Radar level measurement for PLEXIGLAS®

We come across it regularly in everyday life and yet we barely notice it: PLEXIGLAS®. The material is virtually unbreakable, weather-resistant, easy to shape and can be produced in almost any conceivable colour. The chemical company Röhm has been producing PLEXIGLAS® for nearly 100 years and distributing it to more than 100 countries from its largest production site in Worms.

What is PLEXIGLAS®?

PLEXIGLAS® is a special type of acrylic glass also known by its chemical term polymethyl methacrylate (PMMA). PLEXIGLAS® is available in two versions: as a semi-finished product in the form of sheets and rods, which are usually further processed into many different products, and as a moulding compound used in injection moulding and extrusion processes. Methyl methacrylate (MMA) is an important precursor of PLEXIGLAS®. This viscous liquid compound is used to produce building materials, adhesives and paints, among other things.

Where is radar level measurement important?

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The radar sensors precisely monitor the levels in the mobile storage tanks.

There are countless variants of the MMA compound – the exact recipe determines the attributes like heat conduction, refractive index and tensile strength. Even the smallest process deviations have an impact on product quality. The VEGAPULS 6X radar sensors monitor, among other things, the levels in the mobile storage tanks that collect residues from MMA production. The 500 to 800 litre metallic containers are reused as soon as the corresponding recipe is employed again. At this point, knowing the exact level is particularly important: If the full signal is sent too late, some residual pumped material could remain in the hoses because there is no longer enough space in the container – this would lead to residual materials from two different processes being mixed together, with fatal consequences.

How does VEGAPULS 6X simplify processes?

Previously, Röhm had installed a sensor with tuning fork that signalled when a mobile tank was full. However, the measuring result was often inaccurate and caused additional work: *"To know exactly how much could still be filled into a tank, we always opened it and carried out a visual check,"* explains Stephan Bettinger, who is responsible for looking after the electronic processes in Worms. With VEGAPULS 6X, that's a thing of the past: The radar sensors measure continuously and provide an overview of the current level at all times. This allows much more proactive planning of the use of the small storage tanks.

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Where is the radar sensor used at Röhm?

VEGAPULS 6X delivers precise level data from many different tanks. In the outdoor area of the MMA plant, for example, this sensor type measures the levels in two tanks, each 30 cubic metres in size, in which the finished product is stored until it is shipped. As soon as the radar sensor reports that one of the tanks is almost full, the product is finally checked for quality, filled into drums and dispatched.

What advantages does VEGAPULS 6X offer?

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One sensor model for different applications – this optimises work processes at Röhm.

This radar sensor is suitable for tanks of all kinds. With the numerous process fittings and antenna designs that are available, it can be quickly integrated into the system. And it always delivers precise measuring results, regardless of

- the medium, whether solid or liquid
- high pressures
- extreme temperatures

Another plus point: the sensor always comes with Ex approval. This means that Röhm uses one and the same sensor model for large storage tanks and for small mobile residue containers. *“We now need to keep fewer instruments in stock because of its versatility. This is also an important contribution to optimising our MMA process. Because it enables us to work more sustainably, with less work and lower costs,”* says Stefan Bettinger, citing another advantage that comes with using VEGAPULS 6X.

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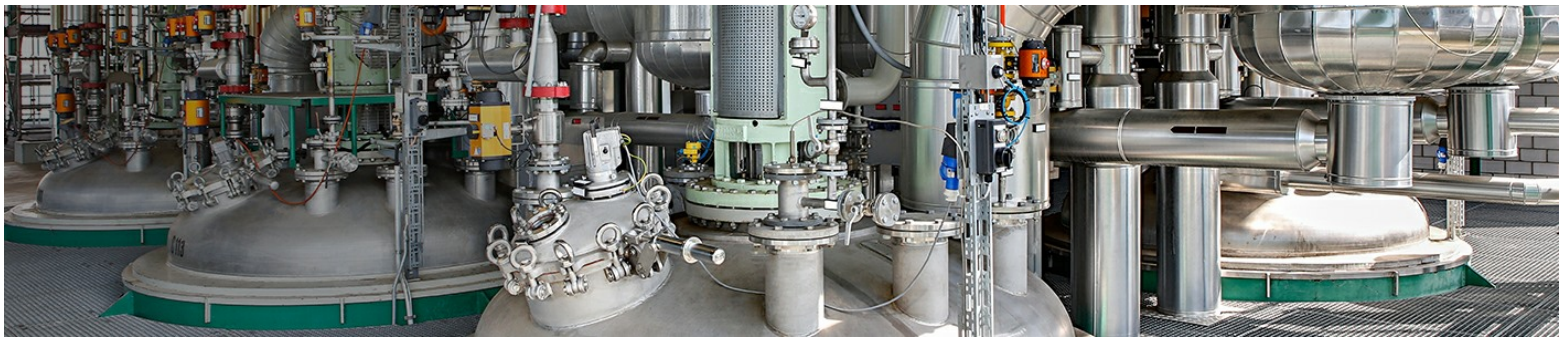

Products

VEGAPULS 6X

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