T.C. GEBZE TECHNICAL UNIVERSITY
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26.10.2021

The Gas Chromatography/Mass Spectrometry (GC/MS) Analyze Report of Dioctyl adipate (DOA)

The DOA sample sent by LEBA SANAYİ URUNLERI ITH IHR PAZ AS was firstly extracted with GC grade high purity hexane. Then, it was analyzed with an Agilent 6890N gas chromatograph (GC) equipped with a mass selective detector (Agilent 5975 inert MSD) working at electron impact ionization mode. A capillary column (HP-5ms, 30 m, 0.25 mm, 0.25 µm) was used. The carrier gas (helium) was used at constant flow mode (1.8 mL min^{-1}) with a linear velocity of 49 cm s^{-1}. The initial oven temperature was held at 40°C for 1 min, raised to 300°C at 25°C min^{-1}, and held for 1 min. Total run time was 12.70 min and the injection volume was 1.0 µl. The injector, ion source and quadrupole temperatures were 280, 230 and 150°C, respectively. The results of GC/MS were presented in Figure 1 and Table 1.

Table 1. GC/MS Library Search Repor

Search Libraries: C:\Database\NIST14.L

Pk#	RT	Area%	Library/ID	Ref#	Cas No
1	10.758	0.14	Adipic acid, di(oct-4-yl) ester	257816	1000324-49-0
2	10.976	**99.56**	Di(2-ethylhexyl) adipate	220809	000103-23-1
3	12.012	0.31	Terephthalic acid, di(4-octyl) ester	233395	1000323-74-2

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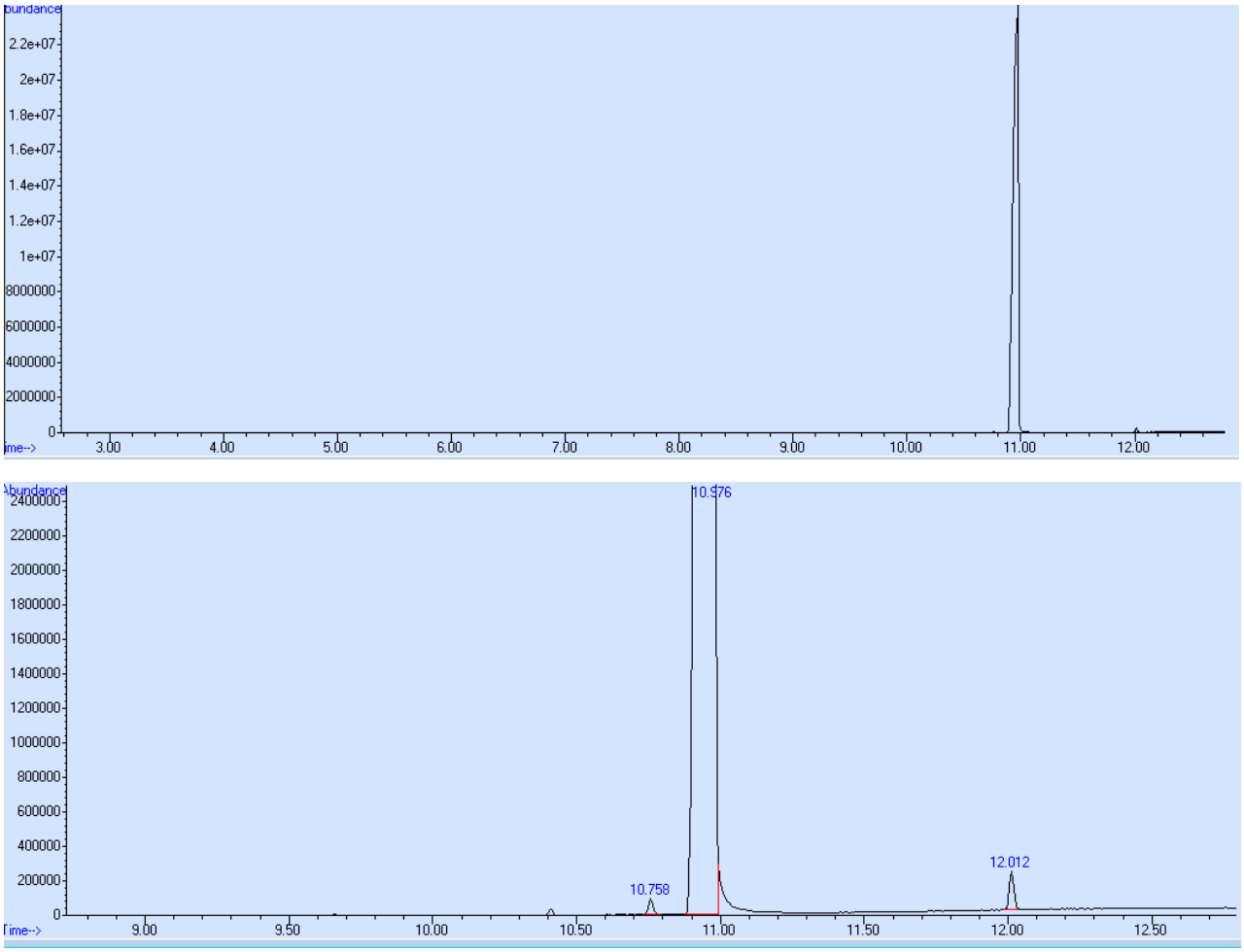

Figure 1. The chromatogram of DOA sample obtained from GC/MS; actual and zoomed

As can be seen from the figure, peak obtained at 10.976 minute belongs to DOA. Only two peaks at 10.758 minute named adipic acid, di(oct-4-yl) ester and 12.012 minute named terephthalic acid, 2-ethylhexyl octyl ester was obtained as impurity. After excluding impurities, purity of DOA sample was found as 99.56 %.

“LEBA SANAYİ URUNLERI ITH IHR PAZ AS” DOA Quantity is > 99 %

Responsible of Analysis
Prof. Banu Çetin

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