

# Definitions and Concepts for Edexcel Chemistry GCSE

## Topic 2 - States of Matter and Mixtures

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

*Definitions marked by '\*' are for separate sciences only*

*Definitions have been taken, or modified from the [Edexcel Specification for GCSE Chemistry. 1CH0. Issue 3. February 2018](#)*

**Chlorination:** A process used in water treatment where chlorine gas is injected into the water to kill any microbes.

**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.

**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.

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

**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.

**Gas:** The state of matter where the particles have the most energy. The particles in a gas are relatively spread out and move randomly in all directions.

**Ground water:** Water which collects in rocks that then trap the water underground.

**Liquid:** The state of matter where the particles are arranged randomly and close together. The particles are able to move past each other.

**Melting point data:** Data which 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.

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

**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.

**Particle theory:** The theory which models the three states of matter by representing the particles as small solid spheres. Particle theory can help to explain melting, boiling, freezing and condensing.

**Potable water:** Water that is safe for humans to drink.

**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.

**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.

**Sedimentation:** A process used in water treatment to remove solids from the water. Suspended solids will fall to the bottom of the container and form a sediment, allowing them to be easily removed.

**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.

**Solid:** The state of matter where the particles hold a regular arrangement and have the least amount of energy.

**State symbols:** The symbols used in chemical equations to denote the states of the chemicals reacting: (s) - solid, (l) - liquid, (g) - gas, (aq) - aqueous solution.

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

**Waste water:** Water from industrial, domestic, agricultural and commercial activity. It requires treatment before it is potable.

