

# Double Safe! – Secondary Containment Metallic Magnetic Coupled Pumps - MKP



cleaner pumps, cleaner planet™



## Why an Additional Sealing in a Sealless Pump?

- The **requirements** of pump operators in the chemical industry for **additional safety** in particularly **hazardous** applications with a high risk potential are **increasing**!
- The «Working group 'pumps in the chemical industry' in Germany» has defined requirements for protection measures / Safety Layer:
  - «...additional measures which prevent, that a product is released upon a failure of the primary containment shell.
  - The protection measures require, that such failure is **detected** and after activation of the protection measures the system is brought into a **safe state**. Frequently the safe state of the system is the **secondary containment shell and the stopping of the pump**.»



# Which Additional Safety Measures do CP Pump Systems Provide?

- All CP magnetic drive pumps have a **primary containment shell / shroud**, which has proven itself in practice. The shroud of the metallic MKP is particularly **robust and field-proven**.
  - It is 'technically tight' and it allows neither drip leakage nor gaseous emissions.
  - The monitoring of the containment shell by means of a **patented Shroud Temperature Monitoring** indicates unwanted operating conditions effectively and quickly. In many applications this safety option is sufficient (\*WSN1)!
- Increased requirements are now covered by the secondary containment "secondary barrier" and monitoring instruments (pressure and liquid detector) (\*WSN2 fulfilled)
- CP Pump Systems has adapted the design of all metal magnetic drive pumps of the MKP series to the requirements and now offers an **optional secondary containment with radial shaft seal ring (RSSR)**



## Secondary Containment – Operating Principle





## Secondary Containment ready for Bearing Frame or Close Coupled Execution





## Pump Protection – MKP (Close Coupled Execution)



### **Primary Sealing**

→ Shroud – Containment Shell / Casing Gasket

### Secondary Containment / - Sealing

- → Radial Shaft Sealing Ring (RSSR)
- (1) → Shroud Temperature Monitoring
- (2) → PI / Pressure Indicator (Manometer)
- (3) → LI / Level Indicator (liquid detector; e.g. Liquiphant)
- WSN 1: PI or LI
- WSN 2: PI or LI; either:
  - PAH (Pressure Alarm High) / LAH (Level Alarm High)
  - PSH (Pressure Switch High) / LSH (Level Switch High)



## Pump Protection – MKP (Bearing Frame Execution)



Primary Sealing
→ Shroud – Containment Shell / Casing Gasket

- Secondary Containment / Sealing
- ➔ Radial Shaft Sealing Ring (RSSR)
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### RSSR – MKP (Bearing Frame Execution)– Detail View





### Thank You for Your Attention!

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