

DOW CORNING

Dow Corning Corporation Media Kit

We help you invent the future.™

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We help you invent the future.™

Everyday Uses of Silicon-Based Products

Since 1943, Dow Corning Corporation has created a long list of innovations that have improved lives around the world. Here is a small sample of the ways silicon-based products impact our lives every day:

Computers and Electronics

Hyper-pure polycrystalline silicon is a fabricated raw material that is used in the semiconductor and photovoltaic industries as the base for computer chips and electronics. Delicate circuit boards in computers, VCRs, and cell phones are protected with silicon-based materials. Dow Corning products also help in the manufacture of computer chips by offering ozone-safe cleaning materials. In the age of electronics, silicon-based materials help us work faster and more efficiently.

Automobiles

Durable sealants, lubricants, protective coatings, and greases help keep automobiles running smoothly. Coatings for airbag fabrics, car polishes, automotive vinyl protectants, paints, oil pan gaskets, and spark plug boots and cables also benefit from silicon science.

Textiles

Silicon-based products can improve the feel (“hand”) of fabrics, as well as waterproofing them. Dow Corning products also help in the manufacture of textiles and leather goods and protect textiles from stains, wrinkles, and shrinking.

Household Products

Dow Corning silicon-based materials help improve the performance of laundry detergents, fabric softeners, cleaners and solvents, and other household products in your home.

Personal Care

Silicon-based materials are used in numerous personal care applications. They provide that silky-smooth feel in hair care products. They also enhance the performance of deodorants, antiperspirants, cosmetics, and skin moisturizers and lotions.

Healthcare

Silicon-based products provide tubing for dialysis, hydrocephalus shunts, pacemaker leads, and lubrication of syringe needles.

Construction and Architecture

Dow Corning products protect buildings against the ravages of nature. Historic lighthouse preservation, for example, benefits from a unique Dow Corning breathable coating, which waterproofs the exterior while allowing trapped moisture to escape. Other applications include glazing sealants for high-rise commercial buildings, roofing materials, pavement sealants, firestop materials, and bathtub caulks. This range allows silicon-based products to seal the deal.

Everyday Uses of Silicon-Based Products *continued*

Paper

Silicon-based products are found in release coatings for label-backing paper, pressure-sensitive adhesives, and paper coatings.

Aerospace

Dow Corning provides aerospace sealants, elastomers, fluids, and resins to keep the world flying and space missions on course.

Manufacturing

Silicon-based materials are used as process aids, coupling agents, defoamers, and antifoams for a variety of industries.

Food and Related Industries

Silicon-based materials are used as defoamers in flavor concentrates, beverages, edible oils, prepackaged foods, and confections – and as release agents for bread, bun, and cake pans.

The Advantage of Silicon-Based Materials

Beyond the ordinary to the extraordinary, silicon-based products provide an advantage in nearly every industry segment of today's economy. Easily tailored, these materials provide routine features, such as high temperature stability and resistance to aging and chemical assault. These advanced materials also have the ability, depending on the material, to:

- Adhere
- Condition
- Control foam
- Improve appearance
- Connect
- Transfer energy
- Mask
- Reconstruct
- Seal
- Lubricate
- Purify
- Wet
- Insulate
- Protect
- Release
- Soften
- Conduct
- Deliver

Versatile

Versatility is the hallmark of silicon technology. By varying molecular structure, network density, molecular size, or functional contents, a world of possibilities emerges: free-flowing resins, rigid plastics, rubbers, greases, powders, and fluids that are thinner than water or as thick as paste. Silicon-based materials can take on all of these different forms. And physical and chemical properties – such as thermal stability, strength, and weatherability – can be varied for specific applications. Because of this versatility, silicon-based materials are key ingredients in thousands of improved products.

Surface Properties

What really differentiates silicon-based materials from other materials is their unique surface properties. These properties help Dow Corning customers create distinctive products. In many applications – such as adhesives, sealants, or coatings – a product must “stick” to another material. By careful design and formulation, Dow Corning scientists make these products bond directly with the substrate. At the other end of the spectrum, coatings can be designed to have unique “release” behavior, where there is no adhesion between the coating and the adhesive layer.

The flexible surface properties of silicon-based materials make them ideal for many applications, including paper and mold release agents, textile modifiers, water repellents, defoaming agents, anticaking aids, corrosion inhibitors, emulsifiers, lubricants, conditioners, and glass enhancers. These are just a few of the thousands of applications for silicon-based products.

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