

THERMOPLASTICS FREQUENTLY ASKED QUESTIONS

Mold Protectants

GENERAL QUESTIONS ABOUT MOLD PROTECTANTS

When do you typically use mold protectants (anticorrosion agents) in thermoplastic processing?

Not only does corrosion destroy the surface of the mold and tooling, but it has a damaging impact on the produced part, too. To prevent from such damage, molds and tools should be maintained on a regular basis and should be securely protected against corrosion and oxidation by use of a specialised mold protectant — particularly if they are not used for a longer time or are stored.

What kind of mold protectants exist?

There are two different kinds of mold protectants: anti-corrosion agents that are oil-based and those that are wax-based.

What are the advantages and disadvantages of those different types of mold protectants?

Oil-based mold protectants:

- Oil-based mold protectants are fairly fluid and are therefore able to creep into the tiniest spaces that are most difficult to access, such as recesses and undercuts.
- Oil-based anticorrosion agents dispel moisture and form a temporary protective layer that can last for several months.

- However, an oil-based anticorrosion agent is sensitive to touch and can be wiped away during handling, leaving unprotected areas more likely to rust.
- Oil-based mold protectants produce oil marks on transparent and optical parts if the mold is not properly cleaned before production restart.

Wax-based mold protectants:

- Wax-based mold protectants provide a consistent and long-lasting protective layer and do not creep. Also, the wax-based protection film covering the surface of the tool remains intact even if swept over with a finger.
- Wax-based anticorrosion agents protect surfaces considerably longer than oil-based agents because they form an even and dry protection film on the surface without any dripping or creeping that cannot be wiped off by touching it.
- Wax-based mold protectants produce lower must emissions when applied, leading to a cleaner working environment.
- Also, wax-based anticorrosion agents are much easier to remove, since they melt at normal processing temperatures and are removed during the course of regular demolding. A separate cleaning procedure — as required by conventional oil-based products — is not necessary. This leads to a smoother and faster production process.

- However, in case the surface is not completely dry, wax-based anticorrosion agents may cover remaining moisture like a blanket, not allowing the moisture to evaporate or dry-off and thereby causing local corrosion. Therefore, it is highly important that the surface is dry before applying the wax-based anticorrosion agent.

How can mold protectants be removed from a mold or from plastic parts?

We recommend to remove oil-based anticorrosion agents with a surface cleaner before the production process.

Wax-based mold protectants melt at normal mold temperatures and are removed from the mold in the course of regular processing. A separate cleaning procedure for wax-based anticorrosion agents is therefore not required.

Why are some mold protectants pigmented or stained?

Applying a stained or pigmented mold protectant is much easier as the anticorrosion agent is more visible on the surface, allowing for higher precision in applying an even film while producing less waste.

Do multifunctional sprays that also include some type of anticorrosion agent offer an adequate mold protection?

Multifunctional sprays usually offer up to three months of temporary protection, whereas dedicated anticorrosion agents provide much longer protection times (12–24 months) and should be used when an extended storage period is expected.

Why do wax-based anticorrosion agents provide for a better cost/benefit option than oil-based agents?

Wax-based anticorrosion agents save time when restarting thermoplastic molding because the agent melts during the process and manual

cleaning of the mold surface cavity is not required. In addition, a wax-based agent reduces scrap due to the fast absorption of the agent.

How many cycles are necessary to remove a wax-based mold protectant from the cavity surface?

The number of cycles required depends upon multiple variables such as the mold design, operating temperatures, process, etc. In general, just a few cycles are necessary to fully eliminate the wax-based mold protectant from the cavity surface.

QUESTIONS ABOUT LUSIN® MOLD PROTECTANTS

What kind of mold protectants does Chem-Trend offer?

Chem-Trend offers both oil-based and wax-based mold protectants.

For example, Lusin® Protect G 11 is an oil-based mold protectant, whereas Lusin® Protect G 31 is a wax-based anticorrosion mold protectant.

Are there Chem-Trend mold protectants available for food applications?

Yes.

Lusin® Protect O 45 F is a grease-based mold protectant that is NSF H1 registered. This mold protectant allows for medium long protection, as no corrosion was found after 50 hours of sales water spray test per DIN 50021.

Lusin® Protect G 31 F is a wax-based mold protectant that is NSF H1 registered and offers long-lasting protection, as no corrosion was found after 150 hours of sales water spray test per DIN 9227.

Visit our website to watch our application videos.

Search our English global website for "[Clean, Lubricate, Release, Protect](#)" and "[Degrease a Built-In Mold](#)."