



Certificate of Calibration

NPL CERTIFIED REFERENCE MATERIAL

Cylinder Number: D961401

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CUSTOMER: University of Helsinki
ADDRESS: Hyytäläntie 124, FI-35500 Korkeakoski, Helsinki, Finland
CALIBRATION DATE: 13 October 2021

CERTIFIED AMOUNT FRACTION:

Component	Amount fraction / ($\mu\text{mol/mol}$)	Component	Amount fraction / ($\mu\text{mol/mol}$)
Acetaldehyde	1.29 \pm 0.13	1,2,4-trifluorobenzene	0.950 \pm 0.048
Methanol	1.05 \pm 0.11	Toluene	1.01 \pm 0.06
Ethanol	1.24 \pm 0.13	Hexamethylcyclotrisiloxane	1.07 \pm 0.11
Isoprene	0.745 \pm 0.038	<i>m</i> -xylene	1.02 \pm 0.06
Acetone	1.04 \pm 0.06	Octamethylcyclotetrasiloxane	1.23 \pm 0.13
Dimethyl sulfide	0.811 \pm 0.041	1,2,4-trimethylbenzene	1.09 \pm 0.11
Acetonitrile	1.32 \pm 0.14	+3-carene	0.98 \pm 0.10
Perfluorotributylamine	0.87 \pm 0.09	Decamethylcyclopentasiloxane	1.27 \pm 0.13
3-buten-2-one	1.16 \pm 0.12	1,2,4-trichlorobenzene	1.21 \pm 0.13
Butan-2-one	1.17 \pm 0.06	Nitrogen	Balance
Benzene	0.857 \pm 0.043	-	-

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 & MS)
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: 103 bar; Minimum utilisation pressure: 10 bar
STORAGE: No special precautions are required
HANDLING: Refer to ISO 16664
OUTLET: BS 341 No. 15 valve
INTENDED USE: Calibration standard

Reference: 2021040286

Date of issue: 22 October 2021

Signed:

(Authorised Signatory)

Name:

Dr D R Worton

(on behalf of NPLML)

Checked by:

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