

Application Data Sheet

No. 188

System Gas Chromatograph

Trace Oxygenated Hydrocarbons in Liquid Hydrocarbon Streams Nexis GC-2030AS3 GC-2014OAS3

This method is for determining trace oxygenated hydrocarbons in C4 liquefied petroleum gas (LPG) as described in below compound table. It requires the use of a dedicated gas chromatographic system which is configured with an automatic sampling and backflush technique in multiple columns.

Analyzer Information

System Configuration:

Two valves two SPL injectors / two capillary columns / two FID

Concentration Range:

No.	Name of Compound	Concentration Range	
		Low Conc.	High Conc.
1	Methyl Ether	1ppm	100,000ppm
2	Ethyl Methyl Ether	1ppm	100,000ppm
3	Ethyl Ether	1ppm	100,000ppm
4	Acetaldehyde	1ppm	100,000ppm
5	Methyl Formate	1ppm	100,000ppm
6	tert-Butyl Ethyl Ether	1ppm	100,000ppm
7	tert-Butyl Methyl Ether	1ppm	100,000ppm
8	Isopropyl Ether	1ppm	100,000ppm
9	Propylene Oxide	1ppm	100,000ppm
10	sec-Butyl Methyl Ether	1ppm	100,000ppm
11	Propionaldehyde	1ppm	100,000ppm
12	Butyl Methyl Ether	1ppm	100,000ppm
13	tert-Amyl Methyl Ether	1ppm	100,000ppm
14	n-Propyl Ether	1ppm	100,000ppm
15	Butyl Ethyl Ether	1ppm	100,000ppm
16	Isobutyraldehyde	1ppm	100,000ppm
17	Tetrahydrofuran	1ppm	100,000ppm
18	n-Butyraldehyde	1ppm	100,000ppm
19	Methyl Acetate	1ppm	100,000ppm
20	Tetrahydropyran	1ppm	100,000ppm
21	Trimethylacetaldehyde	1ppm	100,000ppm
22	Methanol	1ppm	100,000ppm
23	Acetone	1ppm	100,000ppm
24	2-Methylbutyraldehyde	1ppm	100,000ppm
25	Isovaleraldehyde	1ppm	100,000ppm
26	Cyclobutanone	1ppm	100,000ppm
27	Methyl Propionate	1ppm	100,000ppm
28	n-Valeraldehyde	1ppm	100,000ppm
29	2-Butanone	1ppm	100,000ppm
30	Ethanol	1ppm	100,000ppm

No.	Name of Compound	Concentration Range	
		Low Conc.	High Conc.
31	2-Ethylbutyraldehyde	1ppm	100,000ppm
32	3,3-Dimethylbutyraldehyde	1ppm	100,000ppm
33	2-Methylvaleraldehyde	1ppm	100,000ppm
34	Methyl Butyrate	1ppm	100,000ppm
35	1,4-Dioxane	1ppm	100,000ppm
36	Hexanal	1ppm	100,000ppm
37	3-Pentanone	1ppm	100,000ppm
38	3,3-Dimethyl-2-butanone	1ppm	100,000ppm
39	2-Pentanone	1ppm	100,000ppm
40	Isopropanol	1ppm	100,000ppm
41	n-Propanol	1ppm	100,000ppm
42	Cyclopropyl Methyl Ketone	1ppm	100,000ppm
43	2-Methyl-3-pentanone	1ppm	100,000ppm
44	3-Methyl-2-pentanone	1ppm	100,000ppm
45	Cyclopentanone	1ppm	100,000ppm
46	4-Methyl-2-pentanone	1ppm	100,000ppm
47	3-Hexanone	1ppm	100,000ppm
48	Isobutanol	1ppm	100,000ppm
49	tert-Butanol	1ppm	100,000ppm
50	sec-Butanol	1ppm	100,000ppm
51	Cyclobutanol	1ppm	100,000ppm
52	2-Hexanone	1ppm	100,000ppm
53	n-Butanol	1ppm	100,000ppm
54	3-Methyl-2-butanol	1ppm	100,000ppm
55	Neopentyl Alcohol	1ppm	100,000ppm
56	3-Pentanol	1ppm	100,000ppm
57	tert-Amyl Alcohol	1ppm	100,000ppm
58	2-Methyl-1-butanol	1ppm	100,000ppm
59	Cyclopentanol	1ppm	100,000ppm
60	2-Pentanol	1ppm	100,000ppm
61	3-Methyl-1-butanol	1ppm	100,000ppm
62	1-Pentanol	1ppm	100,000ppm

Detection limits may vary depending on the sample.
Please contact us for more consultation.

Methods met:
UOP-960

System Features

- Dual FID channels (One is for detection of target compounds The other one is for checking backflush timing)
- Good repeatability

Typical Chromatograms

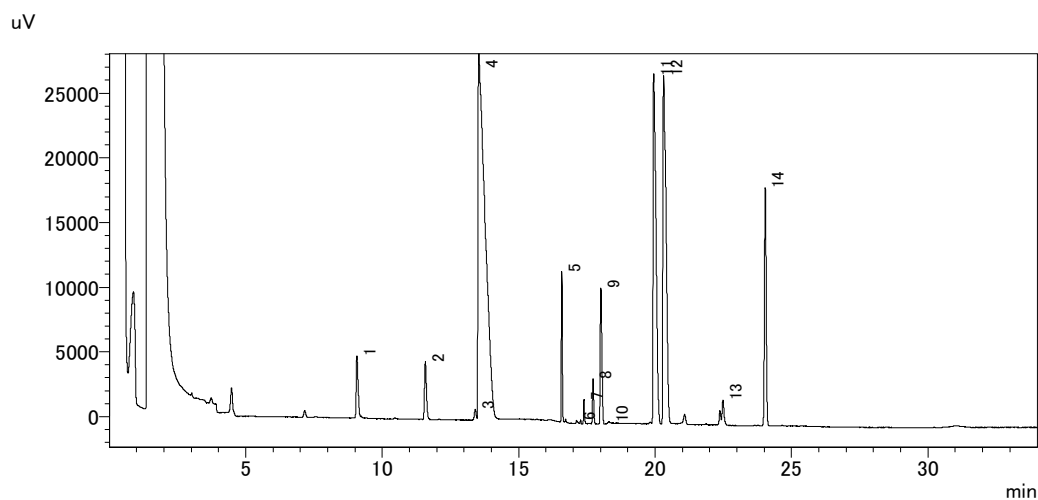


Fig. 1 Chromatogram of FID

ID#	Name
1	Methyl ether
2	Ethyl methyl ether
3	Ethyl ether
4	Acetaldehyde
5	Propionaldehyde
6	Isobutyraldehyde
7	n-Butyraldehyde
8	Methanol
9	Acetone
10	2-Methylbutyraldehyde
11	2-Butanone
12	Ethanol
13	Isopropanol + n-Propanol + Cyclopropyl methyl ketone
14	Isobutanol + tert-Butanol + sec-Butanol

Fig. 2 Compound List of The Chromatogram