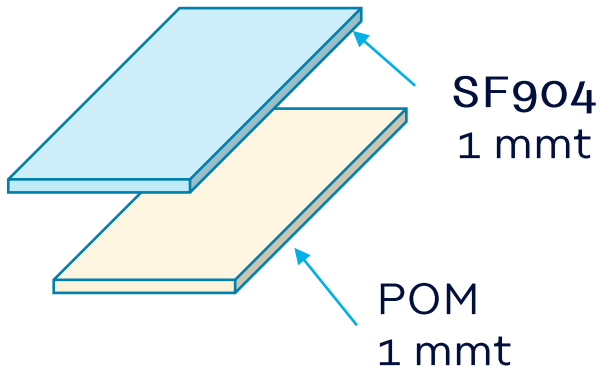


# Thermal Bonding of SEPTON™ BIO-series SF904 to Polyoxymethylene (POM)

Elastomer R&D Dept.  
Elastomer Division

***kuraray*** **Septon™** BIO-series

# Thermal Bonding of SEPTON™ BIO-series SF904



Compression molding  
 Upper: 220 deg. C  
 Lower: 120 deg. C

	Unit	SEPTON™ BIO-series SF904	SEPTON™ 2004F
Structure	-	HSFC <sup>1)</sup>	SEPS <sup>2)</sup>
MFR (230 deg. C, 2.16 kg)	g/10 min	48	5
Styrene content	wt%	21	18
Bio-based content	wt%	48	0
180° peel strength	To POM <sup>3)</sup>	N/25 mm	20 <sup>5)</sup>
	To PP <sup>4)</sup>	N/25 mm	23 <sup>6)</sup>
			1.3 <sup>5)</sup>
			36 <sup>5)</sup>

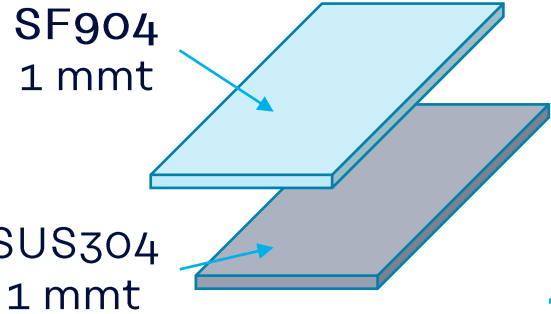
- 1) Hydrogenated Styrene Farnesene Block Copolymer
- 2) Styrene-Ethylene-Propylene-Styrene
- 3) MFR=9 g/10 min (190 deg. C, 2.16 kg)
- 4) Homo-PP, MFR=11 g/10 min (230 deg. C, 2.16 kg)
- 5) Interfacial failure
- 6) Cohesive failure

✓ SF904 strongly bonded to both POM and PP.

# Thermal Bonding of SEPTON™ BIO-series SF904 (Video)

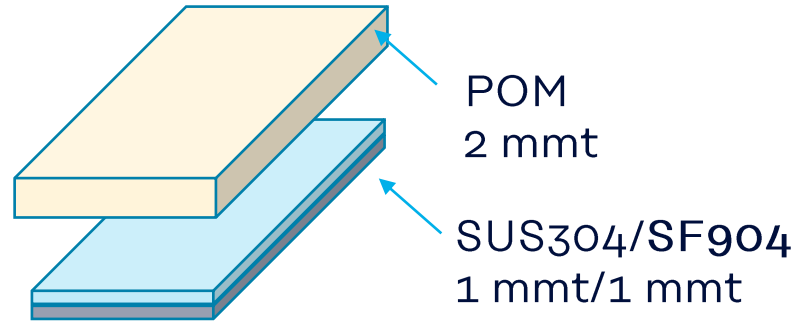
[RRF04\\_003\\_E1\\_POM\\_SF904\\_movie](#)

**Step 1**



Compression molding  
Upper: 220 deg. C  
Lower: 120 deg. C

**Step 2**

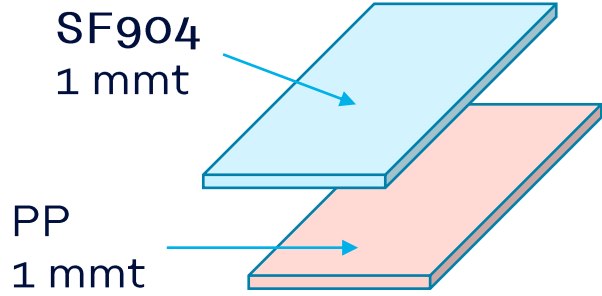


Insert injection molding  
Cylinder: 210 deg. C  
Mold: 80 deg. C



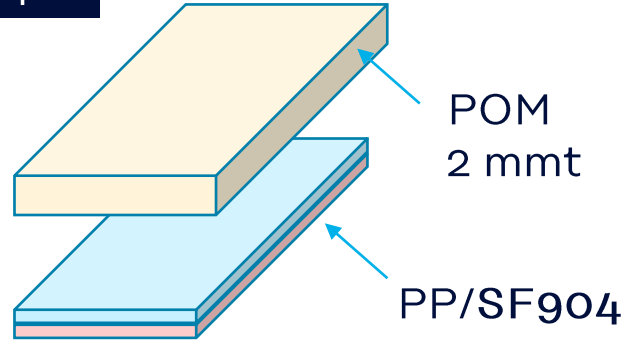
# Effects of Molding Method

Step 1



Insert injection molding  
Cylinder: 250 deg. C  
Mold: 50 deg. C

Step 2

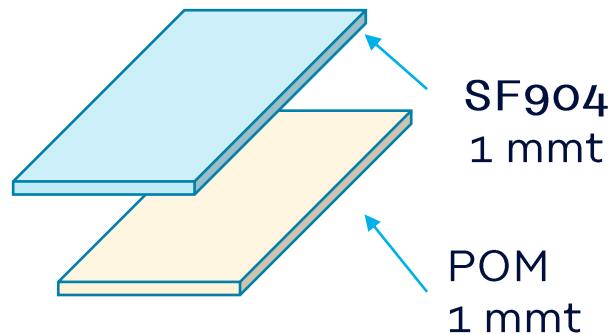


Insert injection molding  
Cylinder: 210 deg. C  
Mold: 80 deg. C

Good

Insert injection molding of POM on SF904  
➤ Strongly bonded.

Insert injection molding  
Cylinder: 250 deg. C  
Mold: 50 deg. C



Bad

Insert injection molding of SF904 on POM  
➤ Not work.

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