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EMSL Case No.: 361004223  
Sample(s) Received: 08/23/10  
Date of Analysis: 08/24/10  
Date Printed: 08/24/10  
Reported By: J.Newton

- Laboratory Report -

Project: Physical Testing of Polymer Sheeting

Analyzed by:

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Senior Materials Scientist

24 August 2010

Date

QA/QC:

Matthew Maki  
Approved Signatory

Eugenia Mirica, Ph.D.  
Laboratory Manager

24 August 2010

Date



Procurement of Samples and Analytical Overview:

The material arrived at EMSL Analytical's corporate laboratory in Westmont, NJ on 8/23/10. The package arrived in satisfactory condition with no evidence of damage to the contents. The data reported herein has been obtained using the following equipment and methodologies.

Method 1	ASTM D1004 – Tear Resistance of Plastic Film and Sheeting
Sample Size:	See ASTM D1004
Grip Type:	Barrel Friction Grips
Test Speed:	2 in/min.
End Condition:	20% loss from peak force
Measurement Device:	Tinius Olson H5KS Testing Machine
Temperature:	22°C
Humidity:	50% RH

Method 2	ASTM D2240 – Durometer Hardness – Shore A
Sample Size:	1" x 1" multiple plies to achieve method minimum thickness
Grip Type:	Indenter Tip Type A
Test Speed:	N/A
End Condition:	End of measurement
Measurement Device:	Tinius Olson H5KS Testing Machine
Temperature:	22°C
Humidity:	50% RH



Results and Discussion:

ASTM D2240 – Durometer Hardness Shore A

Sample ID	Description	Measurement	Shore A	Comments
1	Polymer Sheeting	25.3	69.8	
		25.9	68.5	
		25.8	68.7	
		25.1	70.2	
		25.4	69.6	
		25.8	68.7	
	Average:	<b>25.6</b>	<b>69.3</b>	

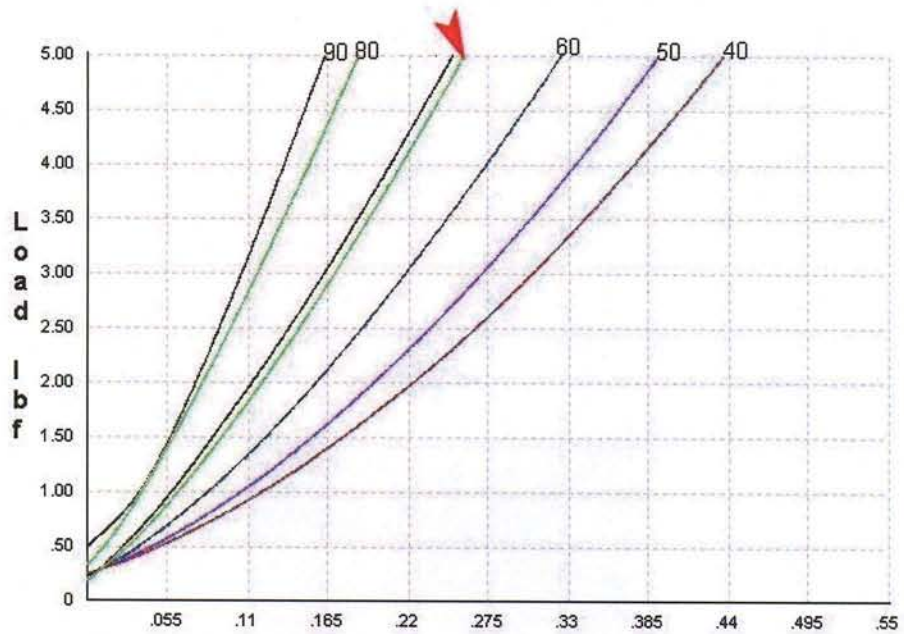


Figure 1: Durometer reading for the sample (arrow) vs. standard reference materials.



ASTM D1004 – Tear Resistance

Sample ID	Description	Force (lb)	Comments
1	Polymer Sheeting	9.03	
		8.54	
		9.01	
		8.61	
		8.41	
		8.44	
	Average:	<b>8.67</b>	

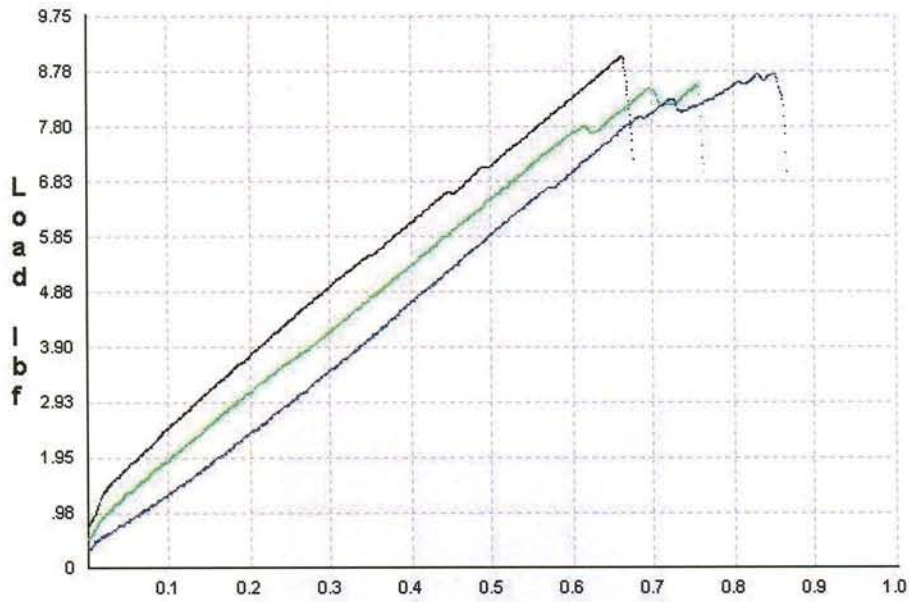


Figure 1: Tear resistance reading for the sample showing the average, upper limit and lower limit.



Descriptions & Definitions:

None Detected (ND) denotes the absence of an analyte in the subsample analyzed. Trace levels of the analyte may be present in the sample below the limit of detection (LOD).

Limit of Detection (LOD): The minimum concentration that can be theoretically achieved for a given analytical procedure in the absence of matrix or sample processing effects. Particle analysis is limited to a single occurrence of an analyte particle in the sub-sample analyzed.

Limit of Quantitation (LOQ): The minimum concentration of an analyte that can be measured within specified limits of precision and accuracy during routine laboratory operating conditions

Terms, Conditions, and Limitations:

1. Sample Retention: Samples analyzed by EMSL will be retained for 60 days after analysis date. Storage beyond this period is available for a fee with written request prior to the initial 30 day period. Samples containing hazardous/toxic substances which require special handling may be returned to the client immediately. EMSL reserves the right to charge a sample disposal fee or return samples to the client.
2. Change Orders and Cancellation: All changes in the scope of work or turnaround time requested by the client after sample acceptance must be made in writing and confirmed in writing by EMSL. If requested changes result in a change in cost the client must accept payment responsibility. In the event work is cancelled by a client, EMSL will complete work in progress and invoice for work completed to the point of cancellation notice. EMSL is not responsible for holding times that are exceeded due to such changes.
3. Warranty: EMSL warrants to its clients that all services provided hereunder shall be performed in accordance with established and recognized analytical testing procedures and with reasonable care in accordance with applicable federal, state and local laws. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied. EMSL disclaims any other warranties, express or implied, including a warranty of fitness for particular purpose and warranty of merchantability.
4. Limits of Liability: In no event shall EMSL be liable for indirect, special, consequential, or incidental damages, including, but not limited to, damages for loss of profit or goodwill regardless of the negligence (either sole or concurrent) of EMSL and whether EMSL has been informed of the possibility of such damages, arising out of or in connection with EMSL's services thereunder or the delivery, use, reliance upon or interpretation of test results by client or any third party. We accept no legal responsibility for the purposes for which the client uses the test results. EMSL will not be held responsible for the improper selection of sampling devices even if we supply the device to the user. The user of the sampling device has the sole responsibility to select the proper sampler and sampling conditions to insure that a valid sample is taken for analysis. Any resampling performed will be at the sole discretion of EMSL, the cost of which shall be limited to the reasonable value of the original sample delivery group (SDG) samples. In no event shall EMSL be liable to a client or any third party, whether based upon theories of tort, contract or any other legal or equitable theory, in excess of the amount paid to EMSL by client thereunder.