GC Analysis of Desulfurization Additives MEA & DEA in LPG

Application Note

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Analyzer Description

The DVLS Liquefied Gas Injector (LGI) is used for the analysis of the desulfurization additives MEA & DEA in LPG.
The LGI consists of a GC, an injector, a pressure station and a controller. The Injector is configured on top of a GC inlet. The Pressure Station is installed next to the GC and ensures that the Injector is filled with the sample in liquid phase.
The Controller box drives the injection cycling.

Instrument	
Instrument type	Agilent GC
Injector	DVLS Liquefied Gas Injector
Columns	• 5 meter Sulfinert® coated stainless steel capillary column • 3 meter non polar retaining column • 27 m non polar analytical column
Detector	FID
Sample Pressurization	DVLS Pressure Station
Injection Time	50 ms
Pre Injection Delay	1 sec
Post Injection Delay	2 sec
Solvent Vent	100 sec
Stop Flow	0 sec

Figure One: the DVLS Liquefied Gas Injector

Sample Type: LPG
Components separated: MEA & DEA
Method: ASTM D7756-13, EN 16423

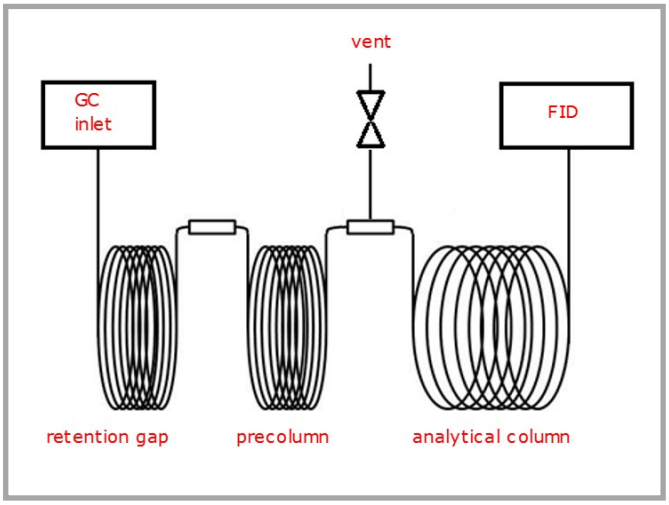
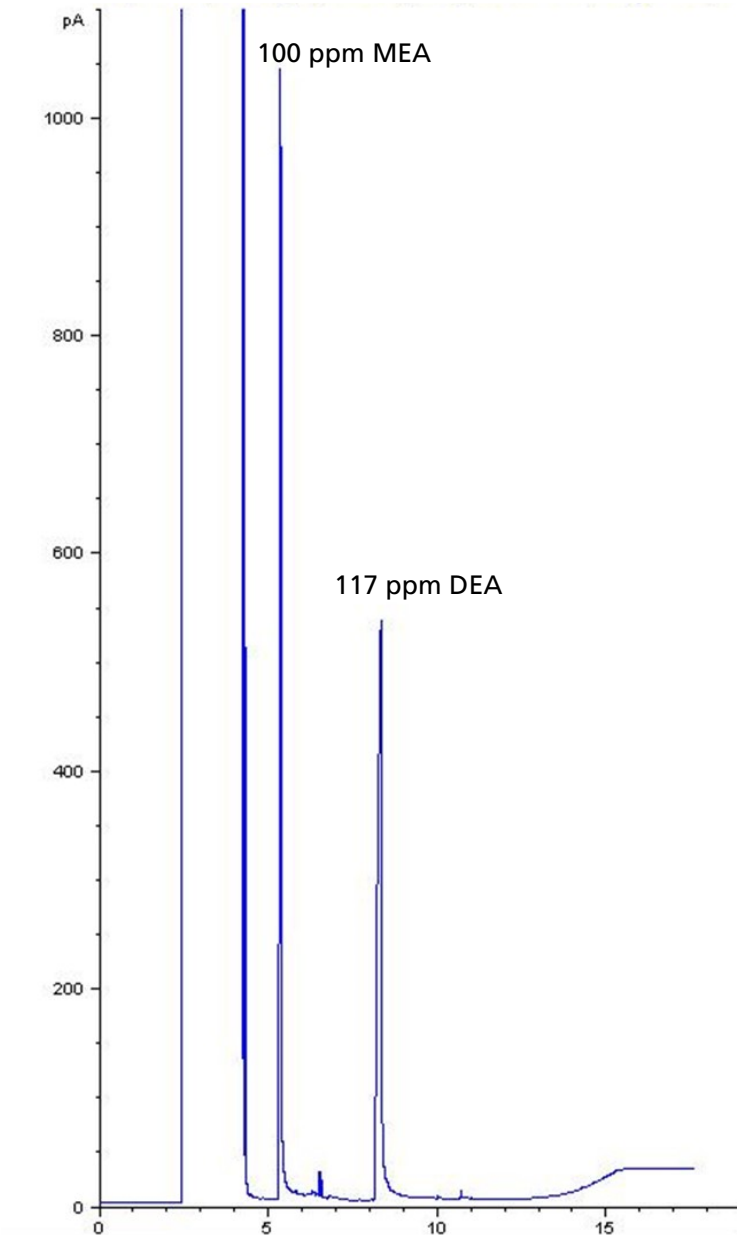


Figure Two: The flow chart of the LGI



Instrument Settings	
Inlet	COC
Oven	35°C (3 min) →25°C/min →325°C
Inlet	55°C (3 min) →25°C/min →325°C
Flow	5.4 mL/min
Carrier	Helium

Figure Three: Chromatogram of 100 ppm MEA & 117 ppm DEA in methanol

For more information, download other application notes on the LGI:

1. Application note: Dual Analysis of Oily Residues in LPG (ASTM D7756/EN 16423) and Hydrocarbon Composition of LPG (ASTM D2163 & ISO 7941)
2. Application note: The Analysis of Hydrocarbon Composition in LPG by Gas Chromatography using the DVLS Liquefied Gas Injector
3. Application note: The Analysis of Inhibitor, Extraction Agent and Dimer in Butadiene by On-column Chromatography with the DVLS LGI Injector
4. Application note: The Analysis of Di-Iso-Propanol-Amine (DIPA) in Liquefied Petroleum Gas (LPG) with the DVLS LGI Injector
5. Application note: The Analysis of n-Methyl-2-pyrrolidone (NMP) in Butadiene with the DVLS LGI Injector
6. Application note: The analysis of pTBC, Acetonitril and Butadiene Dimer by Gas Chromatography with the DVLS Liquefied Gas Injector
7. Application note: GC Analysis of Sulfur Compounds in LPG using the DVLS Liquefied Gas Injector combined with a Sulfur Specific Detector

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