



HARI SHANKAR SINGHANIA ELASTOMER & TYRE RESEARCH INSTITUTE
HASETRI
[AN NABL (ISO / IEC 17025 : 2005) ACCREDITED LABORATORY]

| Method No. | TEST PARAMETER | Method No. | TEST PARAMETER |
|------------|----------------------------------------------------------|------------|-------------------------------------------------------|
| | SPECIAL TEST FOR ANALYTICAL | HV - 3 | - DIN Abrasion |
| HA - 1 | - TGA at 40 Deg. C/MIN | HV - 4 A | - Goodrich Heat Build-up |
| HA - 2 A | - DSC at 10 Deg. C/MIN | HV - 4 B | - Goodrich DMA |
| HA - 2 B | - DSC at 10 Deg. C/MIN, Low Temp. | HV - 4 C | - Goodrich Blow Out Test |
| HA - 3 A | - FTIR (Fourier Transformed Infrared Spectrophotometer) | HV - 5 A | - Monsanto FTFT at RT |
| HA - 3 B | - FTIR - By Pyrolysis | HV - 5 B | - Monsanto FTFT at HT |
| HA - 4 A | - Optical Microscopy | HV - 6 A | - De-Mattia Flex-Cut Initiation |
| HA - 4 B | - Optical Microscopy, Hot Stage Analysis | HV - 6 B | - De-Mattia Flex-Cut Growth |
| HA - 6 | - Molecular Weight of Polymer by GPC | HV - 7 A | - Tension/Permanent Set at RT Using Zwick UTS |
| HA - 8 | - Extraction | HV - 7 B | - Tension/Permanent Set at HT |
| HA - 9 | - TLC | HV - 8 | - Swell Index |
| HA - 10 | - Volume Fraction of rubber | HV - 9 A | - Carrying out Ageing at one Temp.(1 Day) |
| | ANALYSIS OF RUBBER PRODUCT | HV - 9 B | - Carrying out Ageing at one Temp.(3 Days) |
| HA - 11 | - Polymer Identification | HV - 9 C | - Carrying out Ageing at one Temp.(7 Days) |
| HA - 12 | - % Rubber Hydrocarbon | HV - 10 | - Ozone Resistance test at Specified Temp. for 24 Hrs |
| HA - 13 | - % Carbon Black | HV - 11 A | - Analysis of Tube (Dimension & Physicals) - V |
| HA - 14 | - % Volatiles | HV - 11 B | - Analysis of Tube (Dimension & Physicals) - C |
| HA - 15 | - % Ash | HV - 11 C | - Tube Valve Adhesion |
| HA - 16 | - Semi Quantitative Ash Analysis | HV - 11 D | - Tube splice strength by De-Mattia Flexometer |
| HA - 17 | - Plasticiser Identification | HV - 11 E | - Details analysis of Tube Valves |
| HA - 18 | - Qualitative Antioxidant Analysis | HV - 12 A | - Analysis of Flap (Dimension & Phy)-V |
| HA - 19 | - Carbon Chain Distribution of Wax by GC | HV - 12 B | - Analysis of Flap (Dimension & Phy)-C |
| HA - 20 | - Purity of Rubber Chemicals by GC | HV - 13 A | - Sample Prepration by Splitting. M/C |
| HA - 21 | - Benzene & Aromatic Content of Solvent Naphtha by GC | HV - 13 B | - Sample Prepration by Crushing |
| HA - 22 | - Quant.Estmn. of 6PPD in Rubber Vulcanizate by HPLC | HV - 13 C | - Sample Prepration by Drilling/Grinding |
| HA - 23 | - Assay of Rubber Chemicals by HPLC | HV - 13 D | - Sample Prepration from Finished Products |
| HA - 24 | - Characterisation by UV-Vis | HV - 14 A | - Rebound Resilience -RT |
| HA - 25 | - Toluene Discoloration of C-Black | HV - 14 B | - Rebound Resilience -HT |
| HA - 26 | - Surface Area of Materials (powder) | HV - 15 A | - Dynamic Properties - RT |
| HA - 27 | - Determination of S & N by NCS Analyser | HV - 15 B | - Dynamic Properties - HT |
| HA - 28 | - Material Identification by GC-MS | HV - 15 C | - Dynamic Properties - LT |
| HA - 30 | - SEM | HV - 15 D | - Glass Transition by DMA |
| HA - 31 | - SEM - EDS | HV - 15 E | - Frequency Temp. Superposition |
| HA - 32 | - ICP-OES | HV - 16 | - Gas Permeability - HT |
| | TESTING OF UNVULCANISED RAW RUBBER | HV - 16 A | - Gas Permeability - RT |
| HU - 1 A | - Mooney Viscosity by MV 2000 E | HV - 17 | - Determination of Chipping & Chunking |
| HU - 1 B | - Delta Mooney by MV 2000 E | HV - 18 | - Determination of Tyre Aging Characteristics |
| HU - 1 C | - Mooney Scorch by MV 2000 E | HV - 19 A | - Crack Growth - RT by Flexing Machine |
| HU - 2 | - Rheometry study by MDR 2000 E | HV - 19 B | - Crack Growth - HT by Flexing Machine |
| HU - 4 | - Dispersion by Disperse Grader | HV - 19 C | - De-Mattia - HT |
| HU - 5 | - Extrusion/Die swell property by Brabender Plasticorder | HV - 20 | - Hyper Elastic Properties |
| HU - 6 | - Banbury Mixing | HV - 21 | - Quasi-Static Properties |
| HU - 7 | - Mill Mixing | HV - 22 | - Determination of Bulk Tear |
| HU - 8 | - Moulding | HV - 23 | - Compression Mode stress - Strain |
| HU - 9 | - Mixing in Brabender | HV - 24 | - Compression Mode stress - Strain - HT |
| HU - 10 A | - Analysis by RPA : Strain Sweep | HV - 25 | - Pure Shear Hyper Elastic Properties |
| HU - 10 B | - Analysis by RPA : Frequency Sweep | HV - 26 | - Quadruple Shear |
| HU - 10 C | - Analysis by RPA : Temperature Sweep | HV - 27 A | - Compression Set - RT |
| HU - 10 D | - Analysis by RPA : Matrix Sweep | HV - 27B | - Compression Set - HT |
| HU - 10 E | - Analysis by RPA : Cure Study | HV - 28 | - Step Loading Unloading |
| HU - 10 F | - Analysis by RPA : Cure Simulation | | LATEX TESTING |
| HU - 11 | - Tack Study | HRL - 1 | - % Total Solid Content |
| HU - 12 | - P.R.I. | HRL - 2 | - % Dry rubber Content |
| | VULCANISED RUBBER | HRL - 3 | - pH |
| HV - 1 A | - Tensile Properties at RT | HRL - 4 | - Brookfield Viscosity |
| HV - 1 B | - Tensile Properties at HT | HRL - 5 | - Mooney Viscosity of Contained Polymer |
| HV - 1 C | - Tear Properties at RT | HRL - 6 | - Total Alkalinity |
| HV - 1 D | - Tear Properties at HT | HRL - 7 | - Metal Content (Cu, Mn, Mg, Fe, Ni, Co, Cr) |
| HV - 2 A | - Hardness (IRHD) | HRL - 8 | - Surface Tension |
| HV - 2 B | - Hardness (Shore - A) | HRL - 9 | - Coagulum Content |

| Method No. | TEST PARAMETER | Method No. | TEST PARAMETER |
|------------|--------------------------------------------|------------|---------------------------------------------------|
| | LATEX TESTING | HC - 22 | - Cyclohexane Insoluble |
| HRL - 10 | - Chemical Stability | HC - 23 | - Moisture by Karl Fisher |
| HRL - 11 | - Specific Gravity | HC - 24 | - High Temperature Stability of Insoluble Sulphur |
| HRL - 12 | - Bound Styrene of SBR Latex | HC - 25 | - Moisture by Azeotropic Distillation |
| HRL - 13 | - KOH Number of NR Latex | HC - 26 | - Saponification No. |
| HRL - 14 | - Volatile Fatty Acid Number of NR Latex | HC - 27 | - Aniline Point |
| | FABRIC TESTING | HC - 28 | - Assay of MBT |
| HRF - 1 | - Strength Properties | HC - 29 | - Assay of DPG |
| HRF - 2 | - Linear Density & Moisture | HC - 30 | - Assay of TBBS/CBS/NOBS/DCBS |
| HRF - 3 | - Shrinkage | HC - 31 | - Free MBT |
| HRF - 4 | - Twist | HC - 32 | - Assay of MBTS |
| HRF - 5 | - Gauge | HC - 33 | - Saybolt Viscosity |
| HRF - 6 | - H-Adhesion or Peel Adhesion | HC - 34 | - Sieve Residue of powdery material |
| HRF - 7 | - Heat durability (only ageing) | HC - 35 | - Heat loss |
| HRF - 8 A | - Dip pick up of Nylon Cord | HC - 36 | - Softening pt. |
| HRF - 8 B | - Dip pick up of Polyester Cord | HC - 37 | - Melting pt. |
| HRF - 8 C | - Dip pick up of Rayon Cord | HC - 38 | - Distillation range |
| HRF - 8 D | - Dip pick up of Glass Fiber | HC - 39 | - Congealing pt. of Wax |
| HRF - 9 | - Relative dip pickup for aramid | HC - 40 | - Bulk attrition of C-black |
| HRF - 10 | - Spin finish content | HC - 41 | - Sieve residue of C-black |
| HRF - 11 | - Crystallinity of Fabric | HC - 42 | - Pour density of C-black |
| HRF - 12 | - Melting Point of Fabric | HC - 43 | - Defects in Bead wire coating |
| HRF - 13 | - Identification of Fabric | HC - 44 | - Freezing point |
| HRF - 14 | - Lay Length & Lay Direction | HC - 45 | - UV Analysis of Rubber Chemicals |
| HRF - 15 | - Torsion Test | HC - 46 | - Sp.gravity by Sp. Gravity Bottle |
| HRF - 16 | - Reverse Bend Test | HC - 47 | - Sp.gravity by Hydrometer |
| HRF - 17 | - Coating Thickness | HC - 48 | - Sp.gravity by liquid displacement |
| HRF - 18 | - Humidity Ageing (24 Hrs) | HC - 49 | - DBP absorption of C-black |
| HRF - 19 | - Straightness | HC - 50 | - Water settling Characteristics of Clay |
| HRF - 20 | - Residual Torsion | HC - 51 | - Flash & Fire pt. |
| HRF - 21 | - Stiffness | HC - 52 | - CA,CP,CN of Processing Oil |
| HRF - 22 | - CT Cord Fatigue Test | HC - 53 | - Iodine no. |
| | CHEMICAL TESTING | HC - 54 | - Acid No. |
| HC - 1 | - Brookfield Viscosity | HC - 55 | - Oil content of oiled sulphur |
| HC - 2 | - Identification of S-Bloom | HC - 56 | - Organic acid & soap |
| HC - 3 | - A/O by TLC | HC - 57 | - Methylol content |
| HC - 4 | - Doctor Test of Solvent | HC - 58 | - Acidity as % Free acid |
| HC - 5 | - Acid insoluble | HC - 59 | - Oil content of oil extended polymer |
| HC - 6 | - Total Solid | HC - 60 | - Bound styrene by GC Analysis |
| HC - 7 | - Solubility | HC - 61 | - Iodine Adsorption No. of C-black |
| HC - 8 | - pH | HC - 62 | - Clay/gel Analysis of Processing Oil |
| HC - 9 | - Solvent Extraction | HC - 63 | - Drop melting pt. of wax |
| HC - 10 | - Ash | HC - 64 | - RI of Liquid Sample |
| HC - 11 | - Det. of Zn (Chem) | HC - 65 | - Bound Styrene |
| HC - 12 | - Sulphur content by CS ₂ | HC - 66 | - Micro Structure of Polybutadiene Rubber |
| HC - 13 | - Plating weight Wire Cords | HC - 67 | - Pour point of oil |
| HC - 14 | - Ignition Loss | HC - 68 | - Volatile matter in NR |
| HC - 15 | - Chemical Digestion | HC - 69 | - Pellet Hardness of C-black |
| HC - 16 | - Moisture Content by IR Moisture Analyser | HC - 70 | - Titer Value of Stearic Acid |
| HC - 17 | - VP Content of VP latex | HC - 71 | - Proximate Analysis of Coal |
| HC - 18 | - Silica Content of Silicon Dioxide | HC - 72 | - Refractive Index |
| HC - 19 | - Dirt in NR | HC - 73 | - Micro Structure of Solution SBR |
| HC - 20 | - Nitrogen content of NR | HC - 74 | - Calorific Value Determination |
| HC - 21 | - Cobalt content (Chemical) | HC - 75 | - PCA Content of Oil |

Contact Address :

Jaykaygram - 313 342, Kankroli, Dist. Rajsamand (Rajasthan) INDIA
Ph : (02952) 232 019 / 232 079 ; Fax : 232030 ; E-mail : library@hasetri.com
Website : www.hasetri.com