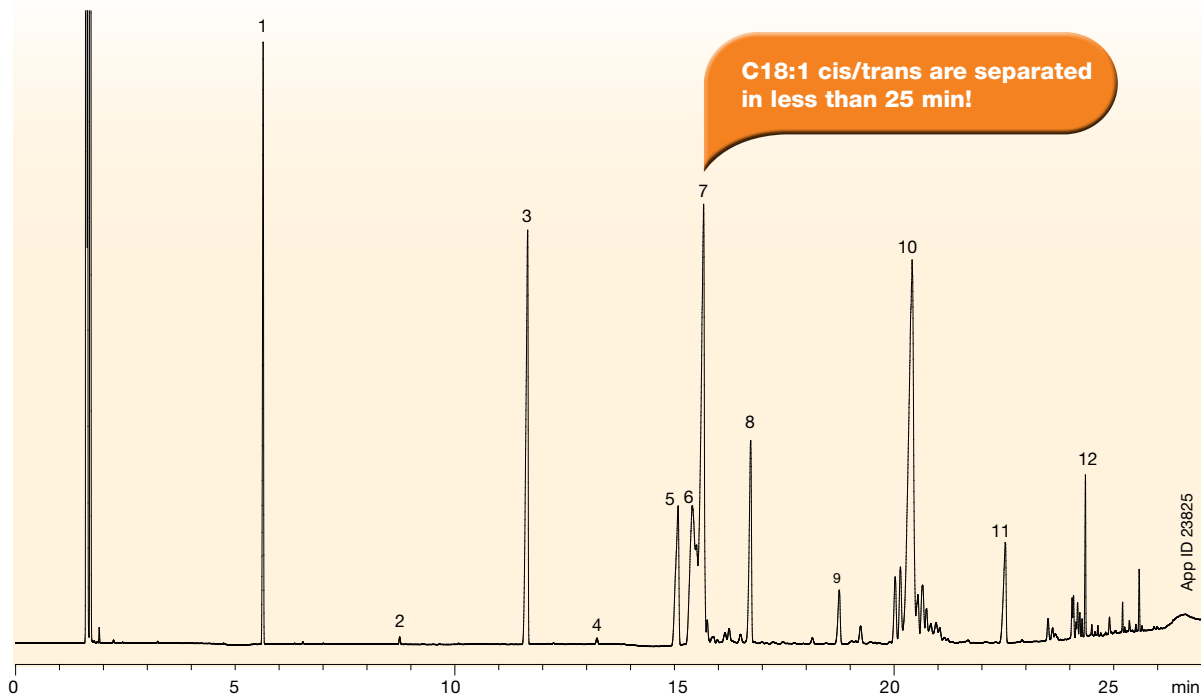
Peanut butter is comprised of a variety of fatty acids that are routinely tested for nutritional labeling purposes. Using a short Zebron ZB-FAME GC column, separation can be achieved in less than 25 minutes without sacrificing cis/trans isomer peak shape.

### Extraction and Derivatization Protocol

1. Weigh out 100 to 200 mg of peanut butter and place it into a scintillation vial
2. Add 100 mg pyrogalllic acid
3. Add 2 mL ethanol followed by 10 mL 8.3 M HCl
4. Incubate at 70 °C for 45 min
5. Extract fatty acids using 2 mL diethyl ether and 2 mL chloroform
6. Blow down extraction liquid
7. Reconstitute in 1 mL toluene and 2 mL 8 % boron trifluoride in methanol
8. Cap reaction mixture, hold at 100 °C for 45 min
9. After reaction, add 5 mL water, 1 mL hexane, and 1 g Na<sub>2</sub>SO<sub>4</sub>
10. Extract hexane layer for GC analysis

### GC Conditions

**Column:** Zebron ZB-FAME  
**Dimensions:** 30 meter x 0.25 mm x 0.20 µm  
**Part No.:** 7HG-G033-10  
**Injection:** Split 50:1 @ 240 °C, 1 µL  
**Carrier Gas:** Helium @ 1.2 mL/min (constant flow)  
**Oven Program:** 100 °C for 2 min to 140 °C @ 10 °C/min to 190 °C @ 3 °C/min to 260 °C @ 30 °C/min for 2 min  
**Detector:** FID @ 260 °C  
**Recommended Liner:** Zebron PLUS Single Taper with Wool  
**Liner Part No.:** AG2-OA11-05 (for Agilent® systems)  
**Sample:** 1. C11:0  
 2. C14:0  
 3. C16:0  
 4. C17:0  
 5. C18:0  
 6. C18:1 trans 9  
 7. C18:1 cis 9  
 8. C18:2 cis 9,12  
 9. C20:0  
 10. C20:2 cis 11,14  
 11. C22:0  
 12. C24:0




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## Ordering Information

### Zebron™ ZB-FAME GC Columns

Length (m)	ID (mm)	Film (µm)	Temp Limits (°C)	Part No.	5m Guardian™ Part No.
20	0.18	0.15	-60 to 280	7FD-G033-05	—
30	0.25	0.20	-60 to 280	7HG-G033-10	7HG-G033-10-GGA
60	0.25	0.20	-60 to 280	7KG-G033-10	—

### Zebron PLUS GC Inlet Liners

Description	Dimensions ID x L (mm)	Part No.	Unit.
<b>For Agilent® or Thermo Scientific® GC Systems</b>			
Single Taper with Wool	4 x 78.5	AG2-0A11-05	5/pk
		AG2-0A11-25	25/pk

Find more Zebron GC columns and accessories at [www.phenomenex.com/GC](http://www.phenomenex.com/GC)



If Phenomenex products in this technical note do not provide at least an equivalent separation as compared to other products of the same phase and dimensions, return the product with comparative data within 45 days for a FULL REFUND.

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