ACTION®
Action Products, Inc.

22 N. Mulberry Street
Hagerstown, MD 21740 USA

making a material difference™

Physical Properties Testing

Action Products, Inc. is committed to developing the best products possible for its customers. As a result of this ongoing commitment, we are continuously evaluating and improving products, engineering better manufacturing techniques, and finding new applications for the unique and beneficial properties of Akton® polymer. Laboratory analysis of AKTON polymer, as tested under ASTM guidelines, illustrates why AKTON polymer is the best choice for shear reduction and pressure distribution in the medical field.

The rigors of elongation testing give us a glimpse at AKTON polymer's structural strength as a cross-linked solid. As described in ASTM D 412-98a*, a prescribed specimen of medical grade AKTON polymer was stretched to its limits. The results show that AKTON polymer has an ultimate elongation of over 1000%. This remarkable degree of elasticity is a significant factor in the durability and long life of our pads and positioners.

Another important physical property that gives AKTON polymer lasting durability is its Compression Set characteristic. Test method ASTM D 395-97* shows that after being compressed to 50% of its initial thickness for 22 hours, AKTON polymer always returned to 100% of its original size. This feature enables AKTON polymer to perform to its maximum capacity for many years of continuous use.

But the major benefits of our products are its tissue friendly characteristics. As a cushioning agent, tests show that there is minimal resistance *, .63 lbs. per square inch, when compressing AKTON polymer a distance of 25% of its thickness. This effect is called load deflection. The initial softness allows the body to recede into the surface of the pad, achieving maximum body to pad interface. Once the body is at rest, the polymer acts to cradle and support, equalizing and distributing pressure (at 50%, the deflection force is 3.45 psi.). In addition, the softness of the material supporting the body also helps to reduce damaging shear forces. In combination, these properties are excellent evidence that products made with AKTON polymer are an ultimate choice in pressure sore prevention.

*See the attached Smithers Scientific Services, Inc. lab report.

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Smithers Scientific Services, Inc.
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TELEPHONE: 330/762-7441 FAX: 330/762-7447

February 15, 2000

CUSTOMER: ACTION PRODUCTS, INC.
22 North Mulberry Street
Hagerstown, MD 21740-

ATTENTION: Cliff Metger
P.O. # 00RD14
Smithers Job # 0002-07386

SUBJECT: TEST REPORT:
The above-mentioned firm submitted one (1) sample for testing identified as "Akton®"

TESTING: PHYSICAL TESTING:
ASTM D 412-98a Rubber Properties in Tension
ASTM D 575-91(96) Compresion Deflection, Method A
ASTM D 395-97 Compression Set
ASTM D 624-98 Die C Tear
ASTM D 1054-91 Resilience Using a Rebound Pendulum

RESULTS: PHYSICAL TESTING:
ASTM D 412-98a Rubber Properties in Tension

Sample Id: Akton®	100% Modulus (PSI)	200% Modulus (PSI)	300% Modulus (PSI)	Peak Tensile (PSI)	Ultimate Elongation (%)	Shore A Hardness (pts)
1.	2.6	3.2	4.8	16.9	959.1	N/A
2.	3.1	4.0	5.3	22.7	1060.3	
3.	2.6	3.9	5.6	18.4	1030.0	
Median	2.6	3.9	5.3	18.4	1030.0	

RESULTS: PHYSICAL TESTING:

ASTM D 575-91(96) Compresion Deflection, Method A, 25% Deflection

Sample Id: Akton®	Lbs. per Square inch
1.	0.66
2.	0.63
3.	0.63
Median	0.63

ASTM D 575-91(96) Compression Deflection, Method A, 50% Deflection

Sample Id: Akton®	Lbs. per Square inch
1.	3.45
2.	3.10
3.	3.47
Median	3.45

RESULTS: PHYSICAL TESTING:

ASTM D 395-97 Compression Set, 22 hrs @ 25% Compression @ Room Temperature

Sample Id: Akton®	% Set
1.	0
2.	0
3.	0
Median	0

ASTM D 395-97 Compression Set, 22 hrs @ 50% Compression @ Room Temperature

Sample Id: Akton®	% Set
1.	0
2.	0
3.	0
Median	0

RESULTS: PHYSICAL TESTING:
ASTM D 624-98 Die C Tear

Sample Id: Akton®	Tear Strength Lb/In
1.	3.4
2.	3.5
3.	2.7
Median	3.4

RESULTS: PHYSICAL TESTING:
ASTM D 1054-91 Resilience Using a Rebound Pendulum
Specimen Size: 1.125" Diameter x 0.5" Thickness
Specimen Conditioning: 16 hrs @ 23°C ±2°C; 50 ± 5% Relative Humidity
Apparatus: Swick Model 5109 Rebound Tester

Sample Id Akton®	Rebound Resistance, R, %			Median	Average
1.	7.2	6.6	6.2	6.6	6.7
2.	9.4	9.0	8.2	9.0	8.9

NOTE: Indentor cut through test piece on each sample; possible contact with anvil.

NOTE: Testing to this specification was outsourced and not performed by Smithers Scientific Services.

Leonard L. Hanson
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Smithers Scientific Services, Inc.
Qualified Laboratories No. 17370
QLL 27 31 March 1984
Defense Logistics Agency
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Albert L. Harrison
Operations Manager/Akron Laboratories
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QLL 27 31 March 1984
Defense Logistics Agency