SBR 1012 and SBR 1013 elastomers

For pressure-sensitive tape and label adhesives

The key elements of a good tape are that it must dispense easily, the adhesive must have good shear resistance, and it must stick well to the intended surface without a tendency for premature lifting. When a roll of tape is unwound, it should not show undue stick or unravel. The labels must stick to the intended substrate, but when they are removed they must be lifted cleanly without leaving traces of adhesive on the substrate. The nature of failure, whether adhesive or cohesive, will depend upon the balance between the initial strength, cohesion, force of attachment at the interface and the rate of stripping.

The high molecular weight of SBR 1012 plays an important role during the compound design of tapes and labels. It yields an adhesive film with enhanced cohesive strength that will not leave residue on the substrate. In SBR 1013, the level of bound styrene, type of emulsifier and the molecular weight of polymer play an important role during the compound design for tapes or labels. A higher styrene level acts as a reinforcing agent, yielding a firmer adhesive film with higher modulus. If formulated correctly, it will yield a correct balance of adhesion, cohesion and shear resistance necessary for tape and label applications.

APPLICATIONS

- *Tapes*
- *Labels*
- *Pressure sensitive adhesives*

BENEFITS

- *Low water absorption*
- *Firm adhesive film*
- *Higher initial modulus*
- *High green strength*
- *Excellent removability*
- *Good insulation and damping*
- *Will adhere to both low-and high-surface-energy material*
- *Blends with other general purpose tape polymers*

TYPICAL PROPERTIES

Emulsifier:	Fatty acid
Stabilizer:	Non-staining
Coagulants:	Acid
% of bound styrene:	43.5

800.535.9960
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LION ELASTOMERS

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SBR 1013 in PSA tape using toluene as primary solvent

PSA tape	
SBR 1013	100
Pentalyn H	100
Irganox 1520	2
Toluene	1000
Total	1202
% Solid	16.81
Brookfield viscosity cP	285
PSTC 180° peel, lbs/in	4.84
Loop tack-PSTC 16A, lb/in	1.7
Static shear (min., 0.5" x 0.5"	204

SBR 1013 in PSA tape using toluene as co-solvent

PSA tape	
SBR 1013	100
Pentalyn H	100
Irganox 1520	2
Hexane[1]	900
Toluene	100
Total	1202
% Solid	16.81
Brookfield viscosity cP	65
PSTC 180° peel, lbs/in	5.6
Loop tack-PSTC 16A, lb/in	1.01
Static shear (min., 0.5" x 0.5")	164

[1] Cyclohexane will yield higher viscosity

Viscosity of SBR 1012 in various solvents (cP) at room temperature

	Toluene	Xylene	Cyclohexane	Hexane	Heptane	Petroleum Distillate	TBAc[1]
5%	1000	1100	534	8	8	125	18
7.5%	5450	5400	2850	18	22	598	70
10%	14000	15000	8900	72	110	2975	550
12.5%	26980	28500	21500	240	540	9250	3220

Viscosity of SBR 1013 in various solvents (cP) at room temperature

	Toluene	Xylene	Cyclohexane	Methyl Cyclohexane	Petroleum Distillate	n-propyl acetate	TBAc[1]
5%	62	64	48		16	30	22
7.5%	218	234	162	102	34	108	72
10%	644	700	472	300	94	380	234
12.5%	1590	1680	1221	728	350	1110	1050

Hexane and Heptanes must be used with an aromatic cosolvent

[1]TBAc=Tertiary Butyl Acetate

FOR MORE INFORMATION

Contact your Lion Elastomers Account Representative or Technical Service, or visit www.lionelastomers.com.

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