

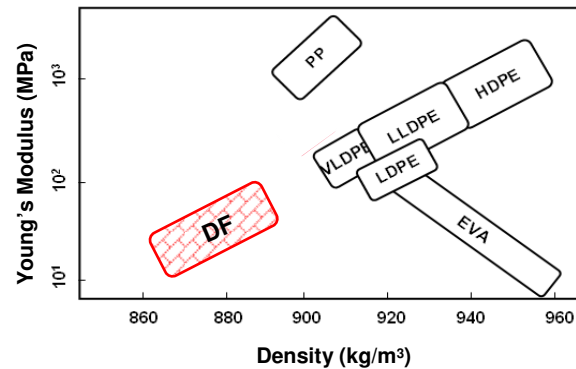
TAFMER™ DF

Ethylene based α -olefin copolymer

TAFMER™ DF is compatible with polypropylene (PP). It is used as a modifier of PP to improve properties such as impact resistance, appearance and paintability.

General characteristics attributed to TAFMER™ DF :

- Low Young's Modulus for Softness and Flexibility
- Low Glass Transition Temperature for low temperature Impact strength
- Compatible with PP for surface gloss



Low temperature impact resistance modification is major usage of TAFMER™ DF in PP injection molding.

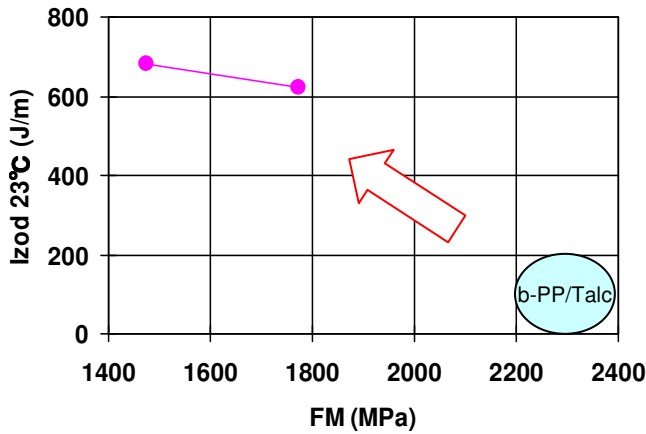
Typical Application

PP compound for Automotive Bumper
PP compound for Automotive Instrumental Panel

Impact Resistance Modification

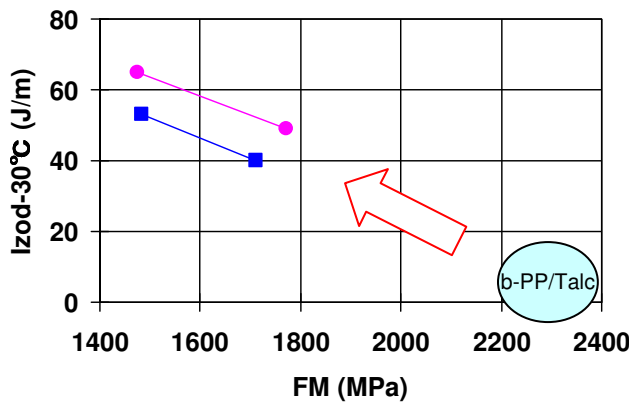
TAFMER™ DF improves impact resistance of PP compound significantly.

Flexural Modulus (FM) vs. Izod Impact Strength at 23 °C



b-PP / Elastomer / Talc=70/20/10, 65/25/10 %
 ● DF605 : MFR=0.5 g/10min, D=861 kg/m³
 b-PP : PP impact copolymer

Flexural Modulus(FM) vs. Izod Impact Strength at -30 °C



b-PP / Elastomer / Talc=70/20/10, 65/25/10 %
 ● DF605 : MFR=0.5 g/10min, D=861 kg/m³
 ■ EOR : MFR=0.6 g/10min, D=863 kg/m³
 b-PP : PP impact copolymer

Summary

TAFMER™ DF improves impact resistance while maintaining required rigidity of PP compound.

Basic Properties

Physical Properties	Test Method	Unit	DF605	DF610	DF640	DF710	DF740	DF7350
MFR(190°C/2.16kg)	ASTM D1238	g/10min	0.5	1.2	3.6	1.2	3.6	35
MFR(230°C/2.16kg)	ASTM D1238	g/10min	0.9	2.2	6.7	2.2	6.7	65
Density	ASTM D1505	kg/m ³	861	862	864	870	870	870
Mechanical Properties								
Tensile Strength at Break	ASTM D638	MPa	> 5	> 3	> 3	> 15	> 8	> 2
Elongation at Break	ASTM D638	%	> 1000	> 1000	> 1000	> 1000	> 1000	> 1000
Torsional Rigidity	ASTM D1043	MPa	2	2	2	3	3	3
Surface Hardness (Shore A)	ASTM D2240	—	58	57	56	73	73	70
Thermal Properties								
Melting Point	MCI Method	°C	< 50	< 50	< 50	55	55	55
Brittleness Temperature	ASTM D746	°C	< -70	< -70	< -70	< -70	< -70	< -70

Physical Properties	Test Method	Unit	DF810	DF840	DF8200	DF940	DF9200	DF110	DF140
MFR(190°C/2.16kg)	ASTM D1238	g/10min	1.2	3.6	18	3.6	18	1.2	3.6
MFR(230°C/2.16kg)	ASTM D1238	g/10min	2.2	6.7	34	6.7	33	2.2	6.7
Density	ASTM D1505	kg/m ³	885	885	885	893	893	905	905
Mechanical Properties									
Tensile Strength at Break	ASTM D638	MPa	> 37	> 27	12	31	16	33	25
Elongation at Break	ASTM D638	%	> 1000	> 1000	950	900	900	750	750
Torsional Rigidity	ASTM D1043	MPa	9	9	9	12	12	25	25
Surface Hardness (Shore A)	ASTM D2240	—	87	86	86	92	92	95	94
Thermal Properties									
Melting Point	MCI Method	°C	66	66	66	77	77	94	93
Brittleness Temperature	ASTM D746	°C	< -70	< -70	< -70	< -70	< -70	< -70	< -70

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.

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