Scharlab s.l.
Tel. int.: +34-93-7151811
Email: lab@scharlau.com

CERTIFICATE OF ANALYSIS

Product: **ET0015**

Ethanol absolute, Multisolvent® HPLC grade ACS ISO UV-VIS

Batch 11603607
Test date 16/03/2010
Shelf life 3/2015

Analysis	Batch value	Guaranteed value
assay (G.C.) (v/v)	99,95 %	min. 99,9 %
identity (IR-spectrum)	passes test	passes test
density (20º/4º)	0,7895	0,789 - 0,790
appearance	clear	clear
solubility in water	passes test	passes test
colour (Hazen)	5	max. 10
acidity	0,0002 meq/g	max. 0,0002 meq/g
alkalinity	0,00025 meq/g	max. 0,0002 meq/g
chlorides (Cl)	< 0,00003 %	max. 0,00003 %
nitrates (NO_3)	< 0,00003 %	max. 0,00003 %
phosphates (PO_4)	< 0,00003 %	max. 0,00003 %
sulfates (SO_4)	< 0,00003 %	max. 0,00003 %
aluminium (Al)	< 0,00001 %	max. 0,00001 %
antimony (Sb)	< 0,000002 %	max. 0,000002 %
arsenic (As)	< 0,000002 %	max. 0,000002 %
barium (Ba)	< 0,000001 %	max. 0,000001 %
beryllium (Be)	< 0,000002 %	max. 0,000002 %
bismuth (Bi)	< 0,000002 %	max. 0,000002 %
boron (B)	< 0,000002 %	max. 0,000002 %
cadmium (Cd)	< 0,000001 %	max. 0,000001 %
calcium (Ca)	< 0,00003 %	max. 0,00003 %
chromium (Cr)	< 0,000002 %	max. 0,000002 %
cobalt (Co)	< 0,000002 %	max. 0,000002 %
copper (Cu)	< 0,000002 %	max. 0,000002 %
gallium (Ga)	< 0,000002 %	max. 0,000002 %
gold (Au)	< 0,000002 %	max. 0,000002 %
indium (In)	< 0,000002 %	max. 0,000002 %
iron (Fe)	< 0,00001 %	max. 0,00001 %
lead (Pb)	< 0,00001 %	max. 0,00001 %
lithium (Li)	< 0,000002 %	max. 0,000002 %
magnesium (Mg)	< 0,00001 %	max. 0,00001 %
manganese (Mn)	< 0,000001 %	max. 0,000001 %
molybdenum (Mo)	< 0,000002 %	max. 0,000002 %
nickel (Ni)	< 0,000002 %	max. 0,000002 %
platinum (Pt)	< 0,000002 %	max. 0,000002 %
silver (Ag)	< 0,000002 %	max. 0,000002 %
thallium (Tl)	< 0,000002 %	max. 0,000002 %
tin (Sn)	< 0,00001 %	max. 0,00001 %
titanium (Ti)	< 0,000002 %	max. 0,000002 %
vanadium (V)	< 0,000002 %	max. 0,000002 %

This certificate does not release the user from the reception control .

This certificate is an electronic copy of the certificate available in our laboratory, and does not require signature

If you need further details, please call at our factory or contact our local distributor.

You can get a copy of any of our COA from our web site: www.scharlau.com

Scharlau Chemie - Certificate of Analysis

Product name: **Ethanol absolute**, Multisolvent® HPLC grade ACS ISO UV-VIS
Batch: 11603607 **Product code:** ET0015

Analysis	Batch value	Guaranteed value
zinc (Zn)	< 0,000001 %	max. 0,000001 %
zirconium (Zr)	< 0,000002 %	max. 0,000002 %
formaldehyde	< 0,0005 %	max. 0,0005 %
furfural	passes test	passes test
fusel oil	passes test	passes test
acetone (G.C.)	0,0001 %	max. 0,001 %
benzene (G.C.)	< 0,0002 %	max. 0,0002 %
iso-amyl alcohol (G.C.)	0,002 %	max. 0,05 %
methanol (G.C.)	0,001 %	max. 0,01 %
methylethylketone (G.C.)	0,002 %	max. 0,02 %
2-propanol (G.C.)	0,001 %	max. 0,003 %
acetaldehyde and acetal (G.C.)	0,0001 %	max. 0,001 %
aldehydes (as CH_3CHO)	< 0,001 %	max. 0,001 %
carbonyl compounds (ac CO)	< 0,003 %	max. 0,003 %
higher alcohols (G.C.)	< 0,01 %	max. 0,01 %
$KMnO_4$ red. matter	< 0,0002 %	max. 0,0002 %
substances darkened by H_2SO_4	passes test	passes test
non-volatile matter	0,0002 %	max. 0,0002 %
water (v/v) (K.F.)	0,05 %	max. 0,1 %
liquid chromatography suitability		
absorbance	passes test	passes test
min. transmission/max. absorbance		
in a 1,0 cm cell at		
wavelength:	T(%) A (AU)	T(%) A (AU)
210 nm	35 % 0,456 AU	35 % 0,456 AU
220 nm	58 % 0,235 AU	55 % 0,260 AU
230 nm	78 % 0,109 AU	72 % 0,143 AU
245 nm	93 % 0,030 AU	90 % 0,046 AU
270 nm	99 % 0,002 AU	98 % 0,009 AU
Microfiltered through membranes		
of pore diameter 0,22 µm		

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