

CONTENTS

Preface	4
1 Basic quantities, solutions and mixtures	5
1.1 Composition of substances and mixtures (mass fraction, mass concentration) ...	7
1.2 Composition of mixtures (molar fraction)	8
1.3 Composition of mixtures (molar concentration)	9
1.4 Mutual conversion between mass fraction and molar concentration	9
1.5 Solution – preparation, dilution.....	10
1.6 Saturated solution	11
1.7 Problems	12
Mole, Avogadro's number	12
Molecular mass, chemical formulas	13
Composition of substances, composition of mixtures (mass fraction)	13
Composition of mixtures (mole fraction)	14
Composition of mixtures (molar concentration)	14
Solution – preparation, dilution.....	15
Saturated solution.....	16
2 Crystallization	18
2.1 Free crystallization.....	18
2.2 Crystallization in motion	19
2.3 Problems	21
Free crystallization	21
Crystallization in motion.....	22
3 Stoichiometry	24
Stoichiometry – limiting reagent.....	25
3.1 Stoichiometry – reactions involving gases.....	26
3.2 Problems	27
Stoichiometry– starting level	27
Stoichiometry – limiting reagent.....	28
Stoichiometry – subsequent reactions	29
4 Complex calculations	33
4.1 Problems	33
5 Results	36
Basic quantities, solution and mixture	36
Crystallization	37
Stoichiometry	37
Complex problems	38
6 Recommended literature	39