

Agilent GC Capillary Columns

New! HP-88 Column for cis-/trans-FAMEs Analysis

HP-88

- For cis-/trans-FAMEs Analysis
- Increased thermal stability while still maintaining the same elution order of critical cis/trans-FAMEs separations as previous-generation columns
- Very high column polarity and specific selectivity to separate molecules with extremely subtle vapor pressure differences
- Very high number of theoretical plates (300,000 +)
- Optimized deactivation for coating the stationary phase evenly and efficiently, minimizing production problems

In response to concerns about the health effects of “trans-fats” and links to coronary artery disease, the U.S. Department of Health and Human Services, through the U.S. Federal Drug Administration, has mandated that, by January 1, 2006, all manufacturers of processed food sold in the U.S. must label the “trans-fat” content of their food products.

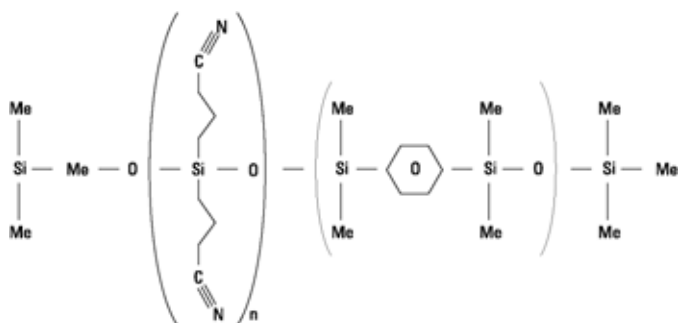
Natural edible oils have only a very small amount of trans-fat; most trans-fat in foods is the result of hydrogenation of unsaturated vegetable oils¹—undertaken to increase the vegetable oil’s desirable qualities for use in processed foods.

Leading manufacturers and food quality and safety testing laboratories are already gearing up for this new reporting requirement.

New HP-88 Column for Analyzing trans-fats Content

Agilent now offers the new HP-88, a column designed especially for the traditional method of determining trans-fat content by GC analysis of cis/trans FAMEs. The HP-88 is a highly efficient, high cyanopropyl-containing polysiloxane GC column. The high cyanopropyl moiety content (about 90%) is similar to the previous generation of columns used for this analysis², but unlike these columns, this is a 90% bis-(cyanopropyl) poly-siloxane with an arylene backbone included. This small amount of phenyl in the backbone of the polymer (Figure 1) increases thermal stability while still maintaining the same elution order of critical cis/trans-FAMEs separations as previous-generation columns (shown in Figure 2).

Figure 1. Structure of the bis (Cyanopropyl) Polysiloxanes Stationary Phase Column



1. Code of the Federal Register, Volume 21, Part 10.
2. AOCS Official Method Ce 1f-96, available online from www.aocs.org

Figure 2. Comparison of HP-88 to Manufacturer A and B Columns

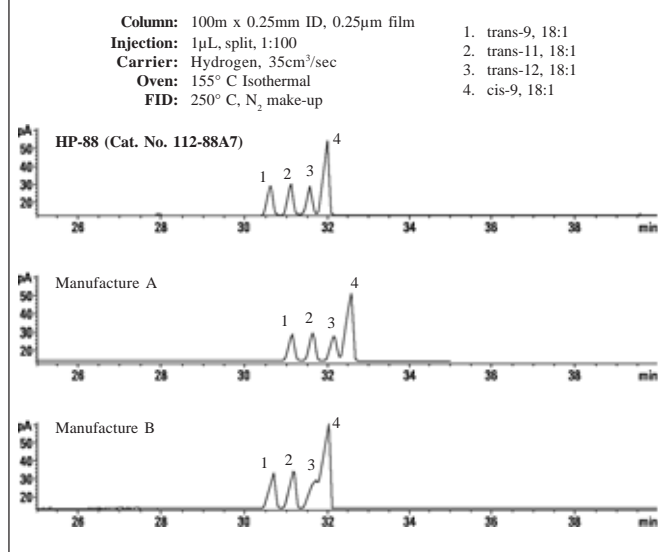
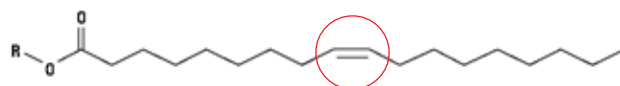


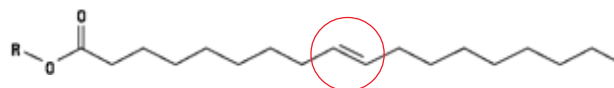
Figure 3. Boiling Point Differences of cis- and trans-FAMEs

cis-9, 18:1, Boiling Point 186



Differences imperceptible by normal means

trans-9, 18:1, Boiling Point 186



High polarity columns such as this one in the past have proven difficult to manufacture reliably, which makes them not always readily available from historical suppliers. In particular, cis/trans-FAMEs separations require not only very high column polarity and specific selectivity to separate molecules with extremely subtle vapor pressure differences (Figure 3), but also a very high number of theoretical plates (300,000+), which means that the column has to be coated with the stationary phase with high efficiency. With the HP-88 column, optimized deactivation ensures that the polymer coats evenly and efficiently, minimizing production problems that historically have caused long waiting times and unpredictable delivery.

You can now replace your previous-generation column with a readily available HP-88 column and enjoy the benefits of greater thermal stability—with no changes in your separation.

HP-88, Column for cis-/trans-FAMEs Analysis

ID(mm)	Length	Film	Iso/Prog	Cat. No.
0.25	100m	0.25µm	250/260	112-88A7