Polymer

Product	Tests	Unit	Method
Natural Rubber	Ash Content	%	ISO 247-1/ ASTM D1278
	Dirt Content	%	ISO 249/ ASTM D1278
	Glass Transition Temp	°C	ASTM D7426/ ASTM E1356/ ISO 22768
	Metal Content	mg/Kg	ISO 19050
	Mooney Viscosity	MU	ASTM D1646
	Nitrogen Content	%	ISO 1656
	Volatile Content	%	ISO 248-1/ ISO 248-2/ ASTM D1278
Synthetic Rubber	Ash Content	%	ASTM D5667/ ISO 247-1
	Glass Transition Temp	°C	ASTM D7426/ ASTM E1356/ ISO 22768
	Metal Content	%	ISO 19050
	Cis Content-Microstructure	%	IS 10016-4
	Trans Content-Microstructure	%	IS 10016-4
	Vinyl Content-Microstructure	%	IS 10016-4
	Styrene Content-Microstructure	%	ISO 21561
	Vinyl Content-Microstructure	%	ISO 21561
	Molecular weight distribution	'--	ASTM D6474
	Mooney Viscosity	MU	ASTM D1646
	Nitrogen Content	%	ISO 1656
	Oil Content	%	ASTM D5774
	Organic Acid Content	%	ASTM D5774/ ISO 7781
	Soap Content	%	ASTM D5774/ ISO 7781

	Volatile Content	%	ASTM D5668/ ISO 248-1/ ISO 248-2
	FTIR Study	-	ASTM D2702
	Moisture by KF titrator*	%	IS 2362
	Acetone extract of SBR*	%	ASTM D5773
	Ethylene Toluene extract content of SBR*	%	ASTM D5774

Carbon

Product	Test	Unit	Method
Carbon Black	Ash Content	%	ASTM D1506/ ISO 1125
	BaP Content	ppb	ASTM D7771
	COAN No	ml/100g	ASTM D3493
	Cyclohexane Extract	%	ASTM D7772
	Extractable Content	%	ASTM D4527
	FTIR Study	'--	ASTM D2702
	Heat Loss	%	ASTM D1509/ ISO 1126
	Iodine no	g/Kg	ASTM D1510/ ISO 1304
	IPHT	gmf	ASTM D5230
	NSA	m2/g	ASTM D6556/ ISO 18852
	OAN No	ml/100g	ASTM D2414/ ISO 4656
	pH	--	ASTM D1512
	Pour Density	Kg/m3	ASTM D1513
	Sieve Residue	%	ASTM D1508/ ISO 1437

	STSA	m2/g	ASTM D6556/ ISO 18852
	Sulfur Content	%	ASTM D1619/ ISO 1138
	Tint Strength	--	ASTM D3265/ ISO 5435
	Toluene Discolouration	%	ASTM D1618/ ISO 3858
	Residue at 325 mesh*	%	ASTM D1508
	Residue at 35 mesh*	%	ASTM D1508
	Bulk Attrition*	%	ASTM D1508

SR Filler

Product	**Test**	**Unit**	**Method**
SR filler	Ignition Loss*	%	ASTM D6740
	Heat Loss*	%	ISO 11235
	HF Soluble*	%	ASTM D297
	pH *	-	ISO 28641
	Residue at 325 mesh*	%	ASTM D5461
	Other minerals-Fe, Cu & Mn*	%	32-WI-300

Silica

Product	Test	Unit	Method
Silica	CTAB surface area	m2/g	ASTM D6845
	Ignition Loss	%	ISO 3262-1/ ASTM D1208/ ISO 5794-1
	NSA	m2/g	ASTM D1993
	Sears No	ml/1.5 g	ASTM D8016
	SiO2 Content	%	ISO 3262-20

	Heat Loss	%	ASTM D6738/ ISO 727-2
	pH	--	ASTM D6739
	SiO2 Content	%	ISO 5794-1
	Electrical conductivity*	µs/cm	ASTM D8300

CaCO3

Product	Test	Unit	Method
Calcium carbonate	Ignition Loss*	%	ASTM D1208
	Heat Loss*	%	ISO 11235
	HCl Insoluble*	%	ASTM C25
	Fineness through 100 mesh*	%	ISO 11235
	Fineness through 325 mesh*	%	ISO 11235
	CaO content*	%	ASTM C25
	Qualitative test for CO2*	-	HASETRI method
	Alkalinity*	-	HASETRI method
	Nitrogen surface area*	m2/g	ASTM D1993
	Lead content*	%	32-WI-300
	Magnesium as MgO*	%	32-WI-300

Crumb rubber

Product	Test	Unit	Method
Crumb Rubber	Acetone extract*	%	ASTM D6370
	Ash content*	%	ASTM D6370
	Moisture by KF *	%	IS 2362
	Fineness through 30 mesh*	%	ASTM D5644
	Fineness through 40 mesh*	%	ASTM D5644
	Rubber hydrocarbon content*	%	ASTM D6370
	Carbon black content*	%	ASTM D6370
	Mesh size distribution*	%	ASTM D5644

Oil

Product	Test	Unit	Method
Oil	Aniline Point	°C	ASTM D611
	API gravity	--	ASTM D1298
	Aromatic content- FTIR	%	IS 13155
	Naphthenic Content-FTIR	%	IS 13155
	Paraffininc Content-FTIR	%	IS 13155
	Aromatic content- Clay gel	%	ASTM D2007
	Saturate content-Clay gel	%	ASTM D2007
	Polar content- Clay gel	%	ASTM D2007
	Asphalt content- Clay gel	%	ASTM D2007
	Flash Point	°C	ASTM D92
	Glass Transition Temp	°C	ISO 28343

	Kinematic Viscosity	mm2/s	ASTM D445
	Naphthalene	mg/Kg	DIN EN 16143
	Acenaphthalene	mg/Kg	DIN EN 16143
	Acenaphthene	mg/Kg	DIN EN 16143
	Fluorene	mg/Kg	DIN EN 16143
	Phenanthrene	mg/Kg	DIN EN 16143
	Anthracene	mg/Kg	DIN EN 16143
	Fluoranthene	mg/Kg	DIN EN 16143
	Pyrene	mg/Kg	DIN EN 16143
	Benzo (a) Anthracene	mg/Kg	DIN EN 16143
	Chrysene	mg/Kg	DIN EN 16143
	Benzo (b) Fluoranthene	mg/Kg	DIN EN 16143
	Benzo (k) Fluoranthene	mg/Kg	DIN EN 16143
	Benzo (a) Pyrene	mg/Kg	DIN EN 16143
	Benzo (g.h.i)perylene	mg/Kg	DIN EN 16143
	Dibenzo (a,h) anthracene	mg/Kg	DIN EN 16143
	Indenol (1.2.3-cd) Pyrene	mg/Kg	DIN EN 16143
	PCA Content	%	IP 346
	Pour Point	°C	ASTM D97
	Sp Gravity	--	ASTM D1298
	Viscosity Gravity Constant	--	ASTM D2501

Chemical

Product	Test	Unit	Method
Accelerator-General	Ash Content	%	ISO 28641
	Heat Loss	%	ISO 11235
	Insoluble content	°C	ASTM D4934/ ISO 11235
	Melting Point	%	ASTM D1519/ ISO 11235
	pH	--	ISO 28641
	Sieve Residue	%	ASTM D5461
	Solubility	%	ASTM D1766
	Water Content	%	ASTM D5460
	Wet Sieve Residue	%	ISO 11235
	Sulfur content	%	ASTM D6741
	Moisture content	%	ASTM D4571
	FTIR Study	%	ASTM D2702
Accelerator-CBS	Assay	%	ASTM D4936/ ISO 11235
Accelerator-DCBS	Assay	%	ASTM D4936
Accelerator-MBT	Assay	%	ASTM D1991
Accelerator-MBTS	Assay	%	ISO 11235/ ASTM D5051
	Free MBT Content	%	ASTM D5044
Accelerator-Sulphenamide	Ash Content	%	ISO 11235/ ASTM D4574
Accelerator-TBBS	Assay	%	ASTM D4936/ ISO 11235
Antidegradants	Melting point*	°C	ASTM D1519
	Flash point*	°C	ASTM D92

	Assay*	%	ISO 11235
	DPPD *	%	ISO 11235
	DTPD*	%	ISO 11235
	PTPD*	%	ISO 11235
Antioxidant	Ash Content	%	ISO 28641
	Heat Loss	%	ISO 28641
	Melting Point	°C	ASTM D1519
	pH	--	ISO 28641
	Purity by GC	%	ASTM D4937
	Purity by HPLC	%	ASTM D5666
	Softening Point	°C	ISO 28641
	Volatile Content	%	ASTM D4571
	FTIR Study	--	ASTM D2702
Process Aid	Ash Content	%	ISO 28641
	Melting point	°C	ASTM D1519
	Metal Content	mg/Kg	SOP: 32-WI-300
	Wet Sieve Residue	%	ASTM D5461
	FTIR Study	--	ASTM D2702
WB212	Drop Melting point*	°C	ASTM D127
	Ash content*	%	ASTM D4574
	Acid no*	mg KOH/g	32-WI-306
	Iodine no*	g/100g	HASETRI method

	Moisture Content*	%	ASTM D4571
	Manganese content*	%	HASETRI method
Resin	Ash Content	%	ISO 28641
	pH	--	ISO 28641
	Softening Point	°C	ASTM E28/ ISO 28641
	Acetone insoluble*	%	ASTM D1766
	Heat Loss*	%	ASTM D4571
	Methylol content*	%	HASETRI method
	FTIR Study	--	ASTM D2702
PF resin hardner	HMT content*	%	HASETRI method
	Hot plate cure @165°C*	s	HASETRI method
	Wet Sieve Residue*	%	ASTM D4572
	FTIR Study*	-	ASTM D2702
HMMM Resin	Ash Content*	%	ASTM D4574
	Free formaldehyde*	%	HASETRI method
	Refractive index*	-	ASTM D1218
	Nitrogen content*	%	ASTM D6741
	Sieve Residue*	%	ASTM D4572
	FTIR Study*	-	ASTM D2702
DCPD Resin	Softening Point*	°C	ASTM E28
	Ash Content*	%	ASTM D4574
	Acid No*	mg KOH/g	32-WI-306

	Bromine no*	g/100g	ASTM D1159
	Saponification number*	mg KOH/g	SOP-32-WI-308
	FTIR Study*	-	ASTM D2702
Silane			
	Ash Content	%	ISO 28641
	Residue on Ignition	%	ASTM D6740
	Sulfur Content	%	ASTM D6741
	FTIR Study	--	ASTM D2702
Stearic Acid	Acid No	mg KOH/g	32-WI-306
	Ash Content	%	ISO 28641
	Metal Content	mg/Kg	SOP: 32-WI-300
	pH	--	ISO 28641
	Saponification number	mg KOH/g	SOP-32-WI-308
	FTIR Study	--	ASTM D2702
	Fatty Acid Composition-C16	%	SOP-32-WI-310
	Fatty Acid Composition-C18	%	SOP-32-WI-310
	Drop Melting point*	°C	ASTM D127
	Iodine no*	g/100g	HASETRI method
	Nickel content*	%	32-WI-300
	Refractive index*	-	ASTM D1218
Sulfur	Acidity	%	ISO 8332
	Ash Content	%	ASTM D4574/ ISO 8332

	Melting Point	%	ASTM D1519
	Oil Content	%	ASTM D4573/ IS 14127/ ISO 8332
	Percent Insoluble	%	IS 14127/ ISO 8332
	Percent Reversion	%	IS 14127/ ISO 8332
	Percent Sulfur	%	ASTM D4578/ ISO 8332
	Soluble sulfur content	%	ISO 8332
	Volatile content	%	ASTM D4571/ ISO 8332
	Wet Sieve Residue	%	ASTM D4572/ ASTM D5461/ ISO 8332
Titanium oxide	Ash Content	%	ASTM D1208
	Loss on ignition	%	ASTM D1208
	Moisture Content	%	ASTM D280/ ASTM D1394
	pH	--	ASTM D1208
Wax	Ash Content	%	ISO 28641
	Carbon Chain distribution	%	ASTM D5442
	Drop Melting point	°C	ASTM D127
	Congealing point*	°C	ASTM D938
	Refractive index*	-	ASTM D1218
	FTIR Study	--	ASTM D2702
Zinc Oxide	Ash Content	%	ISO 28641
	Metal Content	%	SOP: 32-WI-300
	Moisture Content	%	ASTM D280/ ASTM D4315
	pH	--	ASTM D1208/ ISO 28641

	Wet Sieve Residue	%	ASTM D5461
	Zinc Oxide content	%	ASTM D3280/ ASTM D4315
	Lead content*	%	32-WI-300
	Cadmium content*	%	32-WI-300
	Total Sulfur*	%	ASTM D6741
	Nitrogen Surface Area*	m2/g	ASTM D1993
	Color comparison*	--	ASTM D2616
	FTIR Study	--	ASTM D2702
DBD	Ash Content*	%	ASTM D4574
	Moisture by KF moisture*	%	IS 2362
	Wet Sieve Residue*	%	ASTM D4572
	FTIR Study*	--	ASTM D2702
Cobalt Stearate	Cobalt Content*	%	IS 2766
	Final Melting Point*	°C	ASTM E794
	Heat Loss*	%	ASTM D4571
	Heptane Insolubles*	%	ASTM D1766
	FTIR*	-	ASTM D2702
Wood Rosin/Gum Rosin	Softening Point by Ring and Ball*	°C	ASTM E28
	Ash Content*	%	ASTM D4574
	Acid No.*	mg KOH/g	32-WI-306
	Solubility in Benzol (Only for wood Rosin)*	%	ASTM D1766
	Iodine No.*	g/100g	HASETRI method

	FTIR*	-	ASTM D2702
MgO	MgO Content*	%	HASETRI method
	Ash Content*	%	ASTM D4574
	Sieve Residue @ 325 mesh*	%	ASTM D4572
	Nitrogen Surface Area*	m2/g	ASTM D1993
	CaO Content*	%	HASETRI method
Resorcinol	Freezing Point*	°C	ASTM D2386
	Ash Content*	%	ASTM D4574
	Purity*	%	ASTM D4937
	FTIR*	-	ASTM D2702
Oleic Acid	Iodine No.*	g/100g	HASETRI method
	Acid No.*	mg KOH/g	32-WI-306
	Specific Gravity*	-	ASTM D792
Perkalink	Initial Melting Point*	°C	ASTM D1519
	Final Melting Point*	°C	ASTM D1519
	Heat Loss*	%	ASTM D4571
	Ash Content*	%	ASTM D4574
	Assay*	%	ISO 11235
Duralink	Melting Point*	°C	ASTM D1519
	Moisture Content by KF*	%	IS 2362
	Sieve Residue @ 100 mesh*	%	ASTM D4572
	Assay by Titration*	%	ISO 11235

Tyre inner paint	Specific Gravity*	-	ASTM D1417
	Toatal Solid *	%	ASTM D1417
	pH*	--	ISO 28641
Suremix	Zn Content*	%	32-WI-300
	Ash Content*	%	ASTM D4574
	pH*	--	ISO 28641
	Softening Point by Ring and Ball*	°C	ASTM E28
	FTIR*	-	ASTM D2702

Latex

Product	Test	Unit	Method
Latex	Mooney Viscosity	MU	ASTM D1417
	Nitrogen Content	%	ISO 1656
	pH	--	ASTM D1417
	Total Solid Content	%	ASTM D1417

Reinforcement

Product	Test	Unit	Method
Reinforment cord	Coating weight-Steel wire	%	ASTM D2969
	Coating weight-Bead wire	%	ASTM D2969
	Composition in coating-Steel Wire	%	ASTM D2969
	Composition in coating-Bead Wire	%	ASTM D2969
	Melting point-Organic Cord	°C	ASTM D2969

Coal

Product	Test	Unit	Method
Coal	Ash Content	%	IS 1350-1
	Calorific Value	KCal/Kg	IS 1350-2
	Fixed Carbon	%	IS 1350-1
	Moisture Content	%	IS 1350-1
	Sulfur Content	%	ASTM D4239
	Volatile Matter	%	IS 1350-1

Finish Pdt

Product	Test	Unit	Method
Rubber Compound	Antidegredant Content	%	SOP 32-WI-304
	Ash Content	%	ASTM D6370/ ASTM D297/ ISO 9924-1/ ISO 9924-2/ ISO 9924-3
	SBR/BR blend ratio	%	SOP-31-WI-703
	Carbon Black Content	%	ASTM D6370/ ISO 9924-1/ ISO 9924-2/ ISO 9924-3
	Extractable Content	%	ASTM D297/ ISO 1407
	Glass Transition Temp	°C	ASTM D7426/ ASTM E1356
	HCl insoluble ash content	%	ASTM D297
	HCl soluble ash content	%	ASTM D297
	Metal Content	%	ISO 19050
	Polymer Blend Ratio	%	ASTM D6370/ ISO 9924-1
	Polymer Content	%	ASTM D6370/ ISO 9924-1/ ISO 9924-2/ ISO 9924-3
	Silica Content	%	ASTM D297
	Sulfur Content	%	ASTM D1619

	Polymer Identification	'--	ASTM D3677/ ISO 4650
	Pb Content	mg/Kg	31-WI-312
	Cd Content	mg/Kg	31-WI-312
	Hg Content	mg/Kg	31-WI-312
	Cr Content	mg/Kg	31-WI-312
	Mono BB Content	mg/Kg	31-WI-311
	Di BB Content	mg/Kg	31-WI-311
	Tri BB Content	mg/Kg	31-WI-311
	Penta BB Content	mg/Kg	31-WI-311
	Hexa BB Content	mg/Kg	31-WI-311
	Hepta BB Content	mg/Kg	31-WI-311
	Octa BB Content	mg/Kg	31-WI-311
	Nona BB Content	mg/Kg	31-WI-311
	Deca BB Content	mg/Kg	31-WI-311
	Polymer Identification by GC	--	ASTM D3452