

GS-Tek

Separation of isobutylene and oxygenates

According to the customer's concern, refinery gas and oxygenates (alcohol, ether and ketone) are separated on 105m GsBP-624 column. The instrumentation condition in this analysis is recorded as follows,

GC: Agilent 7890 w/ FID

Column: GsBP-624

Dimensions: 105 meter x 0.53 mm x 3 μ m

Oven Program: 35 $^{\circ}$ C for 11.5 min 15 $^{\circ}$ C/min to 120 $^{\circ}$ C for 1min

Carrier Gas: Hydrogen @ 3.8 mL/min (Constant Flow)

Injection: Split flow 40ml/min @ 240 $^{\circ}$ C, 0.1 μ L

Detector: FID @ 260 $^{\circ}$ C

Figure 1. Analysis of isobutylene using 105m GsBP-624 GC column

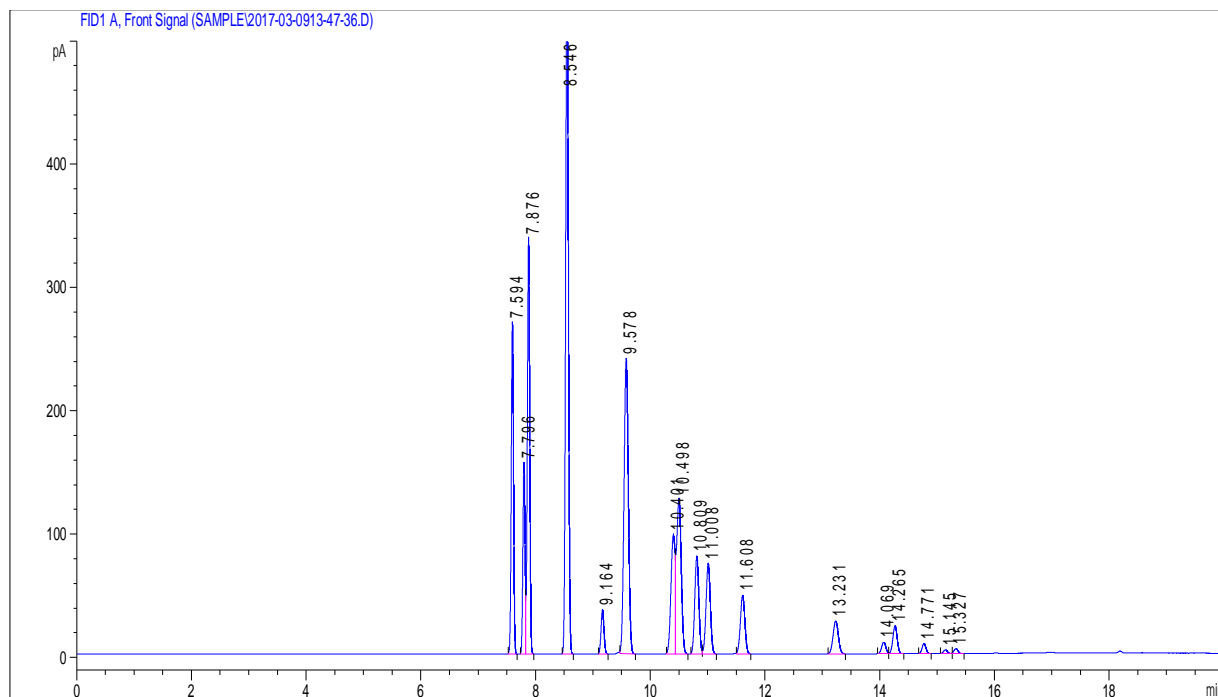


Table 1. Peak identification of analysis in Figure 1

Peak#	Compound	Retention Time	Resolution
1	Methane	7.594	
2	Ethylene	7.796	
3	Ethane	7.876	1.85
4	Propane/propylene	8.546	
5	Propadiene	9.164	
6	Isobutane	9.578	
7	Butene-1/Isobutylene	10.401	
8	n-Butane	10.498	1.19
9	1,3-Butadiene	10.809	3.78
10	trans-2-Butene	11.008	2.48
11	cis-2-Butene	11.608	
12	Isopentane	13.231	
13	Pentene-1	14.069	
14	Pentane	14.265	2.37
15	trans-2-Pentene	14.771	
16	2-methyl-2-butene	15.145	
27	cis-2-Pentene	15.327	2.41

Figure 2. Analysis of Oxygenates using GsBP-624 GC column

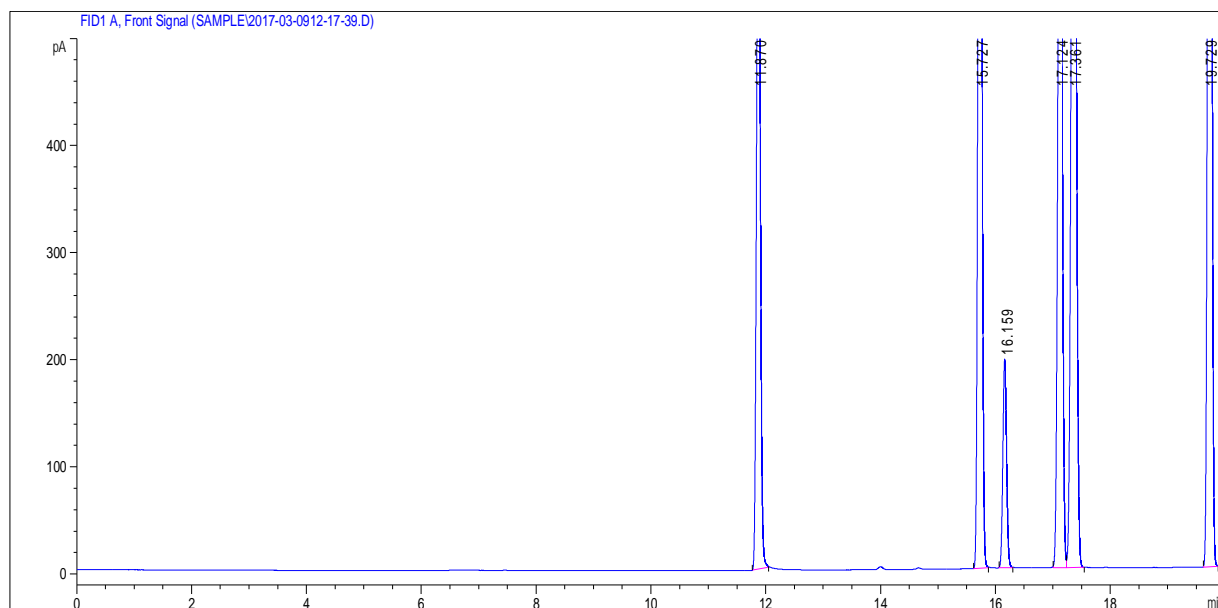


Table 2. Peak identification of analysis in Figure 2

Peak#	Compound	Retention Time	Resolution
1	Methanol	11.870	
2	Acetone	15.727	
3	IPA	16.159	
4	tert-Butanol	17.124	
5	MTBE	17.361	2.91
6	2-Butanone	19.729	