

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

Certificate of Analysis

Date of Testing: 2023-04-11 10:10:01
Date of Next Testing: 2027-04-10 10:10:01
Product Name: **Piperazine, anhydrous**
CAS Number: 110-85-0
Specifications & Purity: 99%
Lot #: D2304351
SKU #: **P105274**
Analysis: **200889**
Storage Temperature: Argon charged

| Parameter | Limit Values | Result |
|--------------------------|--|--|
| Purity(Titration by HCl) | 98.5-101.5 (%) | 100.32 % |
| Purity(GC) | 99-100 (%) | 99.44 % |
| Water by Karl Fischer | 0-1 (%) | 0.29 % |
| Appearance (P105274) | White to Light Yellow Flakes, Crystals or Powder | White to Light Yellow Flakes, Crystals or Powder |
| Infrared spectrum | Conforms to Structure | Conforms to Structure |
| Proton NMR spectrum | Conforms to Structure | Conforms to Structure |



John Su
QA & QC Manager