SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

AKRON RUBBER DEVELOPMENT LABORATORY, INC.[1]
2887 Gilchrist Road
Akron, OH 44305
Walter Samples Phone: 330 794 6600

MECHANICAL

Valid To: January 31, 2014 Certificate Number: 0255.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests on rubber, plastics, latex, condoms, adhesives, sealers and adhesive tapes:

Test	Test Method(s)[2]
Abrasion Resistance	ASTM D1630, D2228, D3389, D5963; DIN 53 516; ISO 4649
AC Loss Characteristics and Permittivity (Dielectric Constant)	ASTM D150
Accelerated Aging and Heat Resistance	ASTM D572, D573, D794[2] (*withdrawn 1998*); D865, D3045; DIN 53 508; ISO 188
Adhesives, Sealers and Adhesive Tapes	AFG-01; ASTM D3498
Brittleness Point	ASTM D2137
Cellular Plastics Test	ASTM D1055 (*except Sec. 20-23*), D3576
Chemical Resistance	ASTM D471, D543
Chloramine Resistance	ASTM D6284
Chlorine, Bromine, or Iodine in Organic Compounds by Oxygen Flask Combustion	ASTM D3566, E442-91[2] (*withdrawn 1997*)
Color Evaluation Spectrophotometer – Non-Fluorescent (including Yellowness Index, Whiteness Index, and Luminous Transmittance)	ASTM D1003, D1925-77[2] (*withdrawn 1995*), D2244, E313, E1164, E1331
Gray Scale	ISO 105/A02, 105/A04; SAE J1545

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Test	Test Method(s)
Compression	ASTM D395, D575, D623, D695, D1229; ISO 815, 1653
Conditioning Plastics for Testing	ASTM D618
Condom Test	ASTM D3492, D6324; ARDL 2139; BS 3704, BS EN ISO 3704; ISO 4074 (*except section 5.2*); WHO 2004
Corrosion Test for Insulation Materials	SAE J1389
Crack Resistance	ASTM D813, D1693
DC Resistance and Conductance	ASTM D257
Density	ASTM D792; DIN 53 479; ISO 1183-1 (Methods A and B)
Dynamic Ozone Cracking	ASTM D3395-99[2] (*withdrawn 2008*)
Effects of Exposure to Fluids on Rubber	DIN 53 521
Extension Cycling Fatigue	ASTM D4482
Flammability	ASTM D635, D3801, D5132; FMVSS-302; ISO 1210, 3795; UL 94, 746B (UL 94 only)
Flex Properties	ASTM D790; ISO 178
Fluid Resistance of Gasket Materials	ASTM F146
Fluorescent UV Exposure of Plastics	ASTM D4329
Fogging Characteristics	Chrysler LP-463DB-12-01; GM 9068P, 9305P; SAE J1756
Friction Properties	ASTM D1894
General Methods	ASTM D380, D1056, D1667, D3577, D3578; ISO 293, 4074-1, 6056; JIS K6301 (*except Sec. 11.0*)
Gloss (60°)	ASTM D523
Hardness	
Barcol Hardness – Rigid Plastics	ASTM D2583
Durometer Hardness – Rubber	ASTM D2240 (Type A and D); DIN 53 505; ISO 868 (Type A and D)

Test	Test Method(s)
Hardness (*cont'd*) International Rubber Hardness	ASTM D1415
HDT/Vicat Softening Point	ASTM D648, D1525 (Rate B); ISO 75, 306 (Method A120)
Ignition Loss	ASTM D2584
Impact	ASTM D256, D3763, D4812, D5420; ISO 179, 180; GM 9904P
Injection Molding Test Specimens	ASTM D3641
Latex Gloves Test	ASTM D5151, D5250, D6124, D6319; ARDL 2140
Low Temperature Brittleness	ASTM D746, D1329; ISO 812
Medical Gloves for Single Use	BS EN 455-1, -2
Melt Flow	ASTM D1238, D3364; ISO 1133
Operating Fluorescent Light Apparatus for UV Exposure of Nonmetallic Materials	ASTM G154
Ozone Testing	ASTM D518-99[2] (*withdrawn 2008*), D1149, D1171; ISO 1431; GM 4486P
Peel Test	ASTM D413, D429
Protective Clothing Material Resistance to Puncture	ASTM F1342 (Procedure A)
Resilience by Vertical Rebound	ASTM D2632-88; DIN 53 512
Resistance of Rubber to Ozone Cracking – Reference Methods for Determining Ozone Concentration in Laboratory Test Chambers	DIN 53 509-2
Rubber Belting, Flat Type	ASTM D378
Rubber Properties in Compression (Mechanical Oscillograph)	ASTM D945
Stain Resistance	ASTM D925
Standard Test Methods for Flexible Cellular Materials Made From Olefin Polymers	ASTM D3575 (*except Suffixes R_2, V, W (Test Method B), CC*)
Standard Test Methods for Urethane Foams	ASTM D3574 (*except B_1, B_2, G, H, I_1-I_4*)

Test	Test Method(s)
Stiffness Test	ASTM D1053
Tear Resistance	ASTM D624, D1004; ISO 34, 6383
Tensile Properties	ASTM D412, D638 (*except Elongation at Yield*), D882, D1708, D3137; DIN 53 504; ISO 37, 99, 527-1
Tension Testing of Nonmetallic Gasket Materials	ASTM F152
Trouser Tear Strength of Rubber	DIN 53 507
Vapor Transmission of Volatile Liquids	ASTM D814; GM 214M (Sec. 3.1.3)
Volatile Loss	ASTM D1203
Water Absorption	ASTM D570; ISO 62
Weatherability	
QUV	ASTM G154; SAE J2020;
Xenon	ASTM G26-96[2] (*withdrawn 2000*), G147, G155; ISO 4892-2; SAE J1885[2] (*withdrawn 2008*), J1960[2](*withdrawn 2008*), J2412, J2527
Xenon and Carbon Arc	JIS D0205

[1] This accreditation covers testing performed at the main laboratory listed above, and at the satellite laboratories indicated.

AKRON RUBBER DEVELOPMENT LABORATORY, INC.
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Akron, OH 44301

Test	Test Method(s)
General Methods	ASTM D3182
Viscosity	ASTM D1646
Vulcanization Using Oscillating Disk Cure Meter	ASTM D2084, D5289

Test	Test Method(s)
Compressibility and Recovery of Gasket Materials	ASTM F36
Compression Stress Relaxation (CSR)	ISO 3384. 6056
Dielectric Strength	ASTM D149
Dynamic and Predictive Testing	ASTM D4065, D5992; SAE J1085
Electrical Resistance	ASTM D257, D991
FEA Modeling and Support Testing	ARDL 8105, 8106
High Pressure/High Temperature Aging; Rapid Gas Decompression	NACE TM0192; NORSOK M-710
Instrumented Impact	ASTM D3763, F1292
Salt Spray Corrosion	ASTM B117; JIS Z2371
Service Life/Shelf Life Prediction of Elastomers	ARDL 8107, 8111
Specific Optical Density of Smoke Generated by Solid Materials	ASTM E662
Weatherability Carbon Arc	 ASTM D750, G152

The laboratory is accredited for the test methods listed above. The accredited test methods are used in determining compliance with the material specifications listed below; however, the inclusion of these material specifications on this Scope does not confer laboratory accreditation to the material specifications. Inclusion of these material specifications on this Scope also does not confer accreditation for every method embedded within the specification. Only the methods listed above on this Scope are accredited.

DaimlerChrysler: MS-AR-20, MS-AR-23, MS-AR-24, MS-AR-26, MS-AR-30, MS-AR-80, MS-DC-16

DIN: 53 512

Ford: ESF-M4D101-A, ESF-M4D423-A, WSK-MR4695-A, WSS-M2D378-B1, WSS-M2D379-B1, WSS-M2D380-B1, WSS-M2D381-B1, WSS-M2D382-B1

GM: GM6086M, GM7001M, GMP.ABS.018R, GMP.E/P.003, GMP.E/P.029, GMP.E/P.071, GMP.TES.012, GMP.PE.001, GMP.PE.002, GMP.PE.003, GMP.PE.004, GMP.PE.005, GMP.PE.006, GMP.PE.007, GMP.PE.009, GMN8423, GMN11106

ISO: 4662

[2]This laboratory's scope contains withdrawn or superseded methods. As a clarifier, this indicates that the applicable method itself has been withdrawn or is now considered "historical" and not that the laboratory's accreditation for the method has been withdrawn.

The American Association for Laboratory Accreditation

World Class Accreditation

Accredited Laboratory

A2LA has accredited

AKRON RUBBER DEVELOPMENT LABORATORY, INC.

Akron, OH

for technical competence in the field of

Mechanical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General Requirements for the Competence of Testing and Calibration Laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009*).

AMERICAN ASSOCIATION FOR LABORATORY ACCREDITATION CORPORATE SEAL 1978 DISTRICT OF COLUMBIA A2LA

Presented this 13th day of March 2012.

President & CEO
For the Accreditation Council
Certificate Number 0255.01
Valid to January 31, 2014

For the tests or types of tests to which this accreditation applies, please refer to the laboratory's Mechanical Scope of Accreditation.

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AKRON RUBBER DEVELOPMENT LABORATORY, INC.
2887 Gilchrist Road
Akron, OH 44305
Walter Samples Phone: 330 794 6600

CHEMICAL

Valid To: January 31, 2014 Certificate Number: 0255.02

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests on rubber and plastic materials:

Test Technology	Test Method(s)
Spectroscopy	
ICP	ASTM E1479
Infrared	ASTM D3677
Chromatography	
Gas Chromatography	ASTM D4626; ARDL 3112
HPLC	ASTM E682; ARDL 3138
TLC	ASTM D3156; ARDL 3110
GC/MS	ARDL 3160
Physical Properties	
Density	ASTM D297 (Sec. 16.3.1), D1817; ARDL 3103; ISO 1183-1 (Methods A and B)
Melting Point (DSC)	ASTM D3418
Wet Chemistry	
Gravimetric	ASTM D297
Formula Evaluation and Extractable Testing	ARDL 3171; 21 CFR 177.2600
Crosslink Density	ARDL 3135
Microscopy	
Light Optical (LOM)	
- Carbon Black/Inorganic Filler Dispersion	ARDL 3801, 3809
- Particle Size Distribution - Recycled Rubber	ARDL 3800
- Particle Size Distribution - Carbon Blacks/Inorganic Fillers	ASTM D2663; ARDL 3803
- Cell Size-Cellular Plastics	ASTM D3576; ARDL 3802
- Failure Analysis	ARDL 3812

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Test Technology	Test Method(s)
Microscopy (*cont'd*)	
Scanning Electron (SEM/EDX)	ARDL 3804, 3816
- Microdispersion of Inorganic Fillers	ARDL 3815
- Elemental Analysis	ARDL 3813
Transmission Electron (TEM)	
- Primary Aggregate	ASTM D3849-95a; ARDL 3803
- Polymer Morphology by CUM/TEM	ARDL 3805
Gas Permeability - Plastic Film/Sheeting	ASTM D1434 (Procedure V)
Liquid Permeability Resistance - Protective Clothing Materials	ASTM D6978, F739, F1383; ISO 6529; BS EN 374-3
Differential Scanning Calorimetry (DSC)	ASTM D3418, D3895, D4419, D4591, E793, E794, E1356; ISO 11357-2, -3
Dynamic Mechanical Analysis (DMA)	ASTM D5992
Linear Thermal Expansion (TMA)	ASTM E831; ISO 11359-1, -2
Thermal Gravimetric Analysis (TGA)	ASTM E1131
Chloroform Coagulation	Vanderbilt Latex Handbook (3rd Edition)
Toluene Swell Test	ARDL 3130
Leaching for Halides and Sulfur	ASTM D512, D516, D1179, D1246; MIL-STD 2041D (SH), 2190 (SH), 1987
Chlorine, Bromine and Iodine in Organic Compounds by Oxygen Flask Combustion	ASTM D3566 (Sections 9.1 – 9.8)
Test for Volatiles in Silicone Rubber	Daimler Chrysler LP-461J-127; Ford AV-102-01; GM 9009P
Resistance of Materials Used in Protective Clothing to Penetration by Liquids	ASTM F903
Resistance of Materials Used in Protective Clothing to Penetration by Synthetic Blood	ASTM F1670
Carbon Black	
Iodine Adsorption Number	ASTM D1510 (*Sec. 10.7.2 only*)
Oil Absorption Number (OAN)	ASTM D2414 (Procedures A and C)
Ash Content	ASTM D1506
Transmittance of Toluene Extract	ASTM D1618
Pelleted Fines and Attrition	ASTM D1508
Sieve Residue	ASTM D1514
Pour Density	ASTM D1513
pH Value	ASTM D1512
Lowry Protein Assay-a Chemical Analysis for Total Aqueous Protein	ASTM D5712

Test Technology	Test Method(s)
Inhibition ELISA Assay Specific for Hevea Natural Rubber Latex	ASTM D6499
Immunological Measurement of Four Principal Allergenic Proteins (Hey b 1, 3, 5 and 6.02) in Natural Rubber and its Products Derived from Latex	ASTM D7427
Colorimetric/Spectrophotometric Procedure to Quantify Extractable Chemical Dialkyldithiocarbomate, Thiuram and Mercaptobenzothiazole Accelerators in Natural Rubber Latex and Nitrile Gloves	ASTM D7558
Residual Accelerator Analysis	ARDL 3174
Medical Gloves for Single Use	BS EN 455-3 (*section 5.1 'Leachable Proteins' only*)

The laboratory is accredited for the test methods listed above. The accredited test methods are used in determining compliance with the material and/or safety specifications listed below; however, the inclusion of these material specifications on this Scope does not confer laboratory accreditation to the material specifications. Inclusion of these material specifications on this Scope also does not confer accreditation for every method embedded within the specification. Only the methods listed above on this Scope are accredited.

ASTM F963

Code of Federal Regulations (C.F.R.): 21 CFR 177.2600
DaimlerChrysler: LP-461J-127

European Standards: BS EN 71-3, BS EN 374-3, BS EN 455-3

Ford AV-102-01

GM 9009P

Mil-Std: 2041 D (SH), 2190 (SH) 1987

Vanderbilt Latex Handbook (3rd Edition)

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Presented this 13th day of March 2012.

President & CEO
For the Accreditation Council
Certificate Number 0255.02
Valid to January 31, 2014

For the tests or types of tests to which this accreditation applies, please refer to the laboratory's Chemical Scope of Accreditation.