

Processors of Thermoplastics: The Quest for Improved Operations

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In terms of daily operations, the purging of thermoplastics processing equipment for color and resin material changes offers a unique opportunity for processors to enhance productivity and improve profitability. The challenge for processors is to have sufficient information readily available so that the advantages of using a Commercial Purging Compound (CPC) over a conventional resin material are stated clearly and demonstrated practically. This product information handout serves this need.

Why Use a Commercial Purging Compound on Purging Thermoplastics Processing Equipment?

- Less time is required to purge with a CPC compared to using a resin material, which is often the next resin to be processed.
- Fewer rejected parts are produced during color and resin material changes when using a CPC to purge processing equipment.
- Use of a CPC has a positive environmental impact as a result of using less resin, producing less scrap and a reduction in energy consumption.
- A **lower cost per purge** is realized on using a CPC due to the combination of: (i) decreased downtime of processing equipment; (ii) reduced resin (scrap) costs; and (iii) lower energy and scrap disposal costs.

Features of Purgex Purging Compounds That Give Rise to Superior Purging Performance

- All Purgex™ purging compounds consist of a carrier resin and a concentrate in a ready-to-use granular form.
- Concentrates are comprised of multiple active and inactive ingredients that allow the physical and chemical properties of a particular grade of a molten Purgex purging compound to be selected for a given purging application.
- Active ingredient-induced expansion of a molten Purgex purging compound within the barrel of processing equipment enables the molten mass to come in contact with surfaces in difficult to access locations.
- Combinations of active ingredients in concentrates in Purgex purging compounds are targeted at creating “reactive” and “aggressive” cleaning environments that greatly enhance purging.
- Purgex purging compounds purge effectively and efficiently due to a combination of “disruptive” mechanical action and chemical “scrubbing” of materials adhered to surfaces.

See next page for time and cost comparison of purging with Purgex and purging with resin.





**Examples of How Purgex™ 457 Plus
Purges a 110-ton Van Dorn Injection Molding Machine
Compared to Using a Natural Resin**

- Example A. Black Polypropylene Copolymer to Natural Polypropylene Copolymer (PP)
- Example B. Black High-Density Polyethylene to Natural High-Density Polyethylene (HDPE)
- Example C. Black Polystyrene to Yellow Polystyrene (PS)
- Example D. Black Acrylonitrile Butadiene Styrene to Natural Acrylonitrile Butadiene Styrene (ABS)

	Example A		Example B		Example C		Example D	
Purging Material	PP	Purgex 457+	HDPE	Purgex 457+	PS	Purgex 457+	ABS	Purgex 457+
Material Weight (lbs)	3.00	0.47 ¹	3.00	0.47 ¹	3.00	0.47 ¹	3.00	0.47 ¹
Purging Time (min:sec)	43:07 ²	10:34 ²	33:38 ²	8:10 ²	57:19 ²	9:42 ²	50:20 ²	13:42 ²
Number of Rejected Parts	48 ²	3 ²	42 ²	2 ²	57 ²	2 ²	46 ²	7 ²
Wt. of Rejected Parts (lbs)	8.02 ²	0.50 ²	7.01 ²	0.33 ²	7.58 ²	0.27 ²	5.84 ²	0.89 ²
Cost Per Purge	\$33.35 ³	\$7.98 ³	\$26.84 ³	\$6.07 ³	\$43.41 ³	\$7.27 ³	\$37.74 ³	\$10.21 ³
Cost Savings Per Purge	\$25.37 ³		\$20.77 ³		\$36.14 ³		\$27.53 ³	
Cost Savings with Purgex	76%		77%		83%		73%	

¹1.5 times barrel capacity

²Average of three trials

³Cost includes machine time and resin cost

