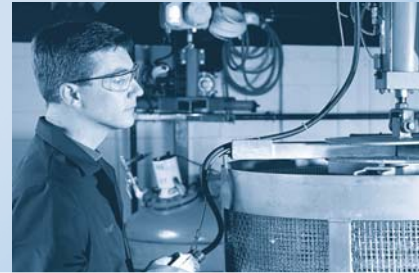


LOCTITE®

Loctite® Vacuum Impregnation Systems from Henkel

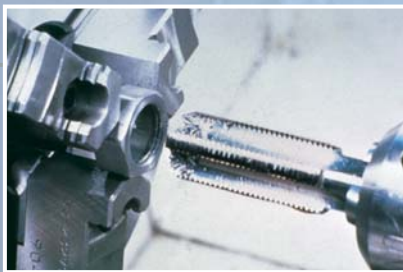
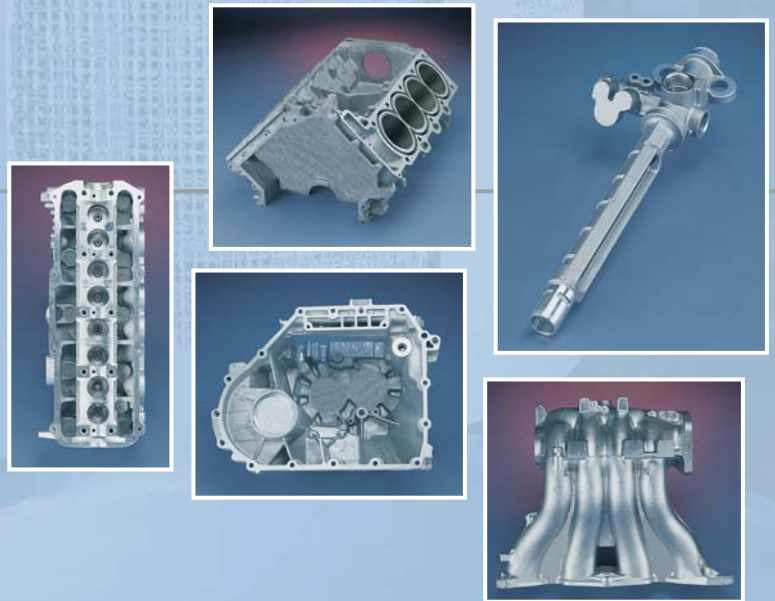


From Design Through Assembly

Henkel is the world's leading supplier of porosity sealing products and technologies. With a full range of Loctite® branded custom designed vacuum impregnation process equipment, a variety of sealant products and comprehensive technical support, Henkel can meet every sealing need.

Sealing Castings

Loctite® impregnation provides the reliability needed for modern automotive and other industry applications. It seals cast metal parts against leaks – all metals, all casting processes, all fluids. Cast parts are sealed for pressures to the structural limits of the casting itself.



Sealing Powder Metal

Powder Metal parts offer unique flexibility for the designer. The capabilities of Powder Metal part technology are expanded even further with the addition of Loctite® brand impregnation sealing technology.

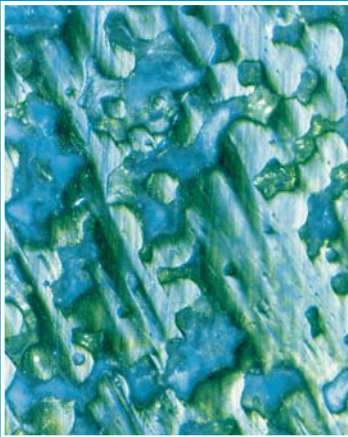
- Seals pores permanently for retention of fluids
- Seals pores consistently for successful plating and other finishing operations
- Improves machining properties by 90 percent or more*

* Results observed in actual practice, verified in independent studies by Kanagawa Industrial Technology Research Group

Sealed for Life

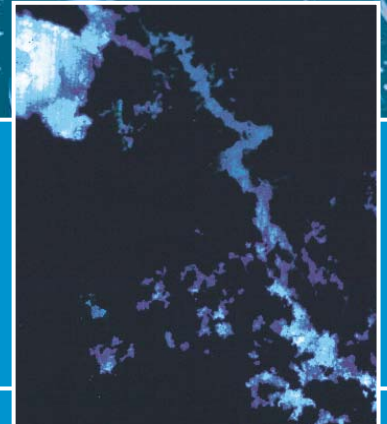
With Loctite® impregnation, porous parts are sealed for life and remain permanently guarded against common automotive and industrial fluids including:

- Fuels
- Lubricants
- Coolants
- Cleaners
- Acids



Magnification of cured sealant within pores of a metal part.

- Permanently sealed at any pressure to their structural limits
- Sealed for temperature extremes from -65°F to +400°F (-54°C to +204°C)
- Long-term durability is assured
- Impregnated parts are clean and free of residue



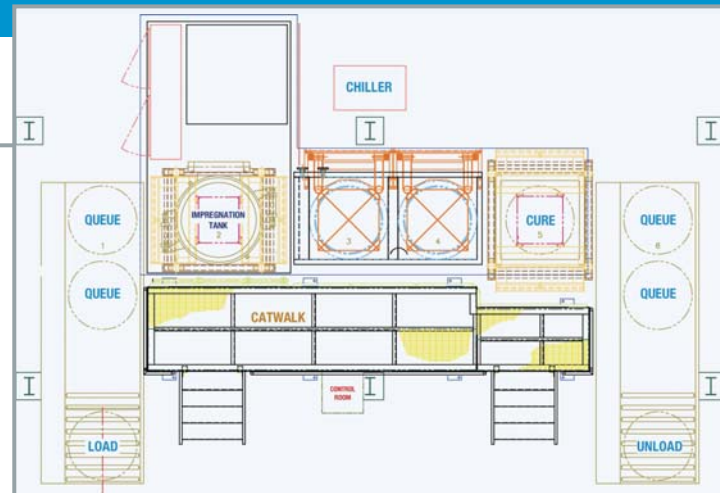
Cured sealant illuminated with ultraviolet light glows blue, to show complete sealing of voids.

Impregnation Process Equipment

Henkel produces a complete range of Loctite® impregnation process equipment to meet every need.

- Small or large volume
- Manual or fully automated operation
- Heat cure or anaerobic cure sealant
- Custom engineered for each application
- Built to highest industrial standards
- Comprehensive field service capability

Impregnation equipment is available in a variety of sizes.



Henkel engineers custom Loctite® processes for each application.

High volume, fully automatic impregnation system.



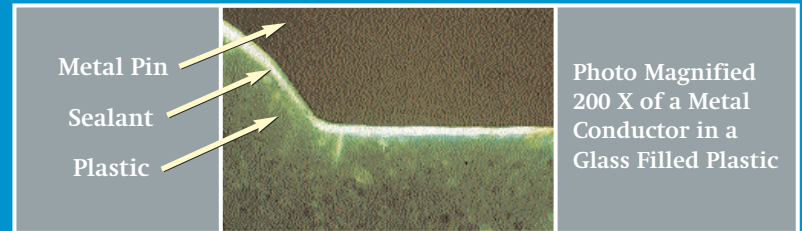
Sealing Nonmetal and Composite Parts

Electrical Components



- Many electrical devices combine metal conductors and molded plastics. Electrical connectors are typical. These components are often used in the same environments as castings and powdered metal parts, and must be sealed against leaks of the same fluids. Even electrical wiring may require sealing.
- Leak paths are created when the molded plastic shrinks slightly, opening microscopic gaps around metal pins or inserts (Figure 1).
- Henkel offers specialized sealants with flexibility, high temperature capability, and excellent resistance to chemical attack. The sealing process is similar to that used for metals.

Figure 1

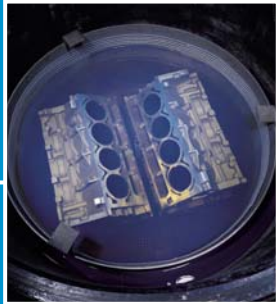


Sealants for Every Requirement

Henkel offers a variety of Loctite® brand sealant products in two cure technologies: anaerobic (self cure at room temperature) and heat cure (cured in hot water bath). If a specialized sealant is needed, Henkel has the solution.



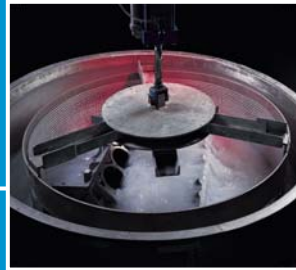
Sealing Process



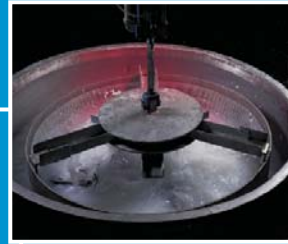
- Initial process step, vacuum impregnate parts with sealant



- Spinning the basket of parts – uses centrifugal force to recover excess sealant from surfaces and puddles



- Wash parts in water



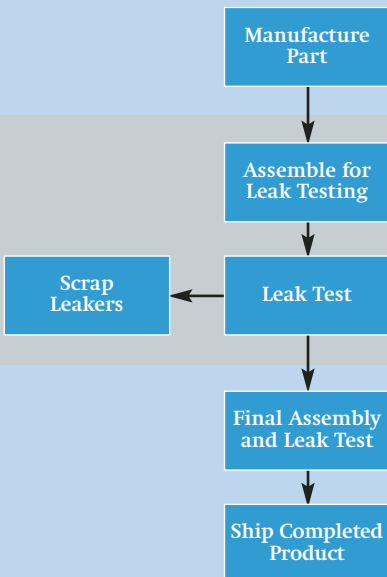
- Dip in activator rinse (anaerobic-cure materials only) - optional



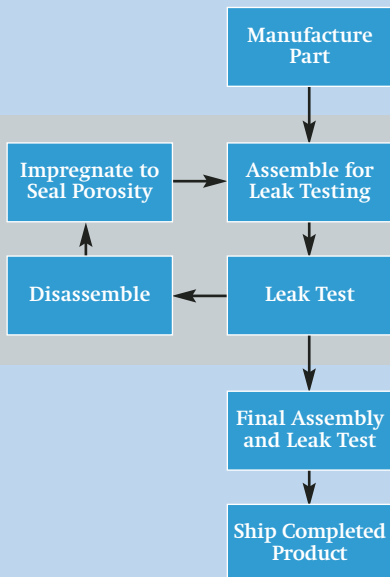
- Dip parts in final rinse. Ready for assembly (heat-cure materials soak in water at 194°F / 90°C).

Cost and Quality Benefits.....Evaluate the Alternatives

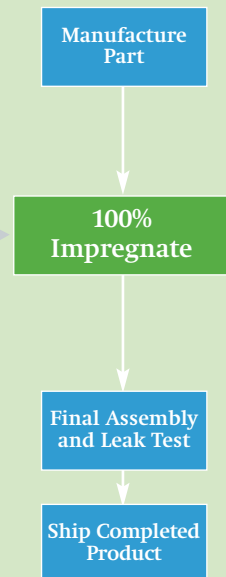
No Impregnation



Impregnation After Inspection



100% Impregnation






Application Services

Henkel supports a worldwide network of Application Process Centers (APCs) with sealant, equipment, technology and expertise. These independent process centers provide Loctite® brand porosity sealing, and often additional services for a huge variety of customer parts. Each center offers comprehensive evaluations and quick turn-around, delivering consistently clean, leak-proof and sealed parts ready for just-in-time assembly. APCs ship millions of sealed components annually and are strategically located in close proximity to customers.

World Class Research and Development



Henkel operates the world's only advanced research and development laboratory solely dedicated to the sealing of porosity with vacuum impregnation. The lab features impregnation systems in a variety of sizes and configurations, enabling technicians and engineers to study equipment design, process advancements, and sealant technology. The ultimate focus is on the successful sealing of customer parts.

This facility provides the unique ability to:

- Evaluate real-world production parts
- Simulate any process method at lab scale or full scale
- Evaluate equipment and process designs
- Process and test components with any sealant technology

**Henkel – Your
Worldwide Partner**

**For more information, call 1-866-322-7024 and request a
Henkel impregnation specialist for an on-site evaluation
or email loctite.porositysealing@us.henkel.com.**

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