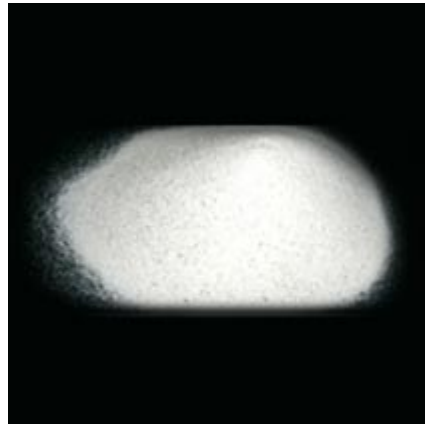


SILICA SAND











Sand is the general term for broken down granules of minerals or rocks, technically between about one-sixteenth of a millimeter to two millimeters in diameter, falling between silt and gravel in the spectrum of sizes. There are many varieties of sand in the world, each with their own unique composition and qualities. The white sandy beaches of iconic tropical destinations, for example, are made up primarily of limestone that has been broken down, while many black sands are either volcanic in origin or contain magnetite. Other sands have high levels of iron in them, and so are rich and yellow in color.

Silica is another name for silicon dioxide, SiO_2 , of which quartz is a specific latticed structure. So silica sand is quartz that over the years, through the work of water and wind, has been broken down into tiny granules. These granules can be used for many different purposes, and can be found in most non-tropical regions of the world. The most common mineral in the Earth's continental crust is quartz, and most silica sand is made up of broken down quartz crystals.

Chemical Analysis of Silica Sand:

Silica	SiO_2	99.19%
Alumina	Al_2O_3	0.62%
Ferric Oxide	Fe_2O_3	0.02%
Titanium DiOxide	TiO_2	0.01%
Loss on Ignition	-	0.16%

USES:

Silica sand used for water purification and manufacture of glass, synthetic foundry moulding catalysts, disodium ultramarine etc. it is also used for acid heat resistant ceramics, refractories, pottery glaze, enamel etc. Silica sand of 150 mesh is used in Sawing stone, grinding and surfacing glass and polishing marble Rounded Grains of silica sand are used for sand blasting it is also used as a filler in paints 'Wood Paste' moulded hard rubber goods, gypsum Plasters, oxychloride acoustic plasters and soap.

Silica sand is one of the most common varieties of sand found in the world. It is used for a wide range of applications, and can be purchased from various suppliers throughout the world. Silica sand is used in industrial processing, to make glass, as fill, and to create **molds and castings**. Silica sand is consumed in large number of industries in different forms.

Application Areas:

- Abrasives and polishes in glass manufacture
- Fillers and extenders
- Silica brick manufacture
- As a catalyst in specialty coatings
- Cleansers
- Ceramics
- Electronics
- Optics and refractory in Ferro-silicon manufacture
- Rubber

Specialty Silica Sand Variety Offered:

Colloidal Silica: Used as a high temperature binder for silicon wafer polishing and carbonless paper

Fumed Silica: Possess unique strength, thixotropic properties and flattening properties, is a valuable ingredient in rubber, plastics coatings, cement and sealants.

Silica Gel: It is an extremely pure, porous and amorphous form of silica possessing high degree of internal surface area, hardness, uniformity and chemical inertness. Its ability to absorb liquids makes it valuable in a wide variety of applications including catalysts, anticaking agents in food and pharmaceutical products, desiccants, cosmetics, plastics, specialty coatings, paper and adhesives.

Precipitated Silica: Another type of specialty silica which is mainly used as a reinforcing agent in tire compounds.

SILICON

Silicon is a periodic element that is classified as a metalloid. It occurs naturally on earth and is found in large amounts in the earth's crust. Silicon has a variety of uses because it bonds easily with other elements, is an electrical semiconductor, and does not conduct temperature. Also, silicon's many derivatives, including silicone and silica, are widely used as a base for a range of manufacturing products.

USES

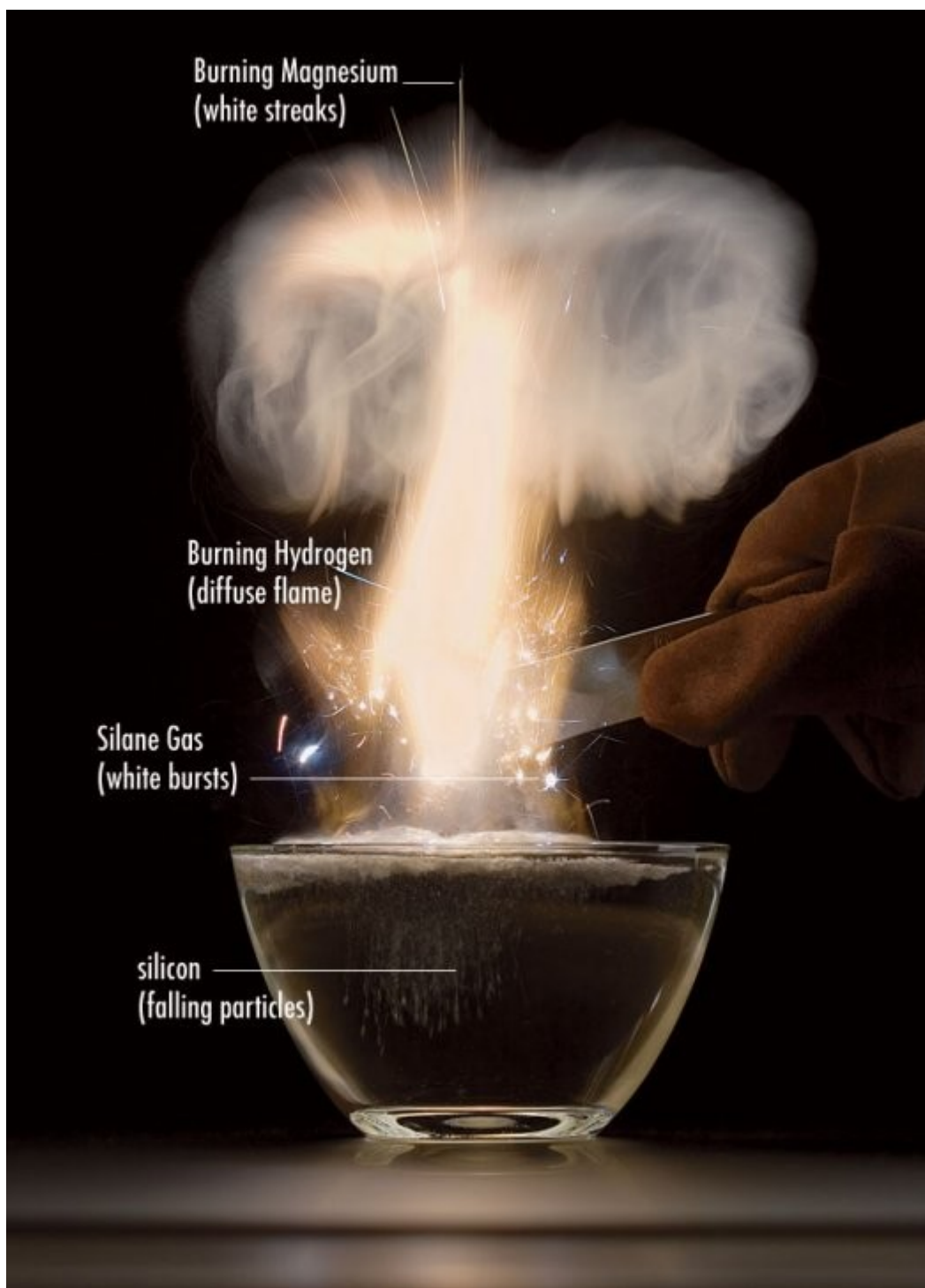
Electronic Equipment: The production of electronic equipment is one of the most common uses for elemental silicon. Thin silicon wafers are used as the base for photovoltaic sheets, like solar panels. Silicon also provides the structural foundation for computer chips and other aspects of electrical circuits, such as semiconductors, microprocessors, and transistors. Hydrogenated amorphous silicon, an alloy of silicon, is generated in thin strips to become part of LCD television and computer screens.

Construction Materials: Silicon is also widely used in the construction materials. Silica, also known as silicon dioxide, is an essential element in the creation of clay, concrete, brick, sand, and cement. It has a shiny, glittery appearance similar to mica. Silica is also used to make car windshields by fusing a thin piece of glass between two pieces of thick, clear silicon dioxide.

Automotive Parts: Silicon is an essential part of the automotive casting industry. Aluminum silicon alloy is added to liquid iron before it is cast in the shape of a car part to strengthen the resulting shape. The addition of silicon into iron casts also reduces the possibility of iron carbide, a weak and brittle formation of iron that can compromise the integrity of the cast parts.

Toy Products: Certain mixtures of silicon that include small amounts of boric acid have the unique ability to be manipulated and bend into different shapes before returning to its original cast shape, making it a popular ingredient in many toy products. Toys such as Silly Putty, Gumby dolls, and Gak are made with silicon, and bouncing balls and stress balls also include large quantities of silicon. Figurines like My Little Ponies that have slightly pliable surfaces are also formed with silicon.

Silicone is a polymer mixture of silicon, oxygen, and carbon that is used in a variety of applications due to its flexibility, malleability, and waterproof qualities. These properties make silicone a versatile material that is used to make, wax, grease, caulk, and certain explosives that require putty packing. Cosmetic surgery also employs silicone to make several different types of implants, including breast implants, buttocks implants, and calf implants, because its supple yet formed shape looks natural under skin.



Industrially, silica is converted to pure silicon by heating it with coke (the form of coal, not the drink) in a furnace.

Chemically speaking, several things happen when the powder hits the acid. Any leftover magnesium powder reacts with the acid to produce hydrogen gas. The magnesium silicide reacts with the acid to produce silane gas, which spontaneously combusts on contact with air, giving off little pops that ignite the nearby swirls of hydrogen gas. If there is still some magnesium powder floating in the air, it catches fire too, creating a bright flash and a puff of white smoke. You get three forms of fire in one, and the powder falling to the bottom of the bowl is purified elemental **silicon**. Spells are fantasy, but potions are real, and this is a great one.

