



## Chemraz® 505

### Increases Pump Lifetime in EO/PO Service



#### Customer

One of the world's leading chemical companies was looking for a superior FFKM sealing solution. The goal was to increase the MTBF (mean time between failure) of their screw spindle pump from several weeks to several years. In addition, the company wanted to improve safety at all of the pump installations in the EO/PO (ethylene oxide, propylene oxide) plant located in Eastern Germany.

#### Application

The rotary pump was used as a reactor pump carrying EO/PO (ethylene/propylene) media. EO/PO is a very reactive, dangerous medium. In general EO /PO users or manufacturers will not change o-ring specifications without thorough proof of compatibility.

The faces of the pump's mechanical seal had been statically sealed against the housing and the shaft by a variety of FFKM o-ring seals.

#### Challenge

Previously installed perfluoroelastomers swelled and lacked sealing force. Since MTBF was only a few weeks, which was not acceptable for the customer, Greene Tweed had been contacted to provide a solution.

#### Solution

Based on Greene Tweed's recommendation the customer installed Chemraz® 505. This material is one of the few recommended for service in corrosive EO media.

#### Results

Given the success of Chemraz® 505, the end user:

- Successfully installed the material in the same pump location in a R&D pilot EO service plant
- Retrofitted all four screw spindle pumps (a total of 16 mechanical seals) at the plant with Chemraz® 505
- Specified Chemraz® 505 on all pumps in the East German plant.



Technical Data	
<b>Pump Type</b>	Rotary pumps W6 (screw spindle pumps)
<b>Mechanical seal</b>	Multi-spring seal; sealing liquid: glycol
<b>Media</b>	EO, PO
<b>Temperature</b>	248°F (120°C)
<b>Pressure</b>	116 psi (max. 8 bar)
<b>Former Product</b>	Three different competitors' elastomers were used
<b>New Product</b>	Chemraz® 505

## Benefits

- **Improved reliability/MTBF** – Chemraz® 505 o-rings have increased pump lifetime from several weeks to almost four years. The pump continues to run without problems. Scheduled maintenance is set for every five years, and it appears this goal will be met without a challenge.
- **Excellent chemical resistance in aggressive media and chemical attack** – Chemraz 505® reduces the risk of seal swell in EO/PO service.

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### Greene Tweed

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