

Ingenia Extrusion Brief

Purge Compounds

Purge compounds are specialized compounds, used in extrusion of thermoplastics. The primary use of purge compounds is to clean the extrusion system—extruder barrels, screws, and dies. Use of purge compounds removes charred and carbonized materials from the system, thereby reducing downtime and improving the quality of the products. Additionally, purge compounds are used when changing colors, when transitioning between materials and prior to maintenance. Purge compounds are used in blown film extrusion, sheet extrusion, cast film extrusion, extrusion coating, blow molding and injection molding.

The two most used purge types are transition purge and shutdown purge. Transition purge compounds are used to clean the extruder and die when transitioning the film structure, changing colors and resins. Transition purges can be mechanical or chemical in nature. Some transition purges are hybrid. Chemical purges consist of chemicals like blowing agents, functionalized chemicals, chemical release agents, etc. They rely on chemical interaction to efficiently remove the char, degraded polymer and pigmentation. Mechanical purges rely on mechanical scrubbing of the system to remove the degraded materials. Shut down purges are used when the extruder will be idle for prolonged periods of time, like holiday shutdowns. Using a shutdown purge will minimize problems with crosslinking and gel formation.

In general purge compounds offer the following benefits:

- Minimize the generation of scrap by eliminating contaminants.
- Reduce downtime by decreasing the time required to clean the equipment.
- Reduce the generation of waste materials by expediting the changeover or shutdown process.