

# Certificate of Analysis

## (Stable Isotope)

Urea Working Standard  
Cat No. B2174 – Certificate no. 318862

### General

This Analytical Standard (OAS) consists of a homogenous batch of **Urea** standard for use as a routine working laboratory standard in the determination of the Carbon and Nitrogen isotopes  $^{13}\text{C}$ ,  $^{15}\text{N}$ .

### Values and Uncertainty

The uncertainty in the quoted value is expressed as expanded uncertainty, U, at 95% confidence and is calculated in accordance with ISO/IEC17025 according to GUM (Guidelines to Uncertainty in Measurement). Confidence limits include those due to sampling variation, weighing, calibration and measurement errors. The quoted values for each are based upon the results of 10 determinations.

This working standard is traceable to primary isotopic certified reference materials (CRM) issued by IAEA Vienna.

It is not intended to be a substitute for such primary standards.

<i>Isotope</i>	<i>Value</i> (‰)	<i>Uncertainty</i> (+/- ‰)
$\delta^{13}\text{C}_{\text{V-PDB}}$	<b>-36.59</b>	<b>0.04</b>
$\delta^{15}\text{N}_{\text{AIR}}$	<b>-2.20</b>	<b>0.12</b>

### Expiration

The values quoted are valid until **23 Nov 2023** within the measurement uncertainties specified.

### Storage and use

This OAS should be stored between 20°C to 25°C and should be kept tightly sealed away from light and moisture.

### Information

The technical aspects involved in the preparation and issuance of this (In)Organic Analytical Standard (IAS/OAS) were carried out at Elemental Microanalysis Ltd, Okehampton, Devon EX20 1UB UK, Tel +44 1837 54446, Fax +44 1837 54544, Email [info@microanalysis.co.uk](mailto:info@microanalysis.co.uk).

For and on behalf of  
Elemental Microanalysis Ltd

Jon Davies  
Technical Manager

