NATIONAL PHYSICAL LABORATORY
Teddington Middlesex UK TW11 0LW Telephone +44 20 8977 3222

Certificate of Calibration

NPL CERTIFIED REFERENCE MATERIAL

Cylinder Number: D115627

CUSTOMER: **Deutscher Wetterdienst**

ADDRESS: Meteorologisches Observatorium Hohenpeissenberg, Albin-Schwaiger-Weg 10, 82383 Hohenpeissenberg, Germany

CALIBRATION DATE: 29 March 2023

CERTIFIED AMOUNT FRACTIONS:

Component	Amount fraction / (µmol/mol)	Component	Amount fraction / (µmol/mol)
Acetaldehyde	1.18 ± 0.06	1,2,4-trifluorobenzene	1.02 ± 0.06
Methanol	1.46 ± 0.15	Toluene	1.10 ± 0.06
Ethanol	1.11 ± 0.12	Hexamethylcyclotrisiloxane	0.90 ± 0.10
Isoprene	0.751 ± 0.038	*m*-xylene	1.13 ± 0.06
Acetone	1.00 ± 0.05	Octamethylcyclotetrasiloxane	1.09 ± 0.11
Dimethyl Sulfide	1.04 ± 0.06	1,2,4-trimethylbenzene	1.26 ± 0.07
Acetonitrile	1.01 ± 0.06	3-carene	1.11 ± 0.06
Perfluorotributylamine	1.11 ± 0.12	Decamethylcyclopentasiloxane	0.93 ± 0.10
3-buten-2-one	0.78 ± 0.08	1,2,4-trichlorobenzene	0.953 ± 0.048
Butan-2-one	0.99 ± 0.05	Nitrogen	Balance
Benzene	1.04 ± 0.06	-	-

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: gas chromatography (FID)

TRACEABILITY: The values on this certificate are traceable to NPL Primary Standards

EXPIRY: Certificate valid for 1 year from the date of issue

PRESSURE: Fill pressure: 107 bar; Minimum utilisation pressure: 10 bar

STORAGE: No special precautions are required

HANDLING: Refer to ISO 16664

OUTLET: DIN 477 No. 1 Valve

INTENDED USE: Calibration standard

Reference: 2022040123 **Date of issue:** 31 March 2023

Signed: (Authorised Signatory)

Name: Dr D R Worton (on behalf of NPLML)

Checked by: G Hristova