

# DIN EN ISO 14912:2006-11 (E)

## Gas analysis - Conversion of gas mixture composition data (ISO 14912:2003)

---

<b>Contents</b>		<b>Page</b>
Foreword .....		3
Introduction .....		4
1	Scope .....	5
2	Terms and definitions .....	5
3	Symbols and units .....	8
4	Basic principles .....	10
4.1	Expression of gas mixture composition .....	10
4.2	Conversion between different quantities .....	12
4.3	Conversion between different state conditions .....	13
5	Main procedures .....	14
5.1	Conversion between different quantities of composition .....	14
5.2	Conversion to reference conditions .....	17
6	Practical implementation .....	17
6.1	Conversion between quantities of composition .....	17
6.2	Conversion of single analyte contents .....	18
6.3	Conversion of complete compositions .....	19
6.4	Conversion between state conditions .....	19
6.5	Simple approximations applicable to conversion .....	19
7	Input quantities and their uncertainties .....	20
7.1	Pure gas data .....	20
7.2	Gas mixture data .....	23
7.3	Rough uncertainty estimates .....	26
8	Conversion uncertainty .....	26
8.1	General considerations .....	26
8.2	Conversion of single analyte contents .....	27
8.3	Conversion of complete compositions .....	28
8.4	Uncertainty calculation using numerical differentiation .....	30
8.5	Variances and covariances of input composition data .....	31
9	Application recommendations .....	33
Annex A (normative)	Assessment of state conditions .....	34
Annex B (normative)	Summation relations for the expression of mixture properties .....	37
Annex C (informative)	Mixture component data .....	38
Annex D (informative)	Examples .....	43
Annex E (informative)	Computer implementation of recommended methods .....	58
Bibliography .....		60