

## OPTIMASS Tantalum: Mass flowmeter especially for the chemical industry

- BASF uses Tantalum version of KROHNE OPTIMASS 7300 C for filling highly aggressive media

### Text:

Ludwigshafen, 29 February 2012: Since 2009, BASF has been using the Tantalum version of the OPTIMASS 7300 C device to fill tankers with highly aggressive and toxic liquids. These devices measure the mass flow of chloroformates and acid chlorides used in the manufacture of plastics, pharmaceuticals and packaging products at a rate of 60t/h. The liquids have a density of 1000-1500 kg/m<sup>3</sup> and a temperature of 50 degrees Celsius.

BASF chose the Tantalum version because a mass flowmeter with high chemical resistance was the only option suitable for this application. The pipelines into which the meters are installed feature an enamel lining. Mass flowmeters from a different manufacturer had previously been used but due to problems with these, BASF was looking to replace them. The customer decided on the KROHNE OPTIMASS 7300 C Tantalum because this device offers one crucial advantage: the OPTIMASS features a single, straight measuring tube, eliminating the need for a flow splitter. Due to the straight tube, cleaning processes have been optimized, preventing product buildup on the inner walls of the measuring tube. In addition, significantly less space is required for installation compared to the twin U-tube format.

For a long time there was no suitable measuring tube material available in the field of Coriolis meters for measuring highly aggressive or corrosive media. It has only been since Tantalum has been widely available that the manufacture of Coriolis meters for these applications has been possible. However, due to the twin U-tube design, the products were always extremely costly as, in addition to the measuring tubes, both the flange and the flow splitters were made of Tantalum.

It was only with KROHNE's development of the straight, single tube design for mass flowmeters that an efficient use of the material was made possible. With this design, only the measuring tube and the raised face need to be made of Tantalum. This translates into a considerable cost advantage over the twin U-tube meters. However, developing the new design was not easy as a material like Tantalum is very demanding in terms of the welding and brazing techniques used.

Thanks to many years of experience in the development of Coriolis straight tube meters, KROHNE was able to solve this problem and offer the OPTIMASS 7300 C, the first straight tube measuring device with one single measuring tube in Tantalum. The Tantalum alloy used is designated Ta10W and consists of 10% Wolfram and 90% Tantalum. The Wolfram portion guarantees higher measuring tube stability. The chemical resistance of Tantalum is comparable to that of glass.

In addition to Tantalum, KROHNE also supplies the OPTIMASS series in Hastelloy® C22, Duplex and Super Duplex stainless steel, Titanium and stainless steel 316L. KROHNE thus supplies a wide range of mass flowmeters which are even suitable for use with the most aggressive media in the chemical industry, covering almost any application.

About KROHNE: KROHNE is a full-service provider for process measuring technology for the measurement of flow, mass flow, level, pressure and temperature as well as analytical tasks. Founded in 1921 and

headquartered in Duisburg, Germany, the company employs over 2,600 people all over the world and is present on all continents. KROHNE stands for innovation and maximum product quality and is one of the market leaders in industrial process measuring technology.

**Picture 1:**



**Caption:** Filling highly aggressive media using OPTIMASS 7300 C Tantalum

**Picture 2:**



**Caption:** Minimal space requirement and simplified cleaning compared to twin U-tube devices

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