All properties of periodic table pdf

One reason why the periodic table of elements is so useful is that it is a means of arranging elements according to similar properties. This is what this means by periodic trends or periodic table trends. There are several ways to grouping the elements, but they are often divided into metal, semimetals (metalloids), and nonmetals. You'll find more specific groups, such as transition metal, rare earthy, alkalin metal, alkalin soil, halogens, and noble gas. Click an element to read about the chemical and physical properties of the group that the element belongs to. Less dense than other metalsOne flex valence valence electronHighly reaction, and increased reactivity moves down the larger atomic group radius of elements of energy issuance period yogyLow electronegativity of electrons in valence shellReady shape cationsLow electronic affinityLow electronegtivity The lanthanges (rare) and actinides are also metal transitions. Basic metals are similar to metal transitions but tend to be softer with them suggested in nonmetalc properties. In the state of its best qualities, all these elements tend to have a shiny, metallic appearance. While there are radioziotop of other elements, all actinides are radioactive. Extremely hard, usually bright, ductile, and malableHigh melted with boiled chigh thermal dots and electrical conductivity cations (state positive oxidation)Tend to expose more than a state of electronic energy oxidation and intermediate listervariable energy energy between those metal and manetalsMay possessing a listervariable metal density, hardness, conductivity, and other propertiesOften make good semiconductorsReactivite depending on the nature of other elements of reactions to the halogens and noble gases are manetal , although they have their own group, too. High energy energyHigh electronegativityPoor Electric and Thermal ConductorsForm britt solidsLittle if any metallic lusterReady takes the Electrons Halogens exposes different physical properties to each other, but do share their chemical properties. Very high electrongativityVery reactive electron valence, so elements from this group typically expose a -1 oxidation noble tank state to have complete worth electron cults, so they act a different way. Unlike other groups, noble gases are inactive and have very low electronegativity or electronic affine. Click the inserted symbol in the table for more information. 1IA1A 18VIIIA8A 1H1.008 2IIA2A 13IIIA3A 14IVA4A 15VA5A 16VIA6A 17VIIA7A 2He4.003 3Li6.941 4Be9.012 5B10.81 6C12.01 7N14.01 8O16.00 9F19.00 10Ne20.18 11Na22.99 12Mg24.31 3IIIB3B 4IVB4B 5VB5B 6VIB6B 7VIIB7B 8← ← 9VIII8 10→ → 11IB1B 12IIB2B 13Al26.98 14Si28.09 15P30.97 16S32.07 17Cl35.45 18Ar39.95 19K39.10 20Ca40.08 21Sc44.96 22Ti47.88 23V50.94 24Cr52.00 25Mn54.94 26Fe55.85 27Co58.47 28Ni58.69 29Cu63.55 30Zn65.39 31Ga69.72 32Ge72.59 33As74.92 34Se78.96 35Br79.90 36Kr83.80 37Rb85.47 38Sr87.62 40Zr91.22 41Nb92.91 42Mo95.94 43Tc(98) 44Ru101.1 45Rh102.9 46Pd106.4 47Ag107.9 48Cd112.4 49In114.8 50Sn118.7 51Sb121.8 52Te127.6 53I126.9 54Xe131.3 55Cs132.9 56Ba137.3 * 72Hf178.5 73Ta180.9 74W183.9 75Re186.2 76Os190.2 77Ir190.2 78Pt195.1 79Au197.0 80Hg200.5 81Tl204.4 82Pb207.2 83Bi209.0 84Po(210) 85At(210) 86Rn(222) 87Fr(223) 88Ra(226) ** 104Rf(257) 105Db(260) 106Sg(263) 107Bh(265) 108(265) 109Mt(266) 110Ds(271) 111Rg(272) 112Cn(277) 113Uut-- 114Fl(296) 115Uup-- 116Lv(298) 117Uus-- 118Uuo-- *LanthanideSeries 57La138.9 58Ce140.1 59Pr140.9 60Nd144.2 61Pm(147) 62150.4 63Eu152.0 64Gd157.3 65Tb158.9 66Dy162.5 67Ho164.9 68Er167.3 69Tm168.9 70Yb173.0 71Lu175.0*ActinideSeries 89Ac(227) 90Th232.0 9 1Pa (231) 92U(238) 93Np(237) 94Pu(242) 95Am (243) 96Cm(247) 97Bk (247) 98Cf (249) 99Es (254) 100Fm (253) 101Md (256) 102No (254) 103Lr (257) It's handy to know about what a particular element resides in and what its atomic structure is like, but not all the periodic table has to tell you. If you're looking at it, you'll accidentally take to work what scientists have spent life struggling with. And if you look at the table as a whole, some great trends begin to merge which tells us how one element will react with another. Before we can see these trends, a quick chemistry schemes can be good. First, metal reacts with manetal to form ionic compounds. The mantal atom takes one or more electron valence from the metal atom. When an atom advances or loses an electron valence, it forms a ion. A ion with more protons than electrons is positively charged and called a cation (from the metal). A ion with more electrons than protons is negatively charged and called a vision (from the manetal). In the end, both ions have a full outward energy level. Second, manetal goods tend to share electrons so that both atoms have full outward energy levels; they form compound consist of convalents. But how do you know which elements will react with which to produce an ionic compound or a convalent? That depends on some factors: Energy Ionization: the amount of energy it takes to strips away electronic value electronics the electronics: a measure of how tight atoms hold on its valence electronsNukleye charge: attracting strength between the positive protons of the core and the negative electrons at energy levels. More protons, the bigger the nuclear charge. Shielding: Inner electrons tend to protect their electrons outside from the attractive force to the core. The further energy levels between the electrons valence and the nucleus, the more concourse. Let's see how these factors can help predict what kind of chemical reaction any two elements will do. If you look at the periodic chart, insight energy tends to decrease as you move down a column and increase as you move across a period from left to right. When you compare elements in groups 1 and 2 (on the left) with those of 16 and 17 (on the right), you'll find that the elements in the first group have the lowest ones energy, will not hold on to electrons the values as tight and will tend to form cations. Thus, elements in groups 1 and 2 will tend to form ionic compounds. Like insulation energy, electronegativity decreases as you descend a column and increase as you go through a period from left to right. So fluorine is more likely to take electrons from another element than lithium. The difference in electronegativity between two elements will determine whether to exchange electrons (ionic compounds) or electron sharing (compound consists of convalents). You can use trends in energy ionization and electronegativity to predict whether two elements will form ionic compounds or convalents. Lastly, nuclear charges increase as you go across the table, while shields remain constant across the periods, but increase as you scroll down the columns. These trends tell you about atom size. Atoms and ions get bigger as you scroll down the columns because the effect swap the effects exceed the effects of the nuclear load, so the attraction between the nucleus and electron is weaker and the atom is expanded in size. In contrast, atoms get smaller as you go through the periods because the nuclear load effect exceeds the shields effect, so the attraction between the core and the older electrons and shrink the atoms in size. It's hard to believe that one measure of sheets can contain this information a lot. The periodic table has gone through many changes since Dmitri Mendeleev draws up its original design in 1869, yet both the first table and the modern period table are important for the same reasons: The periodic chart organizes elements according to similar properties so you can tell the features of an element just by looking at its location on the table. Before all of the naturally occurring components were discovered, they used the periodic table to predict the chemical and physical properties of elements in the gaps on the table. Today, the table can be used to predict properties of elements yet to be discovered, although these new elements are all highly radioactive and break down into more familiar elements almost immediately. Now the table is useful for modern students and scientists because it helps predict what kind of chemical reaction that a particular element is likely to participate in. Rather than memorizing facts and figures for every element, students and scientists need only look at the chart to learn a lot about the reactivity of an element, whether it's likely to make electricity, whether it's difficult or soft, and many other features. Elements in the same column are similar to one another are known as groups and are shared similar properties. For example, the elements in the first column (alkali metals) are all metals that usually carry a 1+ load of reactions, react vigilant with water, and combine conveniently with nonmetals. Components of the same range as one another are known as periods and share the same higher energy electronic inexcessities Another useful feature of the periodic table is that most tables provide all the information you need to sway chemical reactions at a glance. The table tells each element's atomic number and usually its atomic weight. The typical load of an element indicated by its cluster. The periodic table is organized according to the trend of element properties. As you move from left to right across a row of elements, the atomic radius (the size of the element atom) decreases, energy inaccuration (the energy required to remove an electron of an atom) increases, electronic adverbance (the amount of release energy when an atom forms a negative ion) generally increases, and electronegativity (trends a thetom to attract an electronic pair) increases. As you move at top under a column of elements, the atomic radius increases, decreases energy issuance, electron affine usually decreases, and decreases electronics. To summarize, the periodic table is important because it is organized to provide a great artifacts of information about elements and how they relate to each other in one easy-to-use reference. The chart can be used to predict the properties of elements, even those that are no longer being discovered. Columns (groups) and rows (periods) indicate elements that share similar characteristics. The chart makes trends in properties of tangible elements and easy to understand. The table provides important information used for balancing chemical equations. equations.