Henkel’s LOCTITE® vacuum impregnation permanently seals parts with an integral, thermoset plastic—offering a top-quality solution and high production rates.

As a result, vacuum impregnation offers manufacturers valuable cost savings.

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The repeatable effectiveness of vacuum impregnation means minimal inspection needs to be completed prior to product shipment.

Henkel LOCTITE® vacuum impregnation process

Manufactured part

Leak test

Non-leakers to assembly and final leak test

Leakers to impregnation

Henkel offers unparalleled sealing solutions in the automotive market, including:
- Component concepts and designs
- Testing and validation
- Full range of sealing materials
- Custom-designed equipment
- Turn-key processing stations

Our industrial-scale development laboratory provides vast process comprehension and a first-time quality focus for total porosity sealing systems.

www.henkelna.com/automotive
Sealing the way to new vehicle design begins with LOCTITE® vacuum impregnation

Designers are re-imagining the development and use of die-castings, powder metal parts and electrical devices in today’s vehicles. Henkel’s LOCTITE® vacuum impregnation is making it possible, permanently sealing pores to enable:

- Lightweight, thin-walled die-castings that can be used in high-pressure, fluid-containing applications
- Use of powder metal parts in hydraulic systems and flammable gas systems
- Microscopic leak paths in electronic components can cause failures in all types of parts, including pin connectors, switches, wire assemblies, plugs, cords and control sensors. Vacuum impregnation seals those leak paths, expanding the life of the part and reducing the chance of electrical failures.

The Sealing Process

Henkel’s fully automated sealing process saturates pores with anaerobic resins that cure to an impermeable thermoset plastic.

The result is parts that are leakproof, corrosion resistant and thermally resistant — withstanding temperatures that range from approximately -54°F to 204°F (-40°C to 96°C).

Sealants for Every Requirement

From die castings and powder metal parts to electrical components, Henkel’s LOCTITE® vacuum impregnation can seal even the smallest leaks, permanently sealing at any pressure to each product’s structural limits.

1) CASTINGS

Impregnation of castings enables parts to retain fluids under pressure. Typical examples include transmission housings and components, engine blocks, cylinder heads, fuel system pumps, filters, manifolds and coolant pumps.

2) POWDER METAL

The capabilities of powder metal parts are expanded with the addition of LOCTITE® brand impregnation sealing technology.

- Seals permanently for fluid retention
- Seals pores consistently for successful plating and other finishing operations
- Improves machinability and enables machine optimization to increase throughput

3) ELECTRICAL COMPONENTS

Microscopic leak paths in electronic components can cause failures in all types of parts, including pin connectors, switches, wire assemblies, plugs, cords and control sensors. Vacuum impregnation seals those leak paths, expanding the life of the part and reducing the chance of electrical failures.

Anaerobic: Heat cure

- Low utility costs, reduced labor costs
- More familiar equipment requirements
- Curing can be accelerated or slowed by various chemical influences
- Reduced maintenance needs
- Ideal when impregnation process is used intermittently and may stand idle for periods of time

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**Cost savings**

Henkel’s LOCTITE® vacuum impregnation process can be done in batches of 500, 1,000 or even 2,000 parts.

**Decrease in labor costs**

Enable the use of parts that would otherwise have to be scrapped due to porosity.

**Decrease in warranty expenses**

Prevents the failure of a bigger component or the vehicle overall.

**Reduction in processing costs**

Eliminates the need to conduct a final round of product assembly and leak testing.

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