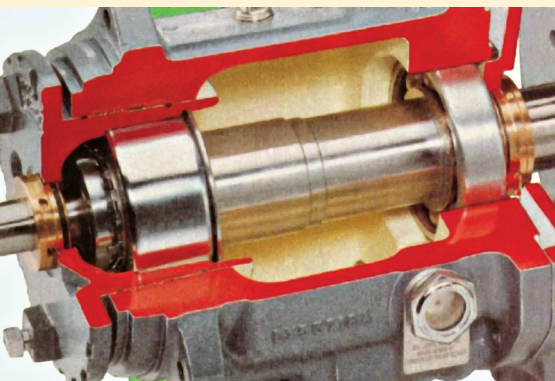


# Krytox<sup>®</sup> Case History

DUPONT<sup>™</sup> KRYTOX<sup>®</sup> IMPROVES SAFETY, PREVENTS PROCESS FLUID LEAKAGE AND EXTENDS SEAL LIFE IN DOUBLE MECHANICAL SEAL APPLICATIONS

**“OUR TEAM SAW SAFETY AND EQUIPMENT PERFORMANCE AS PRIORITIES. KRYTOX<sup>®</sup> WAS UP TO THE TASK.”**

**—TRACY DALY, RISK MANAGER, CHAMBERS WORKS**



Installing new agitators and pumps for a reactor with acidic off-gas at DuPont's Chambers Works plant presented challenges in system design. The first consideration was safety. Another issue was compatibility of the barrier fluids with the equipment. These and other concerns provided direction for the planning team in determining what lubricants they would use as barrier fluids in the system's mechanical seals. OEMs also recognize these needs in specifying barrier fluids for agitators, pumps and mechanical seals.

## Identifying the Problem

With safety, leakage and seal life as top priorities, the planning team needed to identify a lubricant that could perform the critical role of barrier fluid under the demanding operating conditions of the system. The lubricant could not react with the acidic off-gas generated by the reactor. “There could not be any safety issues with flammability, and the equipment needed to be compatible with the lubricant as well. We needed safety, performance and no maintenance issues,” says Tracy Daly, Risk Manager at Chambers Works at the time.

## Solving the Problem

Knowing that reactive gases coming into contact with standard lubricants could result in explosion or equipment failure, the team selected two DuPont lubricants as barrier fluids for the mechanical seals in the system to eliminate potential reactions

between chemicals and lubricants. For the double mechanical bellows seal in the circulating pump, the team chose Krytox<sup>®</sup> GPL 101, and the double mechanical seals in the agitator and transfer pump received Krytox<sup>®</sup> GPL 104. “Double mechanical seals are used in equipment where leakage of the process fluid is unacceptable,” says Daly. “Krytox<sup>®</sup> was a natural choice for our system because of its excellent thermal stability, lubricating capability and non-reactivity with process fluids. It has been used in double mechanical seals from Flow Serve, John Crane and other leading manufacturers.”

With 40 years of Krytox<sup>®</sup> experience behind their choice, the team also chose Krytox<sup>®</sup> oil as the heat transfer fluid in the reactor jacket to moderate and control reactor temperature. Krytox<sup>®</sup> GPL 101 and GPL 104 oils are clear, colorless, fluorinated synthetic oils. They are nonreactive, nonflammable, safe in oxygen service and long-lasting.

## Achieving Results

The Chambers Works team wanted their design to help provide proper equipment performance of the reactor and its components from the beginning of the installation. Using the environmentally friendly and chemically compatible Krytox<sup>®</sup> lubricants “helped ensure safety and could enhance performance by extending the life of mechanical seals in the reactor,” says Daly.

## BENEFITS OEMS AND END-USERS

### Problem:

- Safety issues
- Leakage
- Seal life

### Solution:

- Krytox<sup>®</sup> with 40 years of proven experience
- OEM-backed results; specified by:
  - Agitator OEMs
  - Durco for pumps
  - Flow Serve for mechanical seals



*The miracles of science™*



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