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Speci Purge™ SP1000 Purging Procedure

Recommended Temperature Range 320-560°F (160-290° C)

There are no die size restrictions.

For material change purges screen packs or combinations of screen packs can be used from 20 to 100 mesh without significant buildup. However, after completion of purge it's recommended to replace screen packs.

Tips:

- The best way to keep your extrusion equipment clean is preventative purging. Frequently scheduled and shorter purges will be more effective than purging only when problems are observed. By the time problems are observed carbonized, degraded material may have already formed.

- Keep the barrel mostly full of at all times to prevent oxygen from entering the barrel – excess oxygen will accelerate material decomposition of all polymers.

Safety First: When performing these procedures, it is the machine operators responsibility to know the company's safety policy, appropriate protective safety equipment, extruders maximum safe screw speed and pressure conditions.

Speci Purge Purging Procedure for color changes, material changes, general cleaning, etc.

- Slow extrusion to a drool with current resin and remove excess from hopper.
- Thoroughly clean the hopper and remove any residual resin
- Vented barrels must be capped to prevent loss of vapor
- Maintain temperature of the resident resin to be purged.
- Introduce Speci Purge into the extruder and purge approximately 8 to 15 times of the barrel volume. Estimated amounts are as listed in chart below.
- Run extruder at a mid to high range rpm staying under maximum safe screw speed. Variable screw speed procedure is recommended
- Purge until machine is clean and free of contamination (ie gels, black specs, color, etc)
- Slow extruder and empty/clean the hopper of Speci Purge
- Adjust temperature settings for the next production resin.

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- Optional: A small amount (5-8 times the barrel volume) of LDPE or HDPE resin with low MFR can be used to flush out the Speci Purge prior to introducing the next production resin.
- Change screen pack.
- Fill hopper with next resin and run until purge compound is flushed out of machine before starting production run.

Extruder Diameter (inch)	1”	1.5”	2”	2.5”	3”	3.5”	4.5”
Purge Material (lbs)	3 – 6	7-14	15 - 35	25 – 50	50–100	50-150	50-150

(Above amounts are estimates only and should be used as a starting point. Final amount depends on condition of extruder, materials being purged, barrel volume, piping, screw & die geometry, etc.)

Shutting down with Speci Purge

- Slow extrusion to a drool with current resin and remove excess from hopper.
- Thoroughly clean the hopper and remove any residual resin
- Vented barrel must be capped to prevent loss of vapor.
- Maintain temperature and screw speed settings for the resident resin to be purged.
- Introduce Speci Purge into the extruder and purge approximately 8 to 15 times of the barrel volume. Estimated amounts are as listed in pervious chart
- Purge until compound flushed out of the machine is clean and free of contamination ie gels, black specs, color, etc
- It is acceptable to leave Speci Purge in the extruder barrel or another less-temperature sensitive resin such as polyethylene
- Stop extruder and turn off heats

Speci Purge Start-Up Procedure

- Set temperatures to next production resin as long as it is within the specified Speci Purge range (320-560°F)
- Begin extrusion of residual Speci Purge left in extruder
- If the extrudate has specks of carbon, gels, or old color, add more Speci Purge to the hopper and continue to purge until clean. Contaminates may have loosened during down time.
- Slow extrusion, remove Speci Purge, and thoroughly clean hopper.
- Optional: A small amount (5-8 times the barrel volume) of LDPE or HDPE resin with low MFR can be used to flush out the Speci Purge prior to introducing the next production resin.
- Change screen pack
- Fill hopper with next resin and run until purge compound is flushed out of machine before starting production run.

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Variable RPM Purge Procedure

A variable RPM purge procedure is recommended over a constant extrusion speed purge. The time and the set RPM are not critical in doing a variable RPM purge. The important thing is to have changing velocities, shear rates, and flow patterns of the melt. This is accomplished by altering the rpm. At least 1min at each rpm setting is sufficient to change the flow characteristics. Periods of high output are still essential to a good purge but varying rpms is most effective. Understand the maximum safe extruder RPM and calculate the extruder RPM for the various stages as follows.

Sample Variable RPM Purge Procedure

1st min: 30% of max extruder RPM
2nd min: 90% of max extruder RPM
3rd min: 50% of max extruder RPM
4th min: 15% of max extruder RPM
5th min: 70% of max extruder RPM
6-10min: 15-20% of max extruder RPM
11-15min: Repeat the cycling steps of the first 5 min.
Repeat procedure if necessary

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