

Contents

1	Introduction	1-1
1.1	General thermodynamic relations	1-1
1.2	Fugacity and fugacity coefficient	1-2
1.3	Activity and activity coefficient	1-3
1.4	Excess Gibbs energy	1-4
1.5	Concentration dependence of activity coefficients in binary systems	1-5
1.6	Correction for real behavior of vapor phase	1-6
1.7	Vapor-liquid equilibrium phase diagrams	1-7
1.8	Principles and methods of measurement	1-8
1.8.1	Static methods	1-8
1.8.2	Dynamic (circulation) methods	1-9
1.8.3	Flow methods	1-9
1.8.4	Dew and bubble point methods	1-11
1.8.5	Saturation (transpiration) methods	1-12
1.8.6	Other methods	1-12
1.9	Sources of errors	1-12
1.10	Consistency tests	1-13
1.11	Correlation of experimental data	1-16
1.12	Test mixtures	1-17
2	Tables on vapor-liquid equilibria	2-1
2.1	Introduction	2-1
2.1.1	Property types	2-2
2.2	Organic systems	2-6
2.3	Aqueous-organic systems	2-381
2.4	Systems containing inorganic substances	2-396
3	Instructions on using the computer program ELBT	3-1
3.1	Introduction	3-1
3.2	System requirements	3-1
3.3	Installing the program	3-2
3.4	To start	3-2
3.5	Visualization of numerical data	3-3
3.5.1	PDF display	3-3
3.5.2	SELF (Standard Electronic File) display	3-4
3.5.2.1	SELF structure Identifiers	3-4
3.5.2.2	Physical quantities and physico-chemical properties	3-5
3.5.2.3	Independent variables and dependent variables	3-6
3.5.2.4	Parameters	3-6

3.5.2.5	Symbols, units and scales of physical quantities	3-6
3.5.2.6	Numerical data and estimated uncertainties	3-6
3.5.2.7	Two-phase liquid-liquid systems	3-7
3.5.2.8	Linked data files	3-7
3.5.3	ELDATA display	3-7
3.5.3.1	Selection of units	3-8
3.5.4	Graphical display	3-9
3.5.5	Correlating experimental data	3-9
3.5.6	Output of correlated experimental data	3-10
3.6	Creating SpreadsheetML documents	3-13
4	Indexes	4-1
4.1	Formula index of substances	4-2
4.2	Name index of substances	4-11
4.3.	Class index of organic substances	4-38
4.4	Class index of organic systems	4-41
4.5	Class index of aqueous-organic systems	4-123
4.6	Index of systems containing inorganic substances	4-126
5	General References	5-1