

Certificate of Analysis

Date of Testing: 2024-05-07 11:10:58
Date of Next Testing: 2028-05-06 11:10:58
Product Name: **Piperazine Citrate Hydrate**
CAS Number: 144-29-6
Specifications & Purity: >98.0%(T)
Lot #: G2014026
SKU #: **P160728**
Analysis: **353946**

| Parameter | Limit Values | Result |
|--|-----------------------|-----------------------|
| Purity(Titration by HClO ₄)(anhydrous) | 97.5-102.5 (%) | 97.60% |
| Water by Karl Fischer | 0-12 (%) | 1.79% |
| Proton NMR spectrum | Conforms to Structure | Conforms to Structure |



John Su
QA & QC Manager