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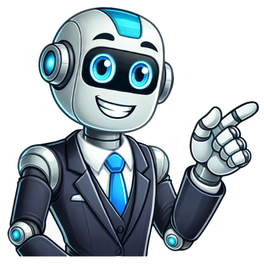

A chemical change, also known as a chemical reaction, is a process in which one or more substances are altered into one or more new and different substances. In other words, a chemical change is a chemical reaction involving the rearrangement of atoms. While a physical change can often be reversed, a chemical change typically cannot be, except through more chemical reactions. When a chemical change occurs, there is also a change in the energy of the system. A chemical change that gives off heat is called an exothermic reaction. One that absorbs heat is called an endothermic reaction. A chemical change occurs when one substance is transformed into one or more new products via a chemical reaction.In a chemical change, the number and type of atoms remain constant, but their arrangement is altered.Most chemical changes are not reversible, except via another chemical reaction. Any chemical reaction is an example of a chemical change. Examples include: Combining baking soda and vinegar (which bubbles off carbon dioxide gas)Combining any acid with any baseCooking an eggBurning a candleRusting ironAdding heat to hydrogen and oxygen (produces water)Digesting foodPouring peroxide on a wound In comparison, any change that does not form new products is a physical change rather than a chemical change. Examples include breaking a glass, cracking open an egg, and mixing sand and water. Chemical changes may be identified by: Temperature Change: Because there is an energy change in a chemical reaction, there is often a measurable temperature change. Light: Some chemical reactions produce light. Bubbles: Some chemical changes produce gases, which can be seen as bubbles in a liquid solution. Precipitate Formation: Some chemical reactions produce solid particles that may remain suspended in a solution or fall out as a precipitate. Color Change: A color change is a good indicator that a chemical reaction has occurred. Reactions involving transition metals are particularly likely to produce colors. Odor Change: A reaction may release a volatile chemical that produces a characteristic scent. Irreversible: Chemical changes are often difficult or impossible to reverse. Change in Composition: When combustion occurs, for example, ash may be produced. When food rots, its appearance visibly changes. It's important to know that chemical change may occur without any of these indicators being obvious to the casual observer. For example, the rusting of iron produces heat and a color change, but it takes a long time for the change to be evident, even though the process is ongoing. Chemists recognize three categories of chemical changes: inorganic chemical changes, organic chemical changes, and biochemical change. Inorganic chemical changes are chemical reactions that don't generally involve the element carbon. Examples of inorganic changes including mixing acids and bases, oxidation (including combustion), and redox reactions. Organic chemical changes are those that involve organic compounds (containing carbon and hydrogen). Examples include crude oil cracking, polymerization, methylation, and halogenation. Biochemical changes are organic chemical changes that occur in living organisms. These reactions are controlled by enzymes and hormones. Examples of biochemical changes include fermentation, the Krebs cycle, nitrogen fixation, photosynthesis, and digestion. 0 ratings0% found this document useful (0 votes)59 viewsThis document describes a science lab report on chemical changes consisting of 5 experiments. [Experiment 1 involves mixing baking soda and vinegar which produces gas. Experiment 2 mixes sug...AI-enhanced title and descriptionSaveSave Unit 2 L3- Session 1- Chemical changes Lab Report-... For Later0%0% found this document useful, undefined We're fetching your file...Please wait a moment while we retrieve your file from its home on the internet 0 ratings0% found this document useful (0 votes)2K viewsThe document is a student exploration activity key about chemical changes. It discusses evidence of chemical changes including heat production or absorption, gas production, and color change...AI-enhanced title and descriptionSaveSave Student_Exploration__Chemical_Changes__ANSWER_KEY_... For Later0%0% found this document useful, undefined