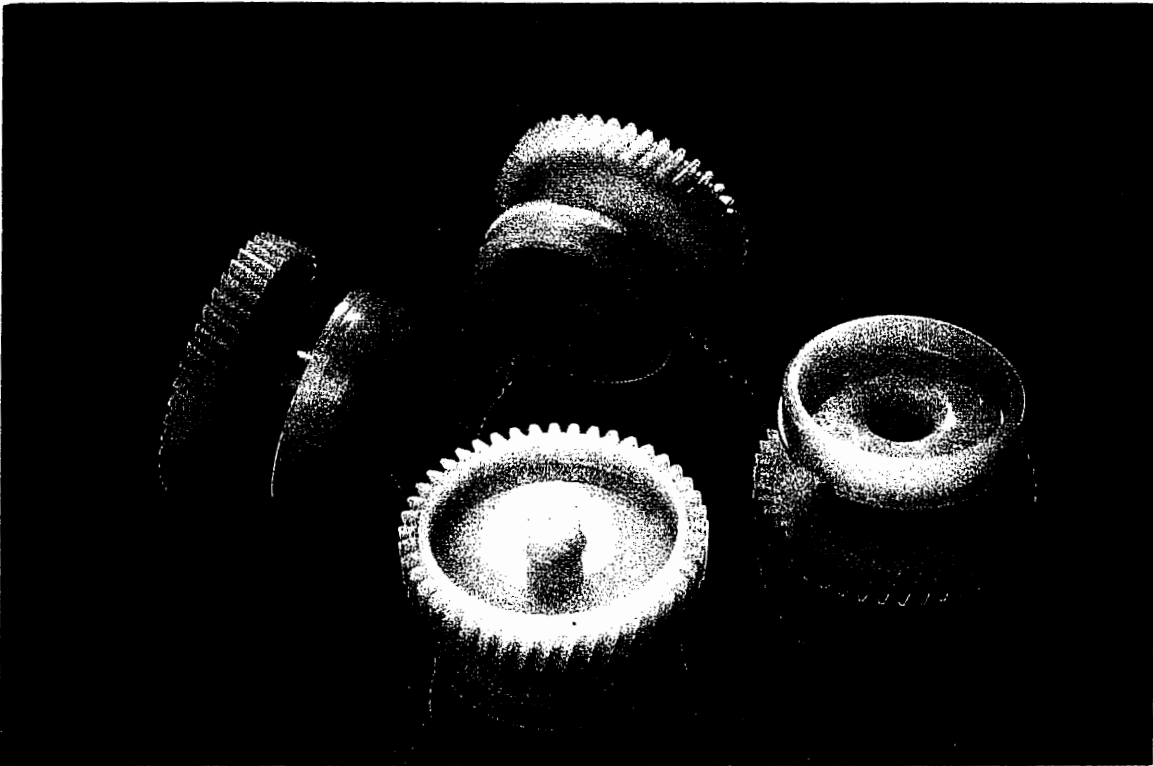




Shell Chemicals

## CARILON POLYMERS CASE HISTORY

### GW Plastics



CARILON™ Polymers replaced a lubricated acetal in these laser printer gears molded by GW Plastics. CARILON Polymers' unique combination of high-performance tribological (wear and friction) properties, ease of processing and lower cost made the choice an easy one for the customer. For more information about CARILON Polymers, call 1-888-CARILON (888-227-4566).



**Shell Chemicals**

## **PRESS INFORMATION**

### **CARILON Polymers from Shell Chemicals Lend Cost Savings and Easy Processing to GW Plastics' Quality Molded Parts**

#### **GW Plastics Case History**

"For more than 40 years, we have staked our reputation on consistent product quality," says Tim Reis, product manager for GW Plastics, a custom producer of injection-molded thermoplastic products. "Shell Chemicals<sup>1</sup> CARILON<sup>2</sup> Polymers have lived up to the quality standards our customers expect from us."

GW Plastics' experience with CARILON Polymers began when a major customer requested an evaluation of the material for a small, but important, gear. For years, GW Plastics had molded the gear from a lubricated acetal. The gear is part of the photo conductor drum assembly within the toner cartridge of a network laser printer.

"CARILON Polymers had passed our customer's rigorous tribological, or friction and wear, tests," Reis explains. In those tests, CARILON Polymers demonstrated the same high-performance wear properties as the higher-priced lubricated acetal the company had been using to manufacture the gear.

Excited by these positive results, a team of GW Plastics and Shell researchers tested CARILON Polymers' processability on GW Plastics' injection-molding equipment. "Shell was very supportive during this process and was instrumental in our ultimate success," Reis says. "CARILON Polymers performed well on our equipment."

The research team discovered that CARILON Polymers' lower specific gravity required less material than acetal to fill GW Plastics' molds. And, their fast set-up time enabled GW

/more . . .

---

<sup>1</sup>The expression 'Shell Chemicals' refers to the companies of the Royal Dutch/Shell Group which are engaged in the chemical businesses. Each of the companies which make up the Royal Dutch/Shell Group of companies is an independent entity and has its own separate identity.

<sup>2</sup>CARILON is a Shell trademark

Plastics to reduce cycle times and significantly increase the capacity of its molding equipment. Finally, CARILON Polymers are more stable than acetal, resulting in less variability in parts quality. This, Reis says, ensures a more consistent quality part for his customers and reduces the time his company spends on quality assurance.

"Wear and tear resistance is vital to thermoplastic parts used in most machine applications," says John Kelley, Shell Chemical Company's staff research engineer. "The whole function of a gear is to transfer power and/or motion as smoothly as possible, and any wear on the teeth of the gear affects that smoothness. One plus with CARILON Polymers is that, unlike nylon and acetal, they resist wear against themselves and against other polymers."

Based on these processability and performance factors, GW Plastics began manufacturing the gear exclusively with CARILON Polymers in January. As a leader in custom plastics gearing mold construction, GW Plastics will produce about two million of these gears this year, Reis estimated. "We plan to evaluate CARILON Polymers for other gear applications and recommend the material to our customers where it is appropriate," he concludes.

CARILON Polymers are engineering thermoplastics with a unique combination of physical properties compared to traditional materials such as polyamides and polyacetals. These properties include strength, stiffness, performance over a broad temperature range, toughness, superior wear and friction characteristics, low hydrocarbon permeability and resistance to a variety of aggressive chemicals.

CARILON Polymers are available in extrusion grades and a variety of injection molding grades, including glass reinforced, flame retardant, mineral filled and lubricated compounds. The polymers can be easily processed on conventional molding and extrusion equipment, and their fast set-up can lead to significantly reduced cycle times in injection molding applications.

For more information on CARILON Polymers, visit Shell's Web site at [www.shellchemicals.com](http://www.shellchemicals.com). In the United States, customers can write to Shell Chemical Company, P.O. Box 2463, Houston, Texas 77252-2463 or call toll free at 1-888-CARILON (1-888-227-4566). In Europe, customers can write to Shell Chemicals Ltd., Shell Centre, SEI 7NA or call +44 171 934 3300.

###

**MEDIA CONTACTS:**

Nicole Cloutier/Pat Frank, Vollmer Public Relations (phone: 713-546-2230)  
808 Travis, Suite 501, Houston, TX 77002 (fax: 713-546-2231)  
E-mail: [nicole@vollmerpr.com](mailto:nicole@vollmerpr.com) or [pat@vollmerpr.com](mailto:pat@vollmerpr.com)