

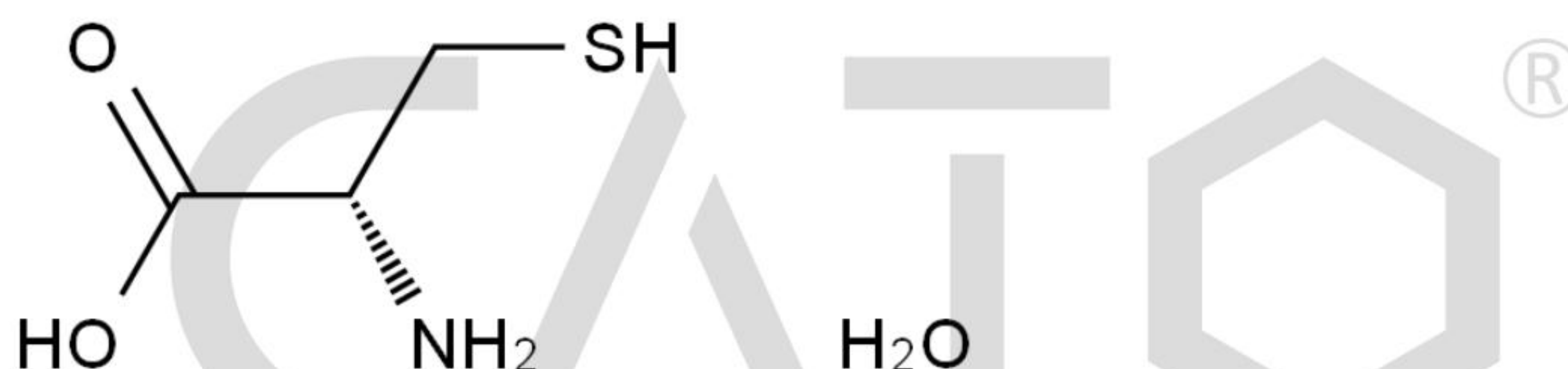
Certificate of Analysis

Reference Material & Standard

Product Name:	L-Cysteine Hydrochloride Monohydrate	Catalogue Number:	CCFD200755
Synonyms:	N/A	Lot Number:	0702-RG-0041
CAS Number:	7048-04-6	Expiry Date:	Jul 09, 2029
Molecular Formula:	C3H7NO2S HCl H2O	Storage:	2°C ~ 8°C Protected from light and Sealed
Molecular Weight:	121.16 36.46 18.02	Warning:	

HCl

Chemical Structure:



Test Items	Method	Results
Appearance	Visual inspection	White Crystalline Solid
Identification	LCMS&HNMR	Confirmed
Purity	ELSD	98.658%
Water Content	Karl Fischer	12.3430%
Water Content(Free Water)		2.0834%
Assay		96.6%
Uncertainty		±0.4%

Comment:

- The content of crystal water is 10.2596%.
- The calculation of the 100% method follows the formula (calculated on the non-dried basis):

$$\text{Assay (\%)} = (100\% - \text{Water Content(Free Water)}) * \text{Purity ELSD (\%)} / 100\%$$
 Water Content(Free Water) is considered as absolute effect, ELSD purity is considered as relative effect.
- The uncertainty values are the expanded uncertainty and represent an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.

Signature:

Prepared by:

Nice

Reviewed by:

Lisa

Approved by General Manager:

David

Date: Jul 10, 2025

Date: Jul 11, 2025

Date: Jul 11, 2025

