

Reference procedure

Gas-Chromatographic Certification of Gas Mixtures for the Determination of the Calorific Value of Fuel Gases

Proof of competence

CMC entry

Testing quantities and objects

Composition of gas mixtures (amount-of-substance fractions of hydrogen, helium, nitrogen, oxygen, carbon dioxide, carbon monoxide, and hydrocarbons up to C₆ in mol/mol)

Testing range

Methane: 0.75 mol/mol to 0.99 mol/mol
Other components: Helium, oxygen, nitrogen, carbon dioxide, carbon monoxide, hydrogen, ethene, ethane, propene, propane, n-butane, 2-methylpropane, n-pentane, 2-methylbutane, 2,2-dimethylpropane, n-hexane
in the range of: 0.00001 mol/mol to 0.2 mol/mol

Expanded measurement uncertainty ($k = 2$)

Methane: 0.09 % to 0.05 % (relative)
Other components: 1.0 % to 0.3 % (relative)

Field of application

Certification of gas mixtures as reference standards of gas composition to assure traceability of calibration gases for process GCs and gas calorimeters to national gas standards according to PTB-A 7.61 "Brennwertmessgeräte" and of gas mixtures for the calibration of analyzers.

References

DIN EN ISO 6142-1:2015, <https://dx.doi.org/10.31030/2313786>.
DIN EN ISO 6143:2006-11, <https://dx.doi.org/10.31030/9716106>.
ISO 12963:2017-04, <https://www.iso.org/standard/64891.html>.
ISO 16664:2017-05, <https://www.iso.org/standard/70554.html>.
Physikalisch-Technische Bundesanstalt (PTB), Messgeräte für Gas - Brennwertmessgeräte *PTB-Anforderungen 1998-01*, *PTB-A 7.61*, <https://oar.ptb.de/files/download/56d6a9e4ab9f3f76468b4621>.

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