

# H75VN mechanical seal

Information **EN07111**



Originally the pump was equipped with a Flowserve mechanical seal type EUROPAC 613/663 in tandem arrangement. The required maximum temperature of the supply medium of 40 °C was always exceeded. Additionally the seal was continuously squeaking during operation. Even after a longer time the competitor was not able to solve these problems. The pump was therefore retrofitted to an engineered EagleBurgmann H75VN. Critical points of this application are the poor lubrication properties and the low heat capacity of the process medium. Due to these reasons a balanced dual seal in tandem arrangement was selected.

- Plan 11 and 52 with multi-point injection, this means the buffer medium is divided into several sub-currents which are directed towards the sliding face at relatively high flow velocities. This improves the heat removal from the mechanical seal.
- Self-closing, this means the seal will remain closed and will keep the full functionality even in case of pressure reversal or failure of the supply system.
- Perfluoroelastomers due to the chemical resistance

### Summary

The EagleBurgmann H75VN meets all requirements of the operator regarding the maximum buffer fluid temperature of 40 °C. Additionally the squeaking of the seal could be eliminated. The mechanical seals have been successfully in operation since the beginning of 2006 and have been running to the full satisfaction of the customer. Further pumps are retrofitted at present. Beyond this the H75VN from EagleBurgmann is now specified as standard mechanical seal for pipeline pumps.

The companies Ineos in Gladbeck and Degussa in Marl (both Germany) are supplied with cumene by a pipeline. The pump station for this pipeline is situated inside the chemical industry park in Marl and is operated by Degussa Infracor. Cumene is mainly used in the production of phenol.

### The technical features of the EagleBurgmann seal at a glance:

- Cartridge unit, easy to install
- Certified according to API 682/ISO 21049 for the application in flashing hydrocarbons. Meets the requirements for „low emission seals“ based on the American STLE-limit values.
- Counter-rotating pumping screw to support the circulation of the buffer medium to ensure an optimal cooling and lubrication of the mechanical seal.

### Operating conditions

Medium: Cumene  
 Operating temperature: 5 ... 50 °C  
 Operating pressure at seal: 1.2 ... 2.4 barg  
 Pump: Centrifugal pump, type MC 80-260/62  
 Pump manufacturer: Sulzer  
 Speed: 2,975 min<sup>-1</sup>  
 Seals incl. materials: H75VN/80-FTA5, AQ1KMG – AQ1KMG  
 Mode of operation: Plan 11 + 52 according to API 682  
 Supply system: TS 2000/M051-A1, operation under atmospheric pressure

### Problem and solution

Cumene (isopropylbenzene) is an aromatic hydrocarbon and a colourless liquid under atmospheric conditions with a characteristic aromatic smell. It is classified as hazardous to the environment and therefore the „TA-Luft“ directive (German Clean Air Directive) has to be considered.

