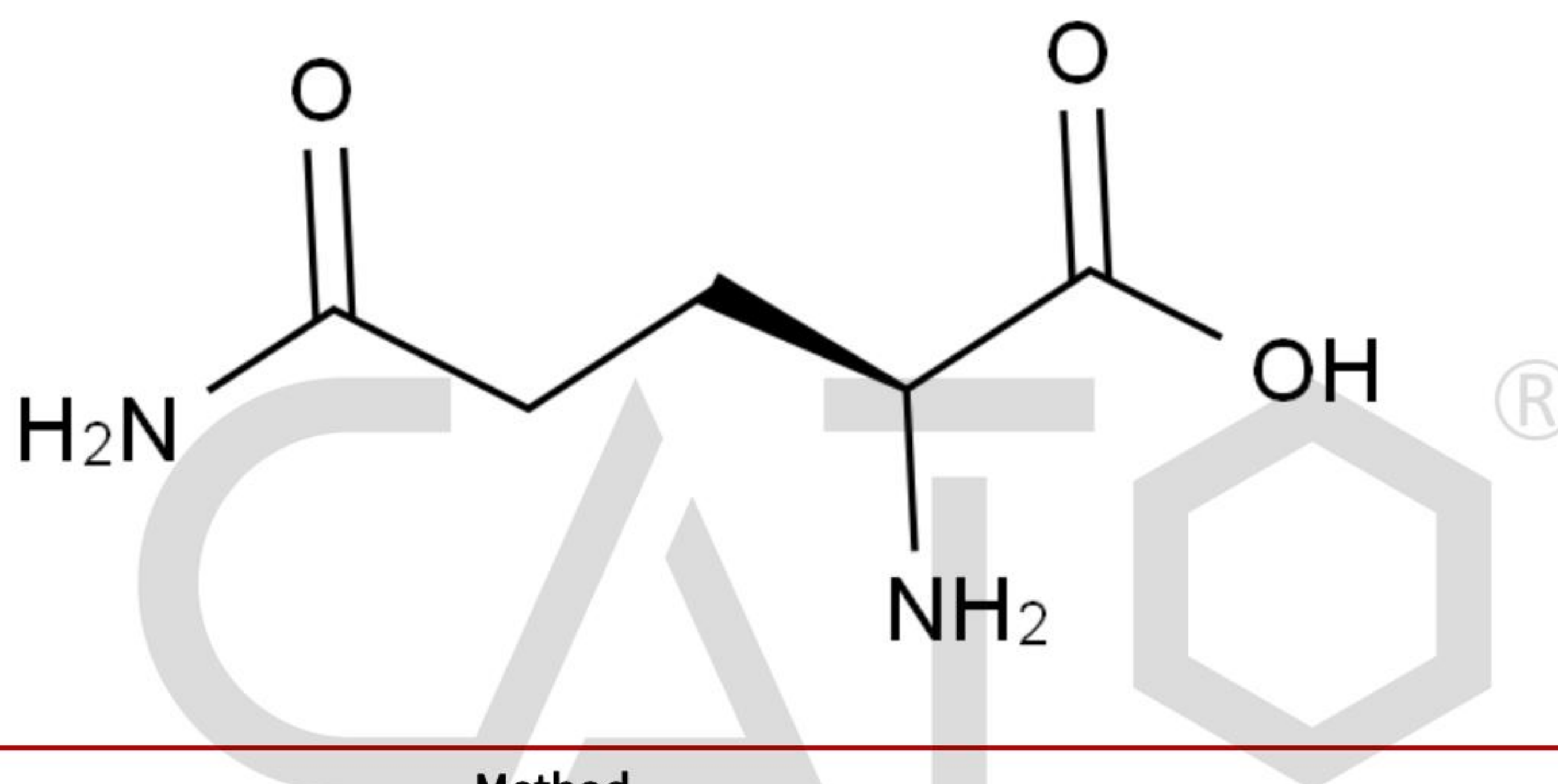


Certificate of Analysis

Reference Material & Standard

Product Name:	L-Glutamine	Catalogue Number:	CCFD200165
Synonyms:	N/A	Lot Number:	1203-RC-0071
CAS Number:	56-85-9	Expiry Date:	Jan 06, 2029
Molecular Formula:	C ₅ H ₁₀ N ₂ O ₃	Storage:	Room Temp Protected from light and Sealed
Molecular Weight:	146.14		

Chemical Structure:



Test Items	Method	Results
Appearance	Visual inspection	White Solid
Identification	LCMS&CNMR&HNMR	Confirmed
Purity	ELSD	100.000%
Loss On Drying	TGA	0.0243%
Assay		100.0%
Uncertainty		±2.0%

Comment:

1. The calculation of the 100% method follows the formula (calculated on the non-dried basis):

$\text{Assay (\%)} = (100\% - \text{Loss On Drying}) * \text{Purity ELSD (\%)} / 100\%$

Loss On Drying is considered as absolute effect, ELSD purity is considered as relative effect.

2. 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:

Lisa

Reviewed by:

Hinlam

Approved by General Manager:

David

Date: Jan 08, 2025

Date: Jan 08, 2025

Date: Jan 08, 2025

