

We help you
invent the future.™

DOW CORNING

dowcorning.com

Silicones & Dow Corning: A window to the future





*We are innovative leaders
unleashing the power of silicon
to benefit everyone, everywhere.*

These are the values that guide us

Integrity

We show our integrity by our ethical behavior and our respect for society's values.

Employees

Our employees are the source of our ideas, actions and performance. Employees can best achieve their full potential in an environment of fairness and respect, self-fulfillment, teamwork, and dedication to excellence.

Customers

We work with our customers in the spirit of long-term relationships based on making the customer's interests our interests.

Safety

Our value of safety is based on our commitment to an injury-free work environment, individual self-worth and consideration for the well-being of other people.

Quality

Our constant goal of quality performance is based on understanding and meeting our customers' needs, exactly.

Sustainability

We will support the principles of sustainability through our business strategies, processes, products and solutions. We will act responsibly to create economic growth and value, improve the quality of life and our environmental performance.

Technology

We will advance the chemistry and related sciences in our chosen fields to contribute to our customers' success and differentiate Dow Corning from our competitors.

At Dow Corning, we are passionate about silicon-based technology – its versatility, its possibilities and its unique potential to help solve some of the most important challenges facing our world, both today and in the future. Challenges driven by population growth; aging; urbanization; climate change; and critical needs for clean water, renewable energy, health, safety and security.

To address these challenges, Dow Corning is harnessing the power of silicon-based technology to help make renewable energy affordable; carbon-neutral solutions possible; and an improved quality of life achievable for everyone, everywhere.

Silicon-based materials, including silicones, are truly amazing. They can be formulated to deliver an almost unlimited range of benefits. And they can be used to create everything from longer-lasting make-up to more durable construction materials; faster, smarter electronic devices; and more efficient solar panels and wind turbines. Yet they are gentle enough for use in healthcare products and medical devices that contribute to patient well-being.

The list of how silicones and other silicon-based materials can improve your world is as long as imagination and as broad as society's needs.

In the following pages, you will discover some fascinating things about silicones and their many applications. You also will get to know more about Dow Corning, see our innovative spirit in action, and learn how we are turning the sand under our feet into materials and solutions that help people and the planet reach higher.

Today, Dow Corning products and solutions improve the quality of life of about a billion of the world's people. We want to share those benefits with everyone, everywhere. We want to share them with you.

Sincerely,

Robert D. Hansen

Robert D. Hansen
President and CEO





Silicones

from the sand under your feet

The missing link between organic and inorganic chemistry, silicones are a family of polymers made from the products of nature – silicon, oxygen, carbon and hydrogen. Silicon, the basic raw material for silicone production, comes from ordinary quartz sand and is the second most abundant element in the Earth's crust.

Unique materials with enormous promise

The world needs innovative technologies and products that can help people live better, healthier, safer and more productive lives. Silicones help make those innovations possible.

Thousands of unique silicone products have been engineered to meet the needs of product designers, manufacturers, consumers and municipalities around the world.

Silicones can be used with or applied to other materials to improve their overall performance or to give them new capabilities. They also enable the development of innovative new products and applications and provide lasting solutions to age-old problems.

Adaptable and versatile

Combining the advantages of glass and plastics, silicones are among the most versatile materials on our planet.

Like glass (which is silicon-based), silicones are temperature- and moisture-resistant, chemically inert, and dielectric. Like plastics (which are carbon-based), silicones are strong and able to assume many forms – from fluids thinner than water to emulsions, solids, resins and stretchy elastomers.

By changing the size or structure of a silicone molecule or by attaching different functional groups, chemists can enhance or change the way a silicone behaves. Consequently, silicones can be designed to perform an amazing range of functions and to deliver a multitude of benefits.



Did You Know

From a handful of readily available ingredients, thousands of durable, waste-reducing silicone materials can be created.

A silicone fluid will flow more quickly and easily and create a thinner, more complete film than a hydrocarbon fluid with the same viscosity.

Silicones can be designed to stick or slip, insulate or conduct, create foam or destroy it.

Silicones are both water-repellent and "breathable." So they can keep rain from entering a building while letting water vapor trapped inside the building escape.

Learn more at fascinating silicone.com.

Silicones can be durable or transient; hydrophobic or hydrophilic; clear or pigmented; release agents or adhesives; glossy, shiny or dull; soluble or insoluble; polar or non-polar; industrial, food or medical grade.

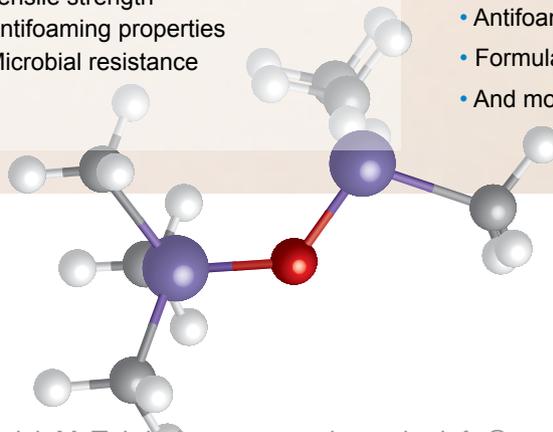


Typical Silicone Properties

- Outstanding weathering and aging resistance
- Thermal stability
- High water-repellency
- Extremely strong adhesion qualities
- Ability to withstand long-term exposure to the atmosphere
- Resistance to the sun's ultraviolet rays
- Extremely low volatility
- Inertness – does not react with most materials
- Chemical resistance
- Long-term elasticity, pliability and flexibility
- Excellent electrical insulation properties
- Tensile strength
- Antifoaming properties
- Microbial resistance

Products that Fuel Innovation and Overcome Limitations

- Fluids, emulsions and dispersions
- Oils, greases, compounds and pastes
- Resins, gels and powders
- Rubbers
- Coatings and encapsulants
- Adhesives and sealants
- Delivery and release agents
- Coupling agents and crosslinkers
- Chemical building blocks
- Space-age composites
- Antifoams and surfactants
- Formulating and processing aids
- And more!



Silicones

improving industry

Silicones make existing materials work better, longer and more reliably. They also help manufacturers streamline production, save time, reduce costs and minimize environmental impact.

Alternative Energy – Solar and Wind

Because they can withstand the sun's unrelenting rays, year after year, silicones improve the cost-effectiveness, durability and performance of both solar panels and wind turbines. Solar cells are made from silicon, and silicones are used throughout solar panel assembly and installation as adhesives and sealants, encapsulants, potting agents, and protective coatings. In wind turbines, silicones enable more efficient designs and extend maintenance intervals.

Automotive

From the airbags to the brakes, from the powertrain to the chassis, silicones coat, seal, insulate, weatherproof and protect our vehicles. They improve dependability and fuel efficiency and make our journeys safer and more enjoyable.



Beauty and Personal Care

Silicones help consumers of any age feel good about their appearance. They help create make-up that lasts longer and is more comfortable to wear. Their luxuriously smooth and silky feel and unique wetting and spreading qualities mean lotions, moisturizers and cleansers are easier and more pleasant to apply. And silicone-enhanced shampoos and conditioners give greater shine and help make hair easier to manage.





Construction

Silicone sealants outperform and outlast most organic weatherproofing materials. They protect the structural integrity of buildings; allow skyscrapers to withstand seismic activity; and enable architects to create more energy-efficient, people-friendly designs.



Electronics

Silicones have played an essential role in advancing computer technology, telecommunications and other innovations that rely on microchips. They enable the design of smaller devices and are contributing to new generations of “thinking appliances.”

Energy Storage

Silicon-lithium solutions increase the performance and improve the cost-effectiveness of lithium-ion batteries used in consumer electronics, electric cars and utility-scale energy storage.

Energy Transmission

Silicone high-voltage insulating rubbers and coatings protect power transmission equipment from weather and environmental pollution. This helps prevent costly and dangerous interruptions to industrial and community power supplies.



Did You Know

Silicone high-voltage insulator coatings perform for 10 years or more, while some other protection methods must be reapplied every 18-36 months.

Dow Corning® brand silicone structural glazing sealants installed in the 1980s are still performing today.

Without the controlled thinning of cell walls made possible by silicone surfactants, high-quality polyurethane foams would not be possible.

When combined with the right pigment, a silicone resin can withstand temperatures as high as 760°C (1,400°F).

Learn more at fascinating silicone.com.

Silicones

improving life

Silicones are revolutionizing our present and shaping our future. They fuel our imaginations and make new products possible ... products that improve the lives of people everywhere.

Healthcare

From the hospital operating room to the medicine cabinet, silicones contribute to our health and well-being. Silicone improves the performance of medical devices and healthcare products and makes them more comfortable to use.

Infrastructure

Silicones add years of cost-effective performance to public buildings, roads, transportation systems and utilities, giving citizens more value for their tax money.



Manufacturing and Processing

Silicones add reliability, durability and value to the products you use every day. They also make products easier and more economical to produce. Because silicones have such a long history of success, they make it easier for designers and manufacturers to pursue high-value opportunities and enter new markets.





Paints and Coatings

From steel bridges to high-style cookware, silicones protect our infrastructures and brighten our lives. Silicones can be tailored to meet almost any paint or coating challenge – from performance and cost-effectiveness to compliance with environmental regulations.

Paper

Silicones have a positive effect on virtually every aspect of the pulp and paper industry – from pulp processing to paper finishing, label making and paper recycling. They enable the development of innovative new products, improve productivity and lessen the impact of paper-making operations on our environment.



Textiles

Fabrics coated with silicone are used to make everything from easy-care clothing to sails, parachutes and hot air balloons. Silicones impart a variety of “feel” properties. They also improve fabric strength, abrasion resistance, water repellency and wrinkle recovery.



Did You Know

Almost everything around you is made ... or made better ... with silicones.

By combining fluoro and silicone technologies, it is possible to create high-value coatings with anti-staining, easy-clean, anti-graffiti properties.

Virtually any electronic device that is powered by batteries or electric current today relies on silicones.

Approximately half of all make-up, hair and skin care, and underarm products introduced today contain silicone.

Learn more at fascinating silicone.com.

Dow Corning

the silicone pioneer

Dow Corning was established in 1943 specifically to explore and develop the potential of silicones. The corporation is equally owned by The Dow Chemical Company and Corning, Incorporated.

A global leader

From its pioneering role in the development of silicones for commercial applications, Dow Corning has grown to become a global leader in silicon-based technology and innovation. We provide performance-enhancing products and solutions that meet the needs of customers in virtually every major industry and improve the daily lives of nearly a billion of the world's people.

Worldwide resources

Headquartered in Midland, Michigan, USA, Dow Corning Corporation is a truly global company with a worldwide distributor network. Approximately 11,500 employees work in sales offices, technical service centers, solar application centers, manufacturing sites, warehouses and laboratories across the Americas, Europe, Asia and Australia.





Knowledgeable people with a local perspective

Dow Corning is an organization of keen listeners and flexible thinkers with more than six decades of research and development, manufacturing, and business expertise.

Because they live and work in diverse communities around the world, Dow Corning employees and distributors have a firm understanding of local markets, trends and economies. They also have direct access to Dow Corning's worldwide industry knowledge and technology network.

So, no matter where in the world our customers do business, Dow Corning is well-equipped to provide them with a reliable supply of top-quality silicone materials, technical support and customer service.

Innovation in Action

The Dow Corning Citizen Service Corps

The Dow Corning Citizen Service Corps gives employees from across our company and around the world a unique hands-on opportunity to expand their understanding of emerging markets and to fuel innovation at Dow Corning through service to others.

Participating in intense, four-week assignments in developing countries, our employee volunteers:

Discover – Experience the world from a new vantage point and gain firsthand knowledge of the everyday challenges and needs of people who live there.

Serve – Work with local organizations and companies on service projects designed to make a tangible, valuable and sustainable contribution to the local community or communities where they serve.

Innovate – Explore new business opportunities that have the potential to improve the quality of life for people who currently have little or no access to the benefits of silicone technology.

Learn more at dowcorning.com/citizenservicecorps.



Dow Corning

a history of world-changing innovation

For more than 65 years, Dow Corning innovations have made an indelible mark on society. Take a moment to enjoy a tiny sampling of where we have been. It is a marvelous example for where we are going.

1940s

Dow Corning Corporation is formed to explore and develop the potential of silicones.

Dr. Earl Warrick of Dow Corning invents the first commercially viable silicone rubber.

A silicone ignition sealing compound from Dow Corning makes high-altitude flight possible and ushers in a new age of aviation.



1950s

Dow Corning introduces the first modern silicone release coating and the foundation for a new generation of releasable tapes and labels.

Dr. Edwin Plueddemann of Dow Corning develops the first commercial silicone adhesive.

Dow Corning develops a silicone for waterproofing that will become the industry standard water-repellent treatment for paper and textiles.



1960s

The first footprint on the lunar surface is made by a boot sole fabricated from silicone rubber from Dow Corning.



1970s

Flexible, thin-film silicone conformal coatings from Dow Corning enable the development of smaller, lighter electronic components, setting the stage for today's smartphones and laptop computers.



Photo courtesy of NASA



The world's first four-sided structural silicone glazing system changes the face of architecture forever.

1980s

Fifteen newly developed silicone products from Dow Corning prove their ability to thrive on tough performance challenges at Le Mans, France's "Grand Prix of Endurance."

1990s

Liquid silicone rubber coatings from Dow Corning advance automotive airbag technology and improve airbag performance.



Photo courtesy of autoliv.com

2000s

Silicone sealants in impact-resistant window systems help reduce injuries caused by flying glass during natural disasters such as hurricanes, earthquakes and typhoons.



Silicones from Dow Corning enable the development of 2-in-1 conditioning shampoos and other new classes of personal care products.



2010s

The future of silicone is now. Healthcare, solar and wind power, water and energy conservation, waste reduction, recycling. Imagine what silicones could enable us to do next!



Customers

helping them achieve more with silicone

Every day, the people of Dow Corning help designers, architects, manufacturers, fabricators and formulators around the world achieve more with silicone.

A passion for solutions

Dow Corning employees are passionate about finding ways to overcome today's challenges and innovate for tomorrow. We invite our customers to talk with us and tell us what they want to accomplish. Our employees listen, understand and respond with flexible solutions.

In addition to proven and innovative silicon-based materials, Dow Corning also offers services and support that make it easier for our customers to:

- Achieve design freedom
- Commercialize new products
- Increase productivity
- Reduce costs
- Operate more sustainably
- Expand into new geographies

Innovative ways to meet changing needs

To meet diverse and changing needs for innovation, efficiency and sustainability, Dow Corning offers two unique brand experiences.

DOW CORNING

XIAMETER[®]
from **DOW CORNING**

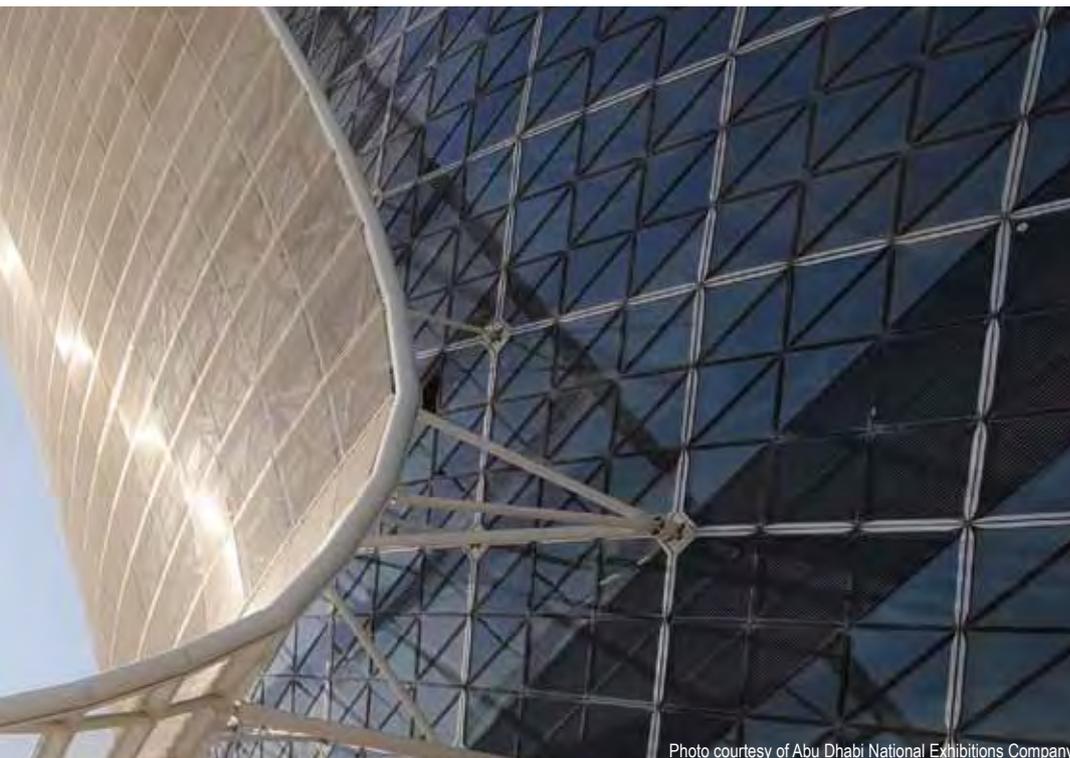


Photo courtesy of Abu Dhabi National Exhibitions Company

The Dow Corning® brand

We help you invent the future™

Dow Corning® products and services are designed for customers who require specialty, silicon-based materials and technologies, as well as innovation support, application expertise, and customized products or business solutions.

Dow Corning® brand customers receive the full benefit of our more than 65 years of experience as a global leader in silicon-based technology.

- Access to thousands of specialty products and services
- A high level of personal service and technical support
- A collaborative relationship

Learn more at dowcorning.com.

The XIAMETER® brand

Silicones simplified

Our Web-enabled XIAMETER® brand is the world's largest online marketplace for silicone products. The brand is designed for customers who know what products they need and are looking for the most direct and efficient way to purchase standard silicones at market-driven prices.

- Self-service functionality, volume quantity options and transparent tiered pricing
- Thousands of high-quality standard silicones – fluids, emulsions, silanes, sealants and rubber materials
- Used in personal care, textiles, pulp and paper, construction, wire and cable, automotive, and more

Learn more at xiameter.com.

Innovation in Action

A shared commitment to solar



When Day4 Energy, Inc., of Canada needed a photovoltaic junction box and frame sealant, they tested products from three companies. They chose a silicone sealant from Dow Corning.

Why? Not only because of the product's high performance, consistent quality and reliable global supply, but also because of Dow Corning's commitment to the solar industry.

According to Shane Kramps, purchasing manager for Day4 Energy, "We seek to build long-term relationships with our vendors, so it's critical to us that they have significant resources invested in the solar industry, just as we do.

"Because of Dow Corning's long experience in the industry, we can benefit from their knowledge. It's not just that they have a good product; they're also good technical collaborators. Our relationship with them gives us access to new ideas and opportunities through their broad involvement in solar innovation."

Learn more at dowcorning.com/solar.



Photo courtesy of Day4 Energy

Sustainability

a company-wide commitment

You see Dow Corning's commitment to sustainability in the personal actions of our employees; in our business decisions; and in our investments in talent, technology and infrastructure.

Bringing sustainability to life

Sustainability is essential to our future success, and it is helping us meet the needs of our customers, employees and communities. It is also helping us meet the needs of our planet and improve the quality of life of people everywhere.

For people

It starts with our employees. They are the source of our ideas, actions and performance. To help them reach their full potential, we have created a culture of innovation, a commitment to workplace safety and a supportive atmosphere. This focus on employee well-being has earned Dow Corning global recognition as one of the world's best places to work.

We also want the communities where our facilities are located to be great places to live – not only for our employees and their families, but for everyone in the area. So we take every opportunity to connect with our neighbors, foster mutual understanding, contribute to community vitality and help prepare local students for the high-tech employment opportunities of the future.

For prosperity

Dow Corning works hand-in-hand with our customers to develop profitable materials and solutions that help address the needs of people everywhere for a better life – from safer, more comfortable and more energy-efficient buildings to technologies



that make renewable energy, including solar, more available and affordable.

We also are seeking affordable ways to extend the value of silicon-based technology to people in emerging economies.

For the planet

Dow Corning continually strives to reduce the environmental impact of our operations by reducing energy, waste and emissions and by recycling materials and byproducts.



Did You Know

Silicone materials enable light-emitting diode (LED) lights and traffic signals to shine more brightly and reduce energy requirements.

If an organic sealant needs to be cut out and replaced every seven years, the amount of garbage produced and solvents used will be at least three times greater than if a longer-lasting silicone sealant had been used.

When used in rinse-cycle fabric softeners, silicone antifoams reduce or eliminate foam after the first rinse. This contributes to water efficiency and makes the rinsing process faster and more convenient.

Dow Corning is one of the only companies in the world that can provide silicon-based material solutions for everything from solar cell manufacturing to solar panel module assembly and installation.

Learn more at fascinating silicone.com.



We apply our innovative thinking and technology know-how to help our customers achieve *their* sustainability goals, as well.



RESPONSIBLE CARE
OUR COMMITMENT TO SUSTAINABILITY

As a participant in the chemical industry's global *Responsible Care*® program, Dow Corning works to provide chemicals that can be manufactured, transported, used and disposed of safely. Health, safety, the environment and resource conservation are critical considerations at every stage of the lives of our products.

For today and for the future ...

Commitment in Action

Clean cookstoves for the developing world

Nearly three billion people in the developing world rely on traditional cookstoves and open fires for cooking.

Exposure to smoke from these cooking methods causes millions of premature deaths each year. Reliance on biomass as cooking fuel forces women and children to spend many hours each week collecting wood, puts increased pressure on local environmental resources, and contributes to climate change.

To help combat this problem, Dow Corning is collaborating with the Global Alliance for Clean Cookstoves. This public-private partnership led by the United Nations Foundation is working to create a thriving global market for clean and efficient household cooking solutions.

Dow Corning will work with the Alliance to explore how to improve the quality of stoves, as well as how to lower the cost of production to make them more affordable for families.

Learn more about the Global Alliance for Clean Cookstoves at cleancookstoves.org.



Innovation for all



Photo courtesy of Centre for Vision in the Developing World

Self-adjustable eyeglasses for children in the developing world

According to the Centre for Vision in the Developing World (CVDW), there are 100 million or more children in developing countries who need glasses to make the most of their educational opportunities. But there are not enough eye care professionals to serve them.

Silicone fluids from Dow Corning were instrumental in the development of self-adjustable eyeglasses for adults. Now, through the Child ViSion™ initiative, Dow Corning and the CVDW are exploring how self-adjustable eyeglasses can be designed specifically to meet the needs of children.

To help find a solution, Dow Corning has teamed up with the CVDW to create an innovative new way to bring improved vision correction to children in desperate need.

Learn more at dowcorning.com/childvision.

Child ViSion™

an initiative of Dow Corning Corporation
and the Centre for Vision in the Developing World



are innovative leaders
unleashing the power of silicon
to benefit everyone, everywhere

**Together, we can achieve things
never before imagined.**

Improved LED performance

Light-emitting diodes (LEDs) are growing in use all around us. They provide keypad lighting for communication devices. They are increasingly popular in large panel displays. And they contribute to safety when used in automobile brake lights and turn signals.

LEDs are “instant on” devices. When traveling 60 mph (96 kph), you gain an extra 15 feet (4.5 m) of stopping time if the car in front of you is equipped with LED brake lights.



In regions where electrical power is not available, LED technology powered by rechargeable batteries or solar energy can replace fuel-based lighting, such as kerosene and candles.

Silicone encapsulants from Dow Corning enable LED manufacturers to increase light output, improve reliability, and extend the life of LEDs and the devices that use them while minimizing environmental impact.



How to Contact Us

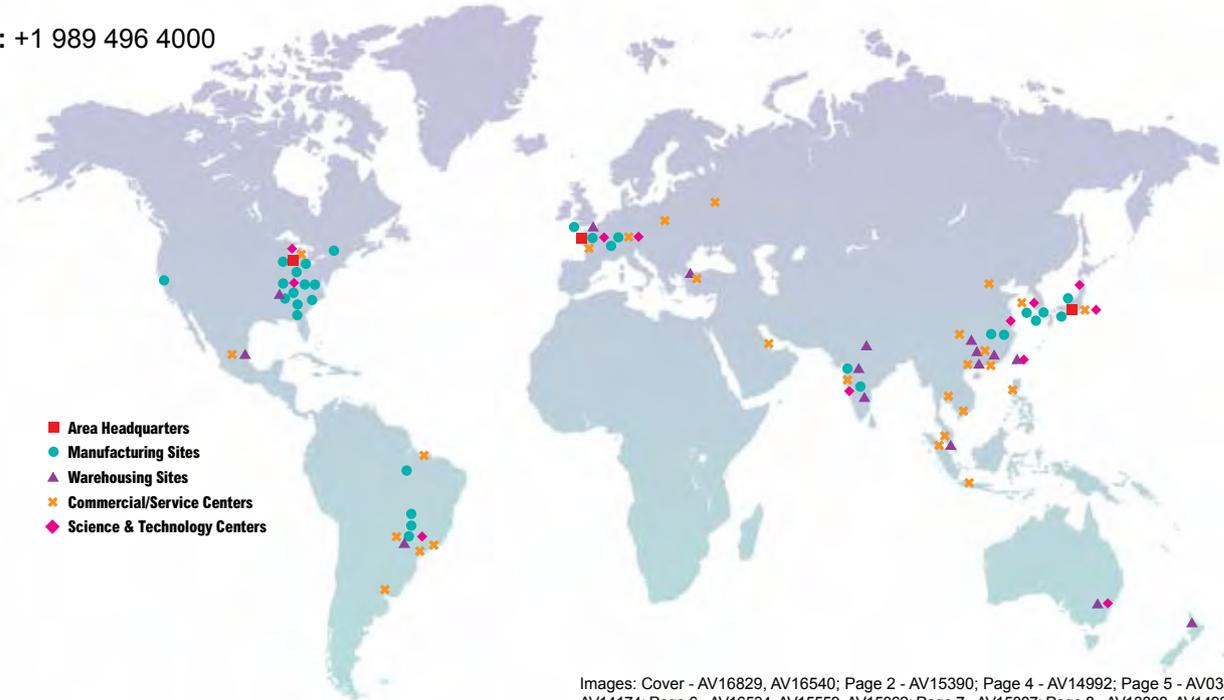
Dow Corning has offices, manufacturing sites, and science and technology laboratories around the globe. Telephone numbers of locations near you, as well as answers to many commonly asked questions, are available on the Web at dowcorning.com/ContactUs.

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Dow Corning actively supports the United Nations' Sustainable Energy for All initiative.



- Area Headquarters
- Manufacturing Sites
- ▲ Warehousing Sites
- ✕ Commercial/Service Centers
- ◆ Science & Technology Centers

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The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that our products are safe, effective and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent.

Dow Corning's sole warranty is that our products will meet the sales specifications in effect at the time of shipment.

Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted.

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