



PARALOID™ KM-X100 PRO Acrylic Impact Modifier for Profiles

Product Description

PARALOID KM-X100 Pro acrylic weatherable impact modifier delivers very high efficiency combined with high gloss necessary for high output profile extrusion. Also maximized is the “process window” in which vinyl compounds containing KM-X100 Pro can reliably develop optimal physical properties, in particular impact resistance.

While PARALOID KM-X100 Pro is fully formulated with processing aid, individual compounds can be augmented with more PARALOID processing aid or PARALOID K-175 lubricating processing aid where the need exists.

Chemical/Physical Description

PARALOID KM-X100 Pro is a free flowing 100% acrylic polymer. This material is a white powder.

New Product Performance

Laboratory testing under stressed conditions exhibiting brittle and fully ductile impact, as well as extruding into profile on a production sized machine shows that PARALOID KM-X100 Pro impact modifier offers the best performance profile compared to other industry offerings.

Table 1: Relative Product Attribute Table

	PARALOID KM-X100			
	Pro	Competitive A	Competitive B	Competitive C
Drop dart efficiency	++	-	+	+
Gloss	+	+	-	+
Process window for Gardner Impact	++	+	+	-
Process window for IZOD impact	++	-	+	N/A

Figure 1: PARALOID KM-X100 Pro hits the sweet spot of excellent efficiency without compromising a high gloss level.

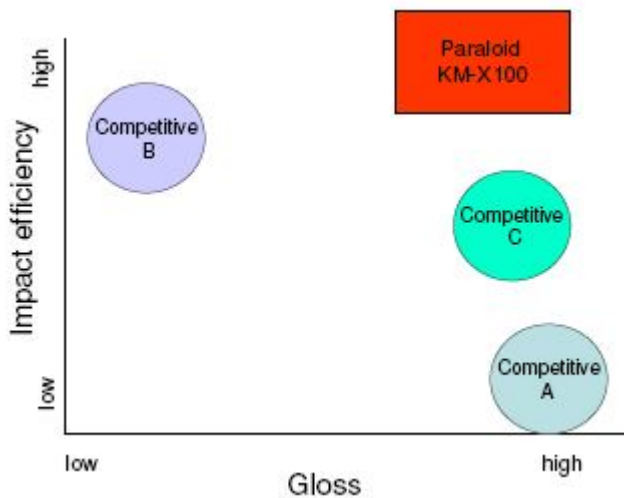


Figure 2: PARALOID KM-X100 Pro widens the process window maintaining higher Gardner Impact over a range of temperatures at low use levels.

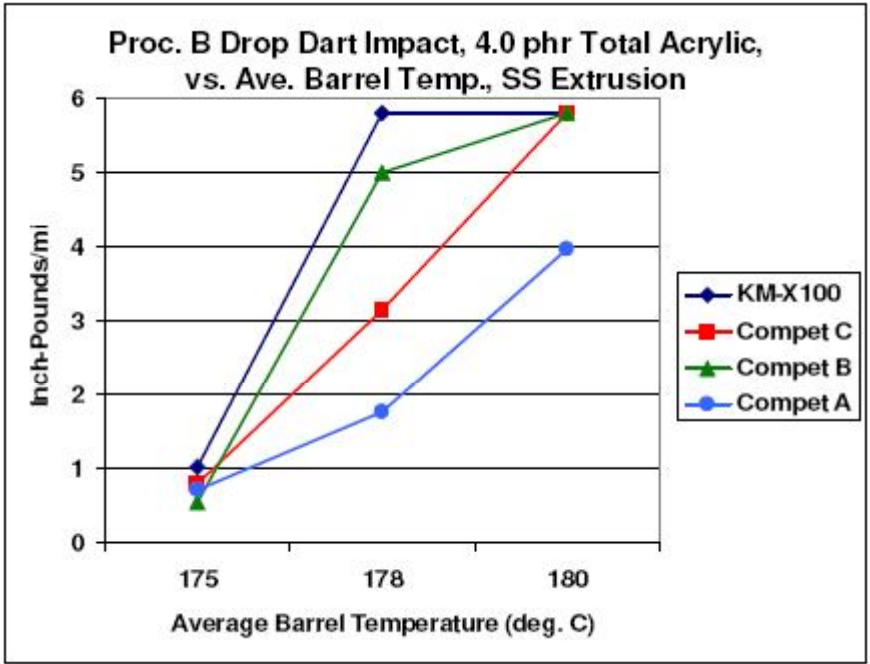


Figure 3: Even at lower use levels, PARALOID KM-X100 Pro maintains high impact performance over the temperature range tested.

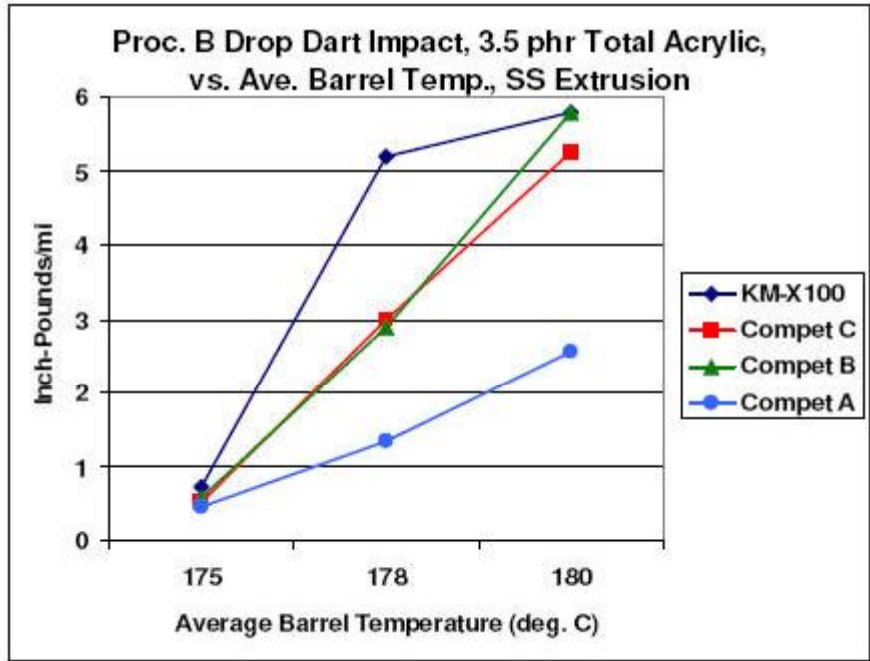


Figure 4: PARALOID KM-X100 Pro delivers the highest drop dart efficiency in window profiles.

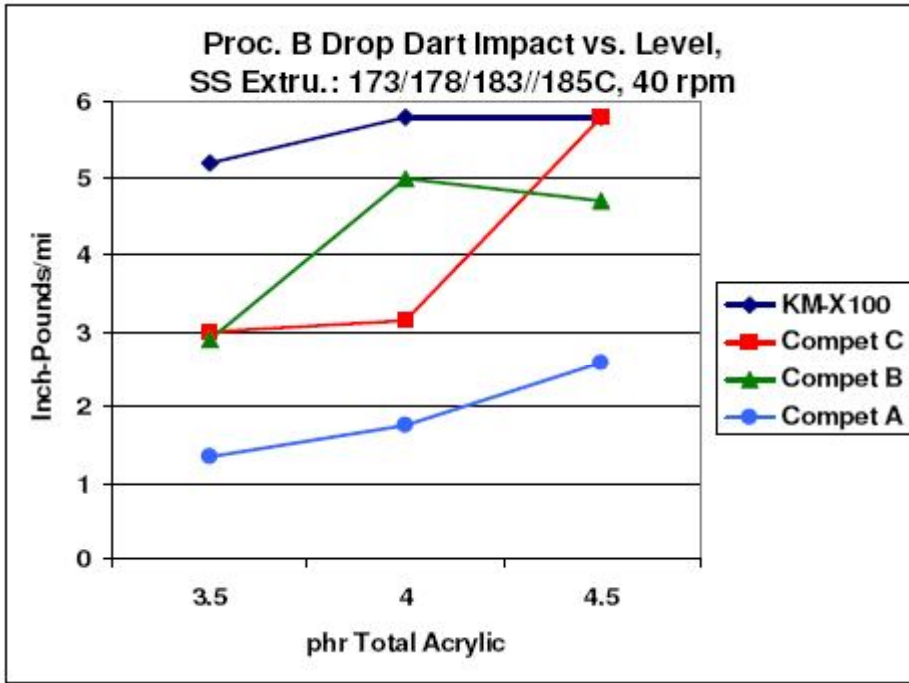


Figure 5: PARALOID KM-X100 Pro achieves desirable high gloss for window profiles.

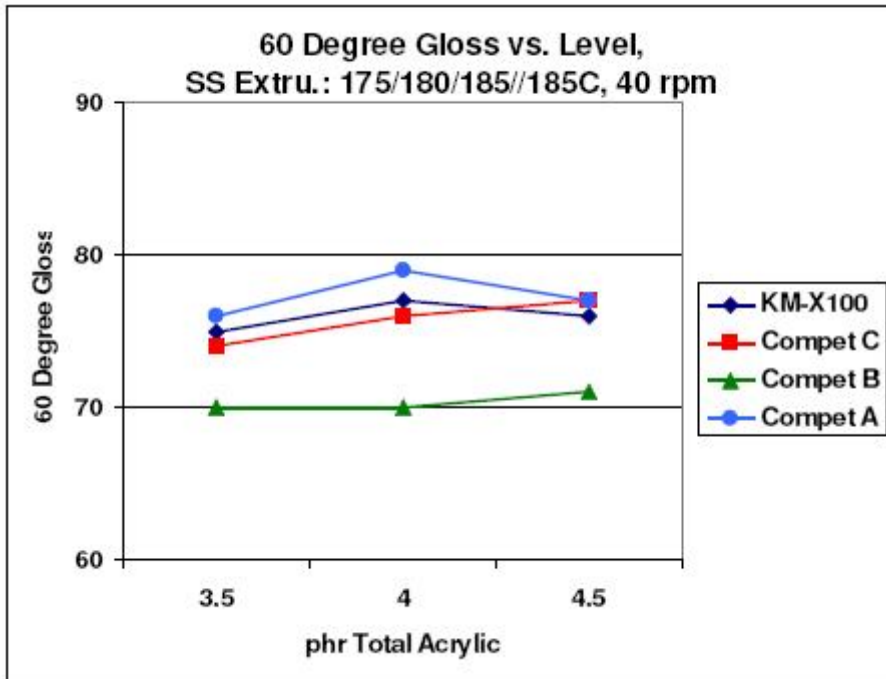


Figure 6: PARALOID KM-X100 Pro toughens vinyl windows reliably across a wide range of processing conditions.

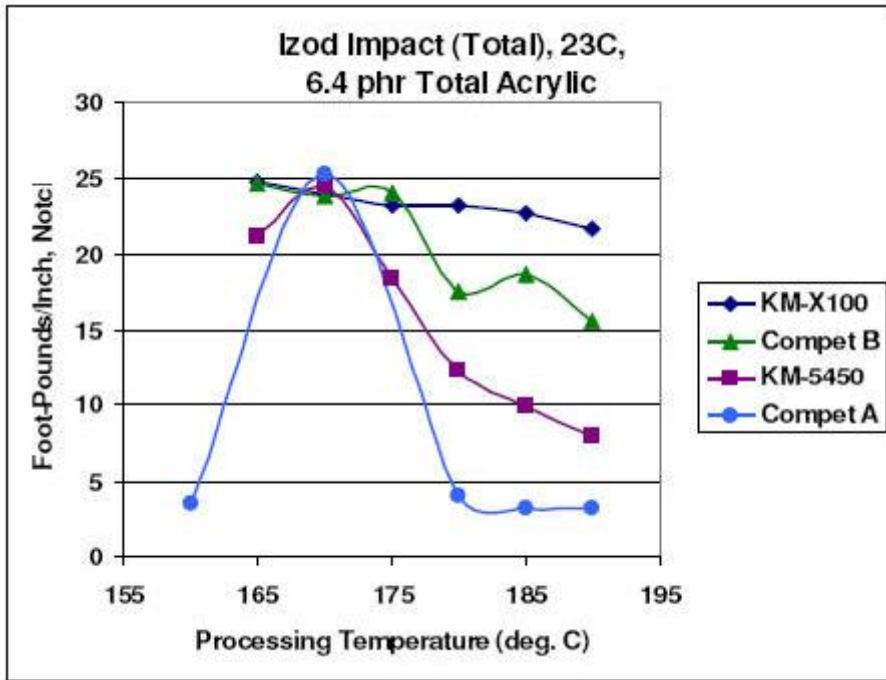


Table 2: Profile Extrusion Performance

Basic Formulation:	PVC (K66)	TM-181	B-3314	TiO2	CaCO3	Acrylic as shown
	100	1.2	2.7	9	3	

CM-55 Profile Extrusion, 0.060 inch wall thickness (1)

Modifier	KM-X100						
	Pro	Compet A	Compet B	KM-5450	KM-4400	KM-362	KM-940
phr	4.5	4.5	4.5	5	5	5.5	6.5
Drop Dart Impact (2)	>5.8	>5.8	>5.8	>5.8	>5.8	>5.8	>5.8
60 Degree Gloss	43	47	26	43	45	48	44
Amps	22	20	22	24	23	23	22
Melt Pres., psi	3270	3200	3290	3240	3300	3150	3240

NOTE:

1. CM-55 Conditions: 355scr//375/373/370/362//360adap//355die
2. ASTM D 4226 Impact, C.125 Dart (Procedure B, 23°C)

Table 3: Brabender Fusion Properties (1)

Basic Formulation:	PVC (K66)	TM-181	B-3314	TiO2	CaCO3	Acrylic as shown
	100	1.2	2.7	9	3	

Modifier	KM-X100			
	Pro	Compet A	Compet B	Compet C
phr	4.5	4.5	4.5	4.5
Time, seconds	60	62	62	58
Torque, M-gms	2875	3145	2675	2760
Equil. Torque, M-gms	1810	1760	1795	1770
Equil. Temp., C	208	209	209	208

NOTE: 1. Bowl Conditions: 185°C, 60 RPM, 60 Gram Charge

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