



**THE AMERICAN
ASSOCIATION
FOR LABORATORY
ACCREDITATION**

ACCREDITED LABORATORY

A2LA has accredited

**AKRON RUBBER DEVELOPMENT
LABORATORY, INC.**

Akron, OH

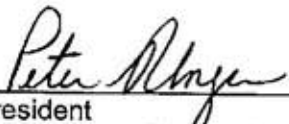
for technical competence in the field of

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 18 June 2005*).

Presented this 31st day of August 2006.





President
For the Accreditation Council
Certificate Number 0255.01
Valid to January 31, 2008

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



American Association for Laboratory Accreditation

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

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

MECHANICAL

Valid To: January 31, 2008

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:

<u>Test</u>	<u>Test Method(s)</u>
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, D865, D3045; DIN 53 508; ISO 188
Adhesives, Sealers and Adhesive Tapes	AFG-01
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 E442-91 (<i>withdrawn 1997</i>)
Color Evaluation	
Spectrophotometer – Fluorescent	ASTM: D1003, D1925-77, E313, E991, E1164
Spectrophotometer – Non-Fluorescent	ASTM: D2244, E308, E1349
Gray Scale	ISO 105/A04; SAE J1545



<u>Test</u>	<u>Test Method(s)</u>
Compressibility and Recovery of Gasket Materials	ASTM F36
Compression	ASTM: D395, D575, D623, D695, D1229; ISO: 815, 1653, 3384, 6056
Conditioning Plastics for Testing	ASTM D618
Condom and Latex Gloves Test	ASTM: D3492, D5151, D6124; ARDL: 2139, 2140; BS 3704; ISO 4074; WHO
Crack Resistance	ASTM: D813, D1693
DC Resistance and Conductance	ASTM D257
Density	ASTM D792; DIN 53 479; ISO 1183-1 (Methods A and B)
Dielectric Strength	ASTM D149
Dynamic and Predictive Testing	ASTM: D4065, D5992, F355, F1292; ARDL: 8105, 8106, 8110, 8111; SAE J1085a
Dynamic Ozone Cracking	ASTM D3395
Electrical Resistance	ASTM: D257, D991
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

PM

<u>Test</u>	<u>Test Method(s)</u>
Fogging Characteristics	CHRYSLER LP-463DB-12-01; GM: 9068P, 9305P; SAE J1756 (except Sec. 5.2)
Friction Properties	ASTM D1894
General Methods	ASTM: D380, D1056, D3182, D3577, D3578; ISO: 293, 4074-1, 6056; JIS K6301 (except Sec. 11.0)
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)
International Rubber Hardness	ASTM D1415
Rockwell Hardness of Plastics	ASTM D785 (R, M Scales)
Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials	ASTM E18
HDT/Vicat Softening Point	ASTM: D648, D1525; ISO: 75, 306
Ignition Loss	ASTM D2584
Impact	ASTM: D256, D3763, D4812, D5420; ISO: 179, 180; GM 9904P
Injection Molding Test Specimens	ASTM D3641
Instrumented Impact	ASTM D3763
Low Temperature Brittleness	ASTM: D746, D1329; ISO 812
Melt Flow	ASTM: D1238, D3364; ISO 1133
Operating Fluorescent Light Apparatus for UV Exposure of Nonmetallic Materials	ASTM G154
Ozone Testing	ASTM: D518, D1149, D1171; ISO 1431
Peel Test	ASTM: D413, D429
Protective Clothing Material Resistance to Puncture	ASTM F1342 (Procedure A)

RAU

<u>Test</u>	<u>Test Method(s)</u>
Resilience by Vertical Rebound	ASTM D2632-86
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 or Shear (Mechanical Oscillograph)	ASTM D945
Salt Spray Corrosion	ASTM B117; JIS Z2371
Specific Optical Density of Smoke Generated by Solid Materials	ASTM E662
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)
Stiffness Test	ASTM D1053
Tear Propagation and Peel	DIN 53 539
Tear Resistance	ASTM: D624, D1004; ISO: 34, 6383
Tensile Properties	ASTM: D412, D638, 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
Viscosity	ASTM D1646
Volatile Loss	ASTM D1203
Vulcanization Using Oscillating Disk Cure Meter	ASTM D2084

PAU

<u>Test</u>	<u>Test Method(s)</u>
Water Absorption	ASTM D570; ISO 62
Weatherability	
Carbon Arc	ASTM: D750, G152
QUV	ASTM G154
Xenon	ASTM: G26, G147, G155; ISO 4892-2; SAE: J1885, J1960, J2412, J2527
Xenon and Carbon Arc	JIS D0205

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:

GM: 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

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

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





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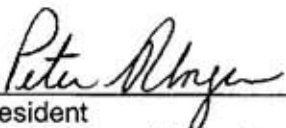
**AKRON RUBBER DEVELOPMENT
LABORATORY, INC.**
Akron, OH

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Chemical Testing

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Presented this 31st day of August 2006.





President
For the Accreditation Council
Certificate Number 0255.02
Valid to January 31, 2008

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



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SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

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

CHEMICAL

Valid To: January 31, 2008

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:

<u>Test Technology</u>	<u>Test Method(s)</u>
Spectroscopy	
ICP/AA	ASTM: D4004, E663
Infrared	ASTM D3677
Chromatography	
Gas Chromatography	ASTM D4626; ARDL 3112
HPLC	ASTM E682; ARDL 3138
TLC	ASTM D3156; ARDL 3110
Gel Permeation	ASTM D5296; ARDL 3134
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 and Capillary)	ASTM D3418; ARDL 3164
Melt Range	ASTM D1519; ISO 3146 (Method A)
Wet Chemistry	
Gravimetric	ASTM D297
Failure Analysis (Using LOM and SEM/EDX)	ARDL 3812
Formula Evaluation and Extractable Testing	21 CFR 177.2600; ARDL 3171
Physicochemical Tests Plastics	USP29NF24VSP661
Crosslink Density	ARDL 3135



Test TechnologyTest Method(s)

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 ARDL 3803
- Cell Size-Cellular Plastics ASTM D3576; ARDL 3802
- Failure Analysis ARDL 3812
- Carbon Black Type ASTM D2663

Scanning Electron (SEM/EDX)

- Microdispersion of Inorganic Fillers ARDL 3814
- Elemental Analysis ARDL 3815
- Polymer Morphology by CUM/TEM ARDL 3813

Transmission Electron (TEM)

- Primary Aggregate ASTM D3849-95a; ARDL 3803

Gas Permeability - Plastic Film/Sheeting

ASTM D1434 (Procedure V)

Gas/Liquid Permeability Resistance -
Protective Clothing Materials

ASTM: D6978, F739, F1383

Differential Scanning Calorimetry (DSC)

ASTM: D3417-83 (*reapproved 1988*), D3418, D3895,
D4419, D4591, E793, E794, E1356;
ISO 11357-2, -3

Dynamic Mechanical Analysis (DMA)

ASTM D5992; ISO 11359-1

Linear Thermal Expansion (TMA)

ASTM E831; ISO 11359-2

Thermal Gravimetric Analysis (TGA)

ASTM E1131

Sulfur Determination (LECO)

ASTM E1019

Chloroform Coagulation

Vanderbilt Latex Handbook (3rd Edition)

Toluene Swell Test

ARDL 3130

Latex Testing

ASTM D1076 (except Sec. 36)

Leaching for Halides and Sulfur

ASTM: D512, D1179, D1246;
Mil-Std: 2041 D (SH), 2190 (SH) 1987

Test for Volatiles in Silicone Rubber

Daimler Chrysler LP-461J-127;
Ford AV-102-01; GM 9009P

Test Technology

Test Method(s)

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

