



Gravimetric Dosing of Liquid Colours

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Liquid colors continue to be very popular as material suppliers make full use of energy and polymer cost savings potential. In addition to saving money, liquid colors offer the additional production benefits of high color consistency, low dosing amounts and rapid color changes. Novosystems says that due to these advantages, producer demand for liquid colors continues to rise for injection molding, extrusion and PU manufacture. Reason enough for Novosystems to radically redevelop their whole program of mixing and dosing technology - resulting in a completely new system.

The basis of the new system is the WB4000 dosing device. This makes reliable and clean feed of liquid colors in a closed system possible. Easy calibration enables color changes in seconds, not possible in the same way with Master batch. In addition to the use of a peristaltic pump, the WB4000 also features an eccentric screw head option, greatly extending dosing range. This allows for very large dosing volumes of up to 60 l/hr as required for extrusion processes. What's more, the eccentric screw head makes technical operation up to pressures of 40 bars possible. Material delivery via eccentric screw results in a very linear feed for the whole range of the feed volume and highest dosing accuracy. A further benefit for special requirements of commercial operation is the delivery of color via pipes up to distances of 8 – 10 meters. This is useful when color containers are not set up directly next to the manufacturing cell or where a steep incline has to be overcome. Last but not least, a special quick-release system allows rapid changing of the eccentric screw attachment.

Total Process Control

The dosing device includes an injection molding and an extrusion mode with regranulate management as well as monitoring of dosing volume and remaining material. Mixing and dosing data is logged by the WB4000 and backed up to databases. Additionally, the module can be integrated into existing IT infrastructure via LAN cable, Blue-Tooth and WLAN. Users have the option of entering commands for the correct recipe via a PDA handheld device or a central PC or notebook. Novosystems also offers special software for these control options, designed to handle up to 100 pumps.

Premiere: Deployment of Gravimetrics for Dosing Liquid Colors

Novosystems have developed two really innovative features: gravimetric management of liquid color dosing via software and scales. According to Novosystems, gravimetric dosing of amounts up to 50 kg is possible. The system calibrates itself: gravimetric dosing also results in even more accurate dosing with minimal variation in comparison with volumetric dosing with automatic adjustment. This new process means optimal consumption while maintaining high color quality, especially with very small amounts of color. Secondly, optional integration of the gravimetric technology via a handheld computer or WLAN – previously the standard for volumetric measurements is now possible.

To sum up: the different demands of plastic production processes and the whole issue of production volumes – from the deployment of liquid colors for laboratory extruders or micro injection molding through to high volume extrusion – Novosystems has taken all of these requirements into account when designing the WB4000. High-tech dosing of liquid colors for increased potential and significantly more flexibility when coloring plastics.