

General Chemistry: Part Inorganic Chemistry

Exercises chapter 2: „Substances and separation of substances”

- 1) Which of the following mixtures are mixtures, suspensions, emulsions, aerosols or solutions? Which of them are homogeneous?
 - a) Seawater
 - b) Salts in a mine
 - c) Hairspray when spraying
 - d) Coffee without milk
 - e) Coffee with milk
 - f) Bouillon
 - g) Whipped cream
 - h) Lubricating oil with molybdenum disulphide
 - i) methylated spirits (alcohol with denaturant)
 - j) Brass
 - k) Granite
 - l) Bronze

- 2) Name suitable processes for separating the following substances!
 - a) Sodium hydroxide from sodium hydroxide solution
 - b) Solid silver chloride after precipitation from a solution
 - c) Various dyes soluble in acetone from a flower
 - d) Sulphur from a mixture with sand
 - e) Ethanol from aqueous solution
 - f) Egg yolk from egg white
 - g) Gold particles from sand
 - h) DNA molecules in water
 - i) Mercury and phosphor (white powder) from old fluorescent tubes
 - j) Gold and platinum from ferrous scrap metal
 - k) Uranium isotopes ^{235}U and ^{238}U from uranium (mixed isotope)
 - l) Zinc chloride and sodium chloride

- 3) Are the following processes chemical reactions or physical processes? Give reasons!
 - a) Dissolution of sugar
 - b) Decomposition of water
 - c) Melting glass
 - d) Rusting of iron
 - e) Photosynthesis
 - f) Boiling water
 - g) Baking cakes
 - h) Distillation of ethanol
 - i) Sublimation of ice
 - j) Sintering of ceramics
 - k) Fermentation
 - l) Condensation of nitrogen