BLOG_260826_Process engineering and ATEX – a homogeneous mixture

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What is the connection between process engineering and ATEX?

Process engineering and ATEX – a homogeneous mixture

For us, the term "process engineering" encompasses specific processing technologies. Examples include homogenizers, where immiscible liquids or solids are subjected to high pressure to break them down, blend them, and process them into a uniform, stable mixture.

At TM-Prozesstechnik, we focus more on the processing units or machines themselves than on the piping systems.

ATEX is currently a hot topic. 🔥

People's first thought is usually of electrical components that might generate ignition sources or sparks. However, there is more to it than that.

Explosion protection is also a fascinating subject when dealing with dusts and gases in process engineering—an area that frequently involves many processes within the food industry. Food-related dusts, such as sugar and grain, carry a high risk of ignition. Regarding gases in the food and beverage sector, solvents are particularly prone to causing explosions.

Consequently, process engineering systems must strictly adhere to explosion protection regulations, which are governed in the EU by the "ATEX Directive" (Directive 2014/34/EU).

There is a huge amount of literature on explosion protection and ATEX. It is a complex subject because it requires a multi-faceted approach.

However, from the perspective of the person directly responsible for the plant, the following questions arise at the outset:

1) What is the key condition within a process engineering system (e.g., a homogenization unit) that necessitates an ATEX assessment?
   ☑ All conditions of the "explosion triangle" must be sufficiently met!
2) What is the simplest measure to ensure compliance with the directive?
   ☑ One of the three conditions must be absolutely ruled out!
3) What is the most cost-effective measure?
   ☑ Usually, it is so-called "preventive explosion protection"!

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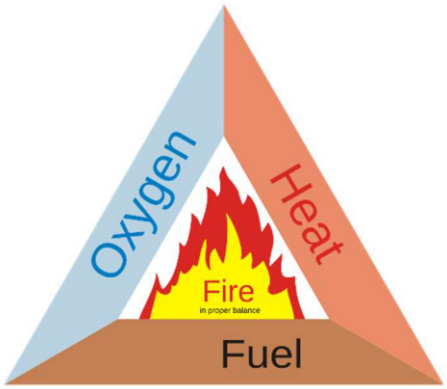

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However, for the operator or the person responsible for process engineering, this always entails a residual risk—one that should ideally be eliminated.
We therefore encourage you to read the next article on this topic as well. In it, we describe measures for a machine—such as a homogenizer—that anyone responsible for process engineering should definitely pay attention to.

#ATEX #homogenizers #Prozesstechnik

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