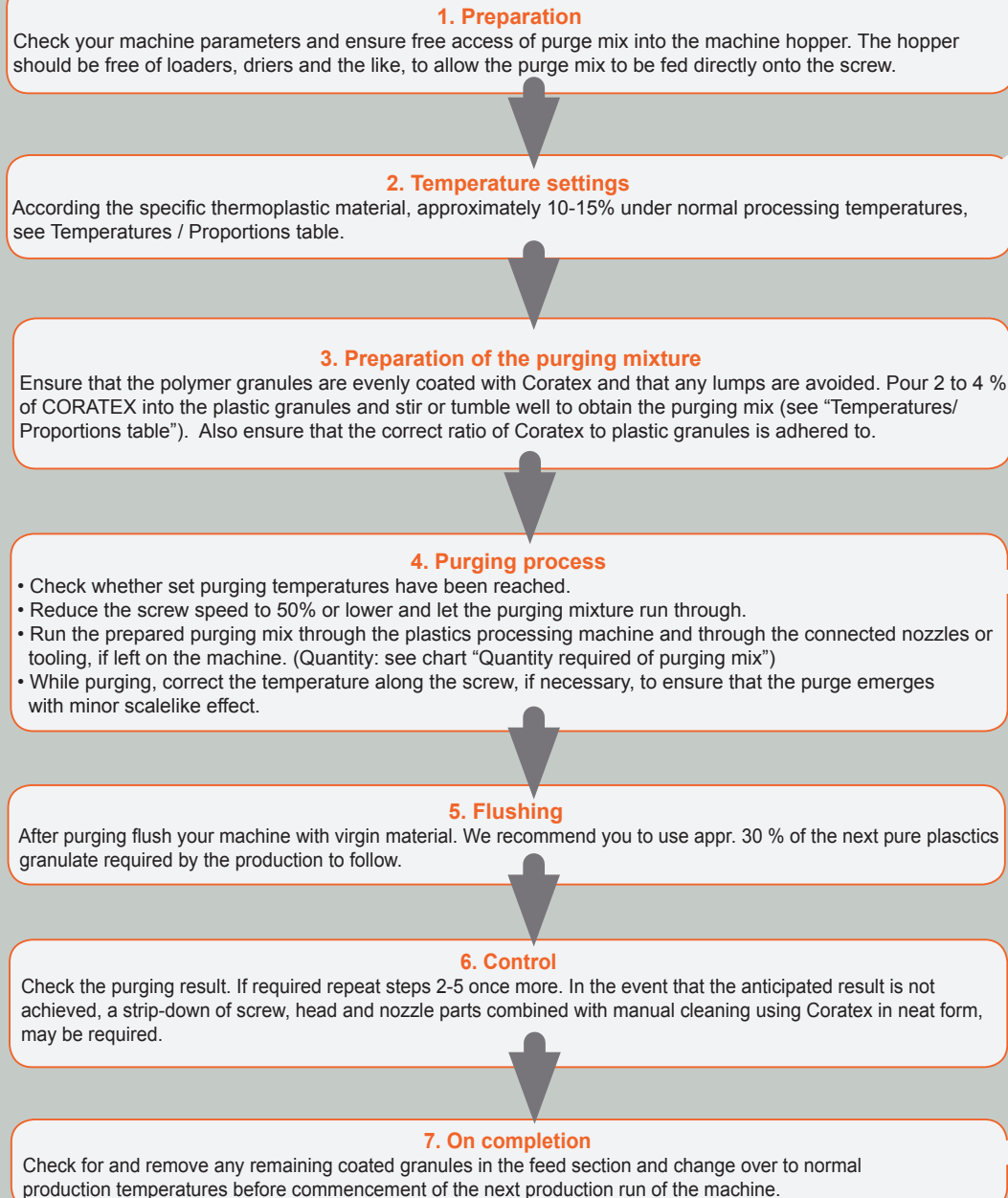


Application Recommendations - 7 steps for perfect purging results with CORATEX and CORATEX HT

Standard process steps for purging with CORATEX



Tech Tip per application

Add 2 - Setting of purging Temperature

Tech Tip for **Injection moulding machines with conventional tooling**:
Along the screw: set of purging temperature.
Along the nozzle area: keep „normal“ processing temperature

Tech Tip for **Injection moulding machines with hotrunner tooling**:
Along the screw: set of purging temperature.
Along the nozzle area: increase temperature of the hotrunner tooling by approx. 50 °C above normal, up to maximum heat.

Tech Tip for **Extruders**:
Along the extruder and the breaker-plate: set of purging temperature.
At the tooling: keep „normal“ processing temperature.
Note: If possible, remove screens before commencing with purging! Do not lower temperature in the breaker-plate region when screens are still in place!

Tech Tip for **blow moulding machines and filmblowing plants**:
Along the extruder and the breaker-plate: set of purging temperature.
At the tooling: keep „normal“ processing temperature.
Note: If possible, remove screens before commencing with purging! Do not lower temperature in the breaker-plate region when screens are still in place!

Add 4 - Purging process

Tech Tip for **Injection moulding machines with conventional tooling**:

- Lift backpressure slightly.
- Use, if possible, the total injection-stroke for purging.

Note: The purge can also be injected into the closed mould (depending on machine). This allows cleaning of the tolling at the same time.

Tech Tip for **Injection moulding machines with hotrunner tooling**:

- Lift backpressure slightly.
- Use, if possible, the total injection-stroke for purging.

Note: The purge can also be injected into the hotrunner tooling.
This allows cleaning of dirty channels.

Add 7 - On completion

Tech Tip for **Injection moulding machines with conventional tooling**:

- Set backpressure as required.
- Set screw stroke as required.

Tech Tip for **Injection moulding machines with hotrunner tooling**:

- Set backpressure as required.
- Set screw stroke as required.

Tech Tip for **Extruders**:

- Inset screens again, if required.

Temperature / Proportions

Special conditions & failure mode

Type of Plastic		Processing-Temperature Range		Purging Temperature Range		Screw Diameter			
		[°C]	[°F]	[°C]	[°F]	< 60 mm Ø > 60 mm Ø CORATEX proportion in the Purging Mix			
						in %	in g/ kg	in %	in g/ kg
Acrylnitrile-Butadiene-Styrene Copolymer	ABS	200 - 250	390 - 480	170 - 190	340 - 375	2 - 3	25 - 35	3 - 4	35 - 50
Acrylonitrile-Copolymer	SAN	200 - 220	390 - 430	180 - 200	355 - 390	2 - 3	25 - 35	3 - 4	35 - 50
Cellulose-Acetate	CA	220 - 260	430 - 500	190 - 230	375 - 445	2 - 3	25 - 35	3 - 4	35 - 50
PEEK	PEEK	370 - 390	700 - 735	340 - 360	645 - 680	2 - 3	25 - 35	3 - 4	35 - 50
Polyamide	PA	250 - 280	480 - 535	220 - 230	430 - 445	2 - 3	25 - 35	3 - 4	35 - 50
Polycarbonate	PC	280 - 330	535 - 625	230 - 280	445 - 535	2 - 3	25 - 35	3 - 4	35 - 50
Polyester	PET	180 - 220	355 - 430	150 - 200	300 - 390	2 - 3	25 - 35	3 - 4	35 - 50
Polyester (linear)	CPET	230 - 300	445 - 570	200 - 250	390 - 480	2 - 3	25 - 35	3 - 4	35 - 50
Polyethylene	HDPE/ LDPE	180 - 250	355 - 480	150 - 190	300 - 375	2 - 3	25 - 35	3 - 4	35 - 50
Polymethyl-Methacrylate (Plexiglass)	PMMA	210 - 230	410 - 445	180 - 200	355 - 390	2 - 3	25 - 35	3 - 4	35 - 50
Polyoxymethylene	POM	170 - 210	340 - 410	140 - 170	285 - 340	2 - 3	25 - 35	3 - 4	35 - 50
Polypropylenel	PP	200 - 250	390 - 480	170 - 200	340 - 390	2 - 3	25 - 35	3 - 4	35 - 50
Polystyrene	PS	200 - 270	390 - 520	170 - 210	340 - 410	2 - 3	25 - 35	3 - 4	35 - 50
Polysulphonate	PSU	350 - 400	660 - 750	320 - 350	610 - 660	2 - 3	25 - 35	3 - 4	35 - 50
Polyvinylchloride*	PVC	160 - 180	320 - 355	140 - 160	285 - 320	2 - 3	25 - 35	3 - 4	35 - 50
Polyvinylidene Fluoride	PVDF	200 - 220	390 - 430	180 - 200	355 - 390	2 - 3	25 - 35	3 - 4	35 - 50
Thermoplastic Polyurethane	TPU	200 - 220	390 - 430	180 - 200	355 - 390	2 - 3	25 - 35	3 - 4	35 - 50

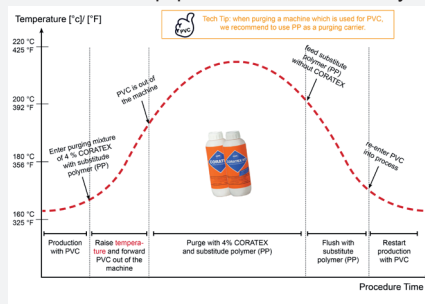
* Tech Tip: when purging a machine used for PVC, we recommend to use PP as the purging material carrier.

This enables you to reach a temperature window from 200°C up to 220°C. When rinsing with pure PP, temperature will be reduced to 165°C to 185°C. The equipment will then be ready again to operate with PVC.



For PVC operations we recommend to observe following steps:

1. Remove the nozzle and clean it manually.
2. Insert the purging compound of PP nature and 4% Coratex.
3. Operate with this compound until only remainders of PVC are leaving.
4. Increase temperature up to 200°C to 220°C and carry out the purging operations.
5. Rinse with a small quantity of pure PP while setting the temperatures as necessary for the production process of the new raw materials.
6. Set screw stroke as required.
7. You can start with the next production.



Quantity required for purging mix with CORATEX and CORATEX HT

Screw dia. in mm	20 - 40	40 - 50	50 - 60	60 - 80	80 - 100	100 - 120	120 - 150	150 - 175	175 - 200
in inch	0.75 - 1.5	1.5 - 2	2 - 2.5	2.5 - 3	3 - 4	4 - 4.5	4.5 - 6	6 - 6.5	6.5 - 8
Recommended in kg ¹	0,5 - 1	1 - 3	3 - 5	5 - 10	10 - 25	25 - 35	35 - 70	70 - 90	90 - 150
in lbs	0.3 - 2.2	2.2 - 4.3	4.3 - 7.5	7.5 - 18	18 - 35	35 - 60	60 - 117	117 - 186	186 - 280

1) Approximate values; depending on screw configuration and degree of contamination.

Suitable for all known commercially available polymers and processing temperatures up to 400°C / 750°F.

How to purge under special conditions

Characteristics	Measures
Screw with small diameter (≤ 30 mm) (≤ 1 1/4")	<ul style="list-style-type: none"> • Keep the exact proportions of CORATEX and plastics for the purging mix (see chart "Temperatures/Proportions"), mix well to allow the purging mix to pour well. • If feeding problems occur, reduce the CORATEX proportion in the purging mix, speed up screw revolutions a little.
Equipment with de-gassing zones (vented barrels)	<ul style="list-style-type: none"> • In the de-gassing zones the cleaning effect of the purging mix with CORATEX is very much reduced because there is no back pressure. In many cases, the following measures can result in an improved cleaning effect: <ul style="list-style-type: none"> - Lower the temperature even further in the de-gassing area. - Purge according to the standard procedure. - Additionally, force-feed cleaning mix through the de-gassing openings.
Jumps in temperature e.g. from 200° C (390° F) to 320° C (610° F) or from PVC to PC or PA	<ul style="list-style-type: none"> • Changes of raw material with different processing temperatures as e.g. from PVC to PC or PA require a purging mix with an intermediate raw material like "PP natural" to ensure an optimal purging result.
When using high value plastic raw materials	<ul style="list-style-type: none"> • In those cases where high-value and expensive plastic raw materials are being processed, a further reduction of the purging costs can be achieved with good results by using a purging mix made from "PP natural" or "PP glass clear" and 3 % of CORATEX. (PP is stable up to 320 °C (610 °F) and can, therefore, be used for nearly all plastics raw materials).
Prevention	<ul style="list-style-type: none"> • In general we recommend prophylactic purging with CORATEX every 2-4 weeks.

How to rectify poor cleaning results

Problem	Reasons	Solutions
After purging with CORATEX further contaminations are being noticed in the plastic melt	• Extra stubborn contamination.	• Repeat purging according to standard procedure, reduce the temperature in the extruder even further.
	• Severe damage of the screw (for example grooves, pockets, porous sections).	• Exchange screw.
	• Damage on inner wall of cylinder (for example cracks, grooves, indentations).	• Rework the cylinder.
Hot-runner system will not get clean	• Unfavourable flow characteristics in head, nozzle and in the tooling area (due to construction, or through wear).	• Repair or exchange those parts producing unfavourable flow characteristics with better constructed parts.
	• Unfavourable flow characteristics in the hot-runner system (for example, pocket holes, undercuts, misalignments).	• Change construction of hot-runner system.
	• Hot-runner temperature too low.	• Raise the temperature of the hot-runner system further (depends on tooling).
Extreme contamination or colour stripes e.g. of carbon or after shutdown of the system		• Generally stop screw for 15 minutes and let purging mix take effect in extruder and hot-runner.

CORATEX HT can be as valuable for manual cleaning as it is for purging. CORATEX HT is also extremely suitable as a polishing agent for tools, moulds and any stainless steel surfaces.

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