

APPLICATION NOTE Chemicals

Mass flow measurement
of pigment and plastic additives production.

- Constant quality monitoring during production with changing viscosities
- Bulk mass flow measurement right down to precise dosing
- Automatic dosing of chemicals in a mixing tank

1. Background

One of the world's leading manufacturers of pigment and plastic additives also produces in Germany. During the production of the additives, up to 8 chemicals with viscosities varying between approx. 50 and 400 mPa · s are added in sequence to a mixing tank. The Flow rates range from 20000 kg/h down to low flow dosing at 500 kg/h.

Products to be measured include

- Xylol with extremely low viscosity,
- Bupol with a viscosity of approx. 200 mPa · s, and
- Polyglycol with a high viscosity of approx. 400 mPa · s.

2. Measurement requirements

To keep pump capacity to a minimum, only mass flowmeters with a single straight measuring tube are used. The chemicals used to manufacture the pigment and plastic additives are stored in tanks, and then flow through the mass flowmeters to the mixers. Accuracy must remain constant with all changes in viscosity. The measurements must be repeatable. With the automated process, the mass flowmeters add the exact amount of chemicals to the mixers. The meters must be self-draining, easy to clean and maintenance-free.

3. KROHNE Solution

Following comparative tests with other suppliers, KROHNE supplied mass flowmeters from the OPTIMASS 7300 C series, in sizes T06, T10, T25 and T40 for these applications.

The meters measure the precise mass flow of the various chemicals flowing to the mixers. Once the desired quantity has been reached, the instruments stop the flow to the mixers.

The single straight measuring tube of the OPTIMASS 7300 C compact meters, together with the vertical mounting of the devices, enable complete drainage of the measuring tubes without residue.

4. Customer advantages

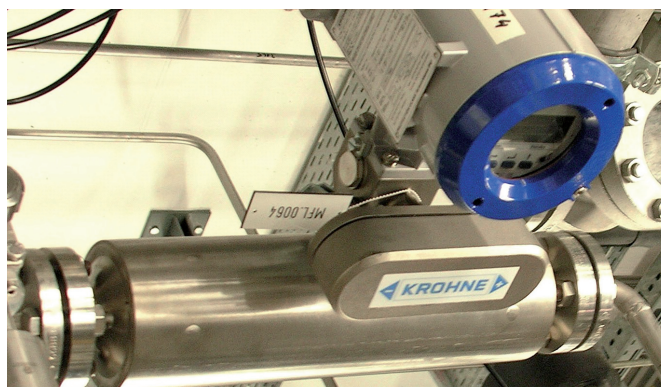
The KROHNE OPTIMASS flowmeters considerably reduced the filling time of the mixers. In addition, the filling of the mixers now stops automatically. Precise adherence to the mixing ratios of the chemicals increases the quality of the colour and paint additives. The long-term stability and excellent reproducibility of the OPTIMASS meters also contributes to this.

The increased in accuracy when filling the mixers with the various chemicals increases product quality. Self-drainage and the lack of need for maintenance also lower operating costs.

5. Products used

OPTIMASS 7300 C

- The only mass flowmeter with one straight measuring tube available in Stainless Steel, Hastelloy®, Titanium or Tantalum
- Minimal pressure loss
- Any mounting position, easily drained and easy to clean
- High accuracy even when product, viscosity and/or temperature changes
- Reliable mass flowmeter for the measurement of mass flow, density, volume, temperature, mass and volume, concentration as well as solid content



Details of the installed mass flowmeters



Contact

Please visit our website for a current list of all KROHNE contacts and addresses.



www.krohne.com