

Silicone elastomer solutions for vehicle airbag systems



DOW

®



**Experience and
expertise drive airbag
design innovation**



Ensure impact protection and occupant safety

Lighter weight, reduced stiffness and enhanced packaging options – along with higher performance and lower costs – are typical design requirements for today's advanced airbag systems. Dow Performance Silicones can help you meet these challenges with unmatched experience, expertise and innovation; our SILASTIC™ silicone engineered elastomers are proven, effective solutions for advanced airbag design.

Silicone rubber fabric coatings and seam sealants can help ensure airbag design integrity to enhance occupant impact protection and safety. With decades of leadership in airbag development, our problem-solving collaboration has helped OEMs and tier suppliers drive airbag design innovation and continuous improvements in strength, weight, cost and reliable deployment at all temperatures.

Potential applications: SILASTIC™ engineered elastomers

SILASTIC™ engineered elastomers meet industry and regulatory requirements for use on cut-and-sewn, seam-sealed (CSSS) airbags and one-piece-woven (OPW) airbags. Current applications include:

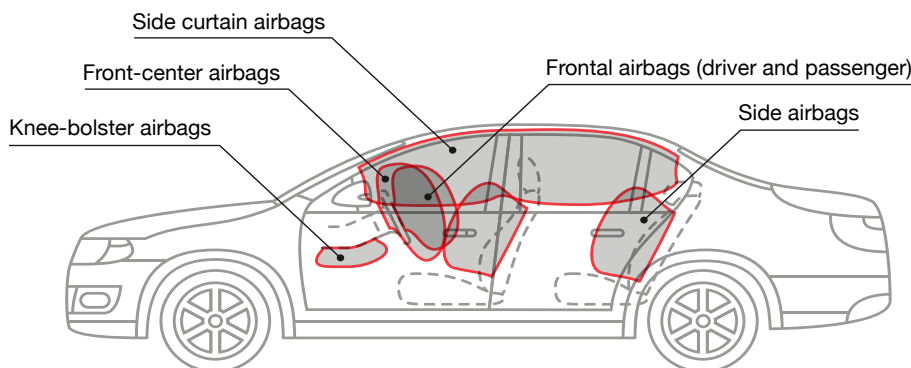
Experience. Expertise. Innovation

With unequaled experience and expertise, Dow Performance Silicones is focused on continuous airbag design innovation. Significant safety benefits will be gained with Automated Driver Assistance Systems (ADAS) and increasing prevalence of autonomous vehicles. Yet advanced airbags will play critical roles with the integration of active and passive safety.

External airbags may protect pedestrians. And with novel interior design changing the position of the driver and passengers, the airbags may protect occupants of automated vehicles with individualized life-cell protective wraps.

Beyond our proven, effective airbag coating materials, we can help you innovate with total airbag solutions:

- Analytical services
- Engineering assistance
- Equipment solutions
- Material selection and customization
- Robotics prototyping and testing



SILASTIC™
silicone elastomers by 

Drive innovation with proven technology and expertise

From prototype to production, depend on Dow Performance Silicones to help drive airbag design innovation with proven material technology, development expertise and broad technical support. SILASTIC™ engineered elastomers can optimize airbag performance and lower processing costs.

Key advantages include:

- Reliable performance over a broad temperature and humidity range
- Excellent strength and flexibility, with long-term resistance to aging, cracking, abrasion and compression set
- Good adhesion to various airbag fabrics (e.g., polyester [PET], polyamide 6.6 [PA6.6])
- Low gas permeability; high flammability resistance
- Low-density, high-strength coatings can reduce mass and contribute to lightweighting



Selection guide: Silicone elastomers for airbag coating and sealing

Supplied as liquid silicone rubbers (LSRs), SILASTIC™ engineered elastomers for airbag coating applications include a selection of low- to medium-viscosity products for use on flat-fabric cut-and-sewn, seam-sealed (CSSS) and one-piece-woven (OPW) airbag designs. A friction-reducing topcoat is available for OPW coated airbags. A proven, effective silicone rubber seam sealant is available for use on cut-and-sewn airbags.

Specification writers: These values are not intended for use in preparing specifications. Please contact your local Dow representative or sales office before writing specifications on these products.

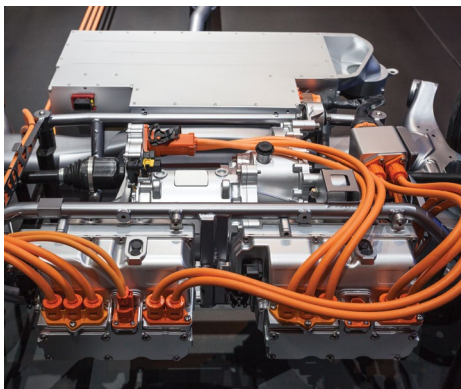
Airbag application need	Potential solution	Key features	Cure	Shore A Hardness ASTM D2240	Elongation, % ASTM D412	Tensile Strength, MPa ASTM D412	Tear Strength, kN/m ASTM D624 DIE B	Specific Gravity ASTM D792	Viscosity @ 10s ⁻¹ , Pa.s CTM 0050	
									Part A	Part B
Cut-and-sewn, seam-sealed (CSSS) flat-fabric coatings	SILASTIC™ LCF 3600 Coating	<ul style="list-style-type: none"> • Unprimed adhesion to polyamide and polyester fabric • Low coefficient of friction • Excellent flame-extinguishing 	(1)	45	180	3.8	5.5	1.07	30	7.5
	SILASTIC™ LCF 4630 Coating	<ul style="list-style-type: none"> • Low stiffness • Excellent adhesion to polyamide and polyester fabric 	(1)	27	660	5	8.1	1.06	45	43
	SILASTIC™ LCF 3600LV	<ul style="list-style-type: none"> • Low TVOC emissions, • Unprimed adhesion to polyamide and polyester fabrics • Medium stiffness coating 	(1)	35	425	5	–	1.06	20	20
Seam sealant	SILASTIC™ SE 6777 LSR US	<ul style="list-style-type: none"> • Excellent adhesion to silicone-coated fabric • Mechanical resistance • High elongation • Room temperature cure 	(2)	14	1,300	4.8	–	1.21	250	260
One-piece-woven (OPW) fabric coatings	SILASTIC™ LCF 3760 Coating	<ul style="list-style-type: none"> • Very high elongation; low elastic modulus • Unprimed adhesion to polyamide and polyester fabric • Low coat weights 	(3)	9	1,450	5.7	12.0	1.05	170	200
	SILASTIC™ LCF 3715 Topcoat	<ul style="list-style-type: none"> • Low coefficient of friction; prevents blocking 	–	–	–	–	–	–	–	–

“–” indicates data not available and/or not applicable.

ASTM: American Society for Testing and Materials. Materials were tested according to Dow Corporate Test Methods (CTMs), which in most cases are similar to the ASTM standard(s) listed. Copies of CTMs are available upon request.

Cure conditions denote parameters used to test rubber properties and do not reflect actual cure time in the coating process.

(1) 3 min @ 196°C. (2) 24 hr @ 25°C. (3) 10 min @ 120°C.



SILASTIC™ engineered elastomers for other vehicle systems

In addition to driving design innovation, durability and reliability on vehicle airbag systems, SILASTIC™ engineered elastomers from Dow Performance Silicones are proven, effective solutions for applications in other vehicle systems. Our range of high-performance silicone materials helps meet challenging design needs in the following automotive systems:

Powertrain | Electrical | Lighting



Learn more: Contact us

To learn more about SILASTIC™ engineered elastomers for design innovation on vehicle airbag systems, contact your Dow Technical Representative or visit consumer.dow.com/auto.



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