



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



GRAPHALLOY® Fitted Pumps for Survival in Tough Services

Pumps are a major GRAPHALLOY application.

The unique properties of GRAPHALLOY enable pumps to run-dry and to survive upsets and flashing that shut-down ordinary pumps. One Gulf Coast refinery has saved between \$150,000 and \$300,000 in annual repairs by converting four pumps in ethylene service to GRAPHALLOY. These 19-stage vertical pumps operate at 3560 rpm.

Ethylene is a very light hydrocarbon that creates problems in pump operation. Because of its low viscosity, ethylene provides minimal lubrication to the rotating parts of the pump. As a result, these pumps are prone to failure.

The pumps in this Texas refinery were failing two to four times a year at an average cost of \$75,000 per pump.



The OEM pump repair shop recommended GRAPHALLOY wear parts based on their success retro-fitting other ethylene pumps. GRAPHALLOY allows the rotating parts to contact without the danger of galling and seizing.

Although it was slightly more expensive than the original metal wear parts, GRAPHALLOY provided a significant cost-savings over composite plastics. The refinery engineer recognized the benefits that GRAPHALLOY could provide and approved the conversion.

All four pumps were retro-fitted with GRAPHALLOY. In the three years since their installation, none of the converted pumps have failed. In addition, measurement of discharge pressure showed that the clearances had not opened up in that time.

This GRAPHALLOY success in ethylene service demonstrates why so many pump users choose GRAPHALLOY for their toughest services. Ordinary fitted pumps do not allow for run-dry conditions and will not survive upsets and flashing. The unique features of GRAPHALLOY permit dry starts, survive frequent loss of suction, and extend life for continuous service.

