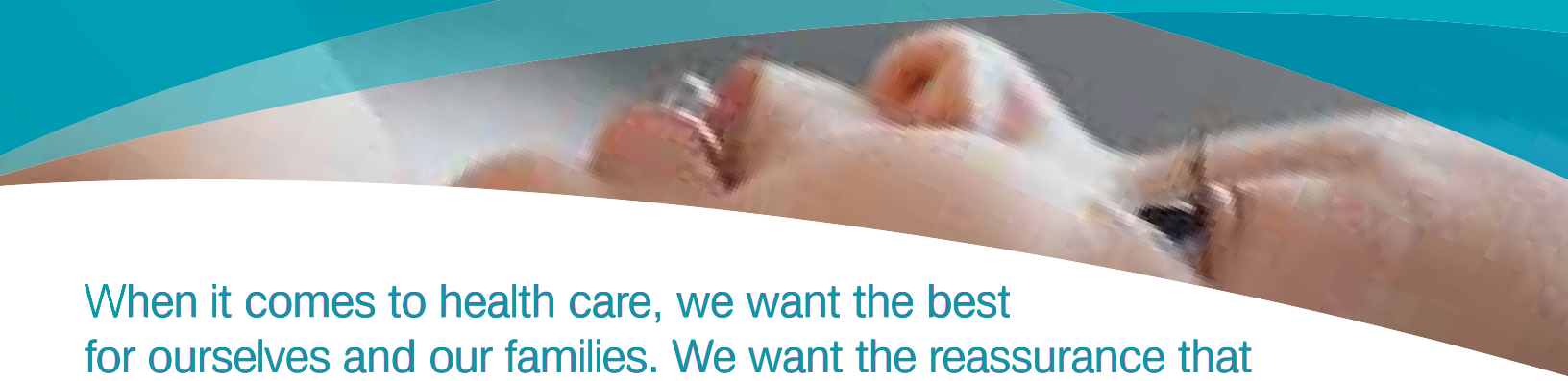
Silicones: Health Care

September 2004

Enhancing Performance for Our Health and Well-Being



When it comes to health care, we want the best for ourselves and our families. We want the reassurance that the tools used by health care professionals are safe, clean and dependable. Health care professionals want that, too, and more.They aim to improve the performance of medicines and medical devices without sacrificing patient comfort.

Protect our Well-being

Medical applications and infant care products with silicone satisfy the highest quality standards demanded by health care professionals and their patients. Resistant to bacteria, silicones are easy to sterilize and are excellent for sensitive applications - respiratory tubing and topical medications, to name just two. Silicones do not react with other materials and do not irritate the body. When used externally or intravenously, they do not generate unwelcome byproducts or trigger allergic reactions.

Enhanced Lifestyle

Silicones provide comfort and well-being. They make materials soft, smooth and flexible. They help make topical applications less irritating, tubing less uncomfortable and prosthetics less abrasive.

Medical devices made with silicones display the following properties:

- Excellent adhesion
- Flexibility
- Stability
- Resistance to bacteria
- Strength and durability
- Non-reactive with most chemicals and substances

Typical Applications

Following are examples of the many ways silicone elastomers are widely used throughout the medical device industry for component fabrication, as well as in the pharmaceutical area.

Adhesives

Medical adhesive applications are varied and vital, with benefits including:

- Optimum skin adhesion properties
- Remains constant for extended periods, even under high-humidity conditions
- No adhesive build-up with appropriate and versatile tissue adhesion
- Skin adhesive devices such as patches are easy to remove and can be easily shaped to difficult-to-apply areas such as elbows and knees
- No unwanted by-products
- Improved absorption of medication with transdermal patches

Dental Care

With their excellent stability, tear strength and non-reactive qualities, silicones are a key component in impression molds used for bridge and crown reconstruction that require an accurate replication of teeth and gum lines.

Infant Care

Silicones help make baby bottle nipples, breast pumps, spill proof valves and pacifiers sturdy but flexible.

Medication

Silicones increase the functionality and absorption of some medications. Silicone as an anti-foaming agent is used in over-the-counter treatments for intestinal gas and in other prescription medications. With excellent absorption qualities, when used as a patch for delivering medications dermally, they can also aid drug permeation of the skin and thus provide for more effective drug delivery.

Prosthetics

Silicones can most closely approximate the consistency of skin and offer exceptional cushion and comfort. Silicone-based prosthetics can be molded to a cushioning shape and have the durability to retain the shape. Silicones also resist bacterial growth and help reduce the risk of infections.

Respirators

Health care professionals use silicone-based respirators because of comfort, flexibility and ease of cleaning. Just as important, silicone is hypoallergenic. Transparent silicone material provides excellent respirator bag re-expansion and is resistant to extreme temperatures.

Topical Medications and Lubricants

Silicones soften and smooth lotions and creams so that they can be applied without leaving a greasy residue, and form a seal that protects wounds during the healing process. In topical drug delivery formulations, silicones improve spreading and provide non-greasy, silky applications, making the medicine easier and more pleasant to use. Silicone enhanced lubricants ease the insertion of needles and devices.

Tubing

Medical professionals use tubing in intravenous drug delivery systems, laboratory research and heart pacemakers. Silicone tubing in some medical devices helps reduce the risk of infection, since silicone does not host bacteria and is easily sterilized.

Consumers and Society Benefit from Silicone

In the hospital, at the doctor's office and at home, silicones are an important part of health care. Silicones are easy to sterilize and keep clean, non-irritating and hypoallergenic. From dentistry to prosthetics, silicones are an integral part of innovative treatments and care that can provide maximum comfort and safety in sensitive applications.

Brought to you by Dow Corning
in association with Silicones Environmental, Health and Safety Council of North America, Centre Européen des Silicones and Silicone Industry Association of Japan.