

Sociology 101

Sociology



**ASSIGN
BUSTER**

Describe the difference between a mixture and a compound. Mixtures are forms of matter described as heterogeneous and composed of variable proportions of molecules and atoms (“ Mixtures and Compounds”, 2011).

Compounds are forms of matter that are homogeneous and composed of elements in fixed proportions (“ Mixtures and Compounds”, 2011).

One way to distinguish between mixtures and compounds is through the law of constant composition which states that the ratio by mass of the elements in chemical compound is always the same regardless of the source of the compound (“ Elements, Compounds and Mixtures”, n. d.). Compounds have stable composition while mixtures don't have.

Another way to differentiate mixtures and compounds is the ease of separation of elements (“ Elements, Compounds and Mixtures”, n. d.).

Mixtures can be separated easily through physical separation while chemical compounds can only be separated by destroying the compound.

Suppose that you have a pure substance. How can you tell whether it is a compound or an element?

Element is any substance that contains only one kind of atom and cannot be broken down into simpler type of matter wither by physical or chemical means (“ Elements, Compounds and Mixtures”, n. d.). If we have pure substance, we can tell whether it is a compound or an element by asking the question “ Can the substance be further decomposed by chemical means?” If the answer is yes, then it is a compound. If the answer is no, then it is an element.

What is the difference between an ionic and a covalent bond?

Ionic bond is a bond in which one or more electrons from one atom are removed and attached to another atom, resulting in positive and negative

ions which attract each other (“ Chemical Bonding”, n. d.). Covalent bond is bond in which one or more pairs of electrons are shared by two atoms (“ Chemical Bonding”, n. d.). These two bonds differ in structure and properties.

Covalent bonds have low polarity while ionic bonds have high polarity.

Covalent bonds have definite shape as ionic bond has no definite shape.

When it comes to melting point, covalent bonds has low melting point while ionic bond has high. Another difference between the two bonds is that of their boiling point which covalent bond has low boiling point while ionic bond has high boiling point. (“ Covalent Bonds vs. Ionic Bonds”, 2011).

Explain why ionic compounds are formed when a metal from the left side of the periodic table reacts with a nonmetal from the right side. Give two examples of such compounds.

Ionic bond is formed when a metal attracts with a non-metal. Non-metals are “ stronger” than the metal and can get electrons very easily from that of the metal. These two opposite ions attract each other to form an ionic bond. (“ Covalent Bonds vs. Ionic Bonds”, 2011).

Examples: Sodium chloride (NaCl), Sulphuric Acid (H₂SO₄)

Explain why covalent bonds are formed when nonmetals from the right side of the periodic table bond with each other. Give two examples of such compounds.

A covalent bond is formed when non-metals from the right side of the periodic table bond with each other because they have similar electronegativities. This is because there are no atoms strong enough to attract electrons from others. They share their electrons from outer molecular orbit with others. (“ Covalent Bonds vs. Ionic Bonds”, 2011).

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Examples: Water (H₂O), Methane (CH₄)

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