



Certificate of Calibration

NPL PRIMARY REFERENCE MATERIAL

Cylinder Number: D109144

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CUSTOMER: Goethe Universität Frankfurt
ADDRESS: Institut für Atmosphäre und Umwelt, Altenhöferallee 1,
60438 Frankfurt am Main, Germany
CALIBRATION DATE: 05 September 2023

AMOUNT FRACTIONS:

Component	Amount fraction
Nitrogen monoxide ^(a)	$1.998 \pm 0.020 \mu\text{mol mol}^{-1}$
Carbon dioxide ^(b)	$10.19 \pm 0.05 \text{ mmol mol}^{-1}$
Nitrogen	Balance

The reported expanded uncertainties are based on standard uncertainties multiplied by a coverage factor $k = 2$, providing a coverage probability of approximately 95 %.

METHODS: Preparation: gravimetry; Analysis: ^(a)chemiluminescence ^(b)gas chromatography (TCD)
TRACEABILITY: The values on this certificate are traceable to NPL Primary Standards
EXPIRY: Certificate valid for 2 years from the date of issue
PRESSURE: Fill pressure: 106 bar; Minimum utilisation pressure: 5 bar
STORAGE: No special precautions are required
HANDLING: Refer to ISO 16664
OUTLET: BS 341 No. 14 Valve
INTENDED USE: Calibration standard

Reference: 2023050084

Date of issue: 26 September 2023

Signed:

(Authorised Signatory)

Name: Dr D R Worton

(on behalf of NPLML)

Checked by:

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