Determination of mineral oil hydrocarbons in vegetable oils

Materials

Shimadzu GC-TCD Shimadzu GC-FID

Applications

• Autosampler (TSI 3520), 50 µL (injection at 240 °C) followed by dilution with hexane (1:10, v:v)

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Procedure - Simple pretreatment

1. For each sample, the hump and the peaks are integrated in the GC solution program (Figure 3).

Data presentation

- Heights and areas of the resolved and unresolved peaks are determined using the peak area of the ISTD peak in the GC chart. The method showed good repeatability and linearity.

Evaluation of the method

All resolved peaks and the ISTD peak (area of the ISTD peak) are determined using the proper skill of the analyst (Figure 5). Using a calculator, the area of the hump (unknown peak) is determined by subtracting the area of the resolved peaks from the area of resolved and unresolved peaks. The mineral concentration is calculated using the following equation:

Mineral oil hydrocarbons were successfully determined in vegetable oils, using a thermochromatographic gas chromatography method. The resolved internal standard showed good repeatability and linearity.

References


2. Official Method for stigmatadienes and contaminants 18 (2009) 313-319, How "white" is your "white"sunflower oil?


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