



# Certificate of Analysis

Shell Product : IPA (Isopropyl Alcohol)  
Shell Spec. No. : S1111 / 1000

Cust PO/Indent : 918 11.09.2014  
Sales Order/Item : 1001472131 / 10  
Delivery Number : 8002464511  
Despatch Date : 15.SEP.2014  
Inspection Lot : 000002000639

Package Type : Bulk  
Vehicle/Vessel : SAIU6411602

| Property               | Units                              | Minimum | Maximum | Result  | N | Method     |
|------------------------|------------------------------------|---------|---------|---------|---|------------|
| Purity                 | %m/m                               | 99,8    |         | > 99,9  |   | DIN 55685  |
| Water                  | %m/m                               |         | 0,1     | 0,0     |   | ASTM D1364 |
| Acidity as acetic acid | %m/m                               |         | 0,001   | 0,000   |   | ASTM D1613 |
| Water Miscibility      | Miscible                           |         |         | Pass    |   | ASTM D1722 |
| Nonvolatile Residue    | g/100ml                            |         | 0,001   | < 0,001 |   | ASTM D1353 |
| Appearance             | Clear & Free From Suspended Matter |         |         | Pass    |   | ASTM D4176 |
| Color, Pt-Co           |                                    |         | 5       | < 5     | 4 | ASTM D1209 |
| Density @20C           | g/ml                               | 0,785   | 0,786   | 0,785   | 4 | ASTM D4052 |
| Distillation, IBP      | °C                                 | 81,8    |         | > 81,8  | 4 | ASTM D1078 |
| Distillation, DP       | °C                                 |         | 82,8    | < 82,8  | 4 | ASTM D1078 |
| Refractive Index @20C  |                                    | 1,376   | 1,378   | 1,377   | 4 | ASTM D1218 |

(Notes : 4-Agreed Specification limits - no results: Statistical average value reported

Product as produced complies with ASTM D770, DIN 53245 and ACS 8th edition. Product meets guaranteed limits, but are not routinely tested.

Shell Chemicals Europe B.V. certifies that these results are based upon sampling and testing procedures in place at the time of production.

*Handwritten signature and date: 18/9/14*