Application of electronegativity pdf

The use of electronegatis1) The nature of the communication The cause of electronegability can be used to predict whether the connection between similar or dissimilar atoms is a non-polar covalent, polar covalent (or) ion bond.1. When XA and XB, i.e. XA- XB 0, the A-B connection is not a polar covalent connection or simply a covalent connection and is presented as A-B. For example. The H-H link in the H2 molecule is a covalent bond and is presented as H-H bond.2. When XA is little more than XB, i.e. XA - XB is small, the A-B connection is a polar covalent bond and is presented as Ad--Bd. for example, O-H communications in the H2O molecule are polar covalent bonds and are presented as Od-Hd, as XO'gt; XH and XO - XH is small.3. When XA is a very large XB, the A-B connection is more ion or polar and is presented as A--B, Since XA'gt; XB. For example, the Na-Cl connection in the Na Cl molecule is an ion bond and is presented as Na'Cl-(Here Cl and Na q B). 2) The percentage of ion symbols in the polar covalent bondPauling estimated the percentage of ion symbols in various Ad--Bd' polar covalent bonds from known (XA-XB) values and brought out the following conclusions :1. When (XA-XB) - 1.7, the number of ion symbols in Ad--Bd' bonds is 50%, and the covalent symbol - also 50%. Thus, A-B bonds are 50% ion and 50% covalent.2. When (XA-XB) is 1.7, the number of ion symbols in Ad--Bd' bonds is less than 50%, and the covalent character is more than 50%. Thus, the Ad--Bd bond is predominantly covalent and is therefore presented as A-B. If (XA-XB) is 1.7, the number of ion symbols in Ad-Bd bonds is more than 50%, and the covalent symbol is less than 50%. Thus, the Ad--Bd' connection is predominantly ionetic and is therefore presented as A-B. Page 213 - Bora Group 14 - Carbon Group 15 - Nitrogen Group 16 - Oxygen Group 17 - Halogen Family 18 - Noble gases p-block elements grouped with s-block elements are called basic elements of the group or representative elements. There are 44 main elements of the group. P-block elements occupy groups of 13-18 periodic table, including inert gases. p-block elements play a dominant role in all natural processes. Aluminium plays a vital role in aviation and as conductors. Carbon is the basis of all organic compounds. Silicon chips play an important role in computers. Nitrogen acts as a building block of life. Molecular oxygen is cellular fuel. The general characteristics of p-block elements 1. General electronic configuration of ns2 np1-6 p-block elements. 2. These elements include metals and non-metals with several semi-metals (metaloids) 3. Most of them form covalent compounds. These elements have a relatively higher ionization and tends to increase over the period, but reduce the group. 5. Most elements have negative (except for some metals) as well as positive conditions of oxidation (except fluoride). 6. One of the familiar characteristics of the p-block elements is the display of an inert pair effect, i.e. a tendency to reduce the availability of ns electron in bonding. The effect of the inert vapor increases down the group with an increase in the atomic number. Group of 13 elements - Boron Family Group 13 (IIIA) elements of Boron, aluminum, gallium, Indium and thallium. 1. Bor is a relatively rare element, which accounts for only about 0.001% of the Earth's crust by mass. Aluminium is the most important element of the 13th group. 3. Gallium is notable for its unusually low melting point (29.7 o C) and therefore usually exists as a liquid at room temperature. Its most important use is the manufacture of gallium arsenide. It is a semiconductor material used in the production of diode lasers for laser printers, compact disk and fiber optic communication devices. 4. Indium is also used in the creation of semiconductor devices such as transistors and electrical resistance thermometers called theristors. 5. Tallium is extremely toxic and has no commercial use. Page 3Group of 13 elements - Bor familyGroup of 13 (IIIA) elements of Boron, aluminum, gaul, indium and thallium.1. Boron is a relatively rare element, accounting for only about 0.001% of the Earth's crust by mass.2. Aluminium is the most important element of the 13th group.3. Gallium is notable for its unusually low melting point (29.7 o C) and therefore usually exists as a liquid at room temperature. Its most important use is the manufacture of gallium arsenide. It is a semiconductor material used in the production of diode lasers for laser printers, compact disk and fiber optic communication devices.4 Indium is also used in the creation of semiconductor devices such as transistors and electrical resistance thermometers called termistors.5 Tallium is extremely toxic and has no commercial use. General TRENDS Electronic Configurations: General electronic configuration of various elements of this kind ns2 np1. Electronic Group Configuration 13 elementsBoron - Atomic Number: 5 Electronic Configuration : He 2s2 2p1 Group Number : 13 Period Number: 2Aluminy - Atomic Number: 13 Electronic Configuration : Ne 3s2 3 Group 1 Number: 13 Period Number: 3 Gallium - Atomic Number: 31 Electronic Configuration : Ar 3d10 4s2 4p1 Group Number: 13 Period Number: 4Indium - Atomic Number: 49 Electronic : Kr 4d10 5s2 5p1 Group Number: 13 Period Number: 5 Tallium - Atomic Number: 81 Electronic Configuration : Xe 4f14 5d10 6s2 6p1 Group Number: 13 Period Number: 6Potash A, K2 SO4. Al2 (SO4)3. 24 H2OPotash Alum is made of alunite or alum stone. From Alunite: Alunite or alum stone K2SO4. Al2(SO4)3. 4Al (OH)3. Its finely powdered and boiled with diluted sulfuric acid, part of the aluminum hydroxide is reissued on aluminum sulfate. When a little more potassium sulfate is added in the calculated amount, the alum crystallizes. Properties 1. The potassium alum is white crystalline solid. 2. Dissolved in water, but insoluble in alcohol. 3. Aqueous solution is sour due to hydrolysis Al2 (SO4)3. 4. When heated, it melts at 365K and then loses all the water crystallization and swells. The swollen mass is so produced is called a burnt alum. Uses 1. It is used in water treatment, water testing of textiles, as well as in dyeing and paper industry. 2. It is also used to arrest bleeding. Electronism, which was originally defined by Poing in 1932 as the force of an atom in a molecule to attract electrons to itself, is one of the most important concepts in chemistry, physics and material science. For about eighty years, the concept of electronegathism has been well developed, and some concepts have been proposed, such as ionical electronegativeness, electronic communication and group electricality. As the basic parameter of an atom or ion, electronegation provides a simple and reliable basis for predicting the nature of chemical bonds, as well as for describing the relationship between structure and property in different material systems. With the rapid development of new materials, electronegathistic models are widely used to determine the composition and structure of materials, as well as to quantify the various physical properties of crystalline materials such as superconductivity, electronic polarization, elastic module and hardness, allowing us to design and develop new materials in accordance with the rules of electronegaty. This review provides a brief introduction to the concept of electronegathism and its application in materials design, and indicates the future prospects of this concept. There is no background information - to enter for access. No citation information is available - log in for access. There is no additional data. 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