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The Gas Chromatography/Mass Spectrometry (GC/MS) Analyze Report of Di-octyl terephthalate (DOTP)

The DOTP 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, raised to 310°C at 7°C min^{-1}, and held for 1 min. Total run time was 39.57 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 Report

Search Libraries: C:\Database\NIST14.L

Pk#	RT	Area%	Library/ID
1	24.771	0.28	2-bromo- Octane
2	28.994	0.14	Hexanedioic acid, bis(2-ethylhexyl) ester
3	32.244	0.24	Terephthalic acid, 2-methoxyethyloctyl ester
4	32.885	**99.39**	Dioctyl terephythalate
			Bis(2 -ethylhexyl) terephthalate

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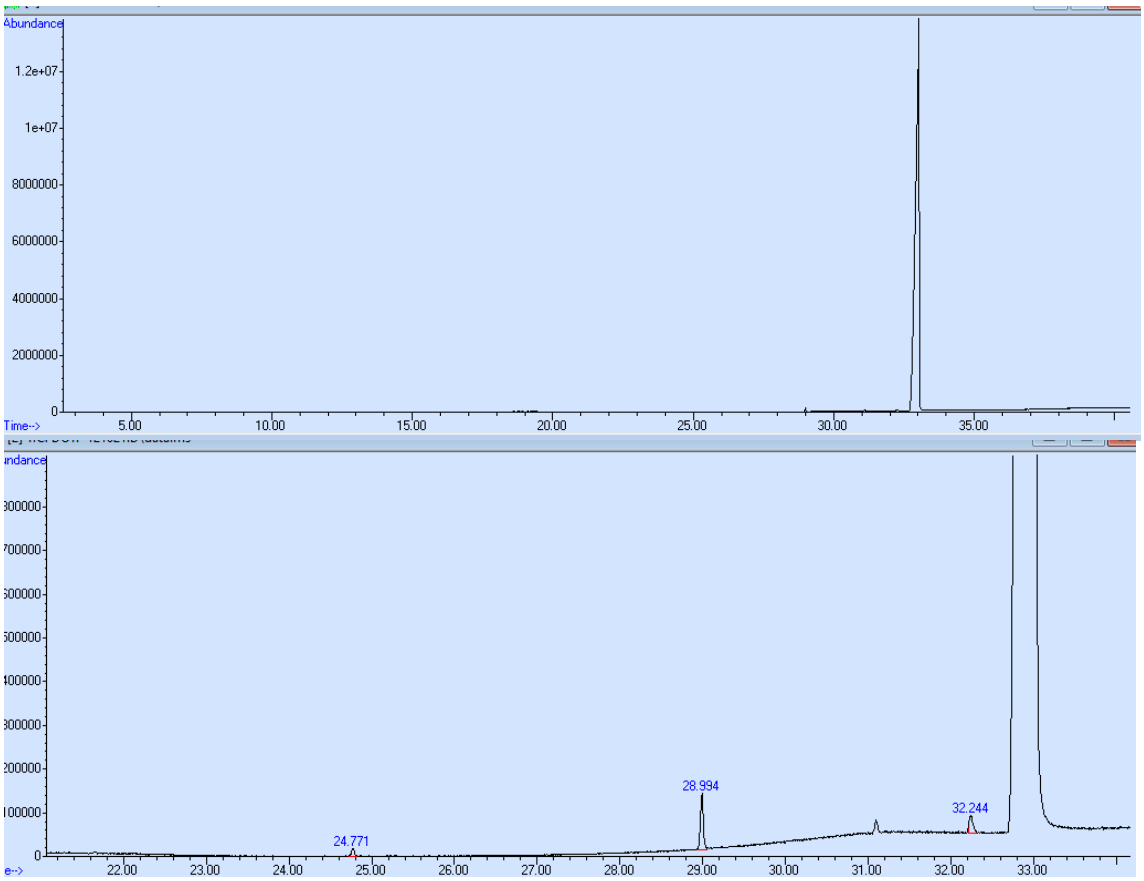

Figure 1. The chromatogram of DOTP sample obtained from GC/MS; actual and zoomed.

As can be seen from the figure, peak obtained at 32.885 minute is belong to DOTP. Only three peaks at 24.771 minute named 2-bromo- Octane, 28.994 minute named Hexanedioic acid, bis(2-ethylhexyl) ester and at 32.244 minute named Terephthalic acid, 2-methoxyethyloctyl ester were obtained as impurity. After excluding impurities, purity of DOTP sample was found as 99.39 %.

“LEBA SANAYİ URUNLERI ITH IHR PAZ AS” DOTP Quantity is ≥ 99 %

Responsible of Analysis

Prof. Banu Çetin

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