

# Silicones: Enabling Renewable Energy and Energy Efficiency

Chemical manufacturing is an essential element for building a sustainable, carbon-neutral future. From technologies that make renewable energy possible to those that improve efficiency in our cars and homes, silicones contribute to meeting environmental sustainability goals. Timely, risk-based chemical evaluations are essential to encouraging economic growth, addressing climate change, *and* protecting the environment.



## 1. Sealants

Silicone sealants help make buildings energy efficient by preventing humidity and hot or cold air from coming through joints and cracks. Sealants also protect joints and materials from moisture, heat, corrosion, sunlight, ultraviolet radiation, pollution, and other chemicals. Silicone sealants can last 3 times longer than organic materials used in the same applications.

## 2. Solar Panels

Silicones are used as conductive adhesives and encapsulants in solar panels. Silicones can improve panel efficiency, help reduce maintenance, and make panels last longer.

## 3. LED Lights

Silicones are used as encapsulants and adhesives in LED lights, which typically require 75% less energy than conventional lighting sources. Silicones help increase brightness and can provide greater reliability and protection of light components.

## 4. Vehicle Batteries

In hybrid and electric vehicles, silicones encapsulate the entire battery pack which helps with stabilization, vibration protection, heat dissipation, and water and dust proofing.

## 5. "Green" Tires & Automotive Parts

Silicone materials are also used to make "green" tires, which have a low rolling resistance and contribute to better fuel efficiency. Silicone rubber, sealants, and lubricants present in other automobile parts reduce the vehicle weight and enable lower emissions.