



**HOT, COLD, WET OR DRY, GRAPHALLOY®  
BEARINGS WORK WHEN OTHERS FAIL.**



## When the Competition Said “No”, GRAPHALLOY® Said “Yes”

### GRAPHALLOY Bushings Are the Solution for a Chemical Plant

A chemical plant in Tennessee was experiencing rapid bushing failure in their gear pumps. These bushings were failing after only a few weeks of operation. When plant representatives contacted this carbon bushing manufacturer about the problem, they were told that there was "no solution". The bushing manufacturer - our competitor - claimed that the viscosity of the polymer being pumped was simply too thick.



Unhappy with this response, the chemical plant engineers contacted Graphite Metallizing for assistance. After studying the problem, our engineers promptly responded by saying "yes, we can help" and that GRAPHALLOY bushings were the solution.

The pump that was failing was a positive displacement, herringbone-type gear pump with internal bushings lubricated by the pumped liquid. The pumpage is a polymer with heavy viscosity (150 -10,000 CPS) similar to a thick latex paint. The temperature can range from 80 degrees to 140 degrees F with a speed of 520 -1,750 RPMs and a load of 155 - 1,980 pounds. This pump has very high bushing loads because of the meshing gear forces. The calculated PV values were up to 500,000 - *over four times the maximum recommended level for GRAPHALLOY in submerged services.*

The GRAPHALLOY engineers provided a solution designed for applications involving the transfer of viscous liquids. Grade GM 119.3 bushings were recommended because of their load-bearing and corrosion-resistant capabilities. GRAPHALLOY engineers also recommended slight design changes to improve reliability.



The initial order was shipped to the customer and immediately installed.

The pumps fitted with GRAPHALLOY bushings have been operating for over one year without failure...*six times the life of the competitor's bushings.*

The success of these GRAPHALLOY bearings demonstrates the potential for GRAPHALLOY upgrades in chemical plants.