

Uses of chlorine, sodium, sodium hydroxide and hydrogen



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Chlorine chemistry is the building block for many products essential to our well being. Things that we take for granted every day — drinking water, modern medicine and housing, being just a few examples — all rely on chlorine products. Drinking Water and Disinfection Drinking water chlorination has been called one of the most significant public health advances of the twentieth century. Sanitation and Disinfection Chlorine-based sanitizers play a vital role in maintaining a safe and healthy pool and spa environment Chlorine-based disinfectants play a critical role in protecting public health in a variety of other applications. Surface disinfectants prevent the spread of infectious diseases during food preparation and service and places such as child care facilities, nursing homes and hospitals.

Affordable Housing When building or remodeling a home, there are many material options available. In today's homes, products made of polyvinyl chloride. About 85 percent of all pharmaceuticals contain or are manufactured using chlorine. Chlorine is an important element of new drug research. Chlorinated compounds are essential to the development of potent new drug therapies for many illnesses and diseases. Chlorine is vital to a wide variety of medical equipment.

One-fourth of all medical devices in hospitals contain chlorine, ranging from some of the most commonly used to some of the most specialized. Sodium has commercial uses as well as industrial uses. From soaps to fertilizers, sodium is used to make water softeners, textiles, and is used as well as to relieve stomach acid, sodium bicarbonate: a white crystalline weakly alkaline salt used especially in baking powders, fire extinguishers, and medicine.

Sodium in its pure form also has industrial uses such as in catalyst which <https://assignbuster.com/uses-of-chlorine-sodium-sodium-hydroxide-and-hydrogen/>

help in making synthetic rubber. Sodium is combined with other metals to produce other chemicals. It is used in the manufacture of a creation lead and some power plants even use it in liquid form to cool nuclear reactors.

Sodium fluoride is used to poison mice and roaches and also for ceramics. Sodium is also used as a fertilizer, Chile salt pepper which is the compound sodium nitrate. Sodium is also a necessary element in the body for the maintenance of normal fluid balance and other psychological functions. Read about Portable appliances dominate our lives at home, at work, and at play in the form of electronic devices, notebook computers, power tools, portable generators, and so forth. Easily carried or moved from one location to another, these devices are typically powered by batteries – which never seem to last as long as we would like them to – or engines, which are typically noisy, smelly, and require handling of messy flammable liquid fuel.

Hydrogen and fuel cells represent an alternative power source for portable applications. As long as hydrogen fuel is available, fuel cells will continue to produce quiet, clean, and quality power. Similarly, hydrogen used as an engine fuel eliminates many of the unpleasant aspects of small engine operation. Hydrogen is to make ammonia, methanol, gasoline, heating oil, and rocket fuel. It is also used to make fertilizers, glass, refined metals, vitamins, cosmetics, semiconductor circuits, soaps, lubricants, cleaners, and even margarine and peanut butter. Hydrogen can fuel internal combustion engine vehicles.

Hydrogen can fuel fuel-cell vehicles. Hydrogen can replace natural gas for heating and cooling homes and powering hot water heaters. Existing wind

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and hydroelectric plants can produce hydrogen to store energy during off-peak hours. Hydrogen production from hydrocarbons can also produce carbon, which in some forms has ten times the strength of steel.

With more research, this carbon could be used for automobile bodies and structural members. Alkalis were used for soap-making and ceramic glazing. With industrialization, came usages in the textile trade. Since then, the uses of sodium hydroxide have expanded to be a reagent in a number of chemical reactions where sodium hydroxide provides either a source of sodium or alkalinity. These include: * Neutralization of acids * Hydrolysis * Condensation * Saponification * Replacement of other groups in organic compounds of hydroxyl ions. * As a source of sodium oxide where lowering of the melting point is required. Sodium hydroxide is used in many different industries and processes.

The major ones are described below: Alumina production The alumina industry is the largest user of sodium hydroxide in Australia. A strong alkali solution separates pure alumina from bauxite ore. Alumina is then recovered through precipitation. Pulp and paper Sodium hydroxide aids separation of cellulose fibers from lignin; this breaks down wood into pulp. Sodium hydroxide also helps bleach paper to required whiteness and brightness. Textile industry Sodium hydroxide is used mainly for two processes in textile manufacture.

Mercerizing of fiber with sodium and hydroxide solution enables greater tensional strength and consistent shine. It also removes waxes and oils from fiber to make the fiber more resistant to bleaching and dyeing. Soap and

detergent manufacture Sodium hydroxide was originally used for soap manufacture, but now has a wider variety of functions. As well as an extractant and refining agent for certain oils, sodium hydroxide is used to produce active agents, or builders in modern synthetic detergents.