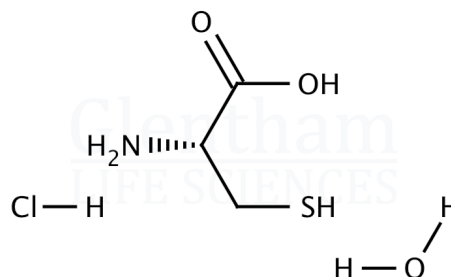


## Certificate of Analysis

Product Name	L-Cysteine hydrochloride monohydrate, Ph. Eur., USP grade
Glentham Code	GM2919
CAS Number	7048-04-6
EINECS	200-157-7
MDL Number	MFCD00065606
Additional CAS	345909-32-2 ( $\cdot xH_2O$ )
Batch Number	078CXN
Molecular Weight	175.64
Molecular Formula	$C_3H_7NO_2S \cdot HCl \cdot H_2O$
Storage Temp.	+20°C



Property	Specification	Batch 078CXN
Physical Description	White or almost white crystalline powder, or colourless crystals	White crystals
Assay	98.5 - 101.0 % (dried substance)	99.7%
Loss on Drying	8.0 - 12.0 %	11.0%
Sulphated Ash	$\leq 0.1\%$	0.05%
Heavy Metals (as Pb)	$\leq 10\text{ppm}$	Conforms
Iron (Fe)	$\leq 20\text{ppm}$	$\leq 10\text{ppm}$
Ammonium (NH <sub>4</sub> )	$\leq 200\text{ppm}$	Conforms
Sulphates	$\leq 300\text{ppm}$	$\leq 200\text{ppm}$
Total Impurities (TLC)	$\leq 2.0\%$	Conforms
Any Individual Impurity (TLC)	$\leq 0.5\%$	Conforms
Specific Optical Rotation	Ph. Eur.: + 5.5 - +7.0 °, USP: + 5.7 - +6.8 °	+6.1°, +5.8°
Solubility (5% in water)	Clear, colourless solution ( $\leq \text{BY6}$ )	Conforms
Identification	Reaction of chlorides	Conforms
Identification	IR	Conforms
Pharmacopoeia Specification(s)	Ph. Eur., USP	Conforms

Specification Version	v1.1
Manufacture Date	2021-03-08
Re-Test Date	2030-03-20

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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