TAFMER™
Alpha-olefin copolymer

TAFMER™
HIGH-PERFORMANCE ELASTOMERS

Mitsui Chemicals
Group

TAFMER™

FEATURES

TAFMER™ is a low crystalline or amorphous α-olefin copolymer based on Mitsui Chemicals' proprietary technology, using its state-of-the-art know-how in polyolefin and rubber materials.
TAFMER™ has lower density, lower modulus, and lower melting point, compared to polyethylene(PE) or polypropylene(PP). TAFMER™ can be processed by various types of methods such as cast & blown film extrusion coating, pipe extrusion, injection moulding, blow moulding, foaming, and calendering.

USES

TAFMER™ has wide applications in automotive, industrial, and packaging materials.

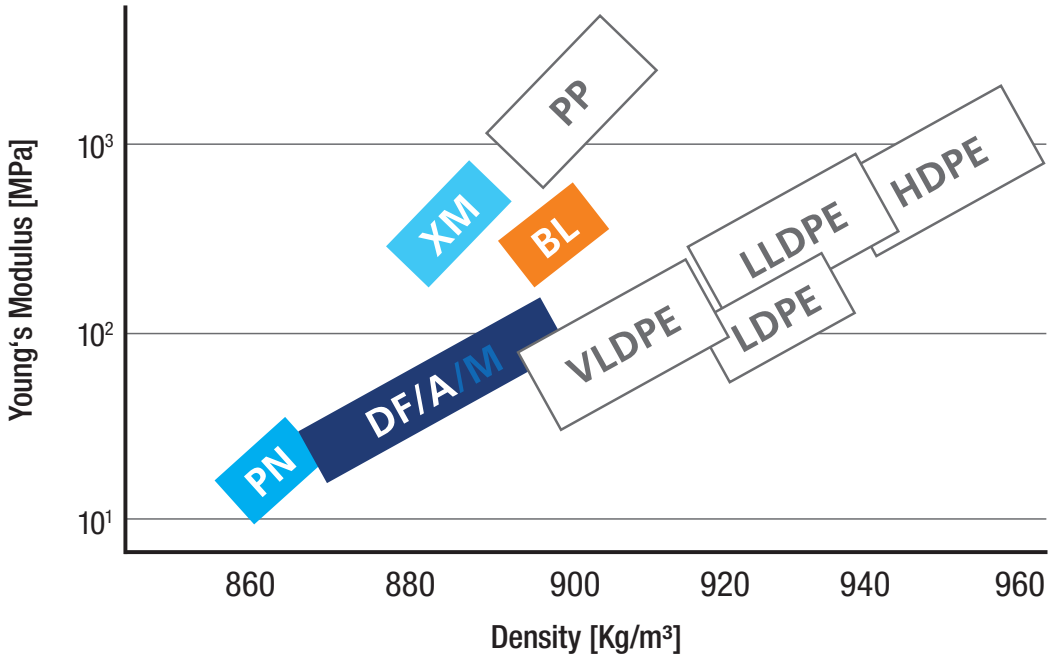
(A) AS A MODIFIER

TAFMER™ can be easily blended with PE, PP, and other thermoplastics to improve or enhance their characteristics.

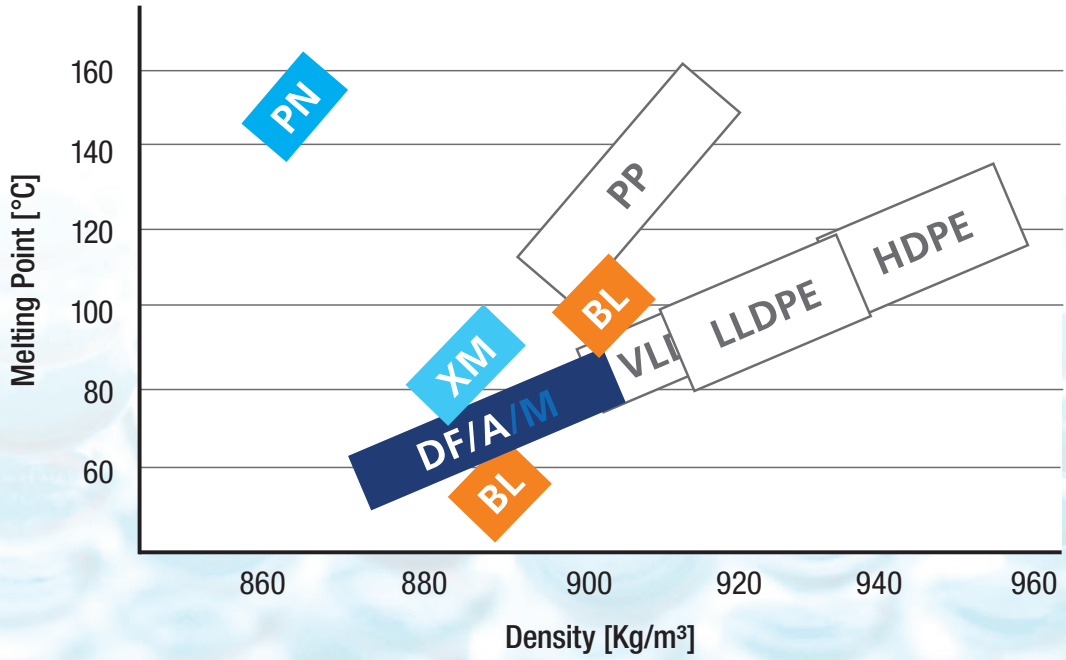
(B) AS A BASE MATERIAL

TAFMER™ can be used as a base material in flexible products. Mitsui Chemicals offers a wide range of products to accommodate various needs.

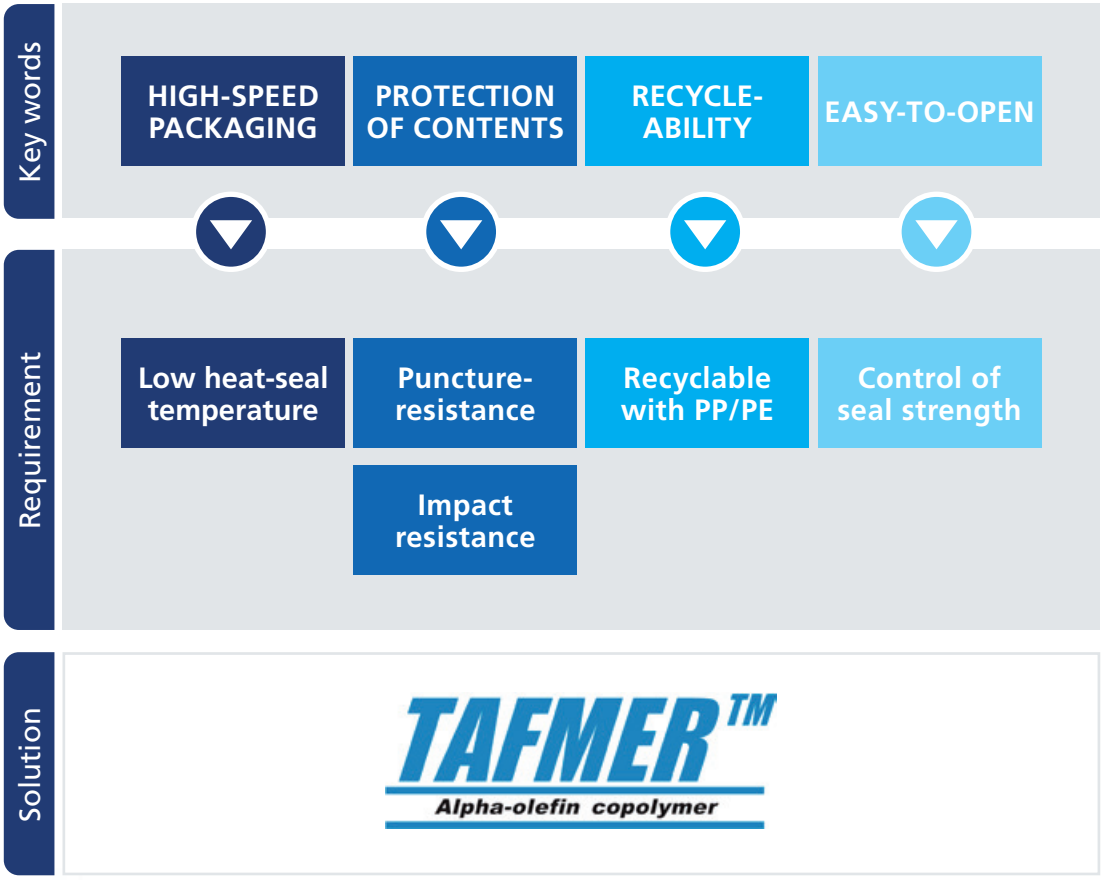
Softness



Melting Point



TAFMER™ for enhanced functionality in packagings



Target Properties

APPLICATIONS	FUNCTIONS	PROCESSES	MAIN IMPROVED PROPERTIES	SERIES
Packagings	PE Modification	Blown Cast Extrusion Coating	Low Temp. Heat Seal Property, Transparency	A
			PP Adhesion	A
			Cling Property, Transparency, Elongation	A
			Easy-Peel Property	BL
	PP Modification	Cast Blown	Easy-Peel Property	A
			Impact Resistance	A
			Low Temp. Heat Seal Property	BL
			Anti-Stress Whitening (Decorative Film)	PN
		Bi-Axial Orientation	Low Temp. Heat Seal Property, Transparency	XM
			Shrink Property	XM

Technical data of TAFMER™ A grades

ITEM	TEST METHOD	UNIT	A-4070S	A-1085S	A-4085S	A-20085S	A-4090S	A-20090S
MFR (190°C, 2.16 kg)	ASTM D1238	g/10 min	3.6	1.2	3.6	18	3.6	18
MFR (230°C, 2.16 kg)	ASTM D1238	g/10 min	6.7	2.2	6.7	33	6.7	33
Density	ASTM D1505	kg/m^3	870	885	885	885	893	893
Melting point	MCI Method	°C	55	66	66	66	77	77
Tensile strength	ASTM D638	MPa	>8	>37	>27	12	31	16
Elongation at break	ASTM D638	%	>1000	>1000	>1000	950	900	900
Torsional Rigidity	ASTM D1043	MPa	3	9	9	9	12	12
Shore A hardness	ASTM D2240	-	73	87	86	86	92	92
Viscal Softening Point	ASTM D1525	°C	41	56	55	55	61	61
Brittleness Temperature	ASTM D746	°C	<-70	<-70	<-70	<-70	<-70	<-70

Note: All of the above listed data ar represantative values, and not specific ones

Technical data of TAFMER™ BL grades

ITEM	TEST METHOD	UNIT	BL2491M	BL2481M	BL6100	BL6400
MFR (190°C, 2.16 kg)	ASTM D1238	g/10 min	4.0	4.0	1.0	4.0
MFR (230°C, 2.16 kg)	ASTM D1238	g/10 min	9.0	9.0	3.0	12
Density	MCI Method	g/cm^3	0.90	0.89	0.91	0.91
Melting point	MCI Method	°C	100	58	114	114
Tensile strength	ASTM D638	MPa	45	40	41	41
Elongation at break	ASTM D638	%	460	580	420	420
Youngs's modulus	ASTM D638	MPa	260	200	280	290
Shore D hardness	ASTM D2240	-	57	47	60	61

Note: All of the above listed data ar represantative values, and not specific ones

Technical data of TAFMER™ PN grades

ITEM	TEST METHOD	UNIT	PN-2070	PN-3560	PN-2060	PN-20300
MFR (230°C, 2.16 kg)	ASTM D1238	g/10 min	7.0	6.0	6.0	30
Density	ASTM D1505	kg/m^3	867	866	868	868
Melting point	MCI Method	°C	140	160	160	160
Tensile strength	ASTM D638	MPa	>14	>12	>19	>16
Elongation at break	ASTM D638	%	>1000	>1000	>1000	>1000
Youngs's modulus	ASTM D1043	MPa	14	11	22	22
Shore A hardness	ASTM D2240	-	75	72	84	84
Softening Point	MCI Method	°C	125	135	120	115
Brittleness Temperature	ASTM D746	°C	-28	-28	-28	-28
Compression set at 23°C	MCI Method	%	20	20	23	25
Compression set at 70°C	MCI Method	%	60	60	70	75

Note: All of the above listed data ar represantative values, and not specific ones

Technical data of TAFMER™ XM grades

ITEM	TEST METHOD	UNIT	XM-7070S	XM-7080S	XM-7090
MFR (190°C, 2.16 kg)	ASTM D1238	g/10 min	3.0	3.0	3.0
MFR (230°C, 2.16 kg)	ASTM D1238	g/10 min	7.0	7.0	7.0
Melting point	MCI Method	°C	75	83	98
Yield strength	ASTM D638	MPa	11	14	16
Tensile strength	ASTM D638	MPa	34	36	36
Elongation at break	ASTM D638	%	750	750	750
Youngs's modulus	ASTM D638	MPa	290	390	520
Shore D hardness	ASTM D2240	-	52	55	58
Viscal Softening Point	ASTM D1525	°C	67	74	86

Note: All of the above listed data ar represantative values, and not specific ones

TAFMER™ M for enhanced impact performance in engineering plastics

Requirement

HIGH IMPACT RESISTANCE

GOOD PROCESSABILITY

Solution

TAFMER™ Alpha-olefin copolymer

Features and Applications of TAFMER™ M

INJECTION MOULDING

- High Impact resistance of PA at low temperature
- Reduction of water absorption
- Good surface gloss

EXTRUSION

- High impact resistance of PA at low temperature
- Viscosity enhancer of PA

Automotive parts
Tube for fuel, brake etc.

Consumer goods
Sports goods

Electrical parts
Connectors

Agro bottles
Bottles

Technical data of TAFMER™ M grades

ITEM	TEST METHOD	UNIT	MA9015	MA8510	MH7010	MH7020	MH7510	MH5010C	MH5020C	MH5040
MFR (190°C, 2.16 kg)	ASTM D1238	g/10 min	11	2.4	0.9	0.7	40	1.1	0.6	0.5
MFR (230°C, 2.16 kg)	ASTM D1238	g/10 min	23	5.0	1.8	1.5	70	2.3	1.2	1.1
Density	ASTM D1505	kg/m^3	896	885	870	873	872	865	866	870
Modifying index*	MCI Method	°C	1.5	1	1	2	1.5	1	2	4
Tensile strength	ASTM D638	MPa	16	>24	>8	>8	>4	>4	>3	>8
Elongation at break	ASTM D638	%	850	>1000	>1000	>1000	800	>1000	>1000	>1000
Shore A hardness	ASTM D2240	-	89	86	70	70	72	55	55	63

Note: All of the above listed data are represantative values, and not specific ones
*) Relative value in the case of MA8510 = 1

TAFMER™ M is an acid modified olefin elastomer. It has good compatibility with polyolefins as well as the ability of chemical interaction with materials containing functional group, such as polyamides, polyesters and inorganic fillers.
TAFMER™ M also exhibits softness and low glass transition temperature, so that it demonstrates excellent performance as an impact modifier for engineering plastics.

Mitsui Chemicals Europe office in Düsseldorf

Local warehouse in Europe

Handling

TAFMER™ resins are supplied in the form of free flowing pellets and can be easily handled with commercially available equipment.

TAFMER™ products should always be stored in a well ventilated warehouse and away from any direct sunlight and stable temperature control. Ideal storage temperature is ≈20°C.

In the summer time, storage temperature should not exceed 30°C; warehouse should be well ventilated to avoid accumulation of heat. Do not keep the products outdoor. “

Packaging

25 kg PE bags or paper bags
Pallet dimensions
(width x length x height)
1100 x 1400 x 152 mm
750kg pallet (30 x 25 kg bags)

Big bags 500 kg / 550 kg
(depending on products
and density)
Dimensions as below:
1.1m (L) x 1.1m (B) x
2.15m (H)

Regulatory Compliance

FOOD CONTACT

EU: Tafmer™ is normally used as impact modifier and not as a main structural component of food contact materials and articles. The monomers and additives of all Tafmer™ grades are included on Annex I of the EU Plastics Regulation 10/2011. Information on restricted substances or dual use additives is included in the Declarations of Compliance. Tafmer is manufactured according to the requirements of the GMP Regulation (EC) No 2023/2006.

US: Tafmer™ grades are in compliance with FDA 21CFR §177.1520 or respective food contact notifications. Information on precise conditions of use related to temperature and food types is included in the Declarations of Compliance.

CHINA: Tafmer™ is a plastic resin listed in GB 4806.6-2016 'Standard on Food-contact Use Plastic Resins'. It also complies with the applicable sections of GB4806.1. All additives used are listed on the Chinese standard of additives used in food contact applications (GB9685-2016 A1 Plastic Resins).

COMPLIANCE WITH LEGISLATION RELEVANT TO ELECTRICAL AND ELECTRONIC EQUIPMENT:

- EU Directive 2011/65/EU on the Restriction of certain Hazardous Substances (RoHS2)
- EU Directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE)
- EU Directive 94/62/EC (Packaging directive)
- EU Directive 2000/53/EC (End-of life vehicles)
- Coalition of Northeastern Governors (CONEG)

Regulatory Compliance

COMPLIANCE WITH EU-REACH (REGULATION (EC) 1907/2006)

TAFMER™ as imported by MCE is fully compliant with the registration obligations under EU-REACH.

TAFMER™ is in compliance with the requirements of Annex XVII of the REACH Regulation (EC) No. 1907/2006.

Substances listed on the REACH Candidate List of SVHC are not contained in concentrations at or above 0.1% by weight.

MEDICAL DEVICES

Should you have interest in medical application, please contact us directly.

FURTHER LEGISLATIVE COMPLIANCE

- Cosmetic Products Regulation (EC) No. 1223/2009
- California Proposition 65
- Conflict minerals (Regulation (EU) 2017/821, US Dodd–Frank Wall Street Reform and Consumer Protection Act (2010))

For further information please contact us under regulatory@mcie.de

Mitsui Chemicals around the World

OVERSEAS SITES

- Offices
- Manufacturing Sites
- R & D Facilities

Mitsui Chemicals Europe GmbH
Oststraße 34
40211 Düsseldorf
Germany
T: +49.211.173 320
tafmer@mcie.de