

# Filtration Group application example – Factory Equipment

## Isocyanate with automatic metal-edge filter AF 73 S



Factory Equipment

### Initial situation

Our customer is a global chemical company and manufacturer of base and speciality chemicals as well as high-performance materials that are used in different everyday products. In the manufacture of highly viscous products in the chemical industry, such as adhesives, insulating components seals, underbody protection etc., Filtration Group automatic metal-edge filters are often the only technology that provides economical filtration to protect downstream process steps against contamination.

In the manufacturing process of MDI (methylene-diphenyl-isocyanate), a raw material for polyurethane, the main task is to retain and separate any possible agglomerates or deposits from the reactor. Isocyanate has almost no lubrication properties, which must be taken into account when designing the bearings. It reacts with substances that demonstrate an OH group (e.g. water, also humidity etc.) vis-à-vis solid matter.

### Solution statement

- Automatic metal-edge filter AF 73 S with optimised bearing points and a double action mechanical seal that is flushed with anhydrous white oil (vaseline)
- Filter supplied completely free of lubricants or preservatives
- Shaft seal in compliance with Germany's „TA-Luft“ air quality regulations
- No ingress of humidity into the process in order to avoid secondary reactions
- The FG automatic metal-edge filter replaces existing basket strainer filters, thus minimising employees' contact with isocyanate



### Customer value

- Process safety through efficient filter cleaning and the associated improvement in safety and environmental protection
- Precision separation using the metal-edge filter principle
- Cleaning performed without an interruption in filtration
- Low life-cycle costs as no filter material is used



### Challenge

In this special manufacturing process the products are processed in complex machines and systems, i.e. applied with fine nozzles. Foreign particles and agglomerates of products constituents would lead to malfunctions and product waste here, and in the worst case scenario, cause damage to the machines. In order to guarantee reliable operation for our customers, Filtration Group supplied an automatic metal-edge filter AF 738 with optimised bearing points and a double action mechanical seal that is flushed with white oil (vaseline).

#### Technical data

- Medium: methylene-diphenyl-isocyanate (MDI)
- Operating pressure: 10 bar
- Operating temperature: 25 – 40 °C
- Filter fineness: 250 µm
- Volume flow: 35 m³/h



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