DIN EN ISO 6974-1:2012-11 (E)

Natural gas - Determination of composition and associated uncertainty by gas chro matography - Part 1: General guidelines and calculation of composition (ISO 6974-1:2012)

Contents

Page

Foreword ... 3

Introduction ... 4

1 Scope ... 5

2 Normative references ... 5

3 Terms and definitions ... 5

4 Symbols ... 9
4.1 Symbols ... 9
4.2 Subscripts ... 10

5 Principles of analysis ... 10
5.1 General considerations ... 10
5.2 Method of operation ... 11
5.3 Mode of operation ... 12
5.4 Directly and indirectly measured components ... 12
5.5 Normalization ... 12

6 Analytical procedure ... 12
6.1 General considerations ... 12
6.2 Step 1 — Defining the working range ... 15
6.3 Step 2 — Defining the requirements of the analytical method ... 15
6.4 Step 3 — Selecting equipment and working conditions ... 15
6.5 Step 4 — Response characteristics (primary calibration or performance evaluation) ... 16
6.6 Step 5 — Relative response factors ... 19
6.7 Step 6 — Routine calibration/quality assurance check ... 20
6.8 Step 7 — Analysis of samples ... 21
6.9 Step 8 — Calculation of component mole fractions ... 22

7 Control chart ... 25

8 Test report ... 25

Annex A (informative) Comparative application ranges and characteristics of analytical methods described in ISO 6974-3 to ISO 6974-6 ... 27

Annex B (informative) Alternative approach to bridging and normalization ... 29

Annex C (informative) Methane-by-difference approach ... 36

Annex D (normative) Relative response factors ... 37

Annex E (informative) Testing for outliers ... 39

Annex F (normative) Pressure correction during calibration and sample analysis ... 40

Annex G (informative) Software suitable for generalized least squares regression analysis ... 42

Annex H (informative) Use of control charts ... 44

Bibliography ... 45