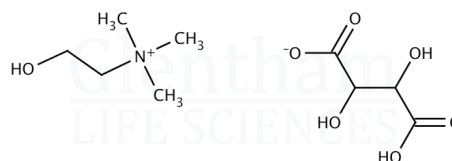


## Product Specification

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](http://www.glentham.com) or contact us using the details above for the current version of this document.

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