

Difference between bromide and hydrogen chloride based nanoparticles.

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Abstract

Chloride is called Hydrochloric Acid. It is widely used in the chemical industry and manufacture of other chemicals. Hydrogen chloride has a corrosive nature. Heavy and expensive containers are needed to store it. To compare Halogen Nanoparticles with Corrosive Nanoparticles.

Keywords: Decimeter, Micrometer, PMC, HCL.

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Introduction

Nanoparticle is a very small. Consider a 7 year old boy; is a one meter tall, and tenth times smaller is his hand (1 Decimeter); his nail is tenth times smaller (1 centimeter); his finger is tenth times smaller; his freckle is tenth times smaller (1 millimeter). Bacteria are 10th times smaller than freckle (1 micrometer). Virus is tenth times smaller (one tenth of micrometer). Cell membrane is tenth times smaller; and sugar molecule is tenth times smaller than cell membrane, and it's about one nanometer, so we see how small nano meter is.

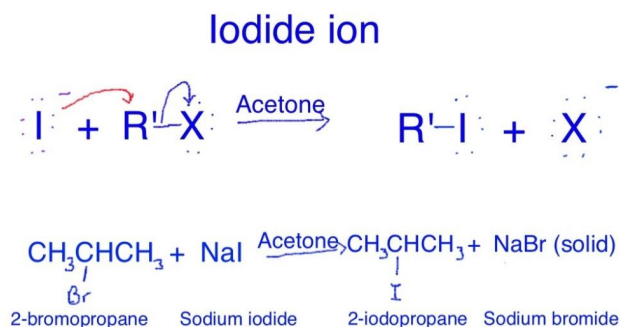
A chip inside a cell phone (nano SIM card), and it will reduce energy consumption more than 99 percent with nano technology [1]. Professor Michael says, "If it works, it could be a revolution in memory and storage industry." PMC or programmable metallization cell memory is under development [2]. As the first Ionic memory prototypes were too slow for practical use, and then these experimental technologies are binding to replace hard drives; the nano volatile, "flash" memory in portable devices; and also in personal computers [1]. From materials used in computer memory chips and microprocessors; another important function of Ionic memory is that it was very low voltage meaning a thousandth as much of flash memory. Flash memory stores bits of information as electrical charge, but the smaller the memory cells becomes; they can hold less charge. This new memory stores information by rearranging atoms to form extremely small cells. In this way, each cell stores more and more information, and the cells can be put on top of each other. Each cell has a solid electrolyte sandwiched between metal electrodes. Electrons bind to the metal ions and this causes metal atoms clustering together. In this way; an electrical current can flow. Nano Ionic memory is nonvolatile; meaning there is no need to energy in order to hold on information [2]. The important thing is that in this type of memory; it stacks up; no need to base layer of silicon [1]. This group recently represented Ionic memory which was built of silicon dioxide and copper materials. This new type of memory needs a challenging way to compensate for flash drives because flash drivers are getting up dated and more progressive [2,3].

Bromine and Iodine

Bromine is a chemical with the symbol of Br [8]. It is red-brown liquid. Bromine irritates eyes, and throat

Synthesize of Bromine and Iodine

Iodine is the heaviest halogens [4,5]. It is shown below. Elemental Iodine is toxic. The vapor irritates the eyes and lungs. Iodine crystals should be handled with care [6]. Tincture of Iodine is capable of tissue damage. We should use appropriate goggles, gloves, and lab coats.



Halogen derma is skin eruptions that result after exposure to halogen containing drugs or substances, Halogen may be a delayed allergic response [7]. The term Iododerma, bromoderma and fluoroderma are used to describe skin lesions that occur after contacting with Iodide-bromide, or fluoride containing preparations [8]. Bromo derma is a reaction caused by bromide. It is an inflammatory skin eruption. Several theories have been put forward to explain the development of halogenoderma [5].

Bromoderma is a cutaneous reaction caused using products containing Bromide [6]. Bromides have been widely used orally as sedatives anti-epileptics, anti-neoplastic, and spasmolytic [2]. Bromide may be prescribed in: 1) Carbomalthoxyzine, 2) Potassium bromide, and 3) Scopolamine Bromide [6]. Bromine intoxication may occur 1-10%. It is also used as an emulsifier in citrus, and some cola drinks [6]. Iodides can also increase the movement of Polymorphonuclear Leukocytes into the area of inflammation [5]. Inflammatory mediators released from neutrophils might be responsible for the hyper proliferative and the vegetative aspect of the skin lesions [6].

Iodine and Iodides

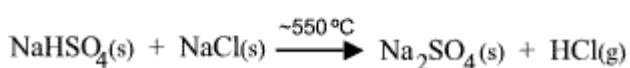
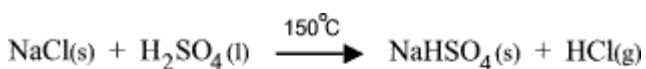
Iodine is commonly used in tropical antiseptics [8]. Oral iodine is used in the treatment of some thyroid diseases; potassium iodide is used for skin diseases like erythema, nodosum [6]. It is found in some expectorants, multivitamins, and tonics. Amiodarone; a medication used to treat angina and hearth arrhythmias, has rarely caused Iododerma after 18-24 months of use [6]. Iodine may also be ingested by seaweed, seafood, and Iodized salt. Accumulation of halogen in the body happens for 2 reasons: A) Prolonged or Excessive use, B) Acute or chronic kidney failure [7]. There are many Halogenodermas: A) Acne like rash, B) Vegetating or necrotic ulcers, C) Blisters, small or large. Treatment of Halogen Derma: Stopping the Halogen will result irresolution in 4-6 weeks [5]. Bromide has a long-life time in the body. Sometimes, active treatment may be required including anti-inflammatory medication [4].

Corrosive Chemical Hydrogen Chloride

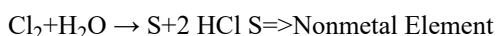
Hydrogen Chloride is a colorless gas at room temperature. It forms white fumes upon contact with water [9]. The chemical formula is HCL. It has a pungent odor. Melting point:144.22C and boiling point: -85.05C. It is soluble in alcohol and ether [10]. Chloride is called Hydrochloric Acid. It is widely used in the chemical industry and manufacture of other chemicals [11,12]. Hydrogen chloride have a corrosive nature. Heavy and expensive containers are needed to store it [12]. The use of hydrogen chloride is limited. Hydrogen Chloride in gas form reacts with metals and their oxides [11]. This reaction occurs in the presence of moisture. Many metallic chlorides liberate hydrogen chloride gas HCL, when warmed with Sulphuric acid, H₂so₄ [8]. Hydrogen chloride may be prepared in the laboratory by heating sulphuric Acid with sodium chloride.

Different reactions in Chemistry Release Hydrogen chloride as: phosphorus pentachloride, both by hot water and cold water [9].

Synthesize of Hydrogen Chloride



A mixture of chlorine C12 and hydrogen explodes when exposed to sunlight [11]. In the dark, there is no reaction [11]. Chlorine removes Hydrogen and forms hydrogen chloride and leaves the non-metal element.



Hydrogen chloride is nonflammable but toxic and corrosive gas. It is highly acidic [10]. It lowers the PH of the water [8]. It is widely used in industry, water supplies, food products cleaning agents [9]. Hydrogen chloride is strongly corrosive to human tissue, Inhaling can cause irritation and pulmonary edema and death [12]. The hazard classification and instructions should be regarded [8]. It may explode if heated.

Acute Effects: Hydrogen chloride is strongly corrosive to human tissue. It causes strong burns to skin and eyes. It can cause Pulmonary oedemic and death it is a major component of gastric acid in stomach. Oral exposure my cause of vomiting [9].

Chronic Effects: Chronic effects are gastric, bronchitis, dermatitis, hyperplasia, and skin cancer [8].

Hydrogen chloride is well understood substance, but according to Massachusetts department of environment protection; we cannot dispose it down the drain or in the trash unless it is neutralized [9]. For neutralizing Hydrogen chloride, we should move the item with hydrochloric acid outside, or to a well-ventilated area, to avoid breathing fumes. Pour 5.5 lbs. baking soda in the bucket per 1 gallon of hydrochloric acid used on the item [10]. We should contact your local officials to verify what is allowable in your state. If acid is swelled, call 911, and drink lots of water [9]. If hydrogen chloride pured on your shirts, take shower , take off shirt, and call911 [8].

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