

Oil Seal Compatibility Test (OSCT) Surveillance Panel Meeting Minutes

02/11/2009

D. Bell

Meeting Attendance:

D. Bell (Afton)	D. Bartlett (Lz)
S. Eliot (XOM)	R. Graziano (Lz)
G. Greene (Lz)	J. Gropp (Lz)
M. Haire (Chevron)	B. Koehler (SWRI)
P. Kanga (XOM)	M. Kasimirsky (TMC)
D. Lind (TMC)	D. Smith (Intertek-Parc)
T. Marougy (Eaton)	B. Grinfield (SWRI, phone)
D. Misich (Lz, phone)	C. Knight (TEI, phone)

A motion made by B. Grinfield and 2nd by D. Misich passed unanimously (7 approved) to approve previous OSCT Surveillance Panel teleconference meeting minutes from 12-15-08 and 01-22-09.

There are multiple OSCT baths available at SWRI and Lz with no known "stand"-related problems or test severity issues.

Upon review of the LRI Procedures Manual, the elongation change % limits were noted to be erroneously reported as per the current limits shown below. Therefore, we are proposing an editorial change to revise these to the correct limits also shown below:

	<u>Current Limits</u>	<u>Proposed Limits</u>
• Polyacrylate elongation %		
▪ Minimum:	no limit	-60
▪ Maximum:	-60	no limit
• Fluoroelastomer elongation %		
▪ Minimum:	<u>Current Limits</u> no limit	<u>Proposed Limits</u> -75
▪ Maximum:	-75	no limit

Since there will be significant changes to the SAE J2360 document shortly, the proposal above will be incorporated into the revision. Once this document has been corrected, the PRI manual will also be revised with this editorial clarification.

Fluoroelastomer batches FL375 and FL376 (200 slabs each) were fully approved over the past two months and released for candidate testing. TEI has 200 slabs each of FL377 and 378 on order since they are sold out of the most recent lot, FL376.

The qualification data generated at Lz and SWRI on a new lot of Nitrile (lot NI-333, 320 slabs) showed data in reference oil 161-1 passed with values comfortably within the Shewhart severity limits. However, the volume% measured in reference oil 168 were well below the Shewhart limits that were initially established based on 13 original data points in 2006. In addition, the % elongation values measured in reference oil 168 were below typical and one value failed the lower limit. Based upon this data, the surveillance panel voted to reject this lot of NI-333. The root cause of the failing batch is being investigated with the supplier, Freudenberg. Test Engineering Institute (TEI) has just received a new lot of Nitrile (NI-334) and is sending this to SWRI and Lz for qualification testing.

The TMC proposed new Shewhart limits as shown below based upon 38 data points in reference oil 168. The new data set reflects the true variability in the data since the original limits were established with only 13 data points. The proposed limits will slightly shift the mean and tighten the limits.

Parameter	Current Target Mean	Proposed Target Mean	Current Standard Deviation	Proposed Standard Deviation
Percent Elongation	-74.22	-74.52	2.422	1.599
Shore Hardness	3.0	3.0	1.49	0.79
Percent Volume Change	1.424	1.326	0.1295	0.1388

A motion made by M. Kazimirsky and 2nd by J. Gropp was approved (6 approved/0 disapproved/1 abstention), stating that on March 1, 2009 the proposed Shewhart limits as noted above will be established for reference oil 168.

Freudenberg has noted that the elastomer process is changing at their LaGrange facility that manufactures Polyacrylate and Nitrile, so they will be contacted to understand the justification and timing for this change. NI-334 was made with the standard process. Freudenberg has offered to send ~30 slabs free of charge for qualification testing of the process change.

Seventy-three of the 301 slabs of a new lot of Polyacrylate (PA339) were found to fail the required thickness specification of 0.070" to 0.080" measured at the left, center, and right of each slab. The typical values were ~0.082". TEI will distribute the thickness data for PA339. The 73 failing slabs were segregated and some of the passing slabs were sent to Lz and SWRI for qualification testing. The shore hardness, % elongation, and % volume in reference oil 160-1 and 161-1 were found to all be comfortably within the Shewhart

limits. A motion made by M. Kazimirsky and 2nd by B. Grinfield to approve PA339 for candidate testing, effectively immediately, was unanimously approved (7 approved). TEI will send out the approved 228 slabs of PA339 as orders from the test labs are received. A new PA order will not be placed until confirmation of the new Freudenberg process is better understood.

To support a Technical Guidance Committee initiative, the TEI has been notified that they must obtain OSCT Surveillance Panel approval before sending seals to any party outside of Lz and SWRI. In addition, TMC must also obtain OSCT Surveillance Panel approval before shipping reference oils outside of Lz and SWRI.

The current elastomer shelf life is 2 years. The chief chemist at the elastomer supplier, Freudenberg, stated that under the current storage conditions of refrigeration in the dark that the elastomers should last forever. Since OSCT Surveillance Panel would like to extend the shelf life to 5 years, NI-329 that is now 5 years old is being evaluated as per the elastomer approval process testing protocol to determine if the Nitrile shelf life can possibly be extended to 5 years. Lz completed the testing, so when SWRI sends the data to TMC, an OSCT SP meeting will be held to review the data.

Motion to adjourn was unanimously approved on 2/11/09 at 1:58 pm.

OIL SEAL COMPATIBILITY SURVEILLANCE PANEL

Date: Feb. 11, 2009

Initials	V = Voting NV = Non-voting	Name	Company & Address	Phone / FAX / e-Mail
DB	V	Don Bell <i>Chairperson</i>	Afton Chemical Corp. 500 Spring Street Richmond, VA 23219	Phone: 804-788-6332 FAX: 804-788-6243 e-Mail: don.bell@aftonchemical.com
	V	Rachel Agusti	U.S. Army TARADEC AMSRD-TAR-D/210 MS110 6501 E. 11 Mile Road Warren, MI 48397-5000	Phone: 586-574-4222 FAX: 586-574-4244 e-Mail: Rachel.agusti@us.army.mil
	NV	Ed Akucewicz	The Lubrizol Corporation 29400 Lakeland Blvd. Wickliffe, OH 44092	Phone: 440-347-2415 FAX: 440-347-4713 e-Mail: Edward.akucewicz@lubrizol.com
	NV	Don Bartlett	The Lubrizol Corporation 29400 Lakeland Blvd. Wickliffe, OH 44092	Phone: 440-347-2388 FAX: 440-347-2878 e-Mail: dtb@lubrizol.com
	NV	Zack Bishop	TEI	Phone: FAX: zbishop@tei-net.com e-Mail: zrbi@sbcglobal.net
	NV	Juan Buitrago	Chevron Oronite Co. 100 Chevron Way Richmond, CA 94802	Phone: 510-242-1161 FAX: 510-242-3392 e-Mail: jebu@chevronfexaco.com
	V	Allen Comfort	US Army TACOM AMSTA-TR-D/210 6501 E. 11 Mile Road Warren, MI 48307-5000	Phone: 586-574-4227 FAX: 586-574-4244 e-Mail: comforta@tacom.army.mil
	V	John D'harte	American Axle 2965 Technology Drive Rochester Hills, MI 48309	Phone: 248-299-6478 FAX: 248-293-6945 e-Mail: dhartej@aam.com
	NV	Stephen Eliot	ExxonMobil 18486 Lanier Island Square Leesburg, VA 20176	Phone: 703-669-9916 FAX: 703-669-9917 e-Mail: Stephen.w.eliot@exxonmobil.com

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2/11/09

Initials	V = Voting NV = Non-voting	Name	Company & Address	Phone / FAX / e-Mail
	NV	Frank Farber	Test Monitoring Center 6555 Penn Avenue Pittsburgh, PA 15206	Phone: 412-365-1030 FAX: 412-365-1047 e-Mail: fmf@astmtmc.cmu.edu
	NV	Hong Gao	ConocoPhillips 1000 S. Pine Street Ponca City, OK 74602	Phone: 580-767-2126 FAX: 580-767-4534 e-Mail: Hong.gao@concoPhillips.com
<i>RRG</i>	NV	Rick Graziano	The Lubrizol Corporation 29400 Lakeland Blvd. Wickliffe, OH 44092	Phone: 440-347-2051 FAX: 440-347-5337 e-Mail: rpg@lubrizol.com
<i>GRG</i>	NV	G. Greene	Lubrizol 29400 Lakeland Blvd. Wickliffe, OH 44092	Phone: 440-347-2394 FAX: e-Mail: ggre@lubrizol.com
<i>RGR</i>	V	Rebecca Grinfield	Southwest Research Institute P.O. Drawer 28510 San Antonio, TX 78228-0510	Phone: 210-522-3652 FAX: 210-522-5907 e-Mail: bgrinfield@swri.org
<i>JG</i>	V	Jerry Gropp	The Lubrizol Corporation 29400 Lakeland Blvd. Wickliffe, OH 44092	Phone: 440-347-1223 FAX: 440-347-5337 e-Mail: jg@lubrizol.com
<i>MH</i>	V	Mike Haire	Chevron <i>Global Lubricants</i> 100 Chevron Way, rm 71-7302 Richmond, CA 94802	Phone: 510-242-2740 FAX: 510-242-3758 e-Mail: mhaire@chevron.com
	NV	Sam Higuchi	Afton Chemical Corp. 500 Spring Street (23219) P.O. Box 2158 Richmond, VA 23218-2158	Phone: 804-788-5375 FAX: 804-788-6358 e-Mail: Samuel.higuchi@aftonchemical.com
	NV	Matt Jackson	Southwest Research Institute P.O. Drawer 28510 San Antonio, TX 78228-0510	Phone: 210-522-6981 FAX: 210-684-7523 e-Mail: Matt.jackson@swri.org

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Initials	V = Voting NV = Non-voting	Name	Company & Address	Phone / FAX / e-Mail
	NV	Brian Koehler	Southwest Research Institute P.O. Drawer 28510 San Antonio, TX 78228-0510	Phone: 210-522-3588 FAX: 210-684-7523 e-Mail: bkoehler@swri.org
	NV	Peter Kamp	Lubrizol Corp. 29400 Lakeland Blvd. Wickliffe, OH 44092	Phone: 440-347-4422 FAX: 440-347-2878 e-Mail: pvk@lubrizol.com
	NV	Percy Kanga	ExxonMobil 600 Billingsport Rd. Paulsboro, NJ 08066	Phone: 856-224-2094 FAX: 856-224-3613 e-Mail: Percy.r.kanga@exxonmobil.com
MTK	V	Michael Kasimirsky	ASTM Test Monitoring Center 6555 Penn Avenue Pittsburgh, PA 15206	Phone: 412-365-1033 FAX: 412-365-1047 e-Mail: mtk@astmtmc.cmu.edu
	NV	Jennifer Keiter	Lubrizol 29400 Lakeland Blvd. Wickliffe, OH 44092	Phone: 440-347-8104 FAX: 440-347-8003 e-Mail:
	V	Clayton Knight	Test Engineering Institute 12718 Cimarron Path San Antonio, TX 78249	Phone: 210-690-1958 FAX: 210-877-0228 e-Mail: cknight@tei-net.com
	NV	Cory Koglin	Afton Chemical Corp. 500 Spring Street (23219) P.O. Box 2158 Richmond, VA 23218-2158	Phone: 804-788-5305 FAX: 804-788-6358 e-Mail: cory.koglin@aftonchemical.com
	NV	Don Lind	Test Monitoring Center 6555 Penn Avenue Pittsburgh, PA 15206	Phone: 412-365-1034 FAX: 412-365-1047 e-Mail: dml@astmtmc.cmu.edu
	V	Jim Linden	GM R&D 480-106-160 30500 Mound Road Warren, MI 48090	Phone: 810-986-1888 FAX: 810-986-2094 e-Mail: james.l.linden@gm.com

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Initials	V = Voting NV = Non-voting	Name	Company & Address	Phone / FAX / e-Mail
	V	Thelma Marougy	Eaton Corporation 26201 Northwestern Highway Southfield, MI 48037	Phone: 248-226-6985 FAX: 248-226-1739 e-Mail: thelmaemarougy@eaton.com
	V	Diane K. Misich	The Lubrizol Corporation 29400 Lakeland Blvd. Wickliffe, OH 44092	Phone: 440-347-8034 FAX: 440-347-8003 e-Mail: dkm@lubrizol.com
	V	Bruce McGlone	Arvin Meritor 2135 West Maple Troy, MI 48084	Phone: 248-435-9929 FAX: 248-435-1411 e-Mail: Bruce.McGlone@arvinmeritor.com
	NV	Donna Mosher	Eaton Corporation 13100 E. Michigan Avenue Galesburg, MI 49053	Phone: 269-342-3039 FAX: 269-746-6039 e-Mail: donnamosher@eaton.com
	NV	Jami Pole	American Axle 2965 Technology Drive Rochester Hills, MI 48309	Phone: 248-299-6598 FAX: e-Mail:
	NV	Chris Prengaman	Lubrizol 29400 Lakeland Blvd. Wickliffe, OH 44092	Phone: 440-347-4225 FAX: e-Mail: CRPR@Lubrizol.com
	NV	Chris Schenkenberg	The Lubrizol Corporation 29400 Lakeland Blvd. Wickliffe, OH 44092	Phone: 440-347-2927 FAX: 440-347-2878 e-Mail: csc@lubrizol.com
	V	Dale Smith	PARC Technical Services 100 William Pitt Way Pittsburgh, PA 15238	Phone: 412-423-1120 x403 FAX: 412-826-5444 e-Mail: Dale.smith@intertek.com
	NV	Bill Sullivan	Independent 5 Scheber Drive Brick, NJ 08723	Phone: 908-930-3512 FAX: 267-220-7750 e-Mail: wtsullivan@comcast.net

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	NV	E. A. Hap Thompson	Global PPL Stds. Association 404 Twin Oaks Lane St. Johns, FL 32259	Phone: 904-287-9596 FAX: 904-287-9596 e-Mail: hapjthom@aol.com
	NV	Chintan Ved	Ford 35500 Plymouth Road Livonia, MI 48150	Phone: 313-805-9495 FAX: e-Mail: cved@ford.com
	NV	Paula Vettel	DA Stuart	Phone: FAX: e-Mail: pvettel@dastuart.net
	NV	Luis A. Villahermosa	U.S. Army TARADec AMSRD-TAR-D/210 MS110 6501 E. 11 Mile Road Warren, MI 48397-5000	Phone: 586-574-4207 FAX: 586-574-4244 e-Mail: Luis.a.villahermosa@us.army.mil
	NV	Claire Whitton	Afton Chemical Corp. 500 Spring Street (23219) P.O. Box 2158 Richmond, VA 23218-2158	Phone: 804-788-5052 FAX: 804-788-6243 e-Mail: claire.whitton@afonchemical.com
	NV	Jack Zakarian	Chevron Products 100 Chevron Way Richmond, CA 94802	Phone: 510-242-3595 FAX: 510-242-3758 e-Mail: