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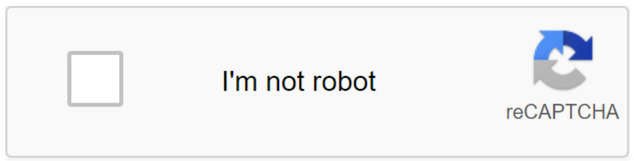

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The chemical link describes the different interactions that hold atoms together in chemical compounds. List the types of chemical bonds and their common properties Key takeaway key points of chemical bonds are the forces that hold atoms together to make compounds or molecules. Chemical bonds include covalent, polar covalent and ion bonds. Atoms with relatively similar electronegavites divide electrons between each other and are connected by covalent bonds. Atoms with large differences in electronegathism transmit electrons to the shape of ions. Then the ions are attracted to each other. This attraction is known as the Ion connection. Key communication conditions: communication or force between neighboring atoms in a molecule or connection. ion bond: The attraction between the two ions used to create an ion connection. This attraction usually forms between metal and non-metal. Covalent communication: Interaction between two atoms, which involves sharing one or more electrons to help each atom meet the octet rule. This interaction is usually formed between two non-metals. intramolecular: Refers to interactions within the molecule. intermolecular forces: Refers to interaction between two or more molecules. Chemical bonds are the connections between atoms in a molecule. These connections include both strong intramolecular interactions such as covalent and ion connections. They are associated with weaker intermolecular forces such as dipole-dipole interactions, London variance forces and hydrogen bonds. Weaker forces will be discussed in a later concept. Chemical bonds: These images show examples of chemical communication using Lewis's point notation. Hydrogen and carbon are not related, while there is a single link between each hydrogen and oxygen in water. Bonds, especially covalent bonds, are often presented as lines between bonded atoms. Acetylene has a triple bond, a special type of covalent bonds that will be discussed later. Covalent bonds Chemical bonds are the forces of attraction that bind atoms together. Bonds are formed by the interaction of valence electrons, electrons in the outer outer electronic shell of the atom. The nature of interaction between atoms depends on their relative electronity. Atoms with the same or identical electronegates form covalent bonds in which the density of the valence electron is separated between two atoms. The density of the electron is located between the atoms and attracts both nuclei. This type of bond is most often formed between two non-metals. When there is a greater difference in electronegathism than between covalent atoms, a pair of atoms usually forms a polar covalent bond. Electrons are still divided between atoms, but electrons are not equal attract both elements. As a result, electrons tend to be near one particular atom most of the time. Again, polar covalent bonds tend to occur between non-metals. non-metals. Bonds Finally, for the atoms with the biggest differences in electrone containability (e.g., metals glued to non-metals), binding interactions are called ion, and valence electrons are usually presented as being transported from a metal atom to a non-metal. Once the electrons have been transferred to non-metal, both metal and non-metal are considered ion. Two oppositely charged ions attract each other to form ion compounds. Communications, stability and connections of Kovalent interactions are directed and dependent on orbital overlap, while ion interactions are not particularly focused. Each of these interactions allows the involved atoms to obtain eight electrons in their valence shell, satisfying the octet rule and making the atoms more stable. These atomic properties help describe the macroscopic properties of compounds. For example, smaller covalent compounds held by weaker bonds are often soft and malleable. On the other hand, longer-term covalent interactions can be quite strong, making their connections very durable. Ion compounds, although composed of strong binders, tend to form fragile crystal lattice. Ion bonds are a subset of chemical bonds that are the result of the transmission of valence electrons, usually between metal and non-metal. To summarize the characteristic features of ion bonds Key takeaway key points of Ion connections are formed through the exchange of valence electrons between atoms, usually metal and non-metal. The loss or increase of valence electrons allows the ions to obey the rule of the octet and become more stable. Ion compounds are generally neutral. Thus, the ions are combined in such a way as to neutralize their accusations. Key terms of valence electrons: electrons of an atom that can participate in the formation of chemical bonds with other atoms. These are the furthest electrons from the nucleus. Octet rule: The atom is most stable when there are eight electrons in its valence shell. Ionical bonds are a class of chemical bonds that are the result of the exchange of one or more valence electrons from one atom, usually a metal, into another, usually non-metallic. This electronic exchange leads to an electrostatic attraction between two atoms called ion communication. The atom, which loses one or more valence electrons to become a positively charged ion, is known as cation, while the atom that picks up electrons and becomes negatively charged is known as anion. This exchange of valence electrons allows the ions to reach the configurations of electrons that mimic the configurations of noble gases, satisfying the octet rule. The Octet rule states that an atom is most stable when its valence shell is eight electrons. Atoms with less than eight electrons tend to satisfy the duo rule by having two electrons in their valence shell. Satisfying the duo rule or octet rule, the ions are more stable. A A indicated by a positive superscript of the charge (something) to the right of the atom. Anion is indicated by a negative superscript of the charge (something) to the right of the atom. For example, if a sodium atom loses one electron, it will have one proton larger than an electron, giving it a total charge of No.1. The chemical symbol of sodium ion is Na-1 or simply Naz. Similarly, if a chlorine atom receives an additional electron, it becomes a chloride ion, Cl-. Both ions are formed because the ion is more stable than the atom due to the rule of the octet. Forming an ion bond After the opposite charged ions form, they attract their positive and negative charges and form ion compounds. Ion bonds are also formed when there is a big difference in electronegathism between two atoms. This difference leads to an unequal exchange of electrons in such a way that one atom completely loses one or more electrons, and the other atom acquires one or more electrons, for example, when creating an ion bond between a metal atom (sodium) and a non-metallic (fluoride). Sodium fluoride formation: electron transmission and subsequent attraction of opposite charged ions. Determining the ion mixture formula To determine the chemical formulas of ion compounds, the following two conditions must be met: Each ion must obey the octet rule for maximum stability. The ions will be combined so that the common ion compounds are neutral. In other words, the ions must be balanced. Magnesium and fluoride are combined into ion compounds. What is the connection formula? Mg most often forms 2 ion. This is because Mg has two valence electrons and he would like to get rid of these two ions to obey the octet rule. Fluoride has seven valence electrons and usually forms an F-ion because it gets one electron to meet the octet rule. When Mg2 and F - combine to form ion connections, their costs must be abolished. Thus, to neutralize the charge requires two Mg2. 2 Ions from Mg balanced, having two -1 charged ions. Thus, the Formula of MgF2. In subscriptum two indicates that there are two fluoride that are ionically associated with magnesium. On a macroscopic scale, ion compounds form crystal lattice structures, which are characterized by high melting and boiling points and good electrical conductivity when melted or dissolved. The example of magnesium and fluoride together form ion compounds. What is the connection formula? Mg most often forms 2 ion. This is because Mg has two valence electrons and he would like to get rid of these two ions to obey the octet rule. Fluoride has seven valence electrons and as such usually forms an F-ion because it gets one electron to meet the octet rule. Mg2 and F-ing combine to form ion connections, their charges must be abolished. Cancel. One Mg2 needs two F-ions to balance. 2 of Mg is balanced with two -1 charged ions. Thus, the Formula of MgF2. In subscriptum two indicates that there are two fluoride that are ionically associated with magnesium. Covalent bonding involves two atoms, usually non-metallic, separating valence electrons. The differentiation between the covalent and ionian connections Key point of removal Key point of the Kovalent bonding include two atoms, usually non-metals, that separate the density of electrons to form strong binding interactions. Covalent bonds include single, double and triple bonds and consist of sigma and pi-binding interactions, where 2, 4 or 6 electrons are separated, respectively. Covalent compounds usually have lower melting and boiling points than ion compounds. Key terms of electronegativeness: The tendency of an atom or molecule to attract electrons and thus form bonds. one link: a type of covalent bond where only two electrons are divided between atoms. Covalent bonds are a class of chemical bonds where valence electrons are divided between two atoms, usually two non-metal. The formation of covalent communication allows non-metal to obey the rule of the octet and thus become more stable. For example: the fluoride atom has seven valence electrons. If it separates one electron with a carbon atom (which has four valence electrons), the fluoride will have a full octet (its seven electrons plus the one it shares with carbon). Carbon will have five valence electrons (its four and one sharing it with fluoride). Covalently sharing two electrons is also known as a single bond. Carbon will have to form four single bonds with four different fluoride atoms to fill its octet. The result is CF4 or carbon tetrafluidide. Covalent bonding requires a certain orientation between atoms to achieve overlap between bonding orbits. Covalent communication interactions include sigma communication (σ) and pi-link (π). Sigma communications are the strongest type of covalent interaction and are formed through the overlap of atomic orbits along the orbital axis. Overlapping orbits allow common electrons to move freely between atoms. Pi communications are a weaker type of covalent interactions and result in overlapping two lobes of interacting atomic orbits above and below the orbital axis. Covalent bonds can be single-, double and triple bonds. Single bonds occur when two electrons are separated and consist of one sigma connection between two atoms. Double bonds occur when four electrons are divided between two atoms and consist of one sigma connection and one pee-connection. Triple bonds occur when six electrons are divided between atoms and consist of one sigma connection and two pee-links (see more riding the concept for more information on pi and sigma ties). Ion compounds vs. molecular compounds Unlike ion communication, the covalent bond is stronger between two atoms with similar similar For atoms with the same electronegate, the connection between them will be a non-polar covalent interaction. In non-polar covalent bonds, electrons divide equally between two atoms. For atoms with different electronegates, communication is a polar covalent interaction where electrons are not separated equally. Ion solids are usually characterized by high melting and boiling points along with fragile, crystalline structures. Covalent compounds, on the other hand, have lower melting and boiling points. Unlike ion compounds, they are often not soluble in water and do not conduct electricity in a solution. solubilized.