Polymer Dynamix

EverGlide®

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Nice to Have Benefits:

- Easy to handle (Pellets)
- Ok for food contact
- High thermal stability
- Paintable
- No migration
- Available in most polymers
- Processing aid
- Nicer looking pellets

EverGlide® Technology Offers:

- Significant increases in Lubricity
- Low addition levels
- Minimal Effect on mechanicals
- Better wear properties
- Saves you money

Make your parts last longer, decrease heat generation, and improve lubricity.

Plastics are being used to replace metal in many applications where metal parts have been used for decades, plastic offers many advantages to metal, however most plastics without additives lack properties required for demanding applications. Many demanding applications require parts to have high rigidity, toughness, and last for extended periods of time. To create a plastic with the desired properties there are many types of additives used, many of which can contribute other issues.

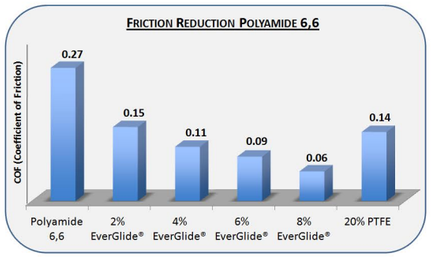
EverGlide® is a unique technology based on ultra-high molecular weight silicone, it can be added to the plastic at low levels to give excellent lubricity, wear and abrasion resistance in the most demanding applications.

Lubricating with EverGlide®

Many materials have been used over the years to lubricate plastic, from PTFE to low molecular weight waxes and each has undesirable side effects. The low molecular weight waxes have limited thermal stability and migrate to the surface causing issues during processing and only lasting for a short period until the wax has been worn away. Where the PTFE is a permanent lubricant and will not melt or migrate during processing, to achieve the desired lubrication 15-20% PTFE is generally required. This high loading of PTFE can significantly hurt the mechanical properties of a resin as well as increase cost. EverGlide® is a super lubricant which does not migrate, has thermal stability similar to PTFE and can be used effectively at loadings as low as 2%.

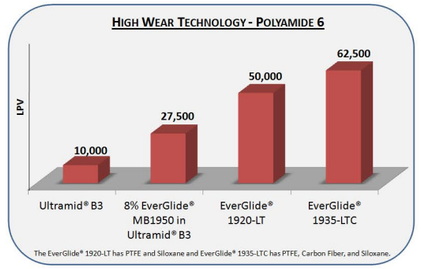
EverGlide® Improves Abrasion Resistance

EverGlide® will reduce the tendency for plastic to scratch and mar easily, thus drastically improving the overall abrasion resistance of the plastic. The proprietary silicone chemistry allows for easier movement across the surface, and introduces rubbery segments onto the surface of the polymer that can inhibit micro abrasions before they travel across the surface becoming visible scratches.



Improved Wear in PA6

Wear properties are critical to determining the life span of a plastic part. ASTM D 3702 is the most widely accepted standard wear testing procedure, a representative alternative is to look at limiting pressure-velocity testing known as LPV. The LPV test is performed by keeping velocity constant at a designated speed and increasing pressure until the sample fuses or fails. Hence the LPV value is reported as pressure times velocity at failure. Therefore, the higher the number the better the performance. The chart to the right demonstrates the outstanding boost in performance with EverGlide® used as a synergist in common PA6 wear formulations.



Improve Wear Resistance While Maintaining Mechanical Properties

Improved Wear Resistance

Product	Total Wear Factor (in^3 min/ft lb hr)x10^{-8}
Delrin® 500 (homopolymer)	32827
EverGlide® 1820 (homopolymer)	108
Fulton® 404 (copolymer)	192
EverGlide® 1818 (copolymer)	79

Delrin™500P is a Acetal homo-polymer made by DuPont. A copolymer grade made for wear applications is called Fulton 404 (made by Sabic IP) contains the traditional 20% PTFE lubrication. In a head to head study, performed by an independent third party, comparing the same polymer lubricated with EverGlide® technology versus the Delrin™ and Fulton™, the Delrin™ polymer lubricated with EverGlide® demonstrated a 30,000% improvement in wear properties over classic unfilled Delrin™ materials. The Fulton™ with EverGlide® technology demonstrated a 243% improvement in wear properties compared to the Fulton™ classically lubricated with PTFE. Not only does the use of EverGlide® technology offer unrivaled wear performance, but it is used at a much lower level, resulting in better physical properties and a much more cost effective formula.

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EverGlide® Selection Table

Polymer	Polymer Dynamix	Siloxane Concentration	MFR	MFI Conditions	Compatibility	Addition Level	
	EverGlide	%	(g/10min)			Process Aid / Mold Release	Surface Modification / Lubricity
PPH	MB150	50	12	230°C / 2.16kg	PP/TPE	.2-2%	2-10%
LDPE	MB450	50	8	190°C / 2.16kg	PE/TPE	.2-2%	2-10%
HIPS	MB950	50	3.5	200°C / 5kg	Styrenics	.2-2%	2-10%
POM	MB1840	40	23	190°C / 2.16kg	Acetal	.2-2%	2-10%
ABS	MB1150	50	1.4	200°C / 5kg	Styrenics	.2-2%	2-10%
SAN	MB3450	50	8	230°C / 3.8kg	Styrenics/PVC	.2-2%	2-10%
Hytrel	MB1450	50	8.5	230°C / 2.16kg	Polyesters	.2-2%	2-10%
PA6	MB1950	50	-	-	Polyamides	.2-2%	2-10%
TPU	MB2450	50	52	190°C / 8.7kg	TPU	.2-2%	2-10%
LLDPE	MB350	50	20	190°C / 2.16kg	PP/PE/TPE	.2-2%	2-10%
HDPE (high flow)	MB250H	50	40	190°C / 2.16kg	HDPE	.2-2%	2-10%
PET	MB1550	50	-	-	Polyesters	.2-2%	2-10%
PC	MB1350	50	15	300°C / 1.2kg	PC/PC Alloys	.2-2%	2-10%
EVA	MB3950	50	0.7	190°C / 2.16kg	EVA/PVC	.2-2%	2-10%
PPH (high flow)	MB150H	50	35	230°C / 2.16kg	PP	.2-2%	2-10%

Processing Aid:
- Improved throughput
- Reduced extruder torque / die head pressure reduction
- Improved filler dispersions
- Reduce polymer chain breakage / better physical properties
- Absolute mold release
- Energy savings through lower process temperatures
- Reduced equipment wear in highly filled systems / glass fiber

Surface Modification:
- Lower coefficient of friction
- Consistent slip / not affected by temperature change
- Durable mar and scratch resistance
- Improved wear and abrasion resistance
- Reduced surface roughness in extrusion surface
- Improved surface feel
- Printable and Paintable

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formulations that *free* your imagination

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