

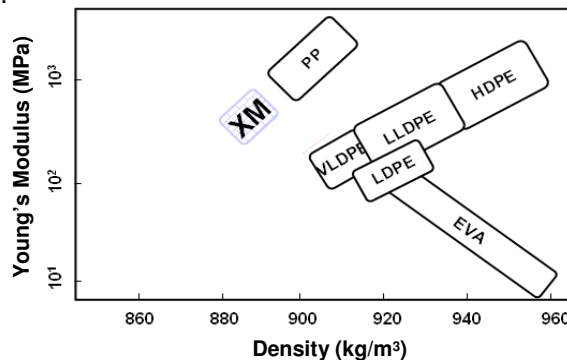
TAFMER™ XM

Propylene based α -olefin copolymer

TAFMER™ XM is used as a modifier of polypropylene (PP) to improve properties such as low temperature drawing, shrinkability and flexibility.

General characteristics attributed to TAFMER™ XM :

- Low Softening Point for improvement in Low Temperature Drawability
- Low Crystallinity and Miscibility with PP for Higher Drawability, Flexibility and Transparency



Typical Shrink Film Structures

- Mono layer
r-PP + TAFMER™ XM
- Multi-layer
r-PP + TAFMER™ XM / PE / r-PP + TAFMER™ XM
PE / r-PP + TAFMER™ XM / PE

r-PP : PP random copolymer

Low Temperature Drawability

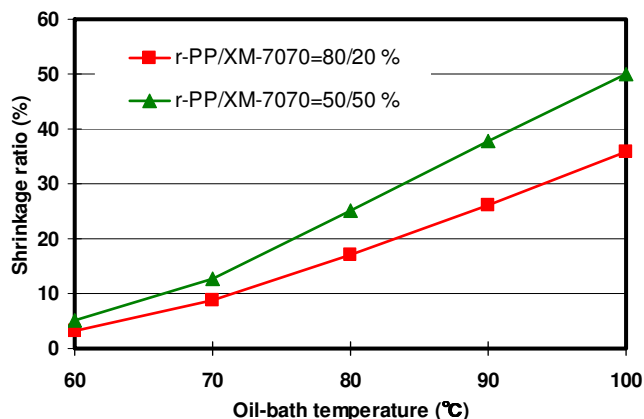
Due to low melting point and miscibility of TAFMER™ XM with r-PP, draw temperature can be lowered to improve shrinkage at low temperature. It also improves shrinkage ratio by increasing blend ratio of TAFMER™ XM:

Formulation		Drawing temperature (°C)					
r-PP (%)	XM-7070 (%)	90		100		110	
		MD	TD	MD	TD	MD	TD
		Shrinkage %					
100	0	Impossible to draw		23	24	18	18
80	20	35	36	31	31	23	25
50	50	49	50	43	43	31	32

Structure: Monolayer (15 μ m)
r-PP: MFR(230 °C) = 2.5 g/10min, Tm = 138 °C
Draw ratio (Simultaneous): 5(MD) x 5(TD)

Increased Shrinkage Ratio

By lowering the drawing temperature and increasing TAFMER™ XM blend ratio, shrinkability can be Improved:



Structure: Monolayer (15 μm)
r-PP: MFR(230 °C) = 2.5 g/10min, Tm = 138 °C
Draw ratio (Simultaneous): 5(MD) x 5(TD)
Drawing temperature : 90 °C
Shrink conditions : Held in oil-bath for 10 s

Summary

TAFMER™ XM

- ☑ Improves low temperature shrinkability
- ☑ Improves shrinkage ratio at wide range of temperature

Basic Properties

Physical Properties	Test Method	Unit	XM-7070
MFR(190°C/2.16kg)	ASTM D1238	g/10min	3.0
MFR(230°C/2.16kg)	ASTM D1238	g/10min	7.0
Mechanical Properties			
Yielding stress	ASTM D638	MPa	11
Tensile Strength at Break	ASTM D638	MPa	34
Elongation at Break	ASTM D638	%	750
Young's modulus	ASTM D638	MPa	290
Surface Hardness (Shore D)	ASTM D2240	—	52
Thermal Properties			
Melting Point	MCI Method	°C	75

Note: All of the above listed data are representative values, and not specific ones.

FDA

All the monomers and additives used in the above TAFMER™ grade are listed in the “Code of Federal Regulation, title 21 Food and Drugs, Parts 170 to 189” and “FCN (Food Contact Notification)”.

EU Directive

All the monomers and additives used in the above TAFMER™ grade are listed in the EU Directive 2002/72/EC and its amendment 2008/39/EC.

The only additives with Specific Migration Limit (SML) are:

n-Octadecyl 3,5-di-t-butyl-4-hydroxy hydrocinnamate (CAS No.2082-79-3, Ref No.68320)

: SML= 6mg/kg

Please ensure that the SML and Overall Migration (OM) are within the specified value in the end-use products,.

Disclaimer:

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