

# Thermo Scientific Gas Chromatography Analyzers

Impurity analysis for polymer grade ethylene/propylene feedstock

**Methods covered: ASTM D8098, D6159 and D5273**

The Thermo Scientific™ TRACE™ 1310 GC system analyzes high purity ethylene and propylene samples for critical impurities according to ASTM Methods D6159, D5273 and D8098. The system will analyze either gas or LPG samples for permanent gases and hydrocarbon contaminants C1 up to C10 as specified in the methods utilizing a simultaneous dual channel configuration.

## Instrument configuration

- TRACE 1310 GC
- Pulsed Discharge Detector (PDD)
- Flame Ionization Detector (FID)
- Four GC columns
- Auxiliary Valve Oven
- LPG Vaporizer
- Front bulkhead connection
- Four gas actuated valves

Optional data system:

Thermo Scientific™ Chromeleon™ Chromatography Data System

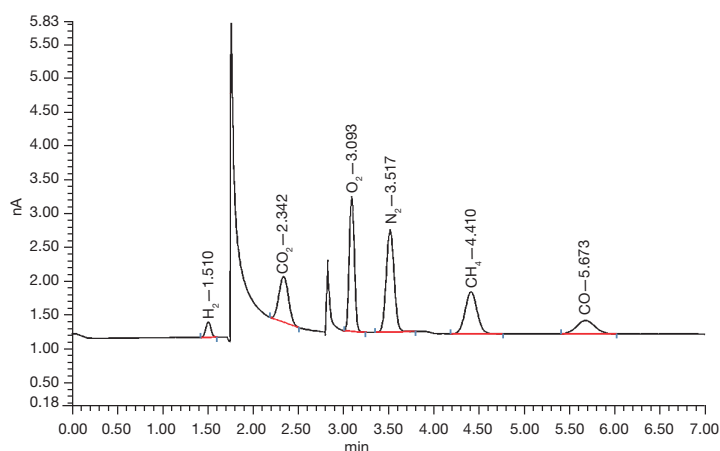


Figure 1. Representative chromatogram of an ethylene balanced hydrocarbon standard at 10 ppb from the PDD (channel 1)

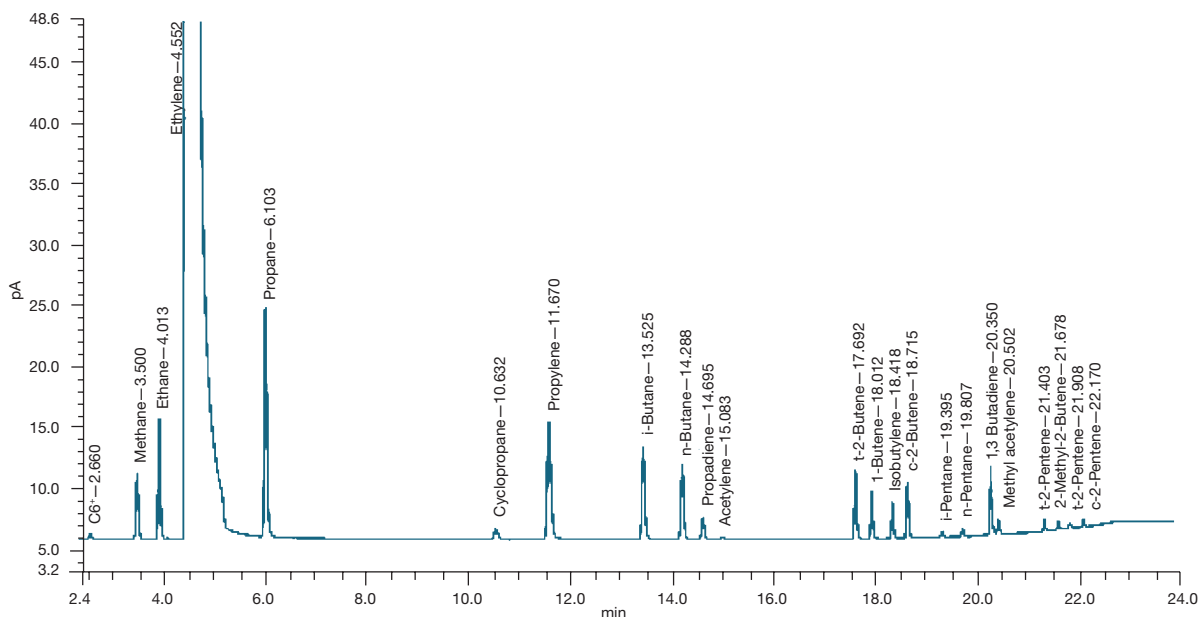


Figure 2. Representative chromatogram of an ethylene balanced hydrocarbon standard at 10 ppb from the FID (channel 2)

Technical and Performance Specifications		
Part number	IMPC2C302022 (120 V) or IMPC2C302022-230 (230 V)	
Methods	ASTM D8098, D6159, D5273	
Sample type	Gas or LPG	
Channels	Channel 1—PDD	Channel 2—FID
Detection	Permanent Gases: H <sub>2</sub> , N <sub>2</sub> , O <sub>2</sub> , CO, CO <sub>2</sub> , CH <sub>4</sub>	Hydrocarbons: methane, ethane, propane, propylene, acetylene, isobutane, propadiene, butane, trans-2-butene, butene-1, isobutene, cis-2-butene, methyl acetylene, 1,3-butadiene and hydrocarbons up to C10
Typical detection limit	0.05 ppm	0.1 ppm
Working range	ppb mole (nmol/mol) to ppm mole (μmol/mol)	4 ppmV to 340 ppmV (2 mg/kg to 204 mg/kg)

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