No. RRS24-001-E1

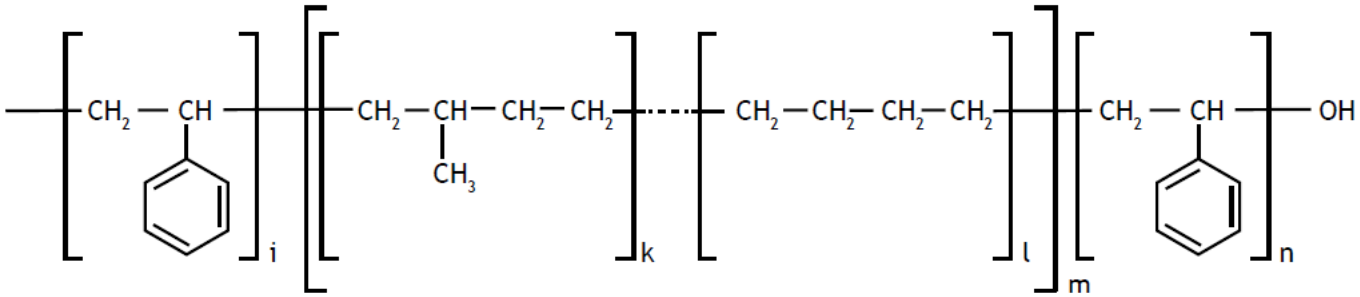
Introduction of SEPTON™ HG-252 ~Hydroxyl Terminated Styrenic Thermoplastic Rubber~

Elastomer R&D Dept.
Elastomer Division

kuraray Septon™

Characteristics of SEPTON™ HG-252

- ✓ A primary hydroxyl group at the polymer terminal
- ✓ Reactivity and affinity to polar resins
- ✓ One-ended functional group can prevent gelation.
- ✓ Maintains good affinity to non-polar resins like polyolefins



Typical Properties of SEPTON™ HG-252

	Units	SEPTON™ HG-252	Method
Type	-	SEEPS-OH	
Styrene Content	wt%	28	
Specific Gravity	-	0.90	ISO 1183
Hardness (Type A)	-	80	ISO 7619 as reference
Tensile Strength (1)	MPa	25	ISO 37 ss reference
Elongation (1)	%	500	
MFR (2)	g/10 min	6	ISO 1133 as reference

(1) Cross-head speed: 500 mm/min at 23 deg. C
(2) 200 deg. C, 2.16 kg

Modification of Ionomer Resin using SEPTON™

Raw Materials

Ionomer Resin	HIMILAN™ 1557 (DOW-MITSUI POLYCHEMICALS CO.,LTD.) (Pre-drying: 80 deg. C for 12 hours)
HSBC	SEPTON™ 2002 (Styrene content=30 wt%, SEPS) SEPTON™ HG-252 (Styrene content=28 wt%, SEEPS-OH)

Mixing condition

Equipment	Twin screw extruder (Screw diameter 25φ, L/D=25)
Compounding temperature	200 deg. C
Screw rotation	100 rpm

Molding condition

Equipment	Injection molding machine
Temperature	Cylinder 200-220 deg. C Mold 50 deg. C

Modification of Ionomer Resin using SEPTON™

Test conditions

MFR: ISO 1133 (230 deg. C, 2.16 kg)
Hardness: ISO 7619
Tensile test: ISO37 (500 mm/min, 25 deg. C)
Rebound resilience: 25 deg. C
Cut Resistance:

V-cut method with cut resistance machine for golf ball (Dumbbell Co., Ltd) loaded 2.5 kg (height 80 cm) is used.
The cut length on the surface of test specimen is measured after cut resistance test.
Shorter length means better cut resistance.

Modification of Ionomer Resin using SEPTON™

		1	2	3
Formulations	by wt			
HIMILAN™ 1557		100	70	70
SEPTON™ HG-252		—	30	—
SEPTON™ 2002		—	—	30
Properties				
MFR (230 deg. C, 2.16 kg)	g/10 min	11	13	18
Hardness (Type A)	-	53	43	42
Mechanical Properties				
Tensile Modulus	MPa	200	100	110
Tensile Strength	MPa	27	28	20
Rebound resilience	%	60	60	60
Cut Resistance	mm	14	16	16

SEPTON™ HG-252 contributes to the softening of ionomer resins without the reduction of flow-ability, tensile strength, rebound resilience, and cut resistance.

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Precautions should be taken in handling and storage. Please refer to the appropriate Safety Data Sheet for further safety information. In using SEPTON™, please confirm related laws and regulations, and examine its safety and suitability for the application.
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™ for any application. SEPTON™ 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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