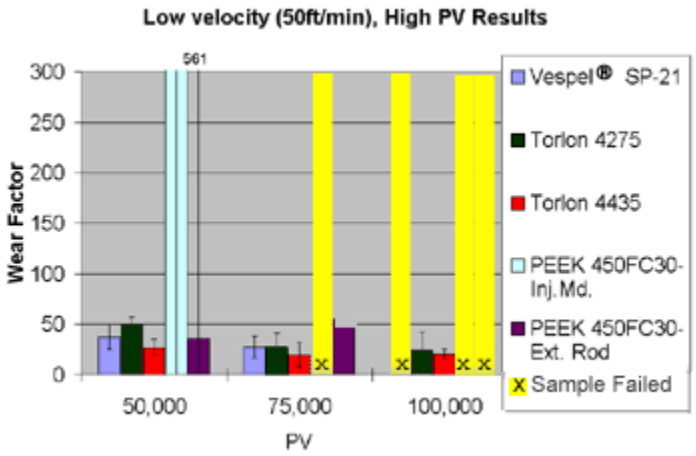
Torlon 4435 vs.
Vespel ® SP-21 and BG PEEK (FC30)

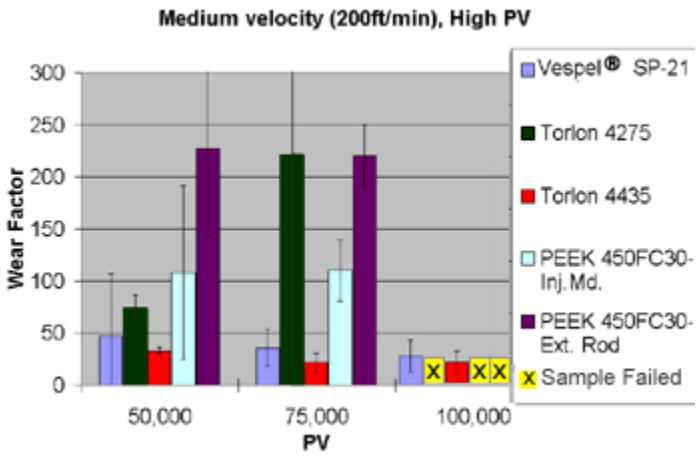
Drake Plastics Ltd. is pleased to add **Torlon 4435** to our high performance Torlon product line. Torlon 4435 is a **durable, economical alternative** to Dupont Vespel ® SP-21 and Bearing Grade PEEK 450FC30. This grade of Torlon offers unmatched wear performance at high PV's without external lubrication. In addition to its groundbreaking wear performance, Torlon 4435 offers excellent mechanical properties, including high strength and heat resistance (see comparison chart below).

WEAR PERFORMANCE

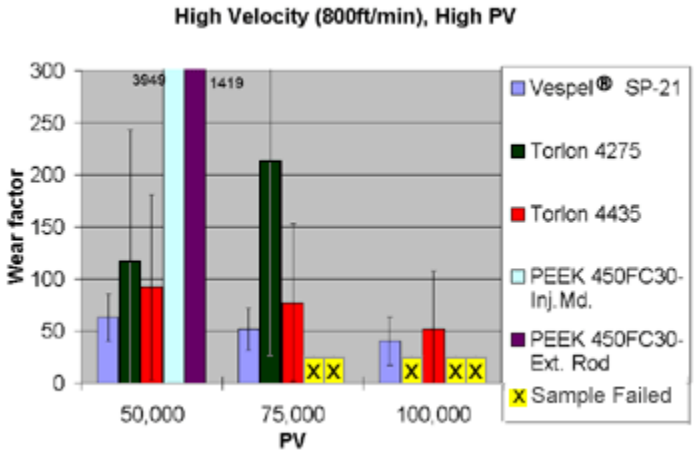
In a comparison study conducted by Solvay Advanced Polymers, Torlon 4435 demonstrated outstanding performance under a variety of extreme velocities and pressures as compared side-by-side to similar high performance plastics Vespel ® SP-21 and BG PEEK FC30. At low velocity and high pressure, both the Vespel ® and the PEEK plastics failed while Torlon 4435 performed quite well:



At medium velocity and medium pressure, Torlon 4435 showed a lower wear factor than Vespel ® and the PEEK sample failed altogether:



At high velocity and low pressure, the PEEK sample failed, while Torlon 4435 and Vespel ® showed good wear performance ratings:



Although the wear performance of Vespel ® ran a close second to Torlon 4435 in most tests, Torlon 4435 is superior in cost efficiency, mechanical properties, and versatility.

Comparison of Typical Mechanical Properties

	Torlon 4435	Vespel ® SP-21	PEEK 450FC30
Tensile Strength, MPa (ksi) ASTM D1708	107 (15.5)	62 (9.0)	141 (20.4)
Tensile Modulus, GPa (Msi) ASTM D1708	9.6 (1.4)	2.6 (0.4)	-- --
Elongation, % ASTM D1708	6.0	5.5	2.5
Specific Gravity, g/ml ASTM D792	1.59	1.42	1.48
Flexural Modulus, GPa (Msi) ASTM 790	15.2 (2.2)	3.2 (0.5)	8.1 (1.2)
Glass Transition Temp, °C (°F) ASTM D3418	280 (536)	~360 (~680)	143 (289)
CLTE, µm/m°C (µin/in°F)	32	46	40/126*

ASTM D696	(18)	(26)	(22/70*)

*Above the T_g

Vespel ® is a registered trademark ® of DuPont.