

Recommendation of SEPTON™ BIO-series based compounds for grips

- Excellent grip performance & High bio-based content -

Elastomer R&D department
Elastomer division

kuraray

SEPTON™ BIO-series based compound with high grip & high bio-based content



		1		2		3		4		Ref.1		Ref.2		Ref.3		
Elastomer	SEPTON™ BIO-series SF903 ¹⁾ (Bio-based cont.=70wt%)	wt%	70	-	-	-	-	-	-	-	-	-	-	-	-	
	SEPTON™ BIO-series SF904 ¹⁾ (Bio-based cont.=50wt%)	wt%	-	70	80	85	-	-	-	-	-	-	-	-	-	
	SEPTON™ 4055 ¹⁾ (Bio-based cont.=0wt%)	wt%	-	-	-	-	25	35	-	-	-	-	-	-	-	
	HYBRAR™ 7125 ¹⁾ (Bio-based cont.=0wt%)	wt%	-	-	-	-	-	-	-	-	-	-	-	100	-	
PO	Bio-LDPE (Bio-based cont.=95wt%, MFR=30g/10min)	wt%	30	30	20	15	34	-	-	34	-	-	-	-	-	
	Random PP (MFR=20g/10min)	wt%	-	-	-	-	-	-	17	-	17	-	-	-	-	
	Paraffin oil (90mm ² /s at 40deg.C)	wt%	-	-	-	-	41	48	-	41	48	-	-	-	-	
	Antioxidant	phr	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
	Anti-blocking agent	phr	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
	Total Bio-based cont.	wt%	77.5	63.5	59	56.8	32.3	0	0	32.3	0	0	0	0	0	
	Coefficient of static friction (Aluminum)	Dry	3.3	4.8	6.3	10	1.5	1.9	4.0	1.5	1.9	4.0	1.5	1.9	4.0	
	Specimen: Injection molded sheet (2mmt)	Wet	1.7	3.1	4.2	3.9	1.4	1.5	1.4	1.4	1.5	1.4	1.4	1.4	1.4	
			MD	TD	MD	TD	MD	TD	MD	TD	MD	TD	MD	TD	MD	TD
	Hardness	Type A	70	60	55	48	76	61	56							
	100% modulus	MPa	3.8	2.3	2.2	1.9	1.6	1.2	1.1	0.9	2.7	2.6	2.1	1.5	2.4	1.1
	Tensile strength	MPa	6.0	7.4	4.6	5.3	4.0	5.2	3.7	4.9	3	5.7	11	14	5.7	12
	Elongation	%	270	490	425	680	440	730	540	760	200	670	880	920	520	890
	MFR (230deg.C, 2.16kg)	g/10min	1.1	90	84	76	40	0.1	6.2							
	Compounding conditions ²⁾ : Cylinder temp./Mold temp	deg.C	200	200	200	200	200	200	-							
	Injection molding conditions ³⁾ : Cylinder temp./Mold temp.	deg.C	200/40	200/40	200/40	200/40	200/40	200/40	200/40	200/40	200/40	200/40	200/40	230/40		
	Moldability		Good	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Fair		

1) Kuraray Co., Ltd., 2) ZSK26Mc φ26mm,L/D=56 (Coperion GmbH), 3) EC75SX 75ton (Shibaura Machine Co., Ltd.)

Excellent wet grip performance of SEPTON™ BIO-series

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Excellent Grip performance

- SEPTON™ BIO-series has excellent wet grip performance compared to general HSBCs.

Formulations: SEPTON™ BIO-series SF904/Bio LDPE=80/20 (Hs=55A)
SEPTON™ 4055/Oil/Homo-PP=100/170/50 (Hs=59A)

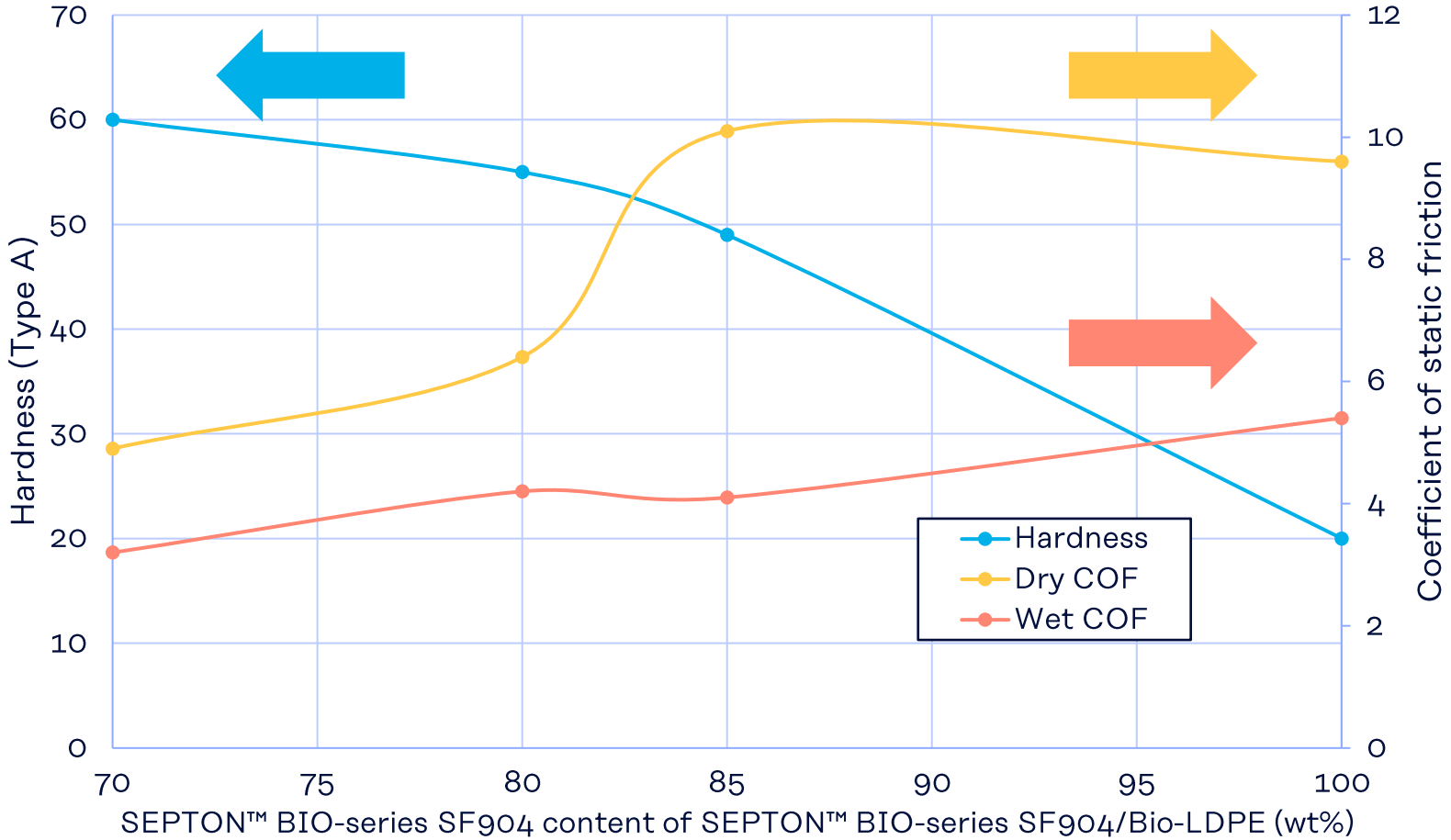


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<https://kuraray.wistia.com/medias/sfbulcbw73>

Relations between SEPTON™ BIO-series SF904 content and Hardness or SEPTON™ BIO-series SF904 content and COF (Dry, Wet)



*COF = Coefficient of static friction

Injection molding conditions

- Injection molding conditions at low speed and low to middle pressure are recommended.

Injection machine (Clamp force:80ton)		
Mold shape		Golf grip
Hopper temperature	deg.C	< 60
Cylinder temperature	deg.C	C1:180, C2-C5:200
Mold temperature	deg.C	20
Injection pressure	MPa	130 (Hold pressure: 38)
Injection speed	mm/s	8.8
Injection time	sec	13
Cooling time	sec	22
Charging stroke	mm	90
V-P Switching position	mm	9

Kuraray Co., Ltd.
Elastomer Division
Tokiwabashi Tower
2-6-4, Otemachi
Chiyoda-ku, Tokyo, 100-0004, Japan

✉ elastomer@kuraray.com

→ www.kuraray.com

→ www.elastomer.kuraray.com

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For medical, health care and food contact applications, please contact your Kuraray representative for specific recommendations. Even so, users must conduct their own assessment, revisions, registrations as well rely in their own technical and legal judgment to establish the safety and efficacy of their compound and/or end product with SEPTON™ and HYBRAR™ for any application. SEPTON™ and HYBRAR™ should not be used in any devices or materials intended for implantation in the human body. Nothing contained herein constitutes a license to practice under any patent and it should not be construed as an inducement to infringe any patent and the user is advised to take appropriate steps to be sure that any proposed use of the product will not result in patent infringement.

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