ISO 6974-1:2012-05 (E)

Natural gas - Determination of composition and associated uncertainty by gas chromatography - Part 1: Gene ral guidelines and calculation of composition

Contents

Page

Foreword iv

Introduction v

1 Scope 1

2 Normative references 1

3 Termsanddefinitions 1

4 Symbols 5
4.1 Symbols 5
4.2 Subscripts 6

5 Principles of analysis 6
5.1 General considerations 6
5.2 Method of operation 7
5.3 Mode of operation 8
5.4 Directly and indirectly measured components 8
5.5 Normalization 8

6 Analytical procedure 8
6.1 General considerations 8
6.2 Step1--Definingtheworkingrange 10
6.3 Step2--Definingtherequirementsoftheanalyticalmethod 11
6.4 Step3--Selectingequipmentandworkingconditions 11
6.5 Step 4 -- Response characteristics (primary calibration or performance evaluation) 12
6.6 Step 5 -- Relative response factors 15
6.7 Step6--Routinecalibration/qualityassurancecheck 16
6.8 Step 7 -- Analysis of samples 17
6.9 Step 8 -- Calculation of component mole fractions 18

7 Control chart 21

8 Test report 21

Annex A (informative) Comparative application ranges and characteristics of analytical methods
Annex B (informative) Alternative approach to bridging and normalization 25

Annex C (informative) Methane-by-difference approach 32

Annex D (normative) Relative response factors 33

Annex E (informative) Testing for outliers 35

Annex F (normative) Pressure correction during calibration and sample analysis 36

Annex G (informative)Softwaresuitableforgeneralizedleastsquaresregressionanalysis 38

Annex H (informative) Use of control charts 40

Bibliography 41