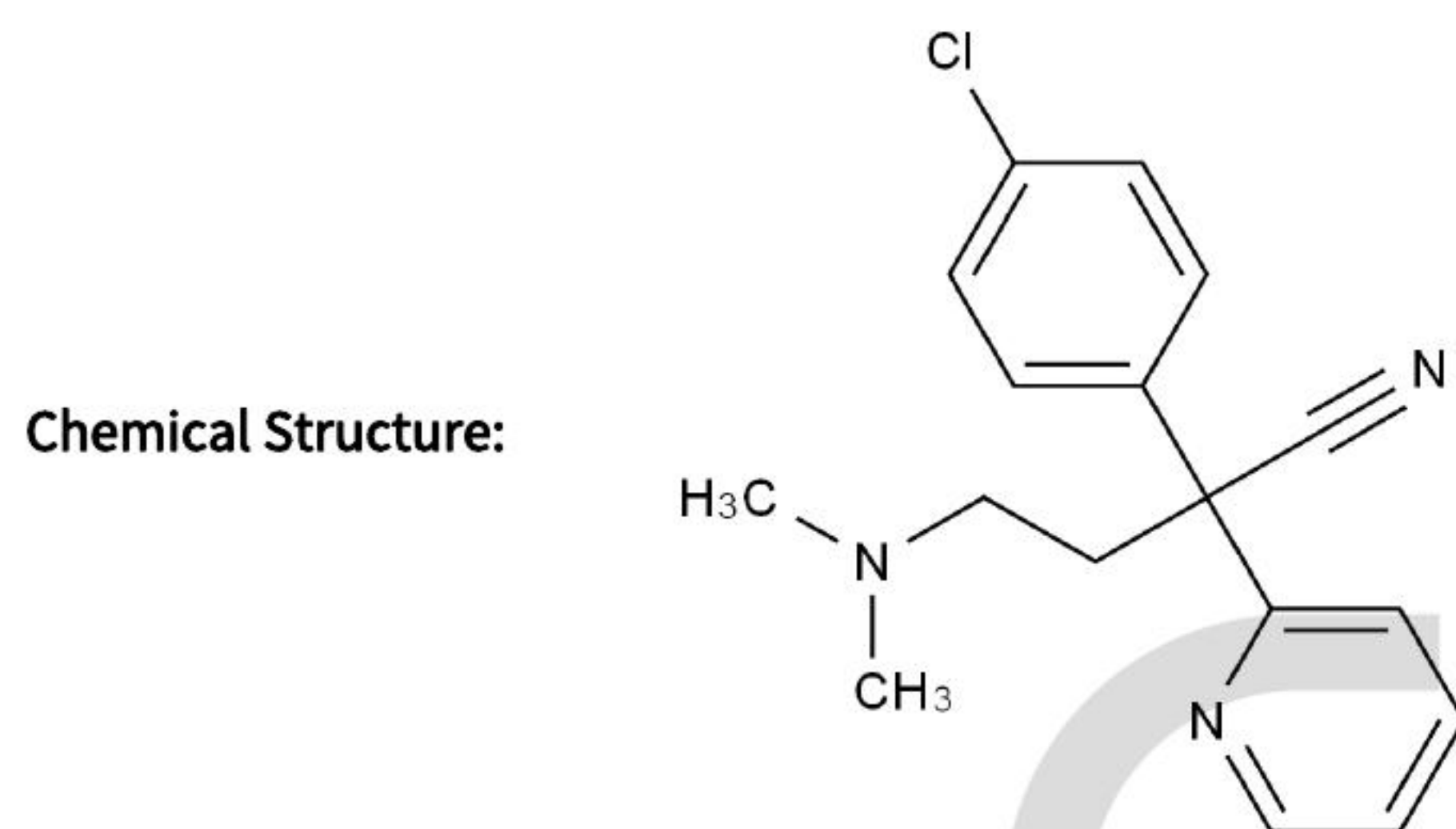


# Certificate of Analysis

## Reference Material & Standard

|                           |                                                                    |                            |                              |
|---------------------------|--------------------------------------------------------------------|----------------------------|------------------------------|
| <b>Product Name:</b>      | Chlorphenamine EP Impurity D                                       | <b>Catalogue Number:</b>   | C4X-118817                   |
| <b>Synonyms:</b>          | 2-(4-Chlorophenyl)-4-(dimethylamino)-2-(pyridin-2-yl)butanenitrile | <b>Lot Number:</b>         | 0804-RH-0062                 |
| <b>CAS Number:</b>        | 65676-21-3                                                         | <b>Expiry Date:</b>        | Aug 19, 2030                 |
| <b>Molecular Formula:</b> | C <sub>17</sub> H <sub>18</sub> ClN <sub>3</sub>                   | <b>Storage:</b>            | 2°C ~ 8°C Sealed             |
| <b>Molecular Weight:</b>  | 299.80                                                             | <b>Shipping Condition:</b> | Shipping at Room Temperature |
| <b>Solubility:</b>        | Soluble in Acetonitrile and Chloroform                             |                            |                              |



| Test Items          | Method            | Results               |
|---------------------|-------------------|-----------------------|
| Appearance          | Visual inspection | Red Sticky Semi-Solid |
| Identification      | LCMS&IR&CNMR&HNMR | Confirmed             |
| Purity              | HPLC              | 97.221%               |
| Residue on Ignition | TGA               | 0.4053%               |
| Loss on Drying      | TGA               | 0.8601%               |
| Assay               | qNMR              | 96.2%                 |
| Assay               | Mass Balance      | 96.0%                 |

## Comment:

- The retest date of this product is Aug 19, 2029.
- The calculation of the mass balance method follows the formula (calculated on the non-dried basis):  

$$\text{Assay (\%)} = (100\% - \text{Residue on Ignition} - \text{Loss on Drying}) * \text{Purity HPLC (\%)} / 100\%$$
Residue on Ignition and Loss on Drying are considered as absolute effect, HPLC purity is considered as relative effect.

## Signature:

Prepared by:

*Koi*

Reviewed by:

*Alice*

Approved by General Manager:

*David*

Date: Aug 20, 2026

Date: Aug 20, 2026

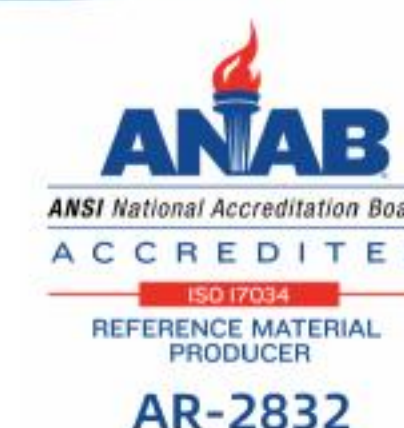
Date: Aug 20, 2026

Add: 3rd Floor, Building B, No.179, Guangpu Rd East, Huangpu District, Guangzhou, China

Tel: +86-20-81960175

Email: supports@cato-chem.com

Web: <https://www.cato-chem.com>



Official WeChat