Kuraray Liquid Rubber

kuraray

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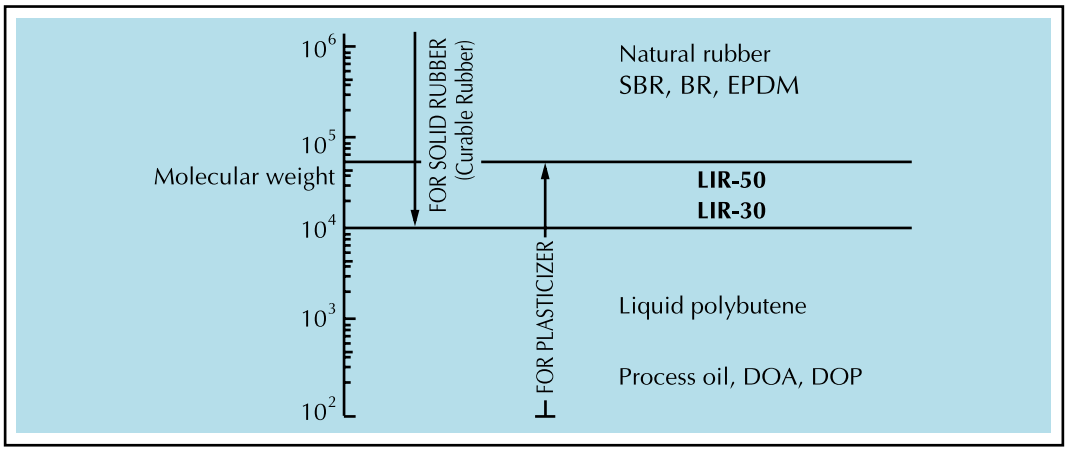
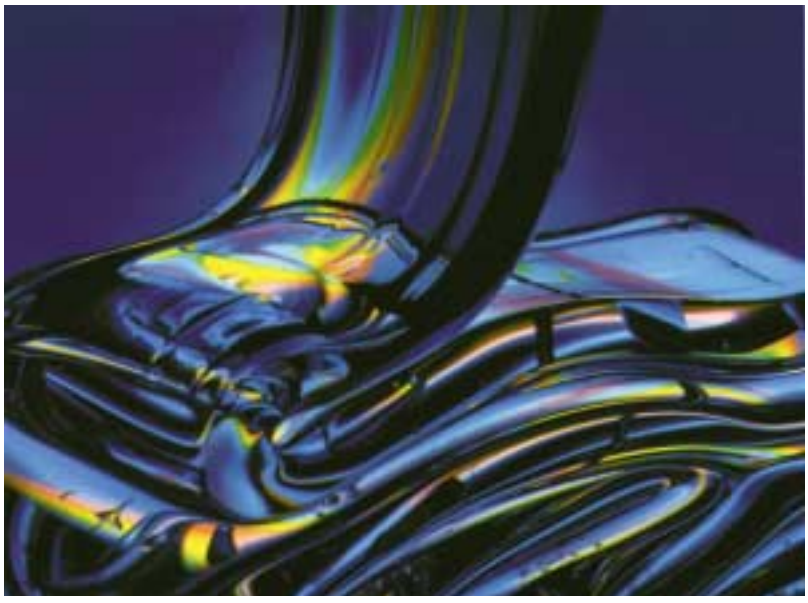
Liquid Isoprene Rubber (“LIR”)
Liquid Butadiene Rubber (“LBR”)

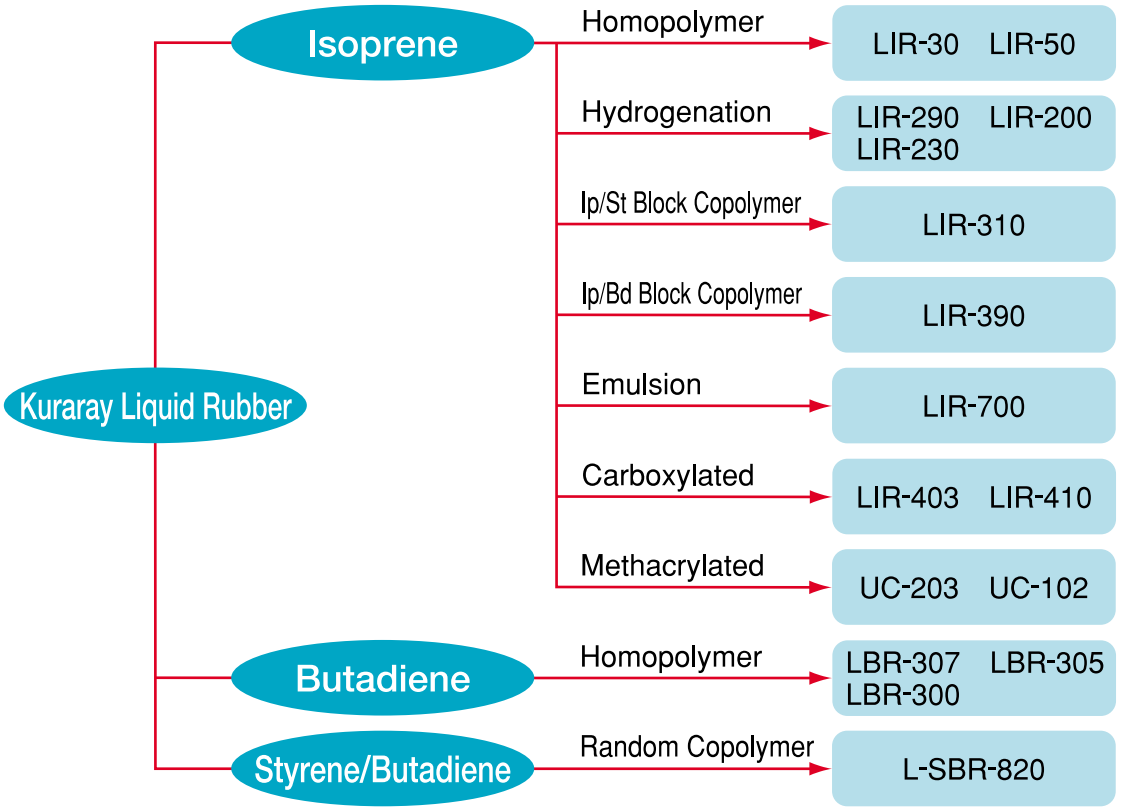
- LIR/LBR is a viscous liquid rubber based on isoprene and /or butadiene, which was originally synthesized by Kuraray Co., Ltd.
- LIR/LBR is colorless, transparent and almost completely odorless.
- LIR/LBR has a function as a “Reactive plasticizer.”
  In terms of function as a “Plasticizer”, LIR/LBR is the rubber with the highest molecular weight among materials which have the plasticizing function.
  In terms of function as a “Reactive”, it is “vulcanizable”.
  LIR/LBR is co-vulcanizable and /or co-crosslinkable with solid rubber such as NR, SBR, BR and EPDM using sulfur or peroxide.
- Some LIR/LBR grades are crosslinkable by reaction of its functional groups and are crosslinkable by UV irradiation.

“Molecular weight of rubbers and plasticizers”





Grades of "LIR/LBR"

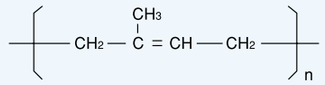
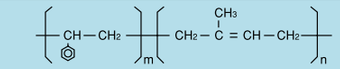
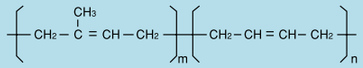
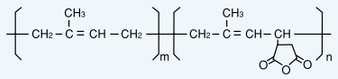
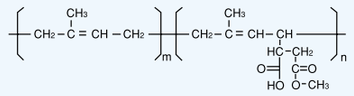
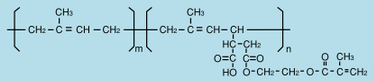
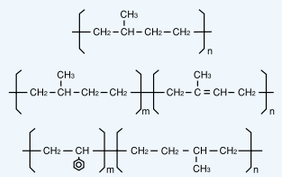
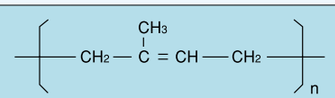
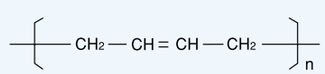
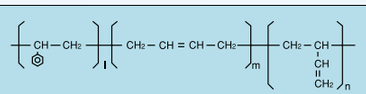


Applications of "LIR/LBR"

When functioning as a "Reactive plasticizer" and as "Crosslinkable", LIR/LBR can be applied to the following applications.

Rubber goods	**Tire, Roll, Belt, Hose, Foot wear**
Adhesives	**Solution, Hot melt, Crosslink, Latex**
Sealants	**Automobile**
Others	**Printing Plate, Coating, Lubricants, Binders**

Typical prope rties of “LIR/LBR”

Category	Type	Grade	Structure	Number of functionality in a molecule	Molecular Weight	Melt Viscosity (Pa·s at 38℃)	Specific Gravity(g/cc)	Glass Transition Temp. (℃)	Features	Main applications
LIR (Isoprene)	Homopolymer	LIR-30		—	28,000	70	0.91	−63	•Good compatibility with diene Robbers. •Well-balanced adhesive properties.	•Reactive plasticizer (NR, IR,SBR, BR) -Tire, Roll- •Pressure sensitive adhesives •Sealants (Automobile)
		LIR-50		—	54,000	500	0.91	−63		
	Block Copolymer	LIR-310		—	32,000	1,400	0.92	−63	•Good compatibility with SIS. •Superior in Softness.	•Hot melt adhesives (SIS, SBS, EVA) •Sealants (Automobile)
		LIR-390		—	48,000	400	0.88	−95	•Superior in heat resistance.	
	Calboxylated	LIR-403		3	34,000	200	0.92	−60	•Crosslinkable by metal compounds, epoxy compounds, isocyanate compounds, amine compounds. •Good adhesion with metals and fibers.	•Modifier of adhesion between rubber and metal, fabric.-Belts, Hose, Footwear- •Pressure sensitive adhesives •Sealants (Automobile)
		LIR-410		10	30,000	430	0.92	−59		
	UV cure	UC-102		2	17,000	30	0.90	−60	•Reactive at low temperature. •Crosslinkable by UV.	•Pressure sensitive adhesives (UV Crosslinkable)
		UC-203		3	35,000	190	0.90	−60		
	Hydrogenated	LIR-200		—	31,000	1,500	0.86	−59	•Good compatibility with EPDM, SEPS and SEBS. •Superior in heat and weather resistance.	•Reactive plasticizer (EPDM) •Hot melt adhesives (SEBS, SEPS)
		LIR-290		(Iodine value= 40g/100g)	31,000	1,200	0.86	−59		
		LIR-230		—	21,000	1.000	0.87	−57		
	Latex	LIR-700		—	28,000	75 (Solid cont. =60wt%)	—	−63	•Good compatibility with NR latex.	•Reactive plasticizer (NR latex, SBR latex) •Adhesive
LBR (Butadiene)	Homopolymer	LBR-307		—	8,000	1.5	0.89	−95	•Good compatibility with BR and SBS.	•Sealants (Automobile) •Reactive plasticizer •Pressure sensitive adhesives
		LBR-305		—	26,000	40	0.90	−95		
		LBR-300		—	44,000	225	0.90	−95		
L-SBR (St/Bd)	Rondom Copolymer	L-SBR-820		—	8,500	350	0.95	−14	•Good compatibility with S-SBR and E-SBR.	•Tire

Compound of “LIR/LBR”

■LIR-50 for Rubber Compounds

Features: Improvement of processability.

Extruded Sample	ASTM D 2230*)	
	EDGE	SURFACE
	6	B
	10	A
	6	B

xcellent) ⟷ 1 (poor)
SURFACE : A (excellent) ⟷ E (poor)

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