Glossary Section 1

|  |  |
| --- | --- |
| Pure substance | something made up of one substance only, not combined with anything else |
| Mixture | a combination of two or more substances. |
| Impurity | something mixed into something else when you do not want it to be there. |
| Contaminant | something mixed into something else when you do not want it to be there – same as impurity. |
| Homogeneous mixture | a mixture where the different components cannot be seen. |
| Single phase mixture | Same as homogeneous mixture |
| Heterogeneous mixture | a mixture where the different components can still be seen. |
| Multiple phase mixture | Same as heterogeneous mixture |
| Dissolve | to disappear into another substance e.g. sugar dissolves in water. |
| Soluble | able to dissolve |
| Insoluble | unable to dissolve |
| Matter |  |
| Physical property | A characteristic that can be observed or measured without changing the composition of the substance being studied. |
| Chemical property | A characteristic shown by a substance when it undergoes a reaction to change into something new. |
| Physical change | A change in which the substance might change its state, for example, but it does not change into a new substance |
| Chemical change | The substance undergoing the chemical reaction changes into something entirely new |
| Filtration | Separation of particulate matter from a liquid by passing through a suitable membrane |
| Evaporation | Vaporization (changing into a gas)of a liquid that occurs from the surface of a liquid |
| Separating funnel | Apparatus to separate two immiscible liquids |
| distillation | Separation of miscible liquids with varying boiling points using vapourisation and condensation |
| Physical states of matter | Solid, liquid or gas |
| Melting point (MP) | Temperature at which a solid starts to turn into a liquid |
| Freezing point (FP) | Temperature at which a liquid starts to turn into a solid |
| Boiling point (BP) | Temperature at which a liquid starts to turn into a gas |
| alloy | A solid homogeneous solution of metals and sometimes carbon |
| Kinetic energy | Energy of movement |
| atom | The smallest possible particle of any element that still has all the characteristics of the element |
| Element | a substance that cannot be broken down or changed into simpler substances by chemical means e.g. copper, oxygen, hydrogen. |
| Compound | a substance made up of more than one kind of element chemically joined together e.g. water is a combination of 2 hydrogen atoms and one oxygen atom to form a new substance. |
| Periodic Table | an organised table of all the known elements known |
| Crystalline | Matter made up of crystals which are organised groupings of the elements making up the compound. |
| Dissolve | to disappear into another substance e.g. sugar dissolves in water. |
| Soluble | able to dissolve |
| Insoluble | unable to dissolve |
| Element | a pure substance which cannot be broken down into simpler substances by ordinary chemical reactions. |
| Di-atomic element | An element made up from 2 atoms joined together by covalent bonds. |
| Polyatomic element | An element made up from more than 2 atoms joined together by covalent bonds. |
| compound | A pure substance which *can* be broken down into simpler substances by chemical reactions. |
| formula unit | A single particle of an ionic compound |
| Molecular compound | A compound made up of 2 or more different non-metal elements joined by covalent bonds |
| Ionic compound | A compound made up of a metallic cation and a nonmetal or polyatomic anion |
| Intermolecular bonds | Bonds occurring between molecules of formula units |
| Intramolecular bonds | Bonds occurring within compounds or di- or polyatomic elements |
| protons | Positively charged particles found in the nucleus of the atom |
| electrons | Tiny, negatively charged particles moving around nucleus of an atom |
| neutrons | neutral particles found in the nucleus of the atom |
| Atomic nucleus | Small, dense centre of an atom in which most of the mass and all the positive charge is located |
| Relative atomic mass | The mass of an atom relative to the mass of a carbon atom (12 amu) |
| Atomic number (Z) | Number of protons in the nucleus of an atom |
| Mass number (A) | The sum of the number of protons and neutrons in the nucleus of an atom. |
| Chemical symbol | Shorthand notation for an element or a compound |
| Electronic configuration | the location of the electrons within an atom |
| Electronic configuration | the arrangement of electrons within the atom. |
| shells | Energy levels in which electrons can be found |
| Electronic orbitals | regions within the atom in which electrons have the highest probability of being found. |
| Core electrons | the electrons that occupy filled electron orbitals |
| Valence electrons | electrons that occupy partially filled electron orbitals |
| Lewis dot diagrams | a short-hand, visual way of representing just the valence electrons of an element |
| polyatomic ion (molecular ion) | an ion composed of two or more atoms covalently bonded together, and together carrying a charge. |
| electronegativity | a measure of the tendency of an atom to attract a bonding pair of electrons |
| Polar bond | A covalent bond in which electrons are shared unequally between the atoms involved in the bond |
| Non-polar bond | A covalent bond in which electrons are shared equally between the atoms involved in the bond |
| chemical formula | a short-hand way of writing a compound |
| Macroscopic changes | Changes that are measureable and visible to the eye |
| Microscopic changes | Changes that are not visible to the eye |
| boiling | bringing a liquid to the temperature at which it bubbles and turns to vapor. |
| Hydrocarbons | compounds made up of carbons and hydrogens only |
| Alkanes | made up of C and H atoms bonded to one another by means of single C-C or C-H bonds only |
| isomers | two or more compounds with the same formula but a different arrangement of atoms in the molecule and different properties. |
| Alkenes | closely related to alkanes but there will be at least one C=C double bond in the molecule |
| alkynes | closely related to alkanes and alkenes but there will be at least one C≡C triple bond in the molecule |
| Functional groups | specific groups of atoms or bonds within molecules that are responsible for the characteristic chemical reactions of those molecules |
| Alkyl halides | alkanes that contain one or more members of the halogen family |
| alcohol functional group | an –OH which can bond with a C atom in an organic molecule in place of an H atom |
| aldehyde | an organic compound containing a functional group with the structure −CHO |
| ketone | an organic compound containing a carbonyl group =C=O bonded to two hydrocarbon groups |
| Carboxylic acid | an organic acid containing a carboxyl group (-COOH) |
| ester | A compound derived from a carboxylic acid and an alcohol. |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |