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Press Release

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Comprehensive spray-drying safety thanks to Bilfinger technology

Many products in our daily lives are manufactured using spray-drying. These include powdered milk, instant coffee and also vaccines. However, the production process is very complicated. Explained simply, dehydrated products are pressed through an atomizer or nozzle and dried using hot air. The result is a dry powder that can be kept for long periods. Given the high temperatures used in the drying process, however, there is a risk of fires or even explosions occurring in the machinery. And this risk is all the greater as many lines that are currently in use are relatively old.

Against this backdrop, Bilfinger has identified great business potential and has now established a department within the GreyLogix foodtec unit with 20 employees to focus on all safety aspects in this area and to simultaneously develop new technological solutions. "Safety and safety technology are growing in importance," explains Matthias Buch, Managing Director of Bilfinger GreyLogix foodtec. "Having realized this, we have developed an integrated package comprising many simple and clever solutions. And we will continue to invest in new solutions."

The age of the machinery is not the only determinant of safety levels. Over the last few years, statutory requirements have also become more stringent, forcing many operators to additionally modernize their machinery. With this in mind, Bilfinger has assembled a comprehensive package for enhancing the safety of spray-drying lines, addressing such aspects as an analysis of the existing situation, a plan of action devised in consultation with the competent authorities for improving safety and the assembly of the components. Companies are also able to make use of a comprehensive range of repair and maintenance services.

The safety team at Bilfinger GreyLogix foodtec consists of plant engineering specialists as well as process technology engineers. The range of services provided builds on this wealth of experience and comprises different modules that make important contributions to enhancing production safety. The benefit of this is that the individual components are not only compatible mutually but also with many third-party systems. The companies utilising the innovative Bilfinger safety solutions in dairy processing include Uelzena, Rucker and Deutsche Milchkontor.



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One innovative element is the carbon monoxide (CO) detection system “detex” for spray-drying, which has now been in use for three years, ensuring safe production of powdered milk. It monitors the spray dryers for any signs of glowing embers, which can cause an explosion in a worst-case scenario. Detex is fitted with a two-channel analysis module. The benefit of this is that absolute measurements can be recorded at any time in both the incoming and outgoing air channel. This helps to identify possible sources of disruptions outside the process and to minimize any unnecessary production downtimes caused as a result.

If it is necessary to shut down a system in an emergency and cool it down to a non-critical temperature zone, the “vertex” cooling system provides valuable assistance. This system prevents the supply air to the drying chamber from overheating and cools it on a controlled basis. It is based on the principle of evaporation cooling, which is achieved through the addition of a fine spray of water in the supply air channel of the drying chamber. The energy that is withdrawn from the hot air in this way reduces the temperature to a non-critical level without damaging the powder that is being dried.

Sometimes, an explosion or fire occurs despite every effort to prevent it. To provide the greatest possible protection, Bilfinger offers explosion protection systems and tailored fire extinguishing equipment.

Safety during work on the plant can also be increased very effectively. For this purpose, Bilfinger offers an innovative key transfer system for maintenance openings. This ensures that the openings remain locked until there is no further risk. Conversely, hazardous situations are avoided while access ways are open. To this end, each maintenance opening has a lock that can only be opened with a special key specifically matching the lock in question. During normal operations, this key is stored on a key board that has an electronically monitored slot for each individual key. When a key is removed, the plant is automatically blocked to prevent any unsafe operations and closed down on a controlled basis.

Captions

Picture 1

Staff members of the safety engineering department, Bilfinger GreyLogix foodtec GmbH

Picture 2

Internal training of the safety engineering department, Bilfinger GreyLogix foodtec GmbH



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Bilfinger is a leading international industrial services provider. The Group enhances the efficiency of assets, ensures a high level of availability and reduces maintenance costs. The portfolio covers the entire value chain from consulting, engineering, manufacturing, assembly, maintenance, plant expansion as well as turnarounds and also includes environmental technologies and digital applications.

The company delivers its services in two business segments: Engineering & Technologies as well as Maintenance, Modifications & Operations. Bilfinger is primarily active in the regions Continental Europe, Northwest Europe, North America and the Middle East. Process industry customers come from sectors that include chemicals and petrochemicals, energy, oil and gas, pharmaceuticals and biopharma, metallurgy and cement. With its 37,000 employees, Bilfinger upholds the highest standards of safety and quality and generated an output volume of €4.2 billion in the 2016 financial year.

More information, photos and videos can be found at



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