

Swabbing greases: the right product for the right job

Florent Ruffino* outlines why lubricants are an essential part of container glass manufacturing, including how they can improve efficiency and create a safer working environment.



Swabbing greases are essential lubricants in the container glass manufacturing process to ensure a high and constant productivity.

They provide a combination of several functionalities during the stage of glass forming like helping the molten glass to perfectly cover the mould surfaces and so avoid defects due to a bad distribution.

Their releasing properties enable to easily remove the glass items from each mould which is essential to act against glassware checks.

Finally, their lubrication performances will enhance moulds life and make them last longer.

Graphite has been, for decades, a central element in swabbing greases formulations. It is a well-known raw material used for its lubrication properties

in several industrial fields. Forging operations and tubes manufacturing are examples of other areas using it. Its origins can be natural (mining ore) or synthetic (full chemical process) and some of its characteristics like the carbon content, the particle size and its crystallography help Condat to select them for optimal performances.

However, graphite is also at the origin of some well-known defects in glass making. A common issue is graphite transfer which leads to glass items dirtiness. This phenomenon is explained by the migration of graphite from the swabbing grease, applied to the mould, to the glass container. The second problem is graphite build-up. It mainly occurs in finish moulds where engravings are used. Graphite will concentrate in some areas

and will last. The consequence is that the molten glass can't reach them and block the mould covering. Marks are not fully printed, and production must be stopped.

You can limit or overcome these defects by choosing the right swabbing grease for the right job or try a new technology, such as a white swabbing grease.

Select the right grease

Each segment of the container glass industry requires specific lubricants adapted to its production specifications: production rate, items cleanliness, types of glass, gob weights, items shape, etc. That's why Condat decided to develop dedicated swabbing solutions depending on their customers application fields:

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- Wine & beer bottles
- Spirit bottles
- Cosmetics & perfumes
- Pharmaceuticals

Indeed, depending on the glassware being produced, a dedicated swabbing grease must be chosen. The use of a non-suitable swabbing grease will lead to more rejects due to graphite transfer and graphite build-up.

Each lubricant is also specified to a mould type. The needs of lubrication between the blank, the neck ring and the finish moulds are all different. Where high releasing properties are wanted in the first stage of the glass forming, swabbing the neck ring and the blank mould must be soft and light. Over-swabbing these areas will conduct to more glass checks.

Using a lower graphited grease

An Asian glass bottle manufacturer specialised in the production of light amber bottles used for energy drinks had been using a highly graphited swabbing grease for every mould in their 10 sections triple gobs IS Machines. Production yield was correct, but they were looking for more.

After analysing the glass items manufactured and the material used for the mould, Condat glass experts suggested to test Condaglass 397, a lower graphited swabbing grease dedicated to the release of small glass containers.

The product shows excellent wetting properties, while keeping good gob loading. Thanks to its high quality and minimum amount of graphite, Condaglass 397 helped the company to reduce the number of automatic rejects by 50% after swabbing.

Less graphite also means less build-up! An essential feature which helped the company decrease its swabbing frequency by 33% and reduce the maintenance downtime of the moulds (**Table 1**).

Over a year, this company could save more than 8 million bottles, together with a significant decrease of the swabbing grease consumption.

But that's not all. Besides productivity, safety was improved too. Less swabbing operations led to a decrease in the risk of operators' injuries.

Turn on white

Made without graphite, Condat white swabbing greases avoid any graphite

transfer. Automatic rejects after swabbing can be decreased and so millions of bottles are saved every year. As a result, glass manufacturers generate less waste and observe immediate productivity gains.

Without graphite also means a cleaner working environment for the operators in the gob forming area. They do not handle graphited and blackened products when swabbing the blank, blow and neck ring moulds. And the same improvement occurs at the mould workshop.

Condat's objective is not only to replace graphite from swabbing greases but also to bring technical benefits in application. The lubricating raw materials used in their new technology have a higher thermal resistance which leads to increase the swabbing frequency. Companies that chose this solution were able to extend by two to four times their swabbing frequency. Thanks to this high performance, operators are also less in contact with the glass forming area and can be more focused on optimisation of the IS machine working parameters. Thus, white swabbing greases help to consume less, better and create a safer working environment.

Reducing the environmental impact

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Lubrication

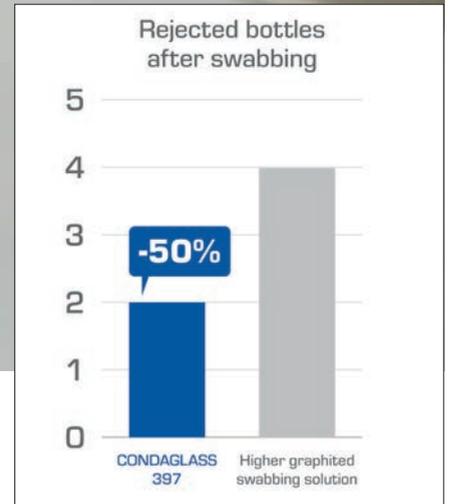
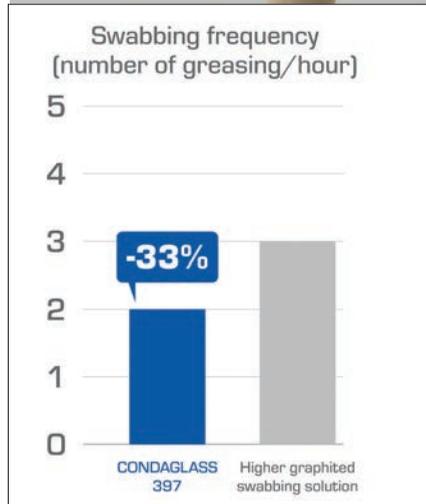
is an important topic at Condat. White swabbing solutions are made of a mix of renewable vegetable-based oils and recycled refined oils. Particular attention was also paid on end-users when developing the product, that's why their Safety Data Sheet does not display any hazardous pictogram. Finally, thanks to their high flash point, Condat swabbing greases limit fire risk and ensure equipment and co-workers protection.

Condat in glass making

Condat has supplied and supported the container glass industry for more than 30 years by providing lubricating solutions. Around 200 customers around the world rely on it for their plant productivity and safety. All the glass production process is addressed with high valued solutions for the shears, scoops, deliveries, moulds and IS machine mechanisms.

To know more about this glass lubricants offering, contact Condat at Glasstec Hall 14 stand B13. ■

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▲ Table 1: the maintenance downtime of the moulds.

Everywhere in the glass plant even where you don't expect it

- SENSORS
- SILO
- BATCH
- CULLET
- ELECTRO FILTER
- FURNACE
- FOREHEARTH
- FEEDER
- GOBS
- LUBRICATION
- IS MACHINE
- HE TREATMENT
- HE STACKER
- ANNEALING LEHR
- CE TREATMENT
- INSPECTION
- CE CONVEYORS
- PALLETIZER
- LABORATORY
- COMPRESSORS
- VACUUM PUMPS
- MOLD SHOP



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