

Purging compounds for use when molding thermoplastics

Injection molding

Material and color changes

Frequent material and color changes are a cost-intensive factor in plastics processing. They often involve significant time and effort, large quantities of granules, long start-up times and production downtime. Purging processes can sometimes take hours to complete, it often being necessary to disassemble the plasticating unit and then mechanically clean it.

The market offers emulsions, powders, granules and liquids for purging. These products are intended to minimize the time required for purging.

The purging compounds listed in the table were used by Covestro (Polycarbonates Business Unit) in Europe to test their efficiency. Analysis focused on the change in color (from black to natural) of a specific molded part made of Covestro thermoplastics.

Purging compounds with a chemical, chemical/mechanical and exclusively mechanical effect were tested.

In addition to the purging effect, the potential wear on the plasticizing unit was tested by ENGEL AUSTRIA GmbH. The granular products were investigated to determine both their abrasive and corrosive effect.

Problems encountered in practice vary greatly. The user must therefore choose a purging compound that best meets his needs.

The criteria listed in the table were collected for Europe and are intended to facilitate this decision-making process.

Trade name (delivery form, mode of action)	Manufacturer, distributor	Mixing ratio	Processing temperature range [°C]	Suitable for hot runner molds*1	Abrasive and corrosive effect*2	Special notes	Environ- mental concerns
Purgex 527 plus (concentrate in granular form; chemical effect)	Neutrex, Inc. www.neutrex.com Kunststofftechnik Ulrike Lapacz www.kunststofftechnik-lapacz.de	Add 8 % of the concentrate	150 – 320 (up to 350, but without soak)	Yes	Abrasive effect appears to be possible	Purge intermittently, minor gas formation, apply several times and briefly allow to soak	See manu- facturer
Rapid Purge IG 3000 (concentrate in granular form; chemical effect)	Rapid Purge www.rapidpurge.com Schlicht Handelsgesell- schaft oHG www.schlicht-gmbh.com	30 % to 50 % of Rapid Purge with 70 % to 50 % of the same or sub- sequent material	Up to 300 (up to 320 possible, but flows out)	Yes	Abrasive effect appears to be possible	Gas odor, apply several times and briefly allow to soak	See manu- facturer
Asaclean New Ex (granules; mechanical-chemical effect)	Sun Plastech Inc. www.asahi-kasei.co.jp/asaclean/en/ Velox GmbH www.velox.com	Used straight	200 to 360	No, but special material is available in this case	Can have a very abrasive and, under certain condi- tions, also a corrosive effect	Set screw speed as high as possible, increasing tempera- ture improves purging effect	See manu- facturer
Rozylit T (granules, mechanical effect)	Romatin AG/Kunststoff- technik Mittelhäuser kunststofftechnik@mittelhaeuser.de	30 % to 50 % of Rozylit with 70 % to 50 % of the same or subsequent material	200 to 300	No	Abrasive effect appears to be possible	Purge intermittently, faint odor formation, solids can stuck in the nozzle	See manu- facturer
Lusin® Clean 1500 (concentrate in granular form; chemical effect)	Chem-Trend www.chemtrend.com	25 % of Lusin Clean with 75 % Poly- carbonat	180 to 320	Yes	No	Purge intermittently, no streaking with the subsequent material*1	See manu- facturer

*1 According to manufacturer, *2 According to ENGEL AUSTRIA GmbH

It is recommended for all purging compounds and processes to extract the resulting vapors. Wear a face mask and gloves.
(See also the respective Instructions for use.)

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Covestro Deutschland AG
Business Unit Polycarbonates
D-51365 Leverkusen

plastics@covestro.com
www.plastics.covestro.com