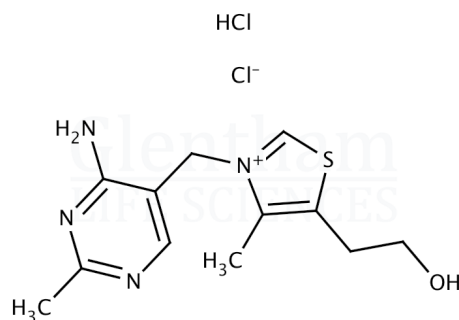


Certificate of Analysis

| | |
|-------------------|-----------------------------------|
| Product Name | Thiamine hydrochloride, USP grade |
| Glentham Code | GP8217 |
| CAS Number | 67-03-8 |
| EINECS | 200-641-8 |
| MDL Number | MFCD00012780 |
| Additional CAS | 59-43-8 |
| Batch Number | 459SEL |
| Molecular Weight | 337.28 |
| Molecular Formula | $C_{12}H_{17}ClN_4OS \cdot HCl$ |
| Storage Temp. | +4°C |



| Property | Specification | Batch 459SEL |
|--------------------------------|----------------------------------|--------------|
| Physical Description | White to almost white powder | White powder |
| Identification (IR) | To conform to standard | Conforms |
| pH | 2.7 - 3.4 | 3.1 |
| Absorbance of Solution | ≤ 0.025 | 0.01 |
| Limit of Nitrate | To pass test | Conforms |
| Residue on Ignition | ≤ 0.2% | 0.04% |
| Chromatographic Purity | ≤ 1.0% | Conforms |
| Water (KF) | ≤ 5.0% | 2.2% |
| Assay | 98.0 - 102.0 % (anhydrous basis) | 99.4% |
| Pharmacopoeia Specification(s) | USP | Conforms |

| | |
|-----------------------|------------|
| Specification Version | v1.0 |
| Manufacture Date | 2021-06-18 |
| Re-Test Date | 2028-02-16 |

Glentham Life Sciences confirm that the above referenced product conformed to the information displayed in this document on the quality release date. Please check www.glentham.com or contact us using the details above for the current version of this document.

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