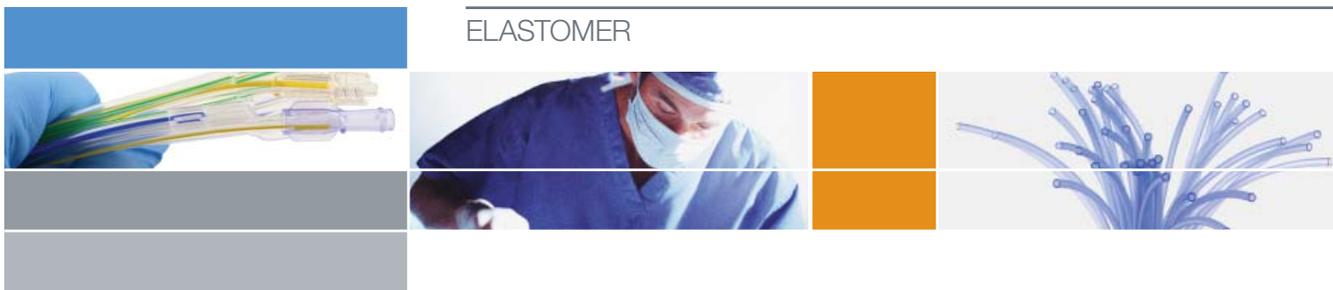


STATSIL* antimicrobial elastomers

ELASTOMER



The heightened concern in the healthcare setting over microbial growth in or on the human body has prompted many design engineers to seek high-performance material solutions with built-in antimicrobial protection. Responding to that trend, Momentive Performance Materials has developed a custom elastomer platform technology based on the direct incorporation of a silver-based antimicrobial additive into the base silicone elastomer. StatSil antimicrobial elastomer technology may provide end users with greater design flexibility and performance in applications where controlling the growth of microbes in or on the body is of concern. Customers can choose from Momentive's globally recognized LIM* or LSR liquid silicone rubber and HCE base elastomers, ranging in durometers from 3 to 80 shore A. USP Class VI, ISO10993, FDA Indirect Food Contact, and/or European Pharmacopoeia compliant bases may be available. (See Note 1.)

Why Silver?

Silver has long been shown to have antimicrobial activity versus a broad spectrum of both gram-positive and gram-negative bacteria, as well as, mold and fungi. Its effectiveness against a variety of microorganisms has been demonstrated in several published studies. The mechanism of action in which silver works as an effective antimicrobial has been described in the following way: The ionic silver carries a strong positive charge so it has a high

affinity for negatively charged groups of biological molecules. It works by altering the molecular structure of biological molecules and rendering it worthless to the cell. This attack on multiple sites within a cell simultaneously has been described to inactivate many functions such as cell wall synthesis, membrane transport, nucleic acids synthesis and translation, and protein folding and function, thus resulting in inhibition of bacterial/microbial growth.

Typical Physical Properties

	LSR4070	Statsil 70
Hardness, Shore A	70	73
Tensile Strength, psi	1230	1550
Elongation, %	400	386
100% Modulus, psi	370	450
Tear B, ppi	114	147
Samples Press Cured 10 minutes at 350°F		
	Tufel* II 94506	StatSil HCR 55 HC
Hardness, Shore A	53	58
Tensile strength, psi	1400	1282
Elongation, %	850	771
100% Modulus, psi	225	245
Tear B, ppi	270	229
Samples Post Cured 4 hours at 400°F		
	Addisil 150E	StatSil HCR 50 HC
Hardness, Shore A	53	55
Tensile Strength, psi (N/mm ²)	1653 (11.4)	(1537) 10.6
Elongation, %	820	850
100% Modulus, psi (Mpa)	159.5 (1.1)	159.5 (1.1)
Tear B, ppi (N/mm)	245 (43)	233 (41)

*StatSil, LIM and Tufel are trademarks of Momentive Performance Materials Inc.

STATSIL* Antimicrobial Elastomers for medical device applications

Potential Applications

Control of Microbial Growth in or on the Human Body

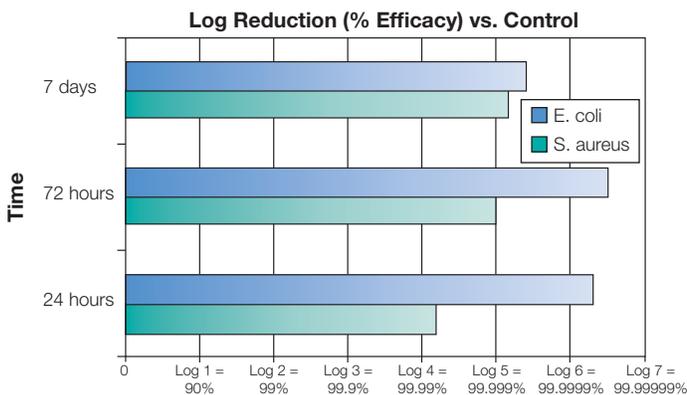
The U.S. EPA generally regulates antimicrobial materials (including antimicrobial-containing articles) under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). FIFRA exempts from pesticide regulation articles where the antimicrobial additive is intended to control the growth of microbes in or on the human body, e.g. catheters and wound drains. StatSil antimicrobial elastomer may be considered only for such potential uses, and should not be claimed to be used for other purposes, e.g., to control microorganisms outside the human body.

Performance Data

Efficacy of StatSil antimicrobial elastomer

The potential efficacy of StatSil antimicrobial custom elastomers was assessed for two common bacteria using a standard quantitative test method, AATCC 100, modified for silicone elastomers. All testing was conducted at an independent test facility. The following tests are solely to show the efficacy of the antimicrobial additive when incorporated into silicone elastomers vs. a control sample with no antimicrobial additive. End users are solely responsible for insuring that the elastomer is appropriate for their end use, including claims restricted to control of microorganisms in or on the human body, and for complying with all applicable FDA and/or EPA regulations when using these materials. (See Note 2.)

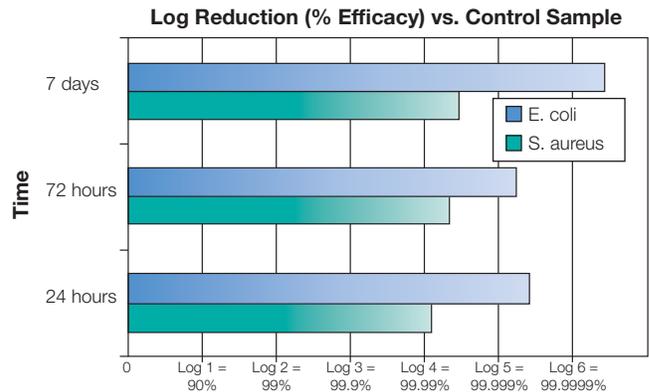
**Figure 1: 7 Day Microbial Challenge Test
StatSil 70 LSR**



Test Method	AATCC Method 100, Film Contact Method	Inoculum Concentration (CFU / 0.4mL)	S. aureus ATCC 6538	E. coli ATCC 8739
Culture Medium	Soybean Casein Digest Broth	Initial	2.0 x 10 ⁵	1.7 x 10 ⁵
Sample Size	48 mm disc	6 day	1.5 x 10 ⁵	2.4 x 10 ⁵
Neutralizer	Lethen Broth			

Test results. Actual results may vary.

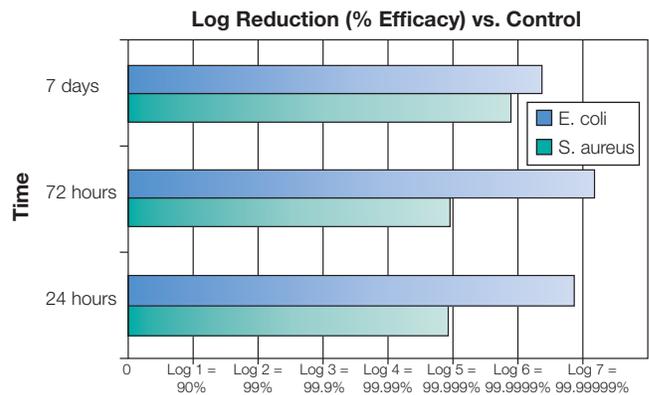
**Figure 2: 7 Day Microbial Challenge Test
StatSil HCR 55 HC**



Test Method	AATCC Method 100, Film Contact Method	Inoculum Concentration (CFU / 0.4mL)	S. aureus ATCC 6538	E. coli ATCC 8739
Culture Medium	Soybean Casein Digest Broth	Initial	1.9 x 10 ⁵	2.4 x 10 ⁵
Sample Size	48 mm disc	6 day	2.5 x 10 ⁵	2.2 x 10 ⁵
Neutralizer	Lethen Broth			

Test results. Actual results may vary.

**Figure 3: 7 Day Microbial Challenge Test
StatSil HCR 50 HC**



Test Method	AATCC Method 100/ Film Contact Method	Inoculum Concentration (CFU / 0.4mL)	S. aureus ATCC 6538	E. coli ATCC 8739
Culture Medium	Tryptic Soy Broth	Initial	1.7 x 10 ⁵	1.4 x 10 ⁵
Sample Size	35 mm x 35 mm	6 day	2.0 x 10 ⁵	2.0 x 10 ⁵
Inoculum Carrier	Sterile saline/ 0.2% Nutrient Broth			

Test results. Actual results may vary.

STATSIL* Antimicrobial Elastomers for medical device applications

Performance Data (continued)

Customized Solutions

Momentive Performance Materials custom elastomer formulation services can help you identify a material engineered to the performance, processing, and production demands unique to your requirements. The same applies to our antimicrobial product offering. Our chemists can customize a solution for you based on the environmental conditions and level of performance needed for your application.

Notes:

1. Based upon testing of representative samples. Only the base material has been tested.
2. Momentive supplies bulk raw materials for use in manufacturing. Momentive uses appropriate quality assurance procedures but is not a GMP facility. The customer has the sole responsibility for the determination of suitability and safety of any Momentive material in its end use application.

Biocompatibility:

Representative samples of StatSil HCR 50 HC and StatSil HCR 55 HC have passed USP Class VI (United State Pharmacopeia 32, National Formulary 27, 2009. <88> Biological Reactivity Test, In Vivo tests) and ISO 10993 (Part 6, 10, and 11) tests using Good Laboratory Practices (GLP). - Note a

Note a: Please contact Product Stewardship and Regulatory Group for details

Patent Status

Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute the permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of the patent.

Product Safety, Handling and Storage

Customers should review the latest Material Safety Data Sheet (MSDS) and label for product safety information, safe handling instructions, personal protective equipment if necessary, and any special storage conditions required for safety. MSDS are available at www.momentive.com or, upon request, from any Momentive Performance Materials (MPM) representative. For product storage and handling procedures to maintain the product quality within our stated specifications, please review Certificates of Analysis, which are available in the Order Center. Use of other materials in conjunction with MPM products (for example, primers) may require additional precautions. Please review and follow the safety information provided by the manufacturer of such other materials.

Limitations

Customers must evaluate Momentive Performance Materials products and make their own determination as to fitness of use in their particular applications.

Emergency Service

Momentive Performance Materials maintains an around-the-clock emergency service for its products.

<u>Location</u>	<u>Emergency Service Provider</u>	<u>Emergency Contact Number</u>
Mainland U.S., Puerto Rico	CHEMTREC	1-800-424-9300
Alaska, Hawaii	CHEMTREC	1-800-424-9300
Canada	CHEMTREC	1-800-424-9300
Europe, Israel	NCEC	+44 (0) 1235239670
Middle East	NCEC	+44 (0) 1235239671
Asia Pacific (except China)	NCEC	+44 (0) 1235239670
China	NCEC	+86-10-5100-3039
Latin America (except Brazil)	NCEC	+44 (0) 1235239670
Brazil	SOS Cotec	08000111767 or 08007071767
All other locations world wide	NCEC	+44 (0) 1235239670
At sea	Radio U.S. Coast Guard in U.S. waters NCEC in International waters	+44 (0) 1235239670

For Health related calls, contact Momentive Performance Materials at +1-518-233-2500 (English only).

DO NOT WAIT. Phone if in doubt. You will be referred to a specialist for advice.

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Mexico and Central America

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