| Apollo Scientific Ltd Whitefield Road, Bredb Stockport, SK6 2QR, U Tel:44(0)161 4060505 e-mail: sales@apollosci | $x: 44(0) 1614060506$ <br> ific.co.uk | APOLLO SCIEN |
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| -CERTIFICATE OF ANALYSIS- |  |  |
| Product: | 7-Aminocephalosporanic acid |  |
| Code No: | BIA4007 |  |
| CAS No: | 957-68-6 |  |
| Batch No: | AS448834 |  |
| Appearance: | Slightly off-white crystalline powder |  |
| Colour of solution: | Slightly yellow ( $1 \%$ in $0.1 \mathrm{~mol} / \mathrm{L} \mathrm{NaOH}$ ) |  |
| Turbidity: | 0.9 NTU ( $1 \%$ in $0.1 \mathrm{~mol} / \mathrm{L} \mathrm{NaOH}$ ) |  |
| Loss on drying: | $0.4 \%$ ( $60^{\circ} \mathrm{C}, 3$ hours, vacuum) |  |
| Specific rotation $[\alpha]_{D}$ : | $90.7^{\circ}$ (c=0.5 in $\mathrm{KH}_{2} \mathrm{PO}_{4} / \mathrm{NaOH}$ buffer pH 7.0, $20^{\circ} \mathrm{C}$ ) |  |
| pH-value: | 3.6 (c=0.5 in water) |  |
| Perchloric acid titratio | 99.6\% (0.1mol/L) |  |
| Purity: | 96.4\% (HPLC) |  |
| FT-IR Spectrum: | Corresponds to reference spectrum |  |
| Verified by: | David Parton |  |
| Signed: |  |  |
| Date: | $29^{\text {th }}$ January 2014 |  |

