Electron Gain Enthalpy Trend

Ununennium It is the lightest element that has not yet been synthesized. Ununennium is predicted to continue the trend and have a valence electron configuration of 8s1. It is therefore expected to behave much Ununennium, also known as eka-francium or element 119, is a hypothetical chemical element; it has symbol Uue and atomic number 119. In the periodic table of the elements, it is expected to be an s-block element, an alkali metal, and the first element in the eighth period. Ununennium and Uue are the temporary systematic IUPAC name and symbol respectively, which are used until the element has been discovered, confirmed, and a permanent name is decided upon. reactive elements b2d71e8250

Glossary of chemistry terms Chemistry is a physical science concerned with the composition, structure, and properties of matter, as well as the changes it undergoes during chemical reactions; it features an extensive vocabulary and a significant amount of jargon. their outermost electron shells are filled with as many electrons as possible, making them broadly resistant to the loss or gain of electrons. inorganic compound This glossary of chemistry terms is a list of terms and definitions relevant to chemistry, including chemical laws, diagrams and formulae, laboratory tools, glassware, and equipment b2d71e8250

Ununennium's position as the seventh alkali metal suggests that it would have similar properties to its lighter congeners. However, relativistic effects may cause some of its properties to differ from those expected from a straight application of periodic trends. For example, ununennium... b2d71e8250 The component ions in a salt can be either inorganic, such as chloride (Cl−), or organic, such as acetate (CH3COO−). Each ion can be either monatomic, such as sodium (Na+) and chloride (Cl−) in sodium chloride, or polyatomic, such as ammonium (NH+4) and carbonate (CO2−3) ions in ammonium carbonate. Salts containing basic ions hydroxide (OH−) or oxide (O2−) are classified as bases, such as sodium hydroxide and potassium oxide. b2d71e8250 In the 1950s... b2d71e8250

Alkali metal 2 kJ/mol) and the enthalpy of dissociation of the Fr2 molecule (42. All alkali metals have their outermost electron in an s-orbital: this shared electron configuration results in them having very similar characteristic properties. Indeed, the alkali metals provide the best example of group trends in properties in the periodic table, with elements exhibiting well-characterised homologous behaviour. The alkali metals consist of the chemical elements lithium (Li), sodium (Na), potassium (K), rubidium (Rb), caesium (Cs), and francium (Fr). This family of elements is also known as the lithium family after its leading element. Together with hydrogen they constitute group 1, which lies in the s-block of the periodic table. 1 kJ/mol). been predicted taking relativity into account are the electron affinity (47 b2d71e8250

If two states, as, for example, a transition state and an unstable intermediate, occur consecutively during a reaction process and have nearly the same energy content, their interconversion will involve only a small reorganization of the molecular structures. b2d71e8250 In solid state physics, the electron affinity for a surface is defined somewhat differently. b2d71e8250

Electrolysis The word "lysis" means to separate or break, so in terms, electrolysis would mean "breakdown via electricity. ". while electron gain is called reduction. Electrolysis is commercially important as a stage in the separation of elements from naturally occurring sources such as ores using an electrolytic cell. When neutral atoms or molecules, such as those on the surface of an electrode, gain or lose electrons they become In chemistry and manufacturing, electrolysis is a technique that uses direct electric current (DC) to drive an otherwise non-spontaneous biological and physical reaction. The voltage that is needed for electrolysis to occur is called the decomposition potential b2d71e8250

Attempts to synthesize the element have been ongoing since 2018 in RIKEN in Japan, and since 2026 at the Joint Institute for Nuclear Research in Dubna, Russia. The Heavy Ion Research Facility in Lanzhou, China (HIRFL) also plans to make an attempt. Theoretical and experimental evidence has shown that the synthesis of ununennium will likely be far more difficult than that of the previous elements. b2d71e8250 X(g) + e− → X−(g) + energy b2d71e8250

Electron affinity The following data are The electron affinity (Eea) of an atom or molecule is defined as the amount of energy released when an electron attaches to a neutral atom or molecule in the gaseous state to form an anion. the group 2 data. Thus, electron affinity follows the same "left-right" trend as electronegativity, but not the "up-down" trend b2d71e8250

Individual ions within a salt usually have multiple near neighbours, so they are not considered to be part of molecules, but instead part of a continuous three-dimensional network. Salts usually form crystalline structures when solid. b2d71e8250 Therefore, the geometric structure of a state can be predicted by comparing its energy to the species neighboring it along the reaction coordinate. For example, in an exothermic reaction the transition state is closer in energy to the reactants than to the products. Therefore, the transition state will be more geometrically similar to the reactants than to the products. In contrast, however, in an endothermic reaction the transition state is closer in energy to the products than to the reactants. So, according to Hammond's

postulate the structure of the transition state would resemble the products more than the reactants. This type of comparison... b2d71e8250 Unbinilium has not yet been synthesized, despite multiple attempts from German and Russian teams. Experimental evidence from these attempts shows that the period 8 elements would likely be far more difficult to synthesise than the previous known elements. New attempts by American, Russian, and Chinese teams to synthesize unbinilium are planned to begin in the mid-2020s; in particular, an attempt to synthesize the element was ongoing as of September 2025, at Lawrence Berkeley National Laboratory in the United States. b2d71e8250 Unbinilium's position as the seventh alkaline earth metal suggests that it would have similar properties to its lighter... b2d71e8250 The word "electrolysis" was introduced by Michael Faraday in 1834, using the Greek words ἤλεκτρον [ɛ̌ːlektron] "amber", which since the 17th century was associated with electrical phenomena, and λύσις [lýsis] meaning "dissolution". Nevertheless, electrolysis, as a tool to study chemical reactions and obtain pure elements, precedes the coinage of the term and formal description by Faraday. b2d71e8250 Vertical, horizontal and diagonal trends characterize the periodic table. Metallic character increases going down a group and from right to left across a period. Nonmetallic character increases going from the bottom left of the periodic table to the top right. b2d71e8250 == A == b2d71e8250 This differs by sign from the energy change of electron capture ionization. The electron affinity is positive when energy is released on electron capture. b2d71e8250

Periodic table Some exceptions to the trends occur: The periodic table, also known as the periodic table of the elements, is an ordered arrangement of the chemical elements into rows ("periods") and columns ("groups"). The table is divided into four roughly rectangular areas called blocks. It is a depiction of the periodic law, which states that when the elements are arranged in order of their atomic numbers an approximate recurrence of their properties is evident. and no electron affinity, have little inclination towards gaining or losing electrons and are generally unreactive. Elements in the same group tend to show similar chemical characteristics. An icon of chemistry, the periodic table is widely used in physics and other sciences b2d71e8250

Note: All periodic table references refer to the IUPAC Style of the Periodic Table. b2d71e8250

Unbinilium to its small size. Unbinilium and Ubn are the temporary systematic IUPAC name and symbol respectively, which are used until the element is discovered, confirmed, and a permanent name is decided upon. Unbinilium is predicted to continue the trend and have a valence electron configuration of 8s2. It is therefore expected to behave much Unbinilium, also known as eka-radium or element 120, is a hypothetical chemical element; it has symbol Ubn and atomic number 120. In the periodic table of the elements, it is expected to be an s-block element, an alkaline earth metal, and the second element in the eighth period. It has attracted attention because of some predictions that it may be in the island of stability b2d71e8250

The alkali metals are all shiny, soft, highly reactive metals at standard temperature and pressure and readily lose their outermost electron to form cations with charge +1. They can all be cut easily with a knife due to their softness, exposing a shiny surface that tarnishes rapidly in air due to oxidation by atmospheric moisture and oxygen (and in the case of lithium, nitrogen). Because of their high reactivity, they must be stored under oil to prevent reaction with air, and are found naturally only in salts and never as the free elements... b2d71e8250

Lawrencium 7 minutes) is most commonly used in chemistry because it can be produced on a larger scale. It is named after Ernest Lawrence, inventor of the cyclotron, a device used to discover many artificial radioactive elements. Eichler calculated that lawrencium's enthalpy of adsorption on metal sources would differ enough depending on its electron configuration that it would be feasible Lawrencium is a synthetic chemical element; it has symbol Lr (formerly Lw) and atomic number 103. Like all elements with atomic numbers over 100, lawrencium can only be produced in particle accelerators by bombarding lighter elements with charged particles. A radioactive metal, lawrencium is the eleventh transuranium element, the third transfermium, and the last member of the actinide series. Fourteen isotopes of lawrencium are known; the most stable is 266Lr with half-life 11 hours, but the shorter-lived 260Lr (half-life 2 b2d71e8250

Chemistry experiments confirm that lawrencium behaves as a heavier homolog to lutetium in the periodic table, and is trivalent. It could thus also be classified as the first of the 7th-period transition metals. Its electron configuration is anomalous for its position in the periodic table, having an s2p configuration instead of the s2d configuration of its homolog lutetium. However, this does not appear to affect lawrencium's chemistry. b2d71e8250

Salt (chemistry) The constituent ions are held together by electrostatic forces termed ionic bonds. (often with a reducing agent such as carbon) such that the metal ions gain electrons to become neutral atoms. According to the nomenclature recommended by In chemistry, a salt or ionic compound is a chemical compound consisting of an assembly of positively charged ions (cations) and negatively charged ions (anions), which results in a compound with no net electric charge b2d71e8250

== Etymology == b2d71e8250

Hammond's postulate is affected by the enthalpy of that reaction. First proposed by George Hammond in 1955, the postulate states that:. Hammond's postulate explains this observation by describing how varying the enthalpy of a reaction would Hammond's postulate (or alternatively the Hammond–Leffler postulate), is a hypothesis in physical organic chemistry which describes the geometric structure of the transition state in an organic chemical reaction b2d71e8250

Salts composed of small ions typically have high melting and boiling points, and are hard and brittle. As solids they are almost always electrically insulating, but when melted or dissolved they become highly conductive, because the... b2d71e8250 The first periodic table to become generally accepted was that of the Russian chemist Dmitri Mendeleev in 1869; he formulated the periodic law as a dependence of chemical properties on atomic mass. As not all elements were then known, there were gaps in his periodic table, and Mendeleev successfully used the periodic law to predict some properties of some of... b2d71e8250