

# Niax<sup>\*</sup> Silicone L-3001

for MDI molded foam

## Product Description

Niax silicone L-3001 is a new silicone for MDI molded foam. Niax silicone L-3001 provides wide processing latitude through excellent foam stabilization, while maintaining good cell-regulating characteristics.

## Key Features and Typical Benefits

- High-efficiency silicone for MDI or MDI/TDI HR molded foam formulations
- Excellent stabilization and cell regulation at low use-levels, resulting in fine, uniform subsurface cell structure
- Open-celled foam, yielding low force-to-crush and low shrinkage

## Typical Physical Properties

Physical Appearance	Clear liquid
Viscosity at 25°C, cSt	42
Color, Gardner	<2
Specific Gravity at 25/25°C	0.971
Density at 25°C, lb/gal (kg/l)	8.07 (0.967)
Coefficient of Expansion, per °C	8.0 x 10 <sup>-4</sup>
Flash Point, Pensky-Martens Closed Cup, °C (°F)	127 (260)

Momentive Performance Materials provides versatile materials as the starting point for our creative approach to ideas that help enable new developments across hundreds of industrial and consumer applications. We are helping customers

solve product, process, and performance problems; our silanes, fluids, elastomers, sealants, resins, adhesives, urethane additives, and other specialty products are delivering innovation in everything from car engines to biomedical devices.

From helping to develop safer tires and keeping electronics cooler, to improving the feel of lipstick and ensuring the reliability of adhesives, our technologies and enabling solutions are at the frontline of innovation.



## Niax\* Silicone L-3001 for MDI molded foam

### Potential Applications

In MDI foam formulations, Niax silicone L-3001 provides excellent stabilization and cell opening. Suggested use-levels range from 0.4 to 1.0 parts per hundred polyol.

Niax silicone L-3001 is also effective in stabilizing TDI-MDI foams. A starting point level of 0.8 to 1.0 pphp is recommended; however, the concentration of product that yields good results is dependent on the specific formulation.

### Performance

The performance of Niax silicone L-3001 is compared to that of a competitive silicone in Table 1 and Figures 1 to 4. Formulations are also summarized in Table 1. Silicone concentration in Formulations A and B was fixed at 0.8 parts per hundred polyol (pphp). Force-to-Crush (FTC) results for Formulations A and B are shown in Figure 1. High use-levels of silicone (2 and 3 pphp) were used in Formulation C to demonstrate cell-opening performance, as measured by FTC and shrinkage. These results are shown in Figures 2 and 3, respectively. In Figure 4, a low use-level of silicone (0.4 pphp) was used in Formulation C to show cell-regulating performance.

Table 1: Evaluation<sup>(1)</sup> of Niax Silicone L-3001 in Typical MDI and TDI/MDI Foam Formulations

Component	Formulation, pphp		
	A	B	C
"Voranol" CP-6001 <sup>(2)</sup>	100.0	100.0	100.0
"Voranol" CP-5021 <sup>(3)</sup>	2.0	—	—
Water	3.2	3.2	3.2
Niax Catalyst A-33	0.4	0.3	0.3
Niax Catalyst C-174	0.4	—	0.3
Niax Catalyst B-26 <sup>(4)</sup>	—	0.3	—
Diethanolamine	1.0	1.0	—
Niax Silicone L-3001	0.8	0.8	varies
MDI "Suprasec" VM-25 <sup>(5)</sup>	66.8	77.4	—
TDI (80:20)	—	—	20.6
MDI "Voramate" M-220 <sup>(6)</sup>	—	—	20.6
Index	82	95	95
Cream Time, sec	7-8	15-20	8-10
Exit Time, sec	62-64	72-77	60-65
Demold Time, min	7	9	6
Density, kg/m <sup>3</sup> (lb/ft <sup>3</sup> )	51 (3.2)	63 (3.9)	42 (2.6)
Mold Type	Aluminum		
Mold Size, cm (in)	30 x 30 x 10 (12 x 12 x 4)		
Mold Temperature, °C (°F)	55 (131)		
Release Agent	"Acosil" 30-11 <sup>(7)</sup>		

(1) Hand-mixed laboratory foams

(2) Dow Europe, OH value = 28 mg KOH/g

(3) Dow Europe, cell-opening polyol, OH value = 21 mg KOH/g

(4) Niax Catalyst B-26 is a balanced blow-gel delayed action amine catalyst for HR molded foams

(5) ICI Polyurethanes, %NCO = 24.3

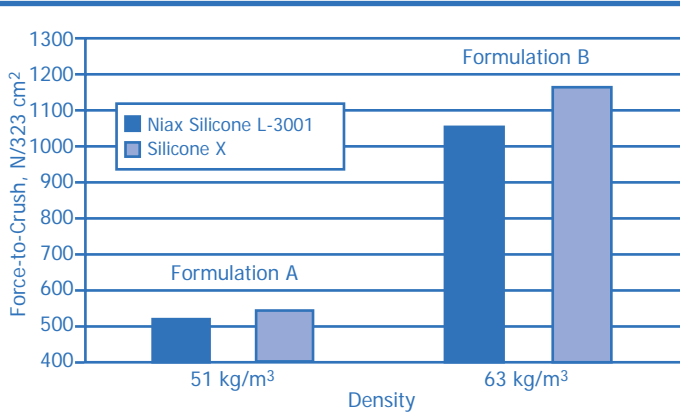
(6) Dow Europe, %NCO = 30.9, Functionality = 2.7

(7) ACMOS Chemie GmbH & Co

# Niax\* Silicone L-3001 for MDI molded foam

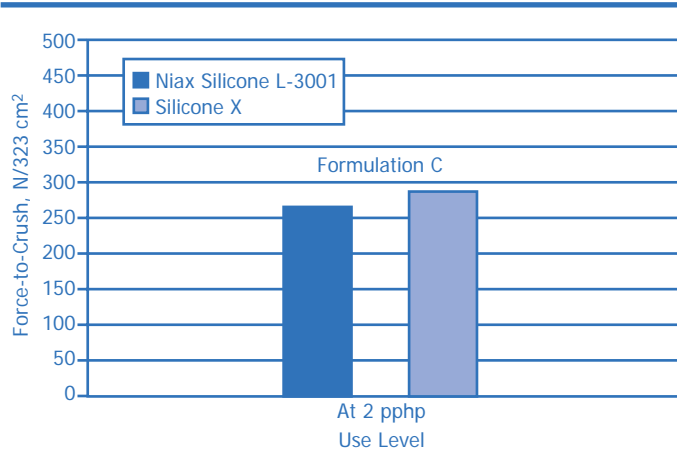
## Performance (continued)

Figure 1: Comparative Force-to-Crush<sup>(1)</sup>  
Performance of Niax Silicone L-3001  
in MDI Foam Formulations A and B



(1) Force-to-Crush is the peak force measured by the deflection of the foam pad through 50% of its thickness 1 minute after demold. A standard 323 cm indenter foot for IFD measurement was used for Force-to-Crush testing.

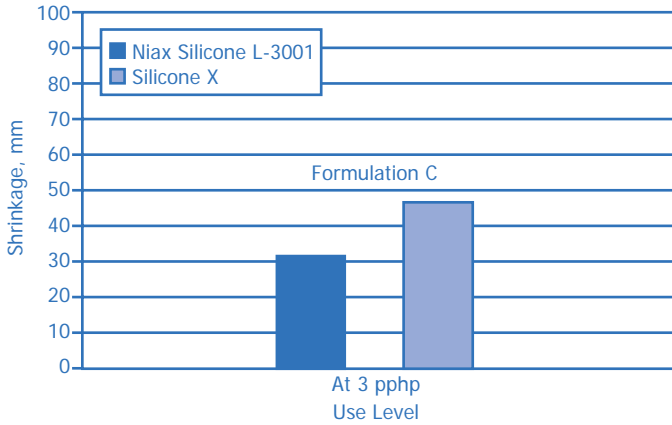
Figure 2: Comparative Force-to-Crush<sup>(1)</sup>  
Performance of Niax Silicone L-3001  
in TDI/MDI Foam Formulation C



(1) Force-to-Crush is the peak force measured by the deflection of the foam pad through 50% of its thickness 1 minute after demold. A standard 323 cm indenter foot for IFD measurement was used for Force-to-Crush testing.

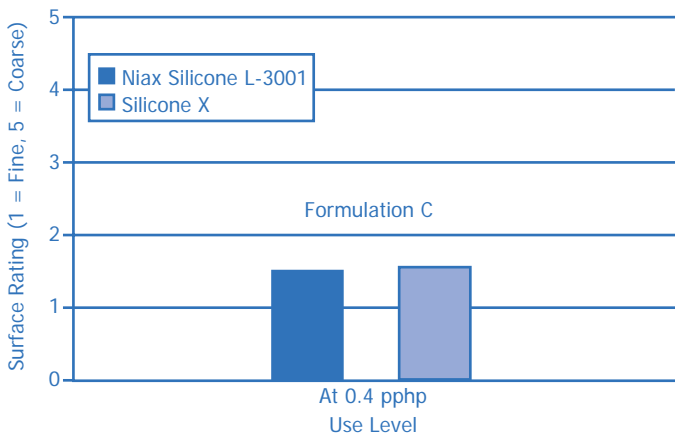
Performance (continued)

Figure 3: Comparative Shrinkage<sup>(1)</sup> Performance of Niax Silicone L-3001 in TDI/MDI Foam Formulation C



(1) Shrinkage is the maximum thickness loss of an uncrushed foam pad measured 15 minutes after demold.

Figure 4: Comparative Foam Stabilization<sup>(1)</sup> Performance of Niax Silicone L-3001 in TDI/MDI Foam Formulation C



(1) The stabilization efficiency is a qualitative evaluation of the presence of coarse basal cells.

## Niax\* Silicone L-3001 for MDI molded foam

### 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 considering the use of this product should review the latest Material Safety Data Sheet and label for product safety information, handling instructions, personal protective equipment if necessary, and any special storage conditions required. Material Safety Data Sheets are available at [www.momentive.com](http://www.momentive.com) or, upon request, from any Momentive Performance Materials representative. Use of other materials in conjunction with Momentive Performance Materials 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.

## Niax\* Silicone L-3001 for MDI molded foam

### Emergency Service

---

Momentive Performance Materials maintains an around-the-clock emergency service for its products. The American Chemistry Council (CHEMTREC), Transport Canada (CANUTEC), and the Chemical Emergency Agency Service also maintain an around-the-clock emergency service for all chemical products:

Location	Momentive Performance Materials Products	All Chemical Products
Mainland U.S., Puerto Rico	518.233.2500	CHEMTREC: 800.424.9300
Alaska, Hawaii	518.233.2500	CHEMTREC: 800.424.9300
Canada	518.233.2500	CANUTEC: 613.996.6666 (collect) or CHEMTREC: 800.424.9300
Europe, Middle East, Africa	+32.(0)14.58.45.45 (Belgium)	CHEMTREC: +1-703.527.3887 (collect)
Latin America, Asia/Pacific, all other locations worldwide	+518.233.2500	CHEMTREC: +1-703.527.3887 (collect)
At sea	Radio U.S. Coast Guard, which can directly contact Momentive Performance Materials at 518.233.2500 or CHEMTREC at 800.424.9300.	

---

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



# MOMENTIVE

performance materials

# Principal Locations

Regional Information	Phone	Fax
<b>North America</b> World Headquarters 187 Danbury Road Wilton, CT 06897, USA	800.295.2392	607.754.7517
<b>Latin America</b> Rodovia Eng. Constâncio Cintra, Km 78,5 Itatiba, SP – 13255-700 Brazil	+ 55.11.4534.9650	+ 55.11.4534.9660
<b>Europe, Middle East, Africa and India</b> Leverkusen Germany	00.800.4321.1000 + 31.164.293.276	+ 31.164.241750
<b>Pacific</b> Akasaka Park Building 5-2-20 Akasaka Minato-ku, Tokyo 107-6112 Japan	+ 81.3.5544.3100	+ 81.3.5544.3101
<b>Customer Service Centers</b>		
<b>North America</b> Charleston, WV 25314, USA E-mail: <a href="mailto:cs-na.silicones@momentive.com">cs-na.silicones@momentive.com</a>	<b>Specialty Fluids</b> 800.523.5862	304.746.1654
	<b>UA, Silanes, Resins, and Specialties</b> 800.334.4674	304.746.1623
	<b>RTV Products-Elastomers</b> 800.332.3390	304.746.1623
	<b>Sealants and Adhesives and Construction</b> 877.943.7325	304.746.1654
<b>Latin America</b> Argentina and Chile Brazil Mexico and Central America Venezuela, Ecuador, Peru, Colombia, and Caribbean E-mail: <a href="mailto:cs-la.silicones@momentive.com">cs-la.silicones@momentive.com</a>	+ 54.11.4862.9544 + 55.11.4534.9650 + 52.55.5899.5135 + 58.212.285.2149	+ 54.11.4862.9544 + 55.11.4534.9660 + 52.55.5899.5138 + 58.212.285.2149
<b>Europe, Middle East, Africa and India</b> E-mail: <a href="mailto:cs-eur.silicones@momentive.com">cs-eur.silicones@momentive.com</a>	00.800.4321.1000 + 31.164.293.276	+ 31.164.241750
<b>Pacific</b> E-mail: <a href="mailto:cs-ap.silicones@momentive.com">cs-ap.silicones@momentive.com</a> Japan China Korea Singapore	+ 81.276.20.6182 + 86.21.5050.4666 (ext. 1523) + 82.2.6201.4600 + 65.6220.7022	
<b>Worldwide Hotline</b>	<b>800.295.2392</b>	<b>+ 607.786.8131</b>
<b>Worldwide Web</b>		<b>+ 607.786.8309</b> <a href="http://www.momentive.com">www.momentive.com</a>

THE MATERIALS, PRODUCTS AND SERVICES OF THE BUSINESSES MAKING UP MOMENTIVE PERFORMANCE MATERIALS INC., ITS SUBSIDIARIES AND AFFILIATES, ARE SOLD SUBJECT TO MOMENTIVE PERFORMANCE MATERIALS INC.'S STANDARD CONDITIONS OF SALE, WHICH ARE INCLUDED IN THE APPLICABLE DISTRIBUTOR OR OTHER SALES AGREEMENT, PRINTED ON THE BACK OF ORDER ACKNOWLEDGMENTS AND INVOICES, AND AVAILABLE UPON REQUEST. ALTHOUGH ANY INFORMATION, RECOMMENDATIONS, OR ADVICE CONTAINED HEREIN IS GIVEN IN GOOD FAITH, MOMENTIVE PERFORMANCE MATERIALS INC. MAKES NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, (i) THAT THE RESULTS DESCRIBED HEREIN WILL BE OBTAINED UNDER END-USE CONDITIONS, OR (ii) AS TO THE EFFECTIVENESS OR SAFETY OF ANY DESIGN INCORPORATING ITS PRODUCTS, MATERIALS, SERVICES, RECOMMENDATIONS OR ADVICE. EXCEPT AS PROVIDED IN MOMENTIVE PERFORMANCE MATERIALS INC. STANDARD CONDITIONS OF SALE, MOMENTIVE PERFORMANCE MATERIALS INC. BUSINESS AND ITS REPRESENTATIVES SHALL IN NO EVENT BE RESPONSIBLE FOR ANY LOSS RESULTING FROM ANY USE OF ITS MATERIALS, PRODUCTS OR SERVICES DESCRIBED HEREIN. Each user bears full responsibility for making its own determination as to the suitability of Momentive Performance Materials Inc.'s materials, services, recommendations, or advice for its own particular use. Each user must identify and perform all tests and analyses necessary to assure that its finished parts incorporating Momentive Performance Materials Inc.'s products, materials, or services will be safe and suitable for use under end-use conditions. Nothing in this or any other document, nor any oral recommendation or advice, shall be deemed to alter, vary, supersede, or waive any provision of Momentive Performance Materials Inc.'s Standard Conditions of Sale or this Disclaimer, unless any such modification is specifically agreed to in a writing signed by Momentive Performance Materials. No statement contained herein concerning a possible or suggested use of any material, product, service or design is intended, or should be construed, to grant any license under any patent or other intellectual property right of Momentive Performance Materials Inc. or any of its subsidiaries or affiliates covering such use or design, or as a recommendation for the use of such material, product, service or design in the infringement of any patent or other intellectual property right.