



July 27, 2011

Adrianna Camarena
Maclin, S.A de C.V.
Calle Sara #7 Fracc. Yamille
La Mesa, Tijuana, Baja California
22600 Mexico, CP
MEXICO

Dear Adrianna:

Enclosed are the attenuation and lead equivalency results performed on the samples that were recently submitted to Health Physics Northwest. At your request, the attenuation tests were performed in accordance with ASTM test Method F 2547-06. Testing was performed on July 27, 2011 at our office utilizing a Trex TM50 high frequency X-ray generator. The following table details the characteristics of the X-ray tube used to perform this testing at settings of 60, 80, 100 and 120 kVp. The test results for the submitted samples are given in the tables on the following page.

	60 kVp	80 kVp	100 kVp	120 kVp
Actual kVp	59.8	79.6	100.2	119.6
Half-Value Layer (mmAl)	2.9	4.0	5.3	6.2

Lead equivalency is no longer the standard unit for reporting the protective properties of leaded garments. The radiation protective garment industry is moving toward an attenuation standard. The lead equivalency of a material is highly dependent on the radiation source and measurement standard used. Please be aware that the lead equivalency data provided in this report are specific to our testing program, which is compliant with the ASTM test Method F 2547-06 standard for determining attenuation. If you have any questions, please contact our office.

Sincerely,

Matt Brien, BS
Physics Associate

Encl.

Number of Layers	Sample Designation	Measured Weight	Measured Thickness	Attenuation			
				60 kVp	80 kVp	100 kVp	120 kVp
1	Maclin Lead Vinyl 0.021 inches PO 2754	0.8 ounces	0.50 mm	95.0 %	88.1 %	82.1 %	78.5 %
2	Maclin Lead Vinyl 0.021 inches PO 2754	1.6 ounces	1.00 mm	99.2 %	96.4 %	93.1 %	91.5 %
3	Maclin Lead Vinyl 0.021 inches PO 2754	2.4 ounces	1.51 mm	99.9 %	98.6 %	97.3 %	96.2 %

Number of Layers	Sample Designation	Measured Weight	Measured Thickness	Lead Equivalency (mm Pb)			
				60 kVp	80 kVp	100 kVp	120 kVp
1	Maclin Lead Vinyl 0.021 inches PO 2754	0.8 ounces	0.50 mm	0.14	0.16	0.17	0.18
2	Maclin Lead Vinyl 0.021 inches PO 2754	1.6 ounces	1.00 mm	0.37	0.38	0.39	0.39
3	Maclin Lead Vinyl 0.021 inches PO 2754	2.4 ounces	1.51 mm	0.58	0.58	0.62	0.58