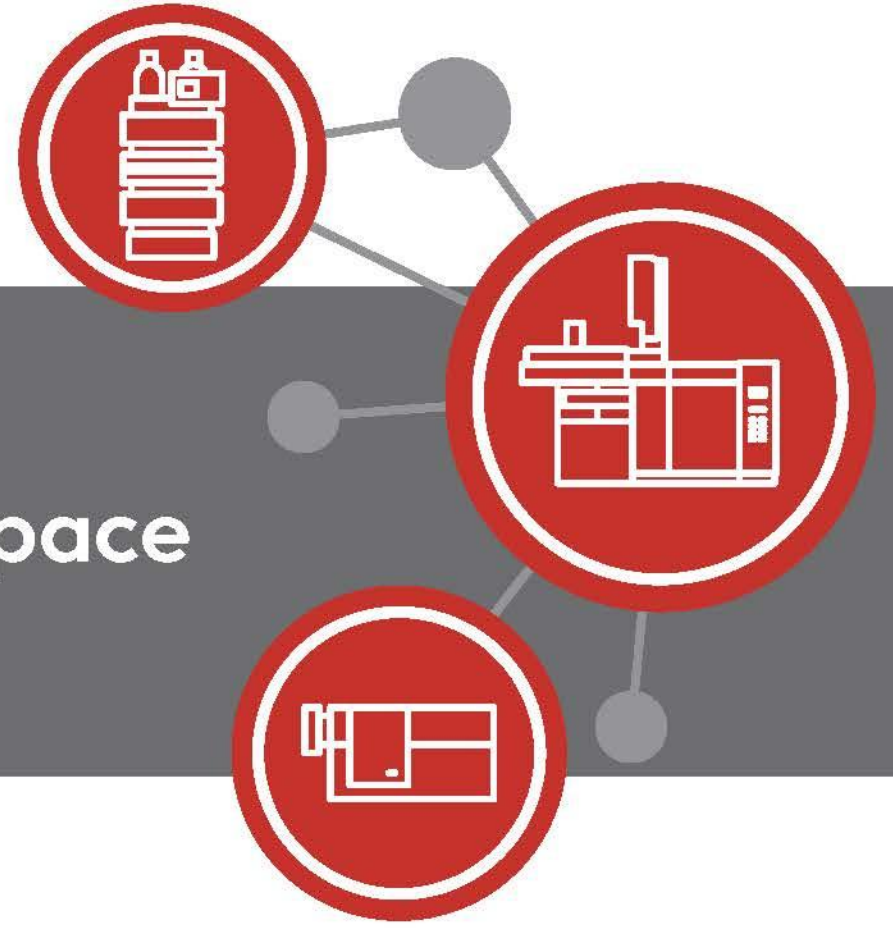


Ambalajlarda Solvent Kalıntılarının GC-MS- Headspace ile Analizi



Sert ambalajlar (metal, cam ve seramikler gibi) geçirgenliği az, plastik ambalajlar (kauçuk, elastomer) geçirgenliği yüksek, kâğıt ve karton gibi heterojen ve gözeneklerinde hava boşlukları olan, gözenekli yapıdadır. Ambalaj materyalindeki kimyasalların gıdalara kontaminasyonu; gıdanın yapısı, temas süresi, temas sıcaklığı, ambalajın yapısında bulunan maddelerin miktarı ile doğrudan ilişkilidir.



Tablo 1 : Agilent 8860 GC Parametreleri

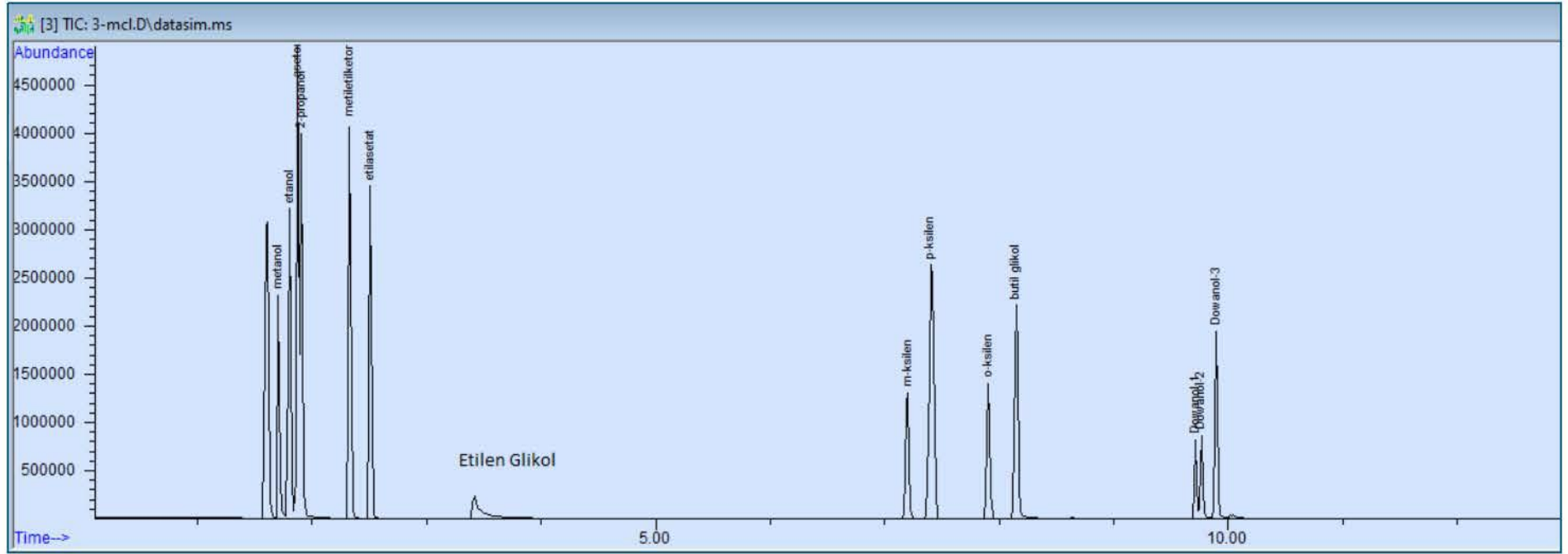
Parameter	
Column	Agilent DB-1 GC Column,
Inlet Mode	Split/splitless
Carrier Mode	Constant pressure
Inlet Temperature	150 °C
Total Flow	19 mL/min
Split Ratio	400;1
Pressure	5 psi
Injection Volume	1µl
Column Flow	0.8186 ml/min
Carrier Gas	He

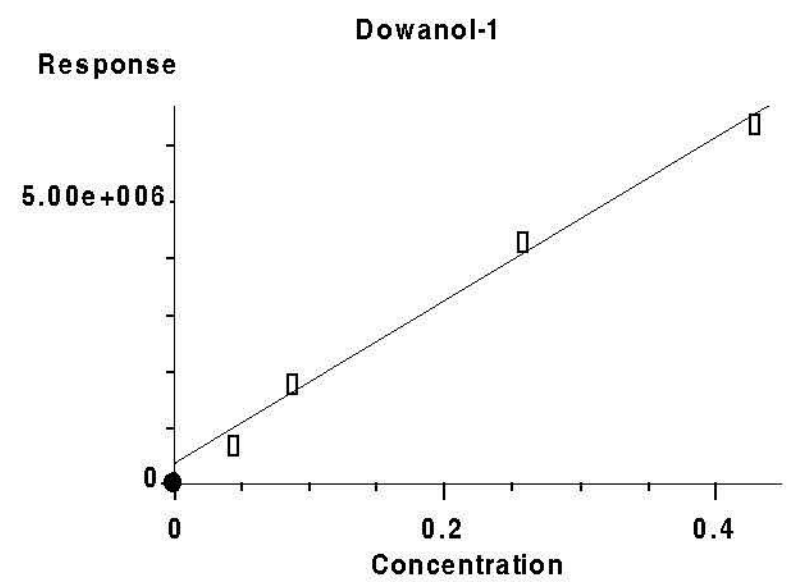
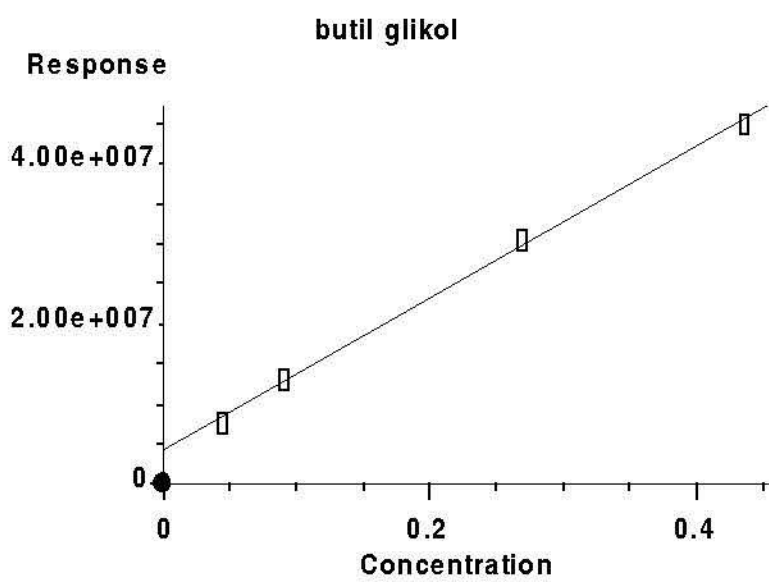
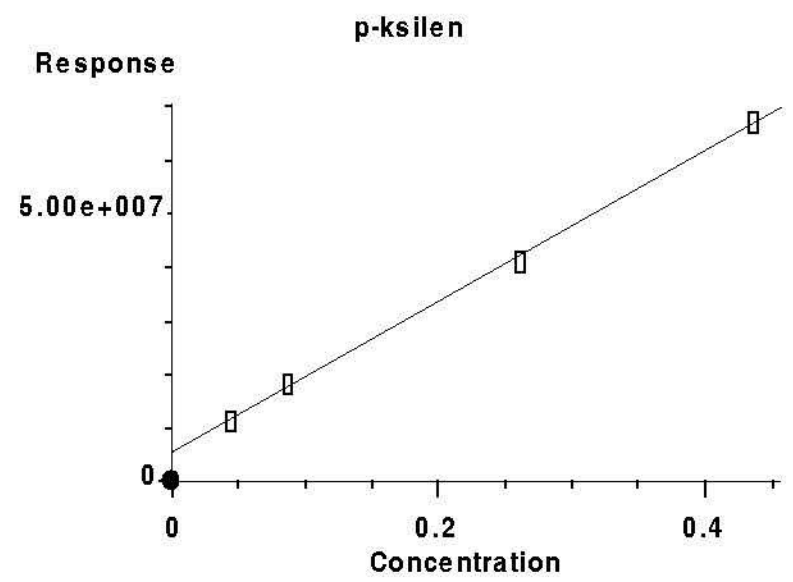
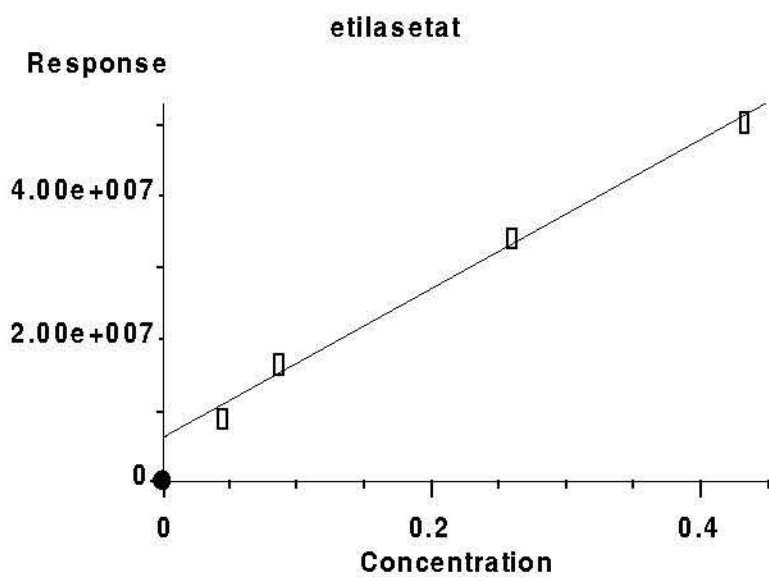
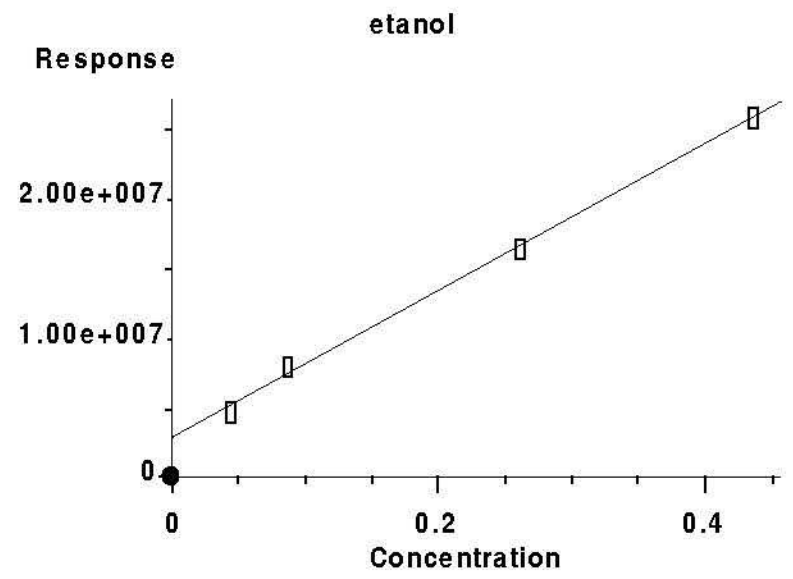
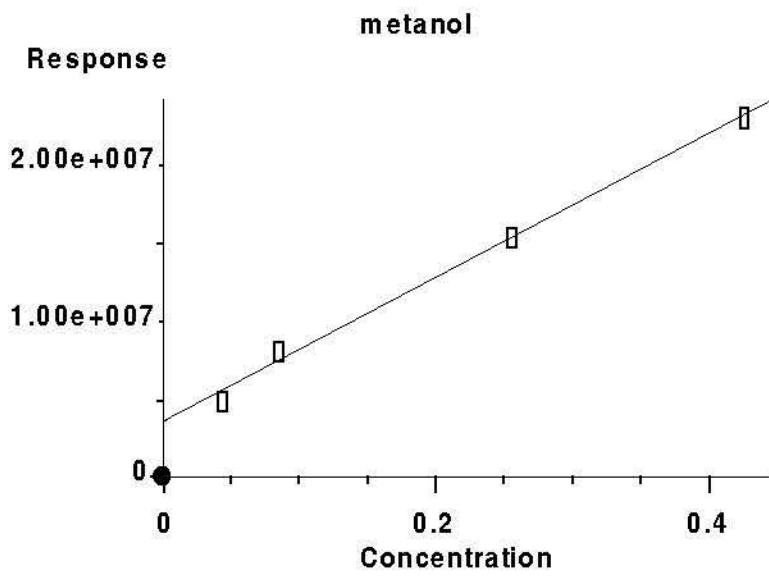
Tablo 2 : 7697A Head Space ve 5977B GC-MS Parametreleri

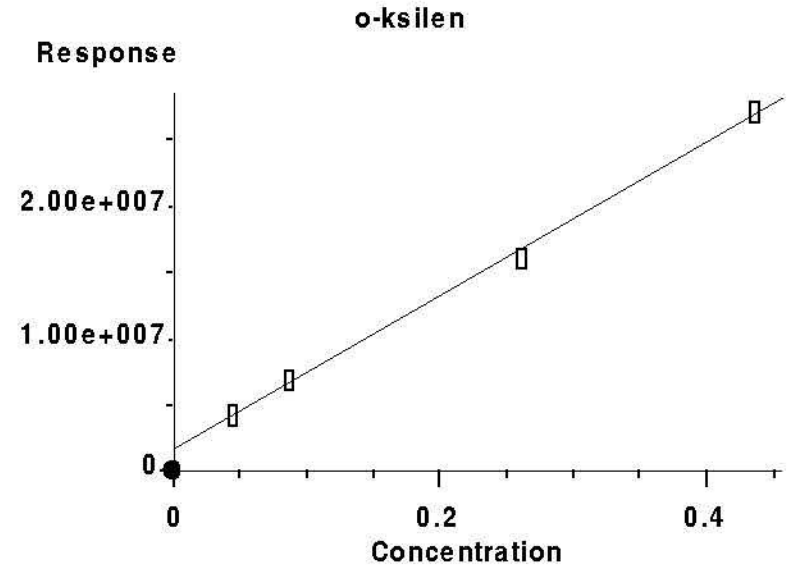
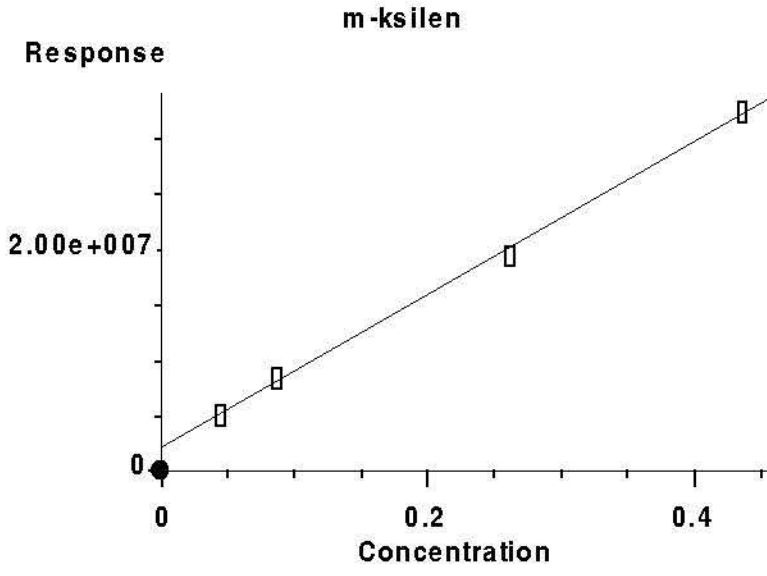
Parameter	
Oven Temperature	80 °C
Loop Temperature	90 °C
Transfer Line Temperature	110°C
Vial Equilibration	30°C
Injection Duration	0.5 min
GC Cycle Time	30 min
Transfer Line	52 min
MS transfer line temp.	280 °C
Ionization mode	EI
MS Source temp.	230°C
MS Quad temp.	150°C

Tablo 3 : Solventlerin Alıkonma Süreleri

Solvents	RT.(min)
Metanol	1,70
Etanol	1,80
Aseton	1,87
2-Propanol	1,91
Metil Etil Keton	2,32
Etil Asetat	2,50
Etilen Glikol	3,42
m-Ksilen	7,23
p-Ksilen	7,40
o-Ksilen	7,90
Butil Glikol	8,16
Dovanol-1	9,71
Dovanol-2	9,76
Dovanol-3	9,89
Dovanol-4	9,89


Şekil 1 : Solventlerin Kromatogramı





Şekil 2 : Solventlerin Kalibrasyon Grafikleri