

18.09.2013

**Invoice No/Date: 015729/18.09.2013**  
**ETHANOL 99,9% FUEL GRADE SPECIFICATION**

ANALİZ ADI	BİRİM	BULUNAN DEĞER	İSTENİLEN DEĞER	ANALİZ YÖNTEMİ
Etil Alkol	%m/m, 20 °C	99.9	min. 98,7	EN 13132
Etil Alkol	%v/v, 20 °C	99.9	min. 99,2	Alkolmatre
Yoğunluk	g/cm <sup>3</sup> , 20 °C	0.7896	max. 0,7934	Densitometre/Anton Pas
Su Miktarı	% m/m	0.0412	max. 0,3	EN 15489
pH		7.0	min. 6,5 / max. 9,0	EN 15490
Toplam Asitlik	% m/m	0.0038	max. 0,007	EN 15491
Fosfor	mg/L	0.0050	max. 0,5	EN 15487
Sulfür	mg/Kg	4.0	max. 10,0	EN 15485
<b>GC By-Products</b>				
Acetic Aldehyde	% m/m	0.0248		EN 15721
Methanol	% m/m	0.0055	max. 1,0	EN 15721
Ethanol	% m/m	99.6802		EN 15721
Acetone	% m/m	0.0004		EN 15721
İsopropanol	% m/m	-		EN 15721
Tert - Butanol	% m/m	-		EN 15721
İsobutyric Aldehyde	% m/m	-		EN 15721
Propan -1- ol	%m/m	0.0357		EN 15721
Ethyl Acetate	% m/m	0.0578		EN 15721
Butan -2- ol	% m/m	0.0003		EN 15721
İsobutanol	% m/m	0.0206		EN 15721
Isovaleric Aldehyde	% m/m	0.0003		EN 15721
Acetal	% m/m	0.0861		EN 15721
Butan -1- ol	% m/m	0.0014		EN 15721
Pentanal	% m/m	0.0005		EN 15721
Isoamill Alcohol	% m/m	0.0238		EN 15721
2-Methylbutan -1- ol	% m/m	0.0196		EN 15721
Ethyl Butyrate	% m/m	0.0048		EN 15721
1,1-Diethoxy-2-Methylpropane	% m/m	0.0005		EN 15721
Koku Analizi		Uygun		Duyusal Analiz

**ORIGINAL**

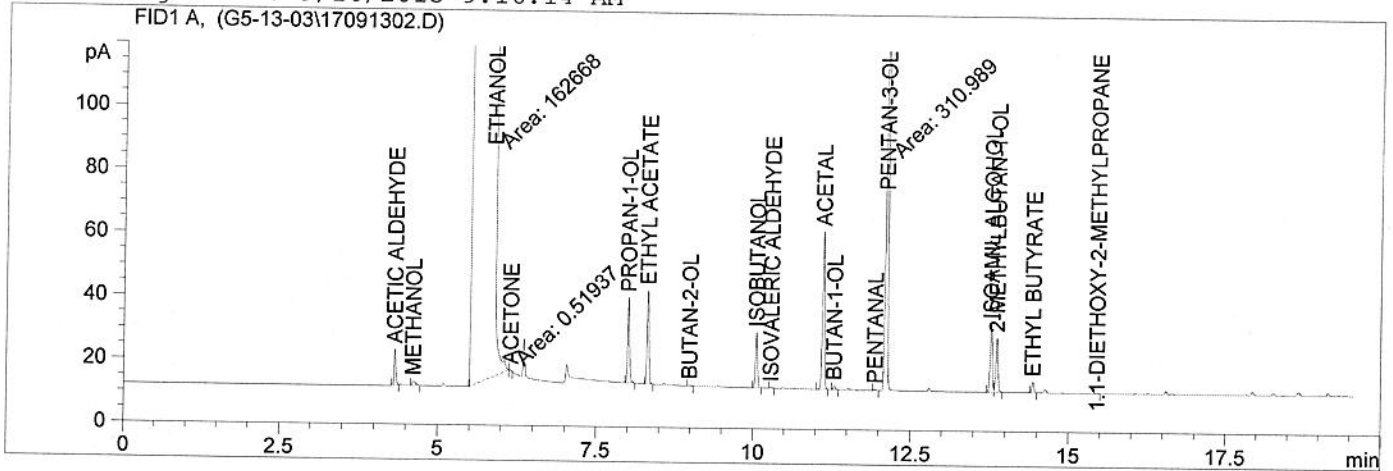
AYTAŞ TARIM ÜRÜNLERİ  
SANAYİ VE TİCARET A.Ş.  
ASEGİN FİZİKSEL BEYAZI  
Tel: 90-232-2511692-2580095  
Etil Alkol İzmir

**100% of the Ethanol are originated from molasses of sugarcane.  
Not produced through dehydration process.**

**Ethanol corresponds European Biofuel Bioethanol Standards Norm EN 15376.  
Non Drinkable. Non Food Grade. Ethanol is Fuel Grade.**

DENATURE EDILMEMIS ETIL ALKOL

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Injection Date : 9/17/2013 10:05:56 AM  
Sample Name : Location : Vial 101  
Acq. Operator : Inj : 1  
Acq. Instrument : Instrument 1 Inj Volume : 1 µl  
Method : C:\HPCHEM\1\METHODS\ETOH1701.M  
Last changed : 9/16/2013 9:16:14 AM  
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Internal Standard Report (Sample Amount is 0!)  
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Sorted By : Signal  
Calib. Data Modified : 8/26/2013 7:12:00 PM  
Multiplier : 1.0000  
Dilution : 1.0000

Use Multiplier & Dilution Factor with ISTDs

Sample ISTD Information:

ISTD ISTD Amount Name  
# [%m/m]

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1 1.62300e-1 PENTAN-3-OL  
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Signal 1: FID1 A,

RetTime [min]	Type	Area [pA*s]	Amt/Area ratio	Amount [%m/m]	Grp	Name
4.326	BB	20.17057	2.35982	2.48411e-2		ACETIC ALDEHYDE
4.617	BBA	4.68422	2.30375	5.63178e-3		METHANOL
5.877	MM	1.62668e5	1.17418	99.68017		ETHANOL
6.149	MM	5.19370e-1	1.56273	4.23578e-4		ACETONE
6.345		-	-	-		ISOPROPANOL
6.854		-	-	-		TERT - BUTANOL
7.276		-	-	-		ISOBUTYRIC ALDEHYDE
8.007	BBA	56.72651	1.20633	3.57131e-2		PROPAN-1-OL
8.315	BBA	61.84425	1.79029	5.77826e-2		ETHYL ACETATE
8.988	BBA	5.77984e-1	1.14961	3.46770e-4		BUTAN-2-OL
10.052	BB	40.03241	9.85810e-1	2.05958e-2		ISOBUTANOL
10.291	BBA	5.31556e-1	1.15148	3.19431e-4		ISOVALERIC ALDEHYDE
11.114	BBA	117.83927	1.40069	8.61402e-2		ACETAL
11.294	PBA	2.59190	1.04497	1.41350e-3		BUTAN-1-OL
11.942	BB	8.18630e-1	1.12040	4.78668e-4		PENTANAL
12.111	MM I	310.98889	1.00000	1.62300e-1		PENTAN-3-OL
13.775	PV	49.91570	9.14216e-1	2.38155e-2		ISOAMYL ALCOHOL
13.866	VB	40.99961	9.14103e-1	1.95591e-2		2-METHYLBUTAN-1-OL
14.437	VP	7.36679	1.24621	4.79118e-3		ETHYL BUTYRATE
15.455	BV	8.26749e-1	1.22183	5.27179e-4		1,1-DIETHOXY-2-METHYLPROPANE

Totals without ISTD(s) : 99.96255

Results obtained with enhanced integrator!  
2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)  
Warning : Calibrated compound(s) not found

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Summed Peaks Report  
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Signal 1: FID1 A,  
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Final Summed Peaks Report  
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Signal 1: FID1 A,

Name	Total Area [pA*s]	Amount [%m/m]
ACETIC ALDEHYDE	20.17057	0.0248
METHANOL	4.68422	5.632e-3
ETHANOL	1.62668e5	99.6802
ACETONE	5.19370e-1	4.236e-4
ISOPROPANOL	0.00000	0.0000
TERT - BUTANOL	0.00000	0.0000
ISOBUTYRIC ALDE	0.00000	0.0000
PROPAN-1-OL	56.72651	0.0357
ETHYL ACETATE	61.84425	0.0578
BUTAN-2-OL	5.77984e-1	3.468e-4
ISOBUTANOL	40.03241	0.0206
ISOVALERIC ALDE	5.31556e-1	3.194e-4
ACETAL	117.83927	0.0861
BUTAN-1-OL	2.59190	1.413e-3
PENTANAL	8.18630e-1	4.787e-4
PENTAN-3-OL	310.98889	0.1623
ISOAMIL ALCOHOL	49.91570	0.0238
2-METHYLBUTAN-1	40.99961	0.0196
ETHYL BUTYRATE	7.36679	4.791e-3
1.1-DIETHOXY-2-	8.26749e-1	5.272e-4

Totals : 100.1248

\*\*\* End of Report \*\*\*