This method provides for the determination of nitrous oxide (N2O), in atmospheric air, by gas chromatography (GC) with Electron Capture Detector (ECD) using Porapak-N and HayeSep-D packed column. A total of 5 valves and 7 columns are used in this GC system. Sample is introduced into two sample loops. In the first channel, N2O is separated by the HayeSep-D column and detected by ECD. In the second channel, the first Porapak-N column is a pre-column used to cut the above C2 compounds. The second Porapak functions to separate CO/CH4 and CO2. The final separation of CO and CH4 are performed by a MS-13X column. CO2 moves through the Porapak-Q and bypasses the Mol-Sieve 13X. CO, CH4 and CO2 are directed to a methanizer and are reduced to CH4 by means of nickel catalyst and detected by flame ionization detector (FID). The system includes LabSolutions GC workstation software. Since large amount of O2 gas affects life time of methanizer catalyst, O2 gas needs to be removed by additional 6 port valve.

### Analyzer Information

#### System Configuration:
- Five valves / seven packed columns with one ECD detector and one FID detector

#### Sample Information:
- N2O, permanent gas

### Concentration Range:

<table>
<thead>
<tr>
<th>No.</th>
<th>Name of Compound</th>
<th>Concentration Range</th>
<th>Detector</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Low Conc.</td>
<td>High Conc.</td>
</tr>
<tr>
<td>1</td>
<td>CH3COCH3</td>
<td>5ppm</td>
<td>500ppm</td>
</tr>
<tr>
<td>2</td>
<td>Propylene aldehyde</td>
<td>5ppm</td>
<td>500ppm</td>
</tr>
</tbody>
</table>

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

### System Features

- Versatile software easy GC system operation
- One ECD/ one FID channel
- Good repeatability
Typical Chromatograms

Fig. 1  Chromatogram of ECD

Fig. 2  Chromatogram of FID