

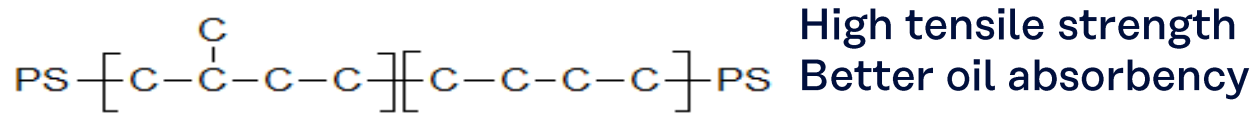
Introduction of SEPTON™ 4030S

Elastomer R&D Dept.
Elastomer Division

SEPTON™ 4030S is a developmental grade.

kuraray **Septon™**

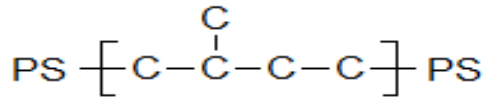
Polymer Structure of SEPTON™ and HYBRAR™



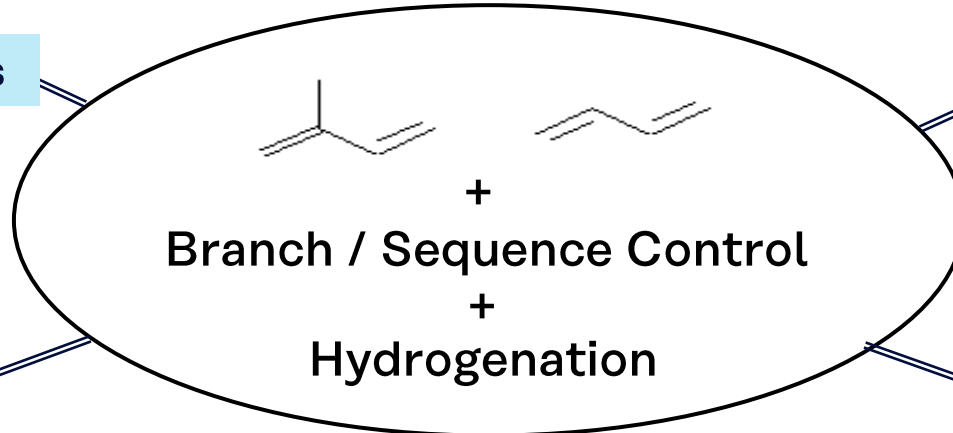
High tensile strength
Better oil absorbency

SEEPS: SEPTON™ 4000-series

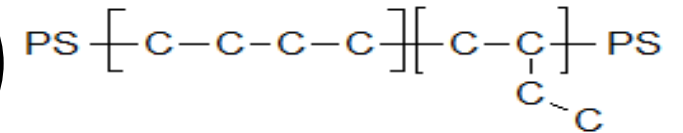
SEPS: SEPTON™ 2000-series



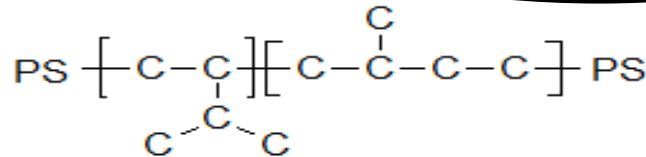
No crystallization
High elongation



SEBS: SEPTON™ 8000-series

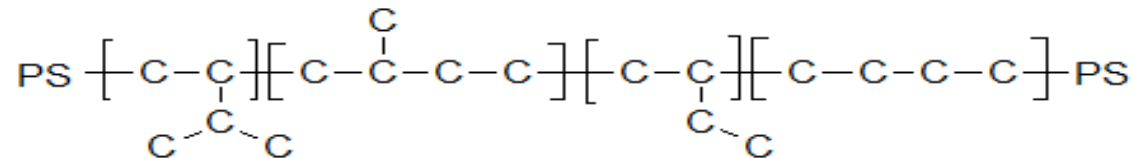


Moderate tensile strength



**Vinyl-bond rich SEPS/SEEPS:
HYBRAR™ 7000-series**

Excellent compatibility with PP
High damping property



Physical Properties of SEPTON™ 4030S

Structure		SEEPS
Styrene	wt%	20
Specific Gravity		0.89
MFR ¹⁾	g/10 min	1.0
Hardness	Type A	67
Tensile Properties ²⁾		
100% Modulus	MPa	2.5
Tensile Strength	MPa	34
Elongation	%	490
Solution Viscosity ³⁾	mPa·s	81
Physical Form		Crumbs

Test Condition:

¹⁾ 230 deg. C, 2.16 kg

²⁾ ISO 37 as reference, Compression molding,
Test speed: 500 mm/min

³⁾ 10 wt%, 30 deg. C, toluene solution



SEPTON™ 4030S (Crumbs) is SEEPS with low molecular weight and the styrene content of 20 wt%.

Comparison of Typical Properties

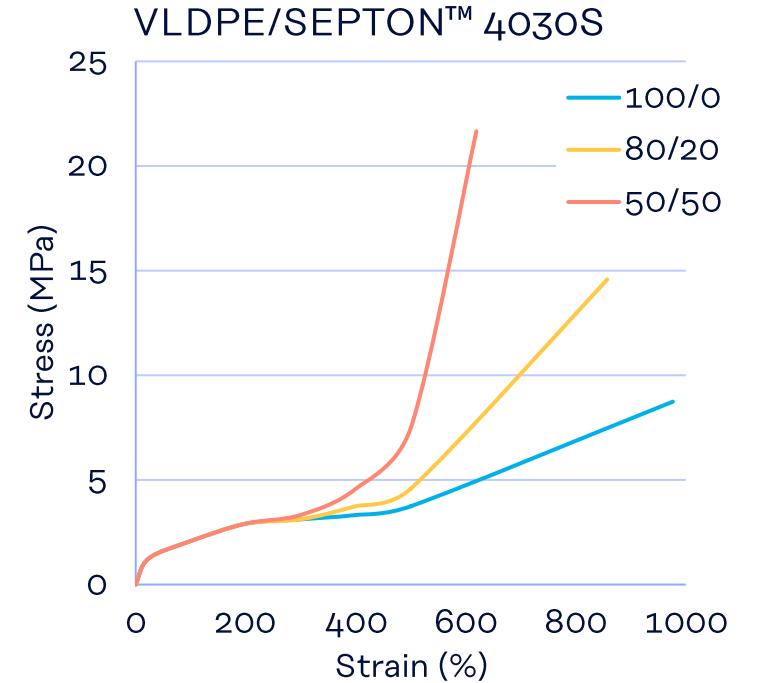
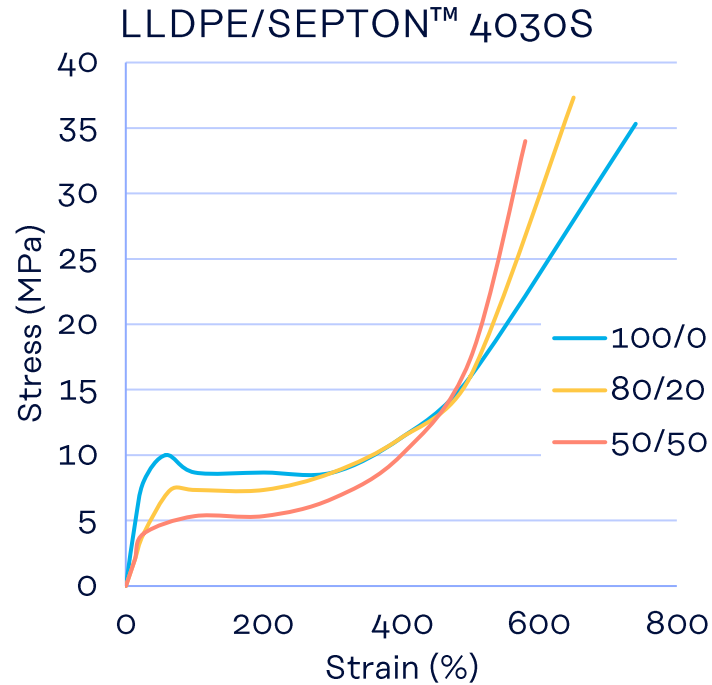
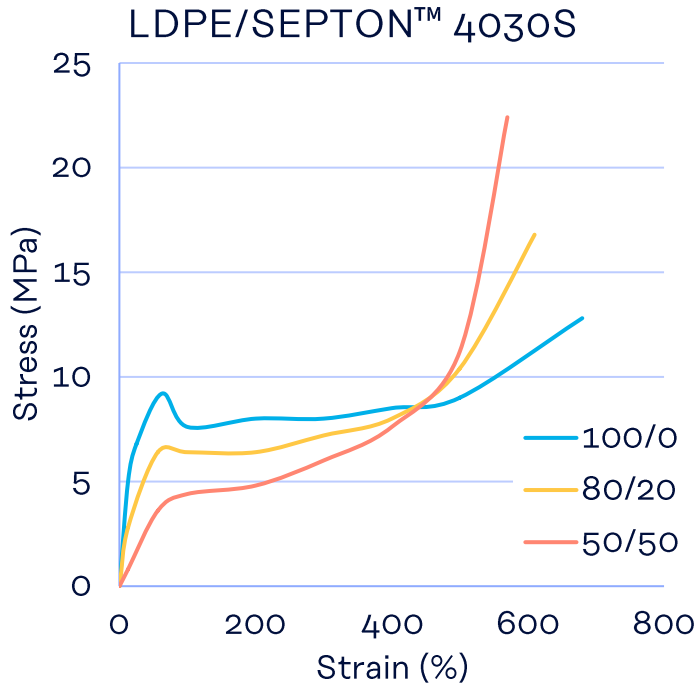
	SEPTON™ 4030S	SEPTON™ 4033	SEPTON™ 2004F	SEPTON™ 8004
Structure	SEEPS	SEEPS	SEPS	SEBS
Styrene Content (wt%)	20	30	18	31
Physical Form	Crumbs	Crumbs	Pellets	Crumbs
MFR (g/10 min) (230 deg. C, 2.16 kg)	1.0	<0.1	5.0	<0.1
Hardness (Type A)	67	76	67	80
Tensile Strength (MPa)	34	49	28	39
Elongation (%)	490	520	650	550
Solution Viscosity (mPa·s) (Toluene 10 wt%, 30 deg.C)	81	50	n.d.	40

SEPTON™ 4030S is more flexible than SEPTON™ 4033.

SEPTON™ 4030S shows higher strength than SEPTON™ 2004F.

SEPTON™ 4030S can be applied for resin modification and soft compounds.

Tensile Properties of PE/SEPTON™ 4030S (by wt)



PE/SEPTON™ 4030S blends are soft and show high tensile strength.

Tensile Properties of LDPE/SEPTON™ 4030S

LDPE*	LDPE/SEPTON™ 4030S (by wt)	M100 (MPa)	M200 (MPa)	M300 (MPa)	M400 (MPa)	M500 (MPa)	Tensile strength (MPa)	Elongation (%)
MFR 20	100/0	7.5	7.0	7.1	7.3	7.5	9.3	680
	80/20	4.1	4.5	5.0	6.4	8.5	11.5	770
	50/50	4.1	4.6	5.3	6.9	10.2	24.5	730
MFR 4	100/0	7.7	7.4	7.7	7.8	8.5	12.7	680
	80/20	6.2	6.3	6.8	7.9	10.7	16.8	620
	50/50	4.3	5.0	5.8	7.5	11.4	22.3	580
MFR 2	100/0	8.6	8.8	8.3	8.5	9.7	14.1	670
	80/20	6.7	6.8	7.4	8.8	12.2	19.5	620
	50/50	4.9	5.4	6.4	8.4	12.9	26.5	570
MFR 0.5	100/0	8.6	8.5	8.7	9.1	12.5	17.3	660
	80/20	7.2	7.3	7.8	9.9	14.2	19.2	570
	50/50	5.0	5.8	6.9	9.2	14.4	25.2	560

*190 deg. C, 2.16 kg

Compounding temperature = 200 deg. C

Tensile properties (ISO 37 as reference): Test speed = 500 mm/min

SEPTON™ 4030S provides flexibility and high strength for LDPE with various viscosities.

<Appendix> Compatibility with Polyethylene

	HDPE	LDPE	LLDPE-1	LLDPE-2
Density (g/cm ³)	0.958	0.919	0.919	0.870
MFR (g/10 min)*	20	12	30	1.0
(S) EEP (S)	C	C	C	C
(S) EB (S)	C/I	C	C	C
(S) EP (S)	C/I	C/I	C/I	C

*190 deg. C, 2.16 kg

C: Compatible, C/I: Partially compatible, I: Incompatible

SEEPS shows good compatibility with wide range of PE.

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