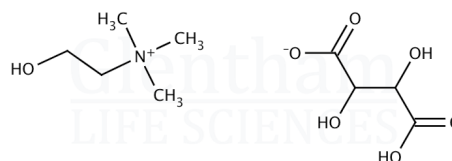


Product Specification

| | |
|-------------------|-------------------------------|
| Product Name | Choline bitartrate, USP grade |
| Glentham Code | GL9811 |
| CAS Number | 87-67-2 |
| EINECS | 201-763-4 |
| MDL Number | MFCD00036332 |
| Additional CAS | 62-49-7 |
| Molecular Weight | 253.25 |
| Molecular Formula | $C_9H_{19}NO_7$ |
| Storage Temp. | +20°C |



| Property | Specification |
|---|---|
| Physical Description | White crystalline powder |
| Solubility (10% in water) | Clear to slightly turbid, colourless solution |
| pH (10% in water) | 3.0 - 4.0 |
| Specific Optical Rotation ($[\alpha]_{20/D}$) | +17.0 - +18.5 ° (c=10, water) |
| Water | ≤ 0.5% |
| Residue on Ignition | ≤ 0.1% |
| Choline | 40.9 - 41.72 % |
| Total Amines | ≤ 0.001% |
| 1,4-Dioxane | ≤ 0.001% |
| Arsenic (As) | ≤ 2ppm |
| Lead (Pb) | ≤ 0.3ppm |
| Heavy Metals | ≤ 10ppm |
| Total Coliforms | ≤ 300CFU/g |
| Yeast & Mould | ≤ 100CFU/g |
| Total Plate Count | ≤ 1000CFU/g |
| Pharmacopoeia Specification(s) | USP |

| | | |
|-----------------------|---|------------|
| Specification Version | - | v1.0 |
| Date Created | - | 2021-10-12 |

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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