

ANALYSIS CERTIFICATE

CODE: 651086

BATCH: 0000871901

PRODUCT: Ethanol absolute (USP, BP, Ph.Eur.) pharma grade

ISSUE DATE: 01/07/2016

RETEST DATE: 06/2022

| SPECIFICATIONS | GUARANTEE VALUE | ACTUAL VALUE |
|--|------------------------|---------------------|
| Minimum assay (G.C.) (v/v) | 99,5% | 99,9% |
| Identity according to Pharmacopoeias: | passes test | Passes test |
| Density 20/20 | 0,7907-0,7932 | 0,7911 |
| Maximum limit of impurities | | |
| Appearance of solution | passes test | Passes test |
| Acidity and alkalinity | passes test | Passes test |
| Insoluble matter in in H2O | passes test | Passes test |
| Non-volatile matter (w/v) | 0,0025 % | <0,0002 % |
| Reducing substances to KMnO4 | passes test | Passes test |
| Colour of solution (USP) | passes test | Passes test |
| Clarity of solution | passes test | Passes test |
| Absorbance | passes test | Passes test |
| Fusel oil | passes test | Passes test |
| Residual solvents (Ph.Eur/USP) | passes test | Passes test |
| 1-Pentanol, non-volatile subst. and carbonized subst. by H2SO4 | passes test | Passes test |
| Acetone, 2-Propanol and 2-Methyl-2-Propanol | passes test | Passes test |
| Benzene | 0,0002% | <0,0002% |
| Butanone (G.C.) | 0,02% | <0,02% |
| Volatile impurities (G.C.) | | |
| Methanol | 0,02% | <0,02% |
| Acetaldehyde and acetal | 0,001 % | <0,001 % |
| Total other impurities | 0,03 % | <0,03 % |
| Aldehydes (CH3CHO) | 0,001% | <0,001% |
| Water (H2O) | 0,5 % | 0,02 % |
| Residual metals ICP: (according to EMEA/CHMP/SWP/4446/2000) | | |
| Class 1A (Pt, Pd) | 10 ppm | <10 ppm |
| Class 1B (Ir, Rh, Ru, Os) | 10 ppm | <10 ppm |
| Class 1C (Mo, Ni, Cr, V) | 25 ppm | <25 ppm |
| Class 2 (Cu, Mn) | 250 ppm | <250 ppm |
| Class 3 (Fe, Zn) | 1.300 ppm | <1.300 ppm |

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