

**U.S. Consumer Product Safety Commission
LOG OF MEETING**

CPSC 8(b)(1) CLEARED for PUBLIC
NO MFRS/PRVTL BRG OR
PRODUCTS IDENTIFIED
EXCEPTED BY: PETITION
RULEMAKING ADMIN. PRCDG
WITH PORTIONS REMOVED.

SUBJECT: Meeting with BP Chemicals staff on wire aging issues

14th
DATE OF MEETING: April 15, 2004

LOG ENTRY SOURCE: rls

DATE OF LOG ENTRY: April 19, 2004

LOCATION: Rm 711 East West Towers Building, CPSC

**CPSC ATTENDEE(S): Richard Stern, Erlinda Edwards, Arthur Lee, Douglas Lee,
Andrew Trotta**

**NON-CPSC ATTENDEE(S): Howard Yokelson and Vasu Kulkarni, BP Chemicals;
Douglas Troutman and Vince Baclawski, National Electrical Manufacturers
Association**

**SUMMARY OF MEETING: Staff from BP Chemicals updated the CPSC staff on
testing of wiring products. An overview of the firm's most recent testing and
methodology was provided (copies attached) along with discussion of specific
test results. This meeting was a follow up of the October 8, 2003 meeting
between the same parties which also discussed the results of some BP
Chemicals testing (test results attached).**

✓



Focus on Safety: Christmas Lights and Wire/Cable

CPSC – BP Meeting
Bethesda, MD
April 14, 2004



Problem

- Some of the Christmas lighting products offered for sale and use to US customers can pose a threat to public safety



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Meeting Objectives

- Identify common interests
- Discuss safety issues
- Raise awareness
- Share ideas



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Market Trends

- Products are used in homes and public places
- Used for a longer period, and even year round

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Safety Issues

- Risks of fire & electric shock
- Root cause – thermal stability of wire insulation
- Historical data on safety incidents
- Product recalls, CPSC

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Market – Decorative lights

- Flexible PVC is most common wiring insulation used for decorative holiday lights for Xmas trees and other holiday decorations.
- Intended usage on a temporary basis either indoors or outdoors.
- Majority are manufactured in the Far East and imported into the US.
- UL has written standards for two product classifications:
 - Decorative Rope Lights (UL 2388) &
 - Seasonal and Holiday Decorative Products (UL 588).
- UL standards do not specify plasticizer type, but they do contain specific performance requirements for maintaining flexibility.

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Market – Decorative lights

- **Non-conformances** were mentioned in BP interviews with Asian contacts.
 - Some percentage of these imported products do not meet the UL performance requirements.
 - Anecdotal only, lacking physical evidence, prior to our recent study
- Some manufacturers might try to save money on raw materials by substituting lower performance plasticizers in their PVC wire insulation and jacketing.
- Trend: Most of the production has moved to the Asia-Pacific region

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Objective for BP Testing Program

- Address the extent of compliance with UL standards of Christmas lights sold into US markets by retailers

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2002 Testing Program & Results

- Samples purchased from Chicago retailers
- Testing at BP and independent laboratory
- Results: 25 % failure rate
- Identified 3 non-conformances of 12 samples
 - ✓ 2 thermal aging failures
 - ✓ 1 low temp flex failure

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2003 Testing Program & Results

- Samples from Chicago retailers & internet
- Testing at BP and independent laboratory
- Results: 50% failure rate
- Identified 7 non-conformances of 14 samples
 - ✓ 7 thermal aging failures
 - ✓ 1 low temp flex failure

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Industry Stakeholders

- Regulatory
 - ✓ Underwriters Laboratory, UL
 - ✓ US Consumer Products Safety Commission, CPSC
 - ✓ National Fire Protection Association, NFPA
 - ✓ US Customs
- Raw material suppliers
- Manufacturers
- Distributors
- Retailers
- Insurance providers

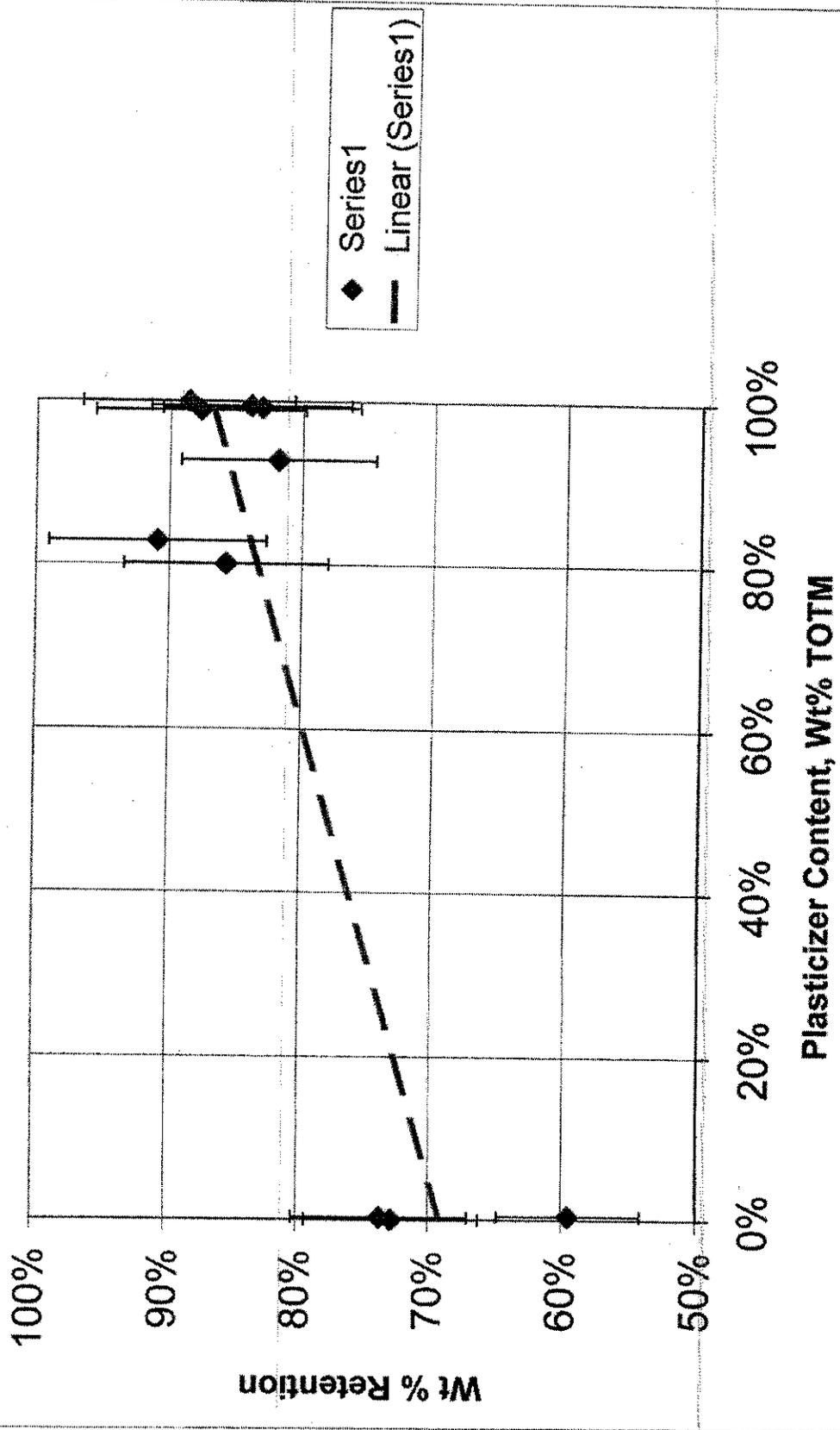
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Solution

- Working together to educate all stakeholders and promote safety awareness
- Methods to identify unsafe products
- Other ideas?

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TGA Analysis. Wt% Retention at 200°C after 200 min



**Decorative Lights,
2003-2004 Season**

Gauge	Notebook ID	Test Code	TOTM	TGA, Retn at 200 min	Heat Aging Data, Per UL 62						Cold Bend, P or F		
					Elong, Initial	Elong, post	Elong, % retn	Elong, P or F	Tensile, Initial	Tensile, post		Tensile, % retn	Tensile, P or F
22	21600-1	HL-01-01	83%	91%	256%	170%	66%	Pass	2215	2215	100%	Pass	Pass
22	21600-2-A	HL-02-02	0%	74%	252%	10%	4%		2543	3451	136%	Pass	Pass
22	21600-6	HL-06-06	0%		296%	10%	3%		2909	4460	153%	Pass	Pass
22	21600-6		0%	60%	296%	10%	3%		2909	4460	153%	Pass	
22	21600-7	HL-07-07	6%		272%	10%	4%		2301	5375	234%	Pass	Pass
22	21600-7	HL-07-07-CP	6%		306%	10%	3%		2343	3855	165%	Pass	Pass
22	21600-8	HL-08-08	99%	88%	260%	174%	67%	Pass	2021	2060	102%	Pass	Pass
22	21600-10	HL-09-10	0%		276%	10%	4%		2725	5329	196%	Pass	Pass
22	21600-13	HL-04-13	0%		244%	0%	0%		2238	9999	447%	Pass	Pass
22			0%		244%	10%	4%		2664	5461	205%	Pass	Pass
18			83%		256%	250%	3%	Pass	1976	2014	102%	Pass	Pass

Wire and Cable Compliance Testing Program - October 8, 2003

Decorative Lights, Phase IA				Data									
Sample ID	Pass or Fail	Type, UL Standard	Thick, mils	Gauge	Elong, Initial	Elong, post	Elong, % retn	Elong, P or F	Tensile, Initial	Tensile, post	Tensile, % retn	Tensile, P or F	Cold Bend, P or F
DL-01-91	Pass	Flex Cord, 62	30	22	270%	220%	81%	Pass	2508	2727	109%	Pass	Pass
DL-02-92		Flex Cord, 62	30	22	240%	150%	63%		2409	2622	109%	Pass	Pass
DL-03-93	Pass	Flex Cord, 62	30	22	250%	200%	80%	Pass	2463	2727	111%	Pass	Pass
DL-04-95	Fail	Flex Cord, 62	30	20	240%	210%	88%	Pass	2096	2683	128%	Pass	Fail
DL-05-97		AWM 1569	16	24	220%	20%	9%		2345	5395	230%	Pass	Pass
DL-06-101	Pass	Flex Cord, 62	30	22	230%	180%	78%	Pass	2530	2920	115%	Pass	Pass

Flexible Cord, Phase 1B				Data									
Sample ID	Pass or Fail	Type, UL Standard	Thick, mils	Gauge	Elong, Initial	Elong, post	Elong, % retn	Elong, P or F	Tensile, Initial	Tensile, post	Tensile, % retn	Tensile, P or F	Cold Bend, P or F
FC-01-114	Pass	AWM, 758	16	24	280%	230%	82%	Pass	2962	2971	100%	Pass	Pass
FC-02-117	Pass	AWM, 758	32	24	300%	260%	87%	Pass	2806	2926	104%	Pass	Pass
FC-03-115	Pass	AWM, 758	31	22	290%	260%	90%	Pass	2738	2886	105%	Pass	Pass
FC-04-116	Pass	AWM, 758	31	22	290%	250%	86%	Pass	2815	2940	104%	Pass	Pass
FC-05-104	Pass	Circuit, 13	9	18	190%	160%	84%	Pass	2934	3642	124%	Pass	Pass
FC-06-106		NM-B, 719	15	14-2	190%	120%	63%		2666	3481	131%	Pass	Pass
FC-07-132		AWM, 758	30	14	260%	n.a.	1%		2562	n.a.	n.a.		Pass
FC-08-133	Pass	Flex Cord, 62	52	16	280%	240%	86%	Pass	2960	3209	108%	Pass	Pass
FC-09-131		AWM, 758	30	12	100%	50%	50%		1935	2974	154%	Pass	Pass

CPSC-BP Meeting
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