

# CORATEX

Purging Emulsion  
for Plastics Processing Machines

Recommended Applications



# CORATEX Recommended Applications - Purging Emulsion for Plastics Processing Machines

## Standard Procedure for Purging with CORATEX

Plastics Processing Machines	Injection moulding machines with conventional tooling	Injection moulding machines with hotrunner tooling	Extruders	Blow moulding machines and filmblowing plants
<b>1. Setting of Purging Temperature</b>	<ul style="list-style-type: none"> <li>Set purging temperature according to the specific type of plastic (approx. 10 - 20 % below normal processing temperature, (see chart "Temperatures/Proportions") along the screw; keep "normal" processing temperature in the nozzle area.</li> </ul>	<ul style="list-style-type: none"> <li>along the screw; increase temperature of the hotrunner tooling by approx. 50 °C <b>above</b> normal, up to maximum heat.</li> </ul>	<ul style="list-style-type: none"> <li>in the extruder and at the breaker-plate; keep "normal" processing temperature at the tooling.</li> </ul>	<ul style="list-style-type: none"> <li>in the extruder and at the breaker-plate; keep "normal" processing temperature in the head.</li> </ul>
<b>Note:</b> If possible, remove screens before commencing with purging! Do not lower temperature in the breaker-plate region when screens are still in place!				
<b>2. Preparation of the Purging Mix</b>	<ul style="list-style-type: none"> <li>Always shake CORATEX bottle well before use!</li> <li>Pour 2 to 4 % of CORATEX into the plastic granules and stir or tumble well to obtain the purging mix (see chart "Temperatures/Proportions").</li> </ul>			
<b>Note:</b> Do not exceed CORATEX proportions as this can result in poor feeding due to slippage.				
<b>3. Purging</b>	<ul style="list-style-type: none"> <li>Check whether set purging temperatures have been reached.</li> <li>Reduce screw revolutions by approx. 50 %, if possible.</li> <li>Run the prepared purging mix through the plastics processing machine and through the connected nozzles or tooling, if left on the machine. (Quantity: see chart "Quantity required of purging mix")</li> <li>While purging, correct the temperature along the screw, if necessary, to ensure that the purge emerges with minor scalelike effect.</li> </ul>			
<ul style="list-style-type: none"> <li>Lift backpressure slightly.</li> <li>Use, if possible, the total injection-stroke for purging.</li> </ul>		<ul style="list-style-type: none"> <li>Lift backpressure slightly.</li> <li>Use, if possible, the total injection-stroke for purging.</li> </ul>		
<b>Note:</b> The purge can also be injected into the closed mould (depending on machine). This allows cleaning of the tooling at the same time.		<b>Note:</b> The purge can also be injected into the hotrunner tooling. This allows cleaning of dirty channels.		
<b>4. "Flushing"</b>	<ul style="list-style-type: none"> <li>Follow up, after the purging mix has gone through, with pure plastic granules of the type required by the production to follow. (Quantity: see chart "Quantity required of purging mix")</li> </ul>			
<b>5. Setting for Next Production Condition.</b>	<ul style="list-style-type: none"> <li>Set all temperatures according to requirements of the plastic raw material which is following.</li> <li>Set backpressure as required.</li> <li>Set screw stroke as required.</li> </ul>	<ul style="list-style-type: none"> <li>Set backpressure as required.</li> <li>Set screw stroke as required.</li> </ul>	<b>Note:</b> Inset screens again, if required.	

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## How to Purge under Special Conditions

Characteristics	Measures
Screw with small diameter ( $\leq 30$ mm) ( $\leq 1\frac{1}{4}$ " )	<ul style="list-style-type: none"> <li>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.</li> <li>If feeding problems occur, reduce the CORATEX proportion in the purging mix, speed up screw revolutions a little.</li> </ul>
Equipment with de-gassing zones (vented barrels)	<ul style="list-style-type: none"> <li>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"> <li>Lower the temperature even further in the de-gassing area.</li> <li>Purge according to the standard procedure.</li> <li>Additionally, force-feed cleaning mix through the de-gassing openings.</li> </ul> </li> </ul>
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"> <li>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.</li> </ul>
When using high value plastic raw materials	<ul style="list-style-type: none"> <li>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).</li> </ul>
Prevention	<ul style="list-style-type: none"> <li>In general we recommend prophylactic purging with CORATEX every 2-4 weeks.</li> </ul>

## How to rectify poor cleaning results

Problem	Reasons	Solutions
After purging with CORATEX further contaminations are being noticed in the plastic melt	<ul style="list-style-type: none"> <li>Extra stubborn contamination.</li> </ul>	<ul style="list-style-type: none"> <li>Repeat purging according to standard procedure, reduce the temperature in the extruder even further.</li> </ul>
	<ul style="list-style-type: none"> <li>Severe damage of the screw (for example grooves, pockets, porous sections).</li> </ul>	<ul style="list-style-type: none"> <li>Exchange screw.</li> </ul>
	<ul style="list-style-type: none"> <li>Damage on inner wall of cylinder (for example cracks, grooves, indentations).</li> </ul>	<ul style="list-style-type: none"> <li>Rework the cylinder.</li> </ul>
	<ul style="list-style-type: none"> <li>Unfavourable flow characteristics in head, nozzle and in the tooling area (due to construction, or through wear).</li> </ul>	<ul style="list-style-type: none"> <li>Repair or exchange those parts producing unfavourable flow characteristics with better constructed parts.</li> </ul>
Hot-runner system will not get clean	<ul style="list-style-type: none"> <li>Unfavourable flow characteristics in the hot-runner system (for example, pocket holes, undercuts, misalignments).</li> </ul>	<ul style="list-style-type: none"> <li>Change construction of hot-runner system.</li> </ul>
	<ul style="list-style-type: none"> <li>Hot-runner temperature too low.</li> </ul>	<ul style="list-style-type: none"> <li>Raise the temperature of the hot-runner system further (depends on tooling).</li> </ul>
Extreme contamination or colour stripes e.g. of carbon or after shutdown of the system		<ul style="list-style-type: none"> <li>Generally stop screw for 15 minutes and let purging mix take effect in extruder and hot-runner.</li> </ul>

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## Temperatures/Proportions

Type of Plastic	Abbreviation	Processing Temperature Range		Purging Temperature Range		Screw Dia. Ø < 60 mm   > 60 mm CORATEX proportion in the Purging Mix	
		[°C]	[°F]	[°C]	[°F]	[%]	[%]
Acrylnitrile-Butadiene-Styrene Copolymer	ABS	200 - 250	390 - 480	170 - 190	340 - 375	2 - 3	3 - 4
Acrylonitrile-Copolymer	SAN	200 - 220	390 - 430	180 - 200	355 - 390	2 - 3	3 - 4
Cellulose-Acetate	CA	220 - 260	430 - 500	190 - 230	375 - 445	2 - 3	3 - 4
PEAK	PEAK	370 - 390	700 - 735	340 - 360	645 - 680	2 - 3	3 - 4
Polyamide	PA	250 - 280	480 - 535	220 - 230	430 - 445	2 - 3	3 - 4
Polycarbonate	PC	280 - 330	535 - 625	230 - 280	445 - 535	2 - 3	3 - 4
Polyester (amorphous)	PET	50 - 60	120 - 140	30 - 40	85 - 105	2 - 3	3 - 4
Polyester (linear)	PET	230 - 300	445 - 570	200 - 250	390 - 480	2 - 3	3 - 4
Polyethylene	HDPE / LDPE	180 - 250	355 - 480	150 - 190	300 - 375	2 - 3	3 - 4
Polymethyl-Methacrylate (Plexiglas)	PMMA	210 - 230	410 - 445	180 - 200	355 - 390	2 - 3	3 - 4
Polyoxymethylene	POM	170 - 210	340 - 410	140 - 170	285 - 340	2 - 3	3 - 4
Polypropylene	PP	200 - 250	390 - 480	170 - 200	340 - 390	2 - 3	3 - 4
Polystyrene	PS	200 - 270	390 - 520	170 - 210	340 - 410	2 - 3	3 - 4
Polysulphonate	PSU	350 - 400	660 - 750	320 - 350	610 - 660	2 - 3	3 - 4
Polyvinylchloride	PVC	160 - 180	320 - 355	140 - 160	285 - 320	2 - 3	3 - 4
Polyvinylidene Fluoride	PVDF	200 - 220	390 - 430	180 - 200	355 - 390	2 - 3	3 - 4
Thermoplastic Polyurethane	TPU	200 - 220	390 - 430	180 - 200	355 - 390	2 - 3	3 - 4

## Quantity Required of Purging Mix with CORATEX

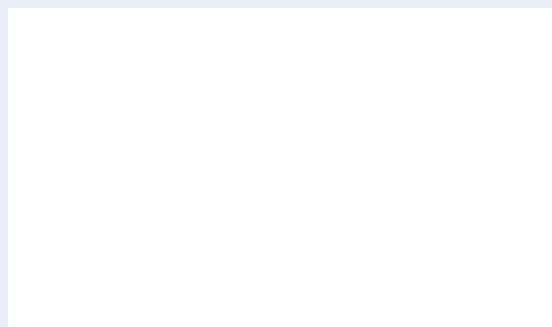
Screw dia. [mm]	20 - 40	40 - 50	50 - 60	60 - 80	80 - 100	100 - 120	120 - 150	150 - 175	175 - 200
[Inch]	0.75 - 1.5	1.5 - 2	2 - 2.5	2.5 - 3	3 - 4	4 - 4.5	4.5 - 6	6 - 6.5	6.5 - 8
Recommended [Kgs] <sup>1)</sup>	0.5 - 1	1 - 3	3 - 5	5 - 10	10 - 25	25 - 35	35 - 70	70 - 90	90 - 150
[LBS.]	0.3 - 2.2	2.2 - 4.3	4.3 - 7.5	7.5 - 18	18 - 35	35 - 60	60 - 117	117 - 186	186 - 280

<sup>1)</sup> Approximate values; depending on length of screw and degree of contamination. (On very long screws with very high degree of contamination use up to 2-3 times of the purging mix quantity).

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

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

Just ask us!



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ABRASIVES

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CORATEX 2007/e

## **CORATEX purges:**

Barrels and screws, nozzles and hotrunner toolings of extruders and injection moulding machines under operating conditions

## **CORATEX enables:**

Fast change of raw material and higher production efficiency

## **CORATEX eliminates:**

Extra stubborn contamination, oxidation traces and coking residues

## **CORATEX offers:**

Low purging process costs combined with easy handling

## **CORATEX is:**

Physiologically harmless when used according to directions

## **CORATEX applies to:**

ABS, CA, PMMA, PA, PC, PET, HDPE, LDPE, PEAK, POM, PP, PS, PSU, PVC, PVDF, SAN, TPU etc.

**Explore the advantages of**

**CORATEX**

**from here on!**

