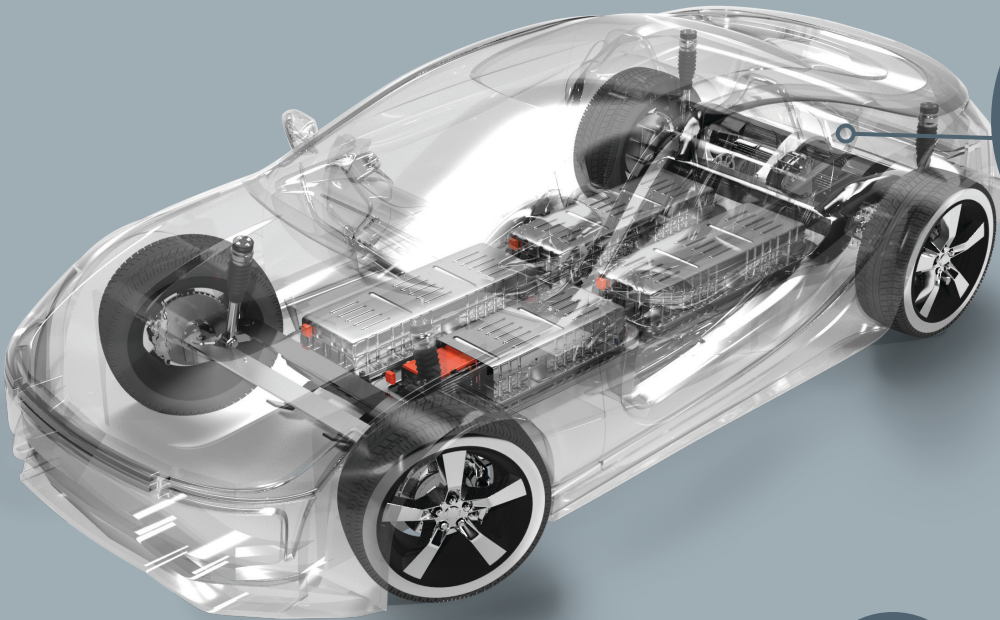


E-MOBILITY

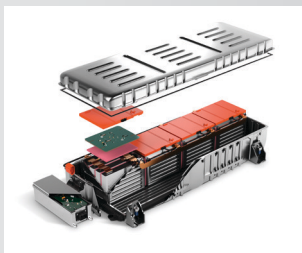


Liquid Gasketing Technologies for e-Mobility Applications

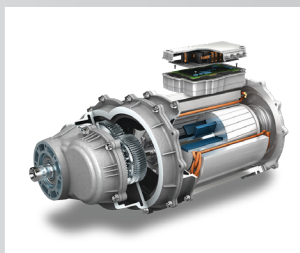
LOCTITE liquid gasketing solutions are robotically applied to provide design and process flexibility by sealing through adhesion or compression.

Combined with product, engineering, design, application and testing expertise, Henkel's full support capabilities contribute to process and cost efficiencies for large scale manufacturing of electric vehicles.

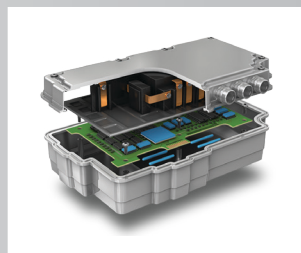
Applications



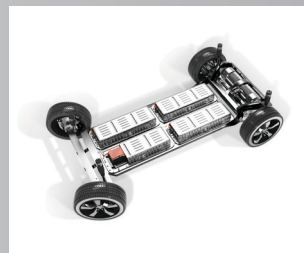
Battery Module



Electric Drive System



Battery Management System / ECU



Battery Pack





Formed-in-Place Gasketing (FIPG)

Formed by applying the adhesive bead to one flange and mating the parts to create a durable seal.

	FIPG		
	LOCTITE® 5970™	LOCTITE® 5607™	LOCTITE® 5999™
CHEMISTRY	One-component, Alkoxy curing Silicone	Two-component Silicone	One-component Silicone
PRODUCT PROPERTY	High elongation with excellent adhesion to metals and plastics	Large cure-through depth	High modulus
PERFORMANCE	Excellent long term automotive fluid resistance	Thixotropic	Excellent automotive fluid resistance

Benefits



Costs

- › Reduced manufacturing costs due to elimination of manual labor work and use of robotic automation
- › Typically 4 to 5 times lower material cost than hard gaskets



Performance and Process

- › Increased manufacturing output and higher productivity versus manual hard gasket process
- › Design flexibility – Increased design flexibility with fast changes and adjustments possible during design phase
- › Easy and fast change of gasket types within production process
- › Excellent Adhesion

Cured-in-Place Gasketing (CIPG)

High performance compression liquid gasket applied in seconds to one flange, cures the bead with heat or UV light and compresses the flange against its mating part to create a strong seal.

	CIPG		
	LOCTITE® 5039™	LOCTITE® 5890™	LOCTITE® 5891™
CHEMISTRY	UV and moisture-cure Silicone	UV-cure Polyacrylate	UV-cure Polyisobutylene (PIB)
PRODUCT PROPERTY	Deep light-cure, UV and visible	Coolant resistant	Coolant resistant
PERFORMANCE	Semi-flowable to promote even knit lines for continuous beads	High sealing performance and chemical resistance	High sealing performance and chemical resistance

Benefits



Costs

- › Lower labor costs due to automated dispensing
- › Bonded to part - ready to ship, and easy to service if needed



Design flexibility

- › Can be applied in multiple designs, and adapted to design changes
- › UV or Moisture curable

Foam Gasketing

Made up of a UV/moisture-cure silicone that can be mixed with nitrogen to form a soft, flexible, low modulus foam gasket for sealing applications.

	FOAMED GASKET		
	LOCTITE® 5470™	LOCTITE® K31™	Fermasil®
CHEMISTRY	UV moisture Silicone foam	Two-component polyurethane foam	Two-component silicone foam
PRODUCT PROPERTY	Mixed with nitrogen to form a soft, flexible foam	Flexible foam seal that forms directly onto the part	Flexible silicone foam seal applied directly onto part
PERFORMANCE	Good compression set	Exceptional long-term behavior and displays almost 100% resetting ability	Closed-cell foam with high resistance to chemicals

Benefits



Performance and Process

- › Easy processing in typical manufacturing environments
- › Excellent adhesion to multiple substrates, including aluminum and most plastics
- › Fast processing; cures within 30 seconds (no oven curing or cooling time required)
- › High temperature performance in demanding environments

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