

Definitions and Concepts for WJEC (Eduqas) Chemistry GCSE

Topic 1 - Pure Substances and Mixtures

*Definitions in **bold** are for higher tier only*

Definitions have been taken, or modified from the [WJEC \(Eduqas\) Specification for GCSE Chemistry, C410, Version 3 January 2019](#)

Chromatography: A process used to separate substances in a mixture. Separation of the substance depends on distribution between a mobile phase and a stationary phase.

Compound: A substance made up of two or more types of atoms chemically combined together.

Crystallisation: A separation technique to obtain soluble solids from solutions. The process involves heating the solution until crystals start to form, leaving the solution to cool and then filtering the formed crystals from the solution.

Element: A substance made up of only one type of atom.

Filtration: A separation technique used to separate an insoluble solid from a solution.

Formulation: A mixture designed for a particular use. They are made up of exact quantities of pure substances.

Fractional distillation: A process used to separate a mixture of liquids. The liquids have different boiling points so can be separated into different fractions within a fractionating column.

Melting point data: Can be used to evaluate the purity of a substance. A pure substance should have a sharp melting point.

Mixture: Contains at least two different elements or compounds which are not chemically bonded together. Mixtures may melt or boil over a range of temperatures.

Mobile phase: The fluid (gas or liquid) which moves through the chromatography system, carrying the mixture which is to be separated.

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Paper chromatography: A type of chromatography which uses paper as the stationary phase and a solvent as the mobile phase. The solvent carries the mixture up the paper where the substances in the mixture then separate, depending on how soluble they are in the mobile phase.

Pure substance: The chemistry definition of a pure substance is a substance which contains only one compound or element. The everyday definition of a pure substance is a substance which has nothing added to it, e.g. pure milk. Pure substances can be identified using melting point.

Rf value: A value used in chromatography which is calculated as the distance travelled by the dissolved substance divided by the distance travelled by the solvent. It can be used to identify substances within a mixture.

Simple distillation: A separation technique used to separate a liquid from a solution. The solution is heated so that only the liquid with the lowest boiling point evaporates. This gas is then condensed in a condenser before being collected as a liquid.

Stationary phase: The nonmoving phase which the mobile phase passes over during chromatography.

