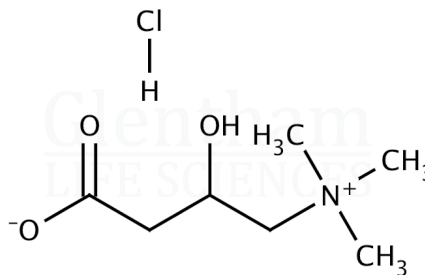


## Certificate of Analysis

Product Name	L-Carnitine hydrochloride
Glentham Code	GM4580
CAS Number	6645-46-1
EINECS	229-663-6
MDL Number	MFCD00066100
PubChem SID	310269396
Batch Number	935PRO
Molecular Weight	197.66
Molecular Formula	$C_7H_{15}NO_3 \cdot HCl$
Storage Temp.	+20°C



Property	Specification	Batch 935PRO
Physical Description	White powder	White powder
Identification (IR)	To conform to standard	Conforms
Solubility (5% in water)	Clear, colourless solution	Conforms
Specific Optical Rotation	-21.0 - -25.0 ° (c=1, water)	-23.7°
Chloride (Cl)	17.0 - 18.5 %	17.8%
Residue on Ignition	≤ 0.5%	≤ 0.1%
Arsenic (As)	≤ 1ppm	Conforms
Lead (Pb)	≤ 3ppm	Conforms
Cadmium (Cd)	≤ 1ppm	Conforms
Mercury (Hg)	≤ 0.1ppm	Conforms
Heavy Metals	≤ 10ppm	Conforms
D-Carnitine	≤ 0.1%	Conforms
Loss on Drying	≤ 2.0%	0.5%
Assay	98.0 - 102.0 % (dried basis)	99.1%

Specification Version	v1.1
Manufacture Date	2017-11-02
Re-Test Date	2031-04-08

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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