# Purity of Frying Fat Assessed by Agilent PLgel and Gel Permeation Chromatograph

## Application Note

Materials Testing and Research, Polymer


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## Introduction

The purity of frying fats can be assessed by gel permeation chromatography (GPC) in organic eluents. The analysis involves a separation of the oligomeric glycerides based on molecular size in solution, using Agilent PLgel 5 µm 500Å, 7.5 × 300 columns.

## Frying Fat Analysis

It is possible to separate the major component (monoglyceride) from the minor components (diglyceride, triglyceride) of frying fat (Figure 1 and Table 1), and subsequently perform a quantitative analysis to obtain information relating to the purity of the monoglyceride.

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## Conditions

| | |
|---|---|
| Columns | 2 × Agilent PLgel 5 µm 500Å, 7.5 × 300 mm (p/n PL1110-6525) |
| Eluent | THF (stabilized) |
| Flow rate | 1.0 mL/min |
| Conc | 0.5% |
| Inj vol | 20 µL |
| Detector | RI |
| System | Agilent PL-GPC 50 |

*Table 1. Chromatographic Characteristics of Three Frying Fat Glycerides*

| Peak | RT (min) | Area (%) |
|---|---|---|
| 1 | 12.97 | 5.3 |
| 2 | 13.55 | 11.3 |
| 3 | 14.68 | 83.4 |

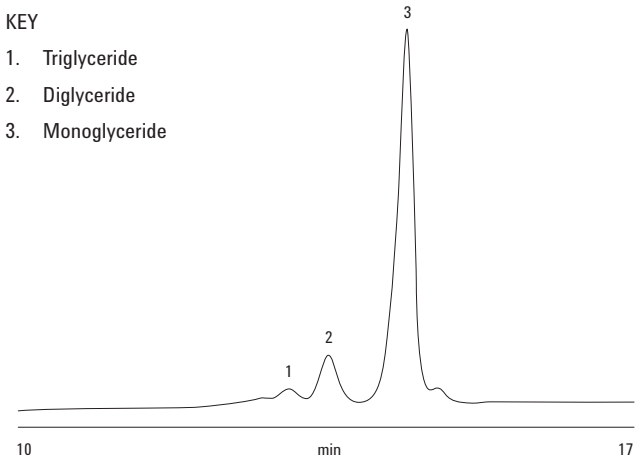


*Figure 1. Three glycerides in a frying fat separated by Agilent PLgel 5 µm columns.*

## Conclusion

Gel permeation chromatography with Agilent PLgel columns can be used to determine the ratio of components in complex materials such as frying fats.

## For More Information

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