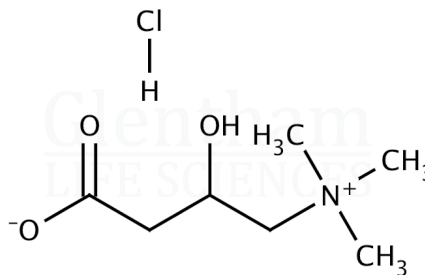


Certificate of Analysis

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 or contact us using the details above for the current version of this document.

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