

FREQUENTLY ASKED QUESTIONS

PURGING COMPOUNDS

Q) Why is the use of specialized purging compounds important?

A) A lot of different polymers are used in thermoplastic processing. The color change operation can be a time- and material-intensive process, especially in situations where hot runner manifolds are involved. A purge compound specialized for the operating parameters and materials being processed can help tremendously to reduce the amount of time and material required to clean the machine. Specific purge compounds provide maximum performance. Optimal changeover performance can only be achieved with the right purging compound as different polymers are not compatible to each other and the use of an incorrect purge compound may create a material contamination situation.

Q) What are the different types of purging compounds available in the market?

A) There are two major classes of purging compounds in the market. One is referred to as mechanical or abrasive purging compounds. These are compounds where the cleaning process is based on the mechanical action of hard particles, e.g., glass. The other type of purging compounds are chemical purging compounds. With these, the cleaning process relies on chemical additives that initiate some form of chemical reaction.

Purging compounds can come in a ready-to-use formula where the product can be used directly from the container or in a concentrated formula that requires mixing before use.



Q) What are the respective advantages and disadvantages of the different types of purging compounds?

A) Abrasive purging compounds can be economical to utilize, and are efficient for certain situations, but they can damage screw and cylinders. In addition, they are not universally usable; for example, they cannot be used in hot runner systems. Chemical-based purging compounds tend to be milder than abrasive purging compounds, making them safer for equipment. They are universally usable in hot runner systems, can be injected in cavity and are economical in use; however, they require a polymer matrix that is not always compatible with other polymers.

Purging compounds in the concentrate form can, in principle, be mixed with all polymers universally, but they tend to be more expensive, require time-consuming preparation and create the potential for risk of incorrect dosage. In the case of concentrated powders, there is also the issue of contamination of conveyor systems and dust loading. Ready-to-use purging compounds are easy to use and there is no risk of incorrect dosage, but they require a polymer matrix that is not always compatible with other polymers.

Q) What positive effects on production do purging compounds provide?

A) A well-selected purging compound that matches with your process and polymer can provide extensive

production benefits, such as: time savings (shorter color and material changeover times); material savings; fewer rejects; lower scrap; higher productivity and quality; positive long-term effects on machine cleaning and less wear and tear on machine components.

Q) Are universal purging compounds available that can work with all applications and polymers?

A) Thermoplastic processing is done in many different ways with many different polymers at a wide range of temperatures. Universal purging compounds are available on the market; however, those products are very compromised offerings that are minimally effective.

Q) Are there differences between purge compounds for extrusion and purge compounds for injection molding operations?

A) Purge compounds for extrusion have a lower MFI compared to those used in injection molding. Injection molding purge compounds need to be able to clean a hot runner at gate size below 0.4 mm.

Q) Can machine parameters influence the cleaning result of a purge compound?

A) Various factors such as temperature and application time can have an influence on the cleaning result and need to be taken into consideration when selecting and utilizing a purging compound.

Q) Can purging compounds be used in hot runner systems?

A) Not all purging compounds are safe for use in hot runner systems; however, there are some purging compounds that have been developed to be hot runner safe. The specifications of the manufacturer of the hot runner system should also be noted.

Q) How do you remove material prone to thermal cracking and encrustation from equipment?

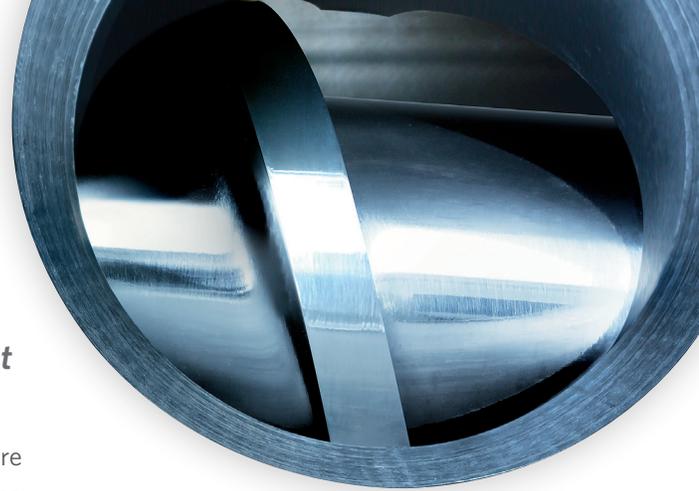
A) Some polymers tend to produce more thermal cracking products and encrustations than others. Special purging compounds have been developed for these polymers.

Q) Can purge compounds be reground and reused for future purging?

A) A purge compound that is contaminated with color, black specks or dissimilar materials has already been saturated or partially saturated with contaminants and will not exhibit the potency of virgin purge compound. Therefore, it should not be reused as it will not produce an efficient purge.

Q) Can purge compounds be reground and added to the plastic part as recycled content?

A) The addition of a purge compound into the regrind stream for part production



is not recommended as it will affect the physical properties of the final part, likely resulting in rejected parts.

Q) Can pollutants be released when using Lusin® purging compounds?

A) Pollutants or other non-desired substances are not contained in Lusin® purging compounds, and therefore pollutants will not be released when using them. Please refer to the MSDS of the specific product being utilized for further detailed information.

Q) Why are Lusin® Clean purge compounds considered the best choice when looking at a cost/benefit ratio?

A) Lusin® Clean purge compounds improve productive efficiency by reducing setup times and reducing both the time to purge as well as the amount of material required to complete a purge, all of which save money and resources. Chem-Trend's Lusin® purge compounds have been formulated to get high performance and lower the cost of cleaning.