Development of methodology for the analysis of IMPURITIES in ETHYL ACETATE

APPLICATION NOTE AN_177

Introduction

Ethyl Acetate is the ester of ethanol and acetic acid. It is a colorless liquid with a characteristic sweet smell of fruit (pear), and it is manufactured on a large scale for use as a solvent due to its dilution properties.

It is widely used in food packaging industry, therefore it is important that this solvent undergoes rigorous quality control testing to ensure that unsafe levels of impurities are not present.

GC is the technique of choice for the determination of impurities in solvent.

In this work a fast, reliable and easy method for the determination of the impurities in Ethyl Acetate is illustrated.

Food Packaging

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SYSTEM CONFIGURATION

Master GC Gas Chromatograph		
OVEN		
Temperature (°C)	**Time (min)**	**Rate (°C/min)**
35	0	2
40	0	7
60	0	15
180	1	
INJECTOR		
Temperature (°C)	250	
Flow (mL/min)	0.6	
Split	1:60	
COLUMN		
Lenght	**Diameter (mm)**	**Film µm**
20	0.18	1

Table 1 : Master GC Parameters

Sample

A standard solution of 11 typical Ethyl acetate impurities was used to prepare 5 different calibration levels in the range 0.05%-0.45% v/v for each compound.

RESULTS

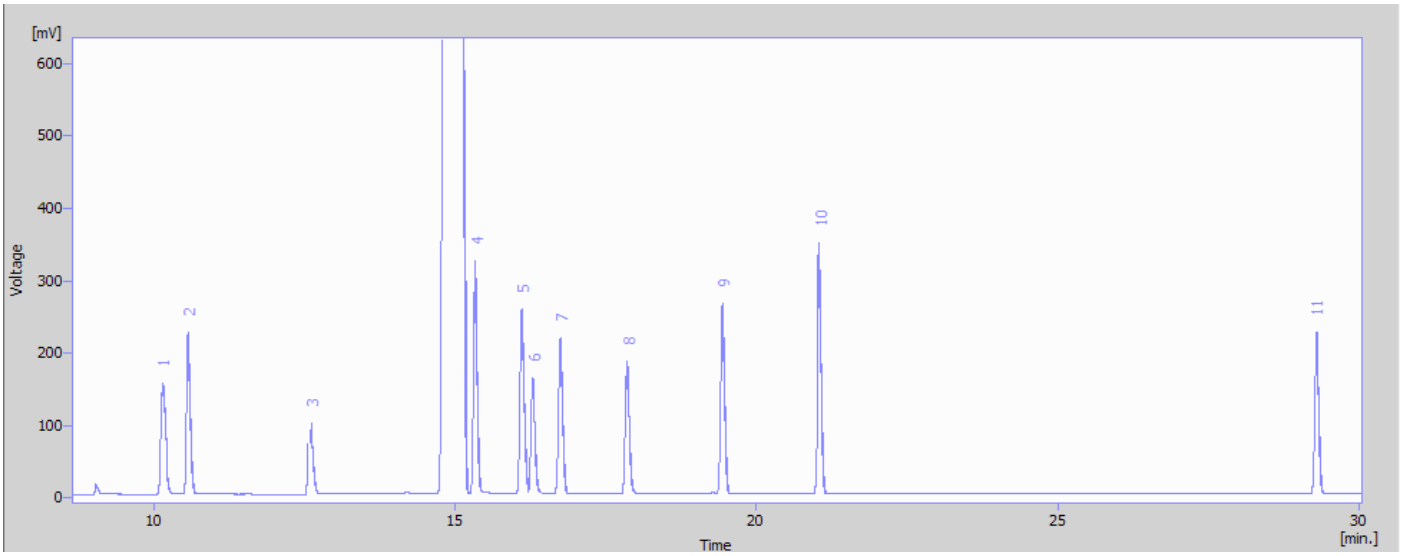

Figure 1 : Chromatogram of standard solution 5% v/v for each compound

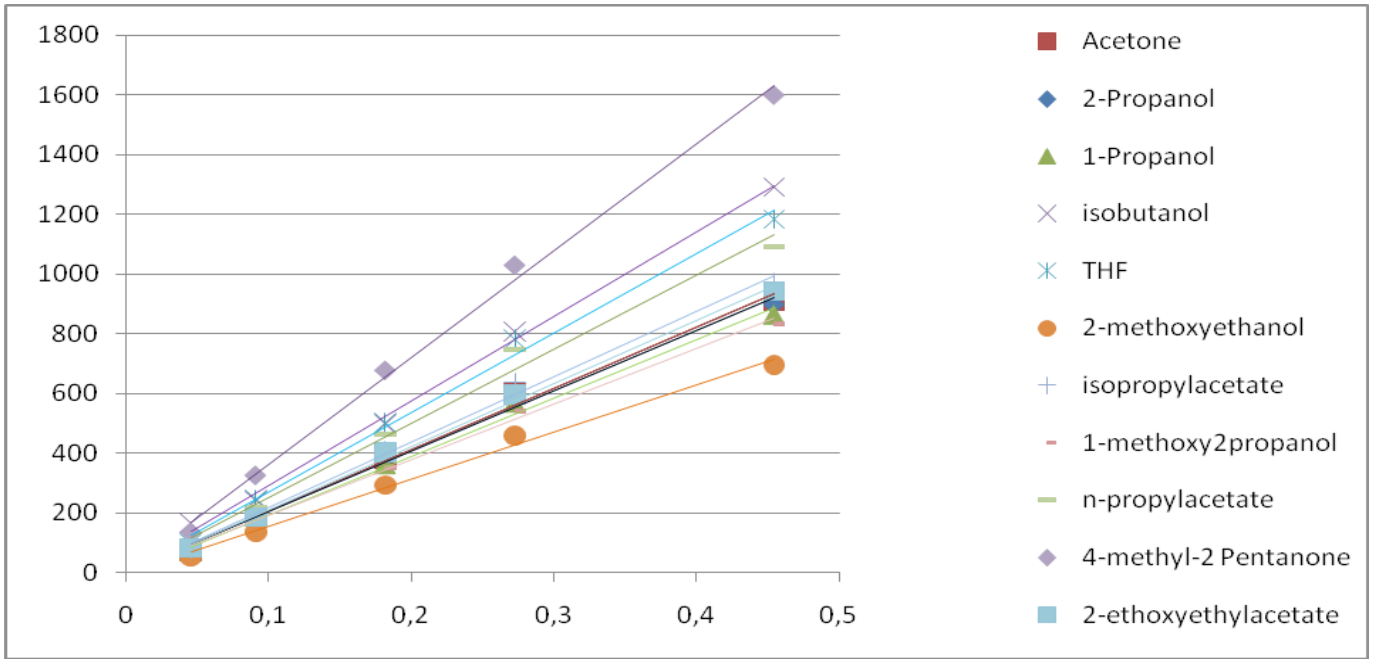

Figure 2: Linearity in the range 0.05-0.45% v/v

	Compound	R^2
1	2-propanol	0.9946
2	Acetone	0.9938
3	1-propanol	0.9942
4	Isobutanol	0.9966
5	THF	0.9942
6	2-Metoxyethanol	0.9949
7	isopropil acetate	0.9949
8	1-metoxy 2-propanol	0.9965
9	n-Propyl acetate	0.9898
10	4-Methyl-2-Pentanone	0.9964
11	2-Ethoxyethyl acetate	0.9972

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