Technical Data Sheet

PARALOID™ KM-X100 Pro Impact Modifier

Description

PARALOID™ KM-X100 Pro Impact Modifier is a weatherable acrylic polymer that delivers very high toughening efficiency, both drop dart and Izod, combined with high gloss, necessary for high output profile extrusion. It maximizes the "process window" in which extruded vinyl compounds can reliably develop optimal physical properties, in particular impact resistance.

PARALOID™ KM-X100 Pro is fully formulated with PARALOID™ Processing Aids, to provide gloss and metal release properties, in additional to impact toughening, all in one modifier. However individual compounds can be augmented with more PARALOID™ Processing Aid or PARALOID™ K-175 Lubricating Processing Aid, where the need exists.

Applications

PARALOID™ KM-X100 Pro Impact Modifier is recommended for all rigid extruded PVC applications, but is particularly well tuned for extruded PVC window profiles.

Regional Product Availability

- North America
- Latin America

Product Description

Chemical Description	Acrylic polymer
Physical Appearance	White, free-flowing powder
Specific Gravity (g/cm^3)	1.11

Key Attributes

- Reliably develops high impact resistance and other physical properties over a wide range of processing conditions and temperatures in extruded rigid PVC applications.

Product Performance: Summary

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 Attributes.

	PARALOID™ KM-X100 Pro Impact Modifier	Comp A Impact Modifier	Comp B Impact Modifier	Comp C Impact Modifier
Drop Dart Efficiency	++	-	+	+
Gloss	+	+	-	+
Process Window for Gardner Impact	++	+	+	-
Process Window for Izod Impact	++	-	+	N/A

Product Performance :

Increased Efficiency

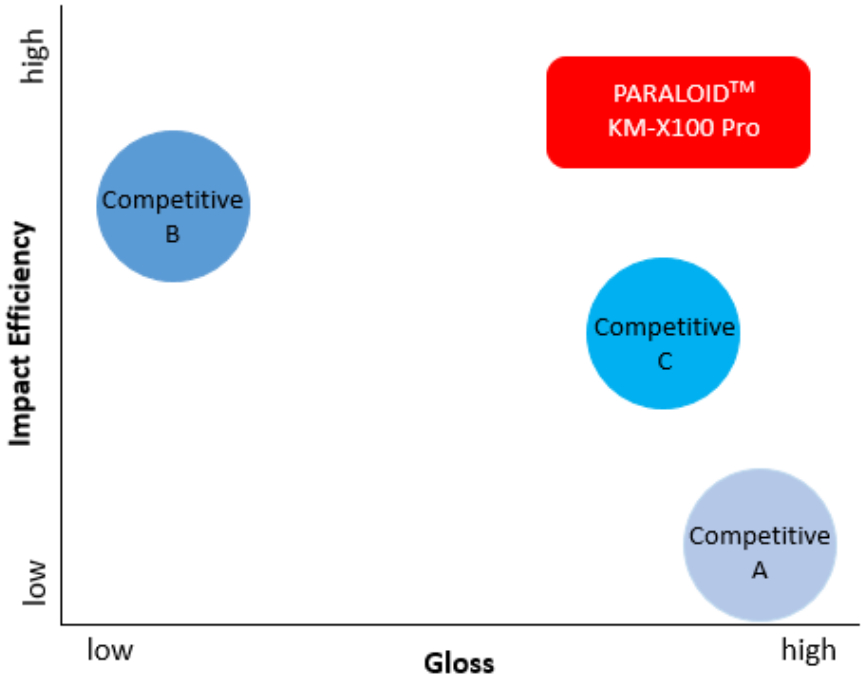

Figure 1. PARALOID™ KM-X100 Pro Impact Modifier hits the sweet spot of excellent efficiency without compromising a high gloss level.

Product Performance :

Wide Processing Window

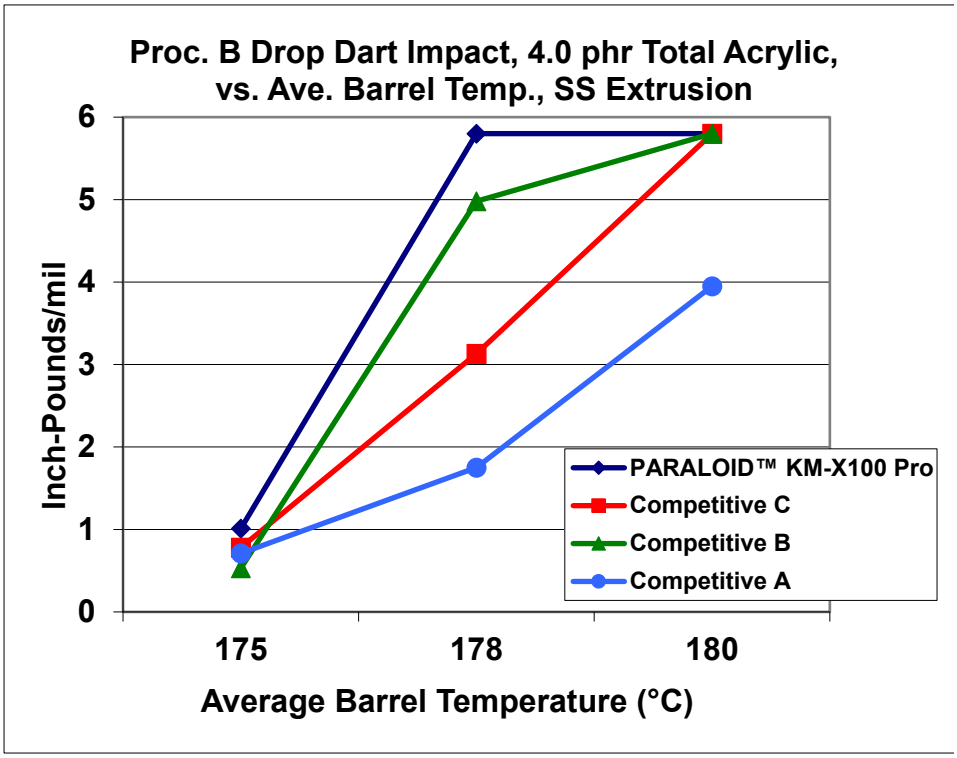

Figure 2. PARALOID™ KM-X100 Pro Impact Modifier widens the process window maintaining higher Gardner impact over a range of temperatures and use levels.

Product Performance :

Increased Efficiency and Wide Processing Window

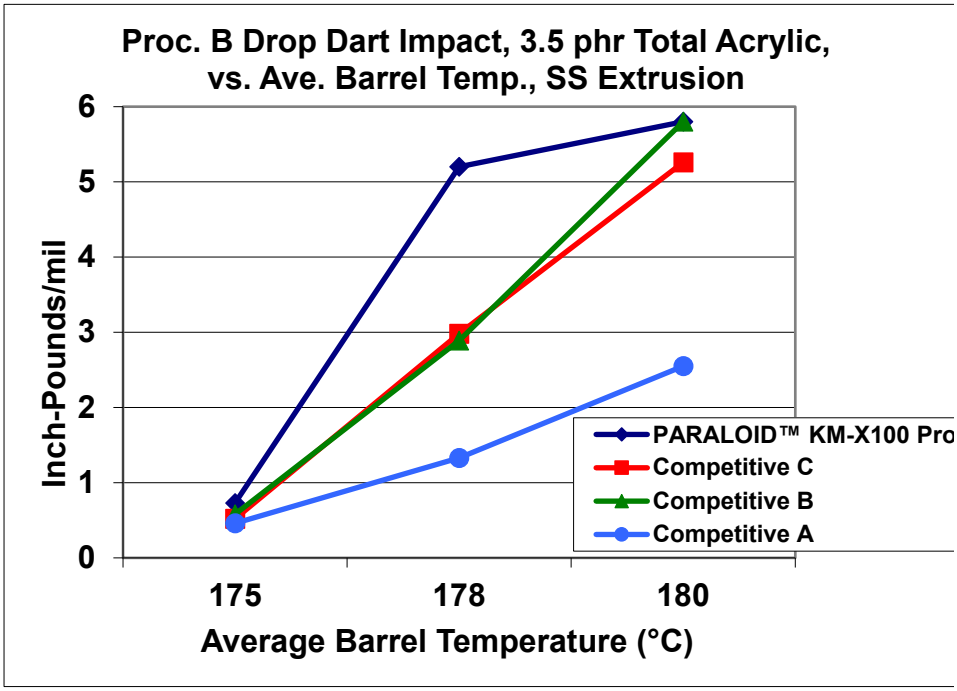

Figure 3. Even at lower use levels, PARALOID™ KM-X100 Pro Impact Modifier maintains high impact performance over the temperature range tested.

Product Performance :

Increased Efficiency

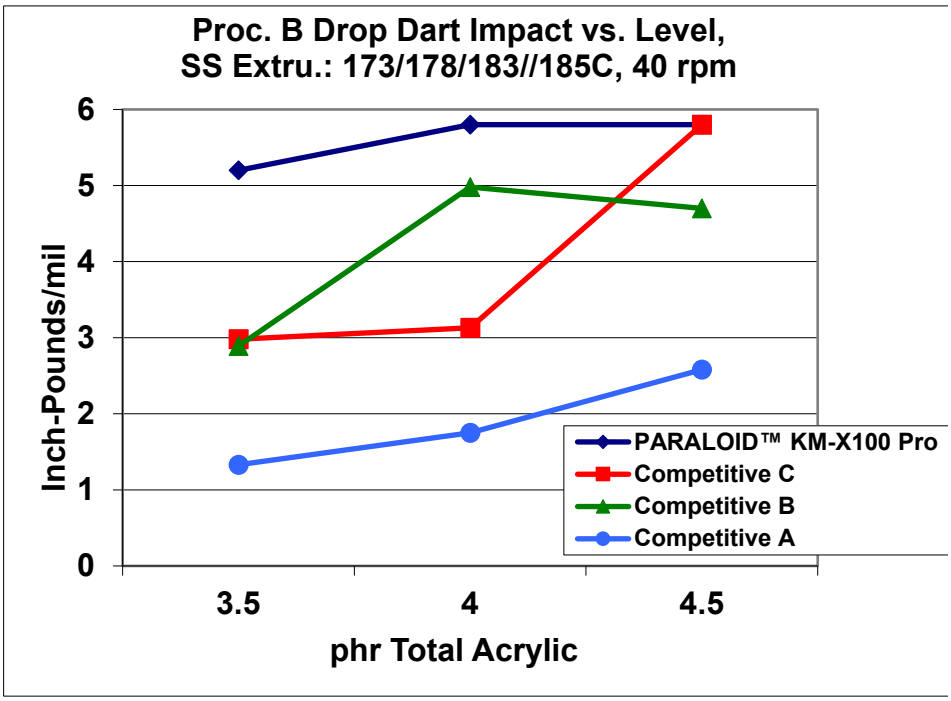

Figure 4. PARALOID™ KM-X100 Pro Impact Modifier delivers the highest drop dart efficiency in window profiles.

Product Performance : Gloss

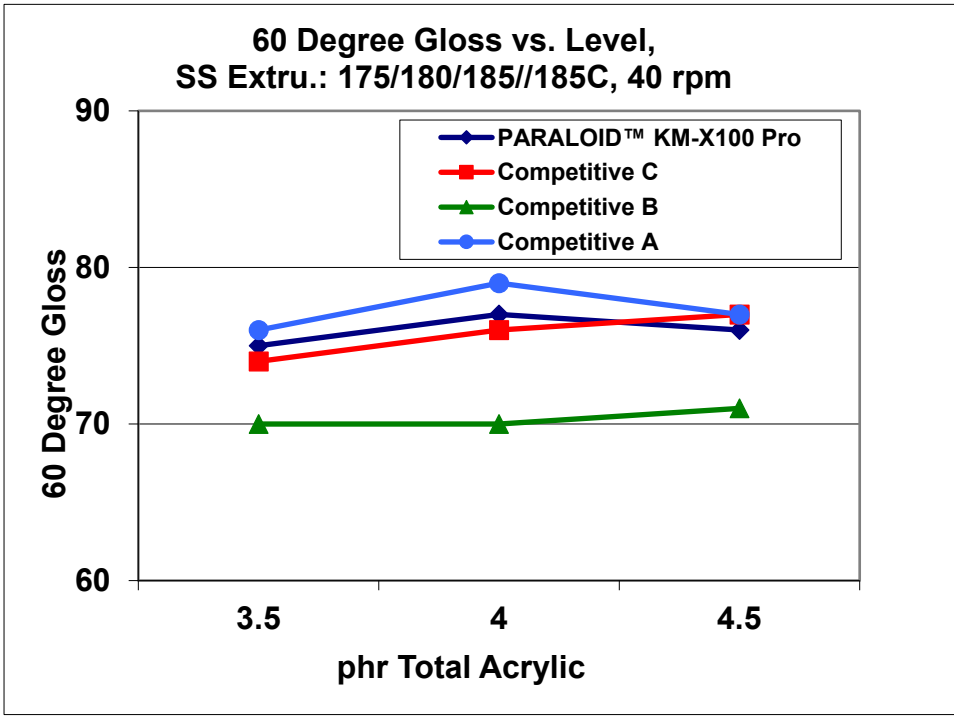

Figure 5. PARALOID™ KM-X100 Pro Impact Modifier achieves desirable high gloss for window profiles.

Product Performance : Notched Izod Impact

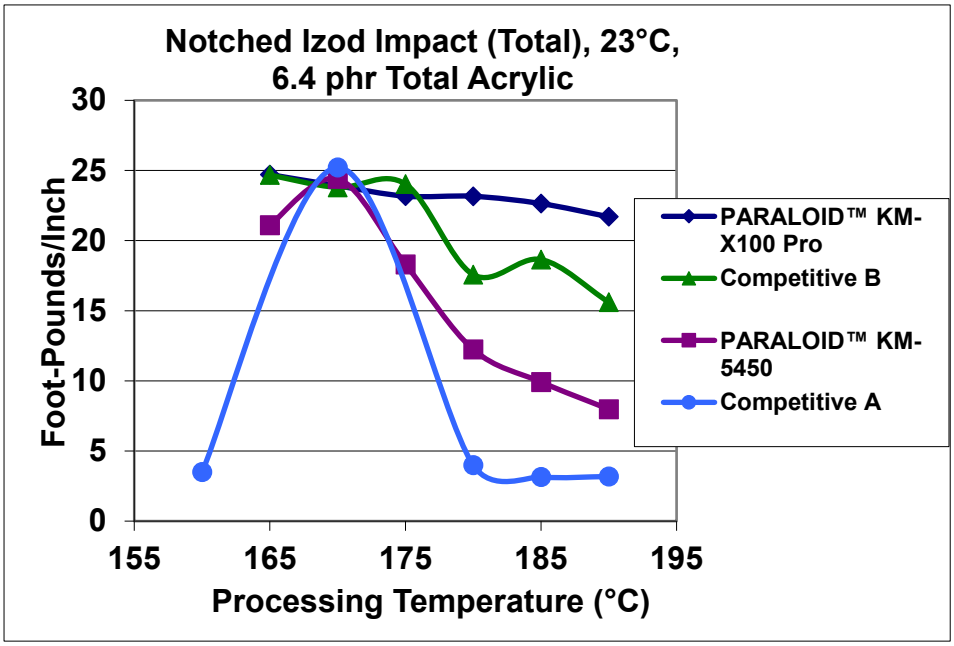

Figure 6. PARALOID™ KM-X100 Pro Impact Modifier toughens vinyl windows reliably across a wide range of processing conditions in notched impact testing.

Product Performance : Extrusion & Rheology

Table 2. Lab Evaluation Formulation

Ingredient	phr
PVC (K66)	100
Tin Stabilizer	1.2
Lubricant Package	2.7
Pigment (TiO_2)	9.0
Filler ($CaCO_3$)	3.0
Acrylic	4.5

Table 3. Brabender Fusion Rheology: 185°C, 60 RPM, and 60 Gram Charge

	PARALOID™ KM-X100 Pro Impact Modifier	Comp A Impact Modifier	Comp B Impact Modifier	Comp C Impact Modifier
Fusion Time (s)	60	62	62	58
Fusion Torque (m-g)	2875	3145	2675	2760
Equilibrium Torque (m-g)	1810	1760	1795	1770
Equilibrium Temp (°C)	208	209	209	208

Table 4. CM-55 Profile Extrusion: Screw-355 // 375/373/370/362 // Adap-360 // Die-355°F

ASTM D-4226 Impact: C.125 Dart, Procedure B, 23°C

	PARALOID™ KM-X100 Pro Impact Modifier	Comp A Impact Modifier	Comp B Impact Modifier
Amps	22	22	22
Melt Pressure (psi)	3270	3200	3290
Impact Strength (in-lb/mil)	>5.8	>5.8	>5.8
60° Gloss	43	47	26

Product Packaging

The standard package is either a unitized pallet of 20-25 kg bags or 500-900 kg super sacks/big bags/FIBC bags.

Please consult a Dow representative for specific package availability for this product.

Quality Management System

The Dow Chemical Company (Dow) and its subsidiaries have implemented a comprehensive quality management system pursuant to Good Manufacturing Practices (GMP) and various quality management standards including ISO 9001. An overview of **The Dow Quality Management System Manual** can be obtained at the following Internet web site – http://www.dow.com/en-us/about-dow/our-company/beliefs-and-culture/quality-culture. As part of that system, the Dow Plastics Additives business maintain ISO 9001 registration for most of our manufacturing plants. A copy of these certificates available upon request.

Storage and Handling Precautions

Store unopened in original packaging at ambient temperature. If material is opened, it should not be left exposed and should be used within one month. When stored correctly in the original packaging, the shelf life is 3 years from date of manufacture.

Before using this product, consult the Safety Data Sheet (SDS) for details on product hazards, recommended handling precautions and product storage. Contact Dow for copies of the SDS and for more information on this product. Information contained in a TDS document cannot substitute a SDS.

Disposal Considerations

Dispose in accordance with all local, state (provincial) and federal regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.

Medical Applications Restrictions

Dow prohibits sale into certain medical applications. Please check with Dow if you believe your application could be in violation of this policy.

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Regulatory Information

If your application includes a sensitive application such as food contact or drinking water requirements or if you need other regulatory information, please contact your local Dow representative.

Contact information:

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