

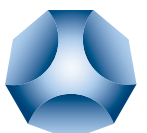
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Cleaning intervals as leverage for cost savings



Technical Paper

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Environmentally-Friendly Release Agents and Cleaners Reduce Process Costs

The cleanliness of semi-finished products, finished components and the manufacturing environment in particular is indispensable in professional industrial production.

Contaminants on components and tools impair their functionality and may lead to more rejects and rework. The type of contamination affects the length of the cleaning interval. The tighter the margins in the considered industry, the more important the question of best practice becomes.

Consistent economic analysis of the value chain necessitates better utilization of the processes used and the methods available. A "better" utilization of resources deliberately does not focus purely on cost considerations, because choosing the cheapest way may be effective, but it is rarely efficient.

Efficient cleaning processes

Regardless of which branch of industry you look at, the cleaning process chain always has a similar structure: care is taken to avoid contamination or to reduce the cleaning effort in upstream production steps. In the cleaning interval itself with subsequent quality control of the cleaning success not only effective solutions, but efficient products are used, which today are generally environmentally friendly and have a low impact on the user.

Solutions for this purpose should therefore be characterized by efficiency. The increase in material efficiency - i.e. the ratio of production volume to material usage - is an important factor in reducing production costs and increasing the competitiveness of the user's operation. The solutions can help to increase efficiency, i.e. by delivering equal or higher performance at low doses, or by offering added value that can save other materials in the process or reduce their consumption.

Cleaning processes in the foundry

In the areas of core and mold production, employees generally struggle with sand residues and sticky resin residues on tools and core boxes. In highly productive series foundries, the speedy cleaning of the core tools as well as their perfect

cleanliness are essential for compliance with productivity metrics. In both cases, efficient release agents and cleaners play a key role in minimizing the cost and expense of cleaning.

Prevention of contamination in the manufacturing process

The use of release agents is already standard practice. They help ensure that the sand core is not damaged and can be removed from the core tool without any problems. Of course, this also has implications for the tool: the more efficient the release agent, the less contamination and wear on the core tool (from cleaning). The formulation of the release agent here is everything. Modern release agents are environmentally friendly, reduce application cycles and thus have a positive influence on downstream cleaning intervals. They even prevent the tool from becoming damaged.

ECOPART™ CB H 18-350 is a water-based, solvent-free and therefore environmentally friendly release agent that, thanks to its excellent release and penetration properties, makes demolding even the most complicated designs extremely easy and without sacrificing quality.

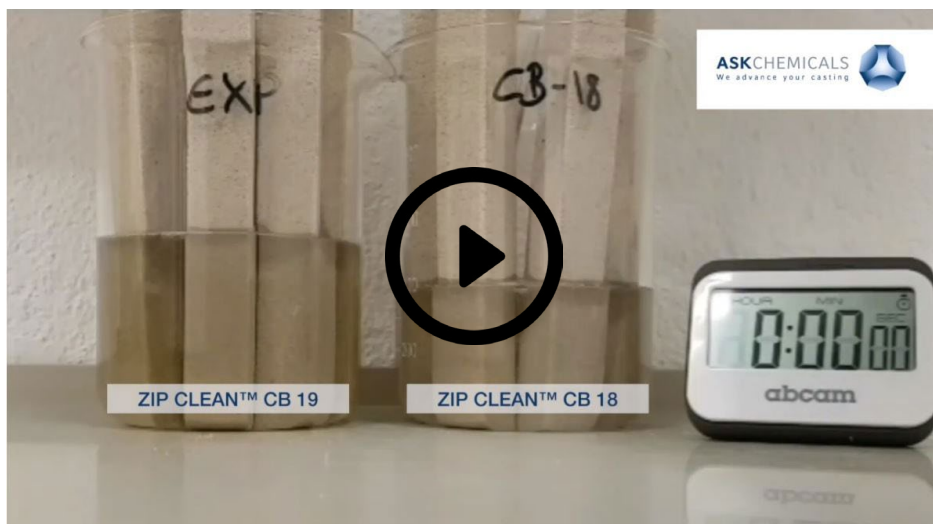
Another way to reduce the cleaning effort in the manufacturing process is the use of self-cleaning core box vents. In conventional core box vents, the slots often clog. Adequate ventilation and optimal flushing times can no longer be guaranteed. This therefore leads to scrap and cleaning effort. The special design of self-cleaning vents prevents this problem.

By contrast, ISOVENTS have a positive influence on the core quality. Gassing and rinsing times can also be reduced. With its excellent self-cleaning properties, ISOVENTS eliminate the hassle of traditional vents cleaning, increasing foundry productivity and output.

Cleaning the tools

To clean the core and mold tools, abrasive sandblasting techniques such as sand blasting or non-abrasive processes such as dry ice blasting are used. In addition, there are chemical cleaners, which are usually used in a complementary way. Since the more dissolved the dirt, the easier it is to remove, the gentler the process for the valuable tool and the shorter the cleaning interval. There are now a variety of options available, which differ significantly in the performance, but also in the friendliness of their formulation in terms of your employees and the environment.

ZIP CLEAN CB 19 cleaner has been specially developed to remove resin deposits, sand and release agent residues. In doing so it does not attack the surface of the tool. Our cleaner is free of NM, NMP and DMF and has a very high cleaning efficiency. The diagram illustrates the cleaning performance of the new ZIP CLEAN CB 19 cleaner. While the conventional cleaner can hardly “touch” the cold box-bonded sand after 5 minutes of action time, the new cleaner is already doing a great job.



Dissolving power of modern cleaner against conventional solutions

We are happy to advice you on cleaning tools and keeping them clean.

Henning Rehse

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