



Test No. 10-539: Fibers Analysis

This test was sent to 249 participants. Each sample pack consisted of two sets of "questioned" fibers and a "known" swatch of fabric. Participants were requested to compare the items and report their findings. Data were returned from 211 participants (85% response rate) and are compiled into the following tables:

	<u>Page</u>
<u>Manufacturer's Information</u>	<u>2</u>
<u>Summary Comments</u>	<u>3</u>
<u>Table 1: Association Results</u>	<u>4</u>
<u>Table 2: Fiber Type Determination</u>	<u>8</u>
<u>Table 3: Examination Methods</u>	<u>18</u>
<u>Table 4: Conclusions</u>	<u>27</u>
<u>Table 5: Additional Comments</u>	<u>54</u>
<u>Appendix: Data Sheet</u>	<u>57</u>

This report contains the data received from the participants in this test. Since these participants are located in many countries around the world, and it is their option how the samples are to be used (e.g., training exercise, known or blind proficiency testing, research and development of new techniques, etc.), the results compiled in the Summary Report are not intended to be an overview of the quality of work performed in the profession and cannot be interpreted as such. The Summary Comments are included for the benefit of participants to assist with maintaining or enhancing the quality of their results. These comments are not intended to reflect the general state of the art within the profession.

Participant results are reported using a randomly assigned "WebCode". This code maintains participant's anonymity, provides linking of the various report sections, and will change with every report.

Manufacturer's Information

Each sample pack consisted of a section of known fabric (Item 1) and two sets of questioned fibers (Items 2 and 3). Items 1 and 2 were from the same orange fabric labeled as 100% polyester, whereas Item 3 was from an orange fabric labeled as 100% acetate. Both fabrics were purchased from a local store.

Participants were requested to examine the fibers, identify the fiber type, and determine if the questioned fibers could have originated from the known fabric.

SAMPLE PREPARATION-

The fabric was laid out and rolled with a lint roller to remove any extraneous debris. Items 1/2 and Item 3 were prepared on different days to prevent any possibility of cross-contamination.

ITEM 3 (ELIMINATION): For the questioned acetate fibers, a 0.5 yard of fabric was first cut into 2"x2" swatches. For each item, two warp and two weft fibers were teased from the edges of one fabric swatch, then packaged into a glassine bag and prelabeled Item 3 coin envelope.

ITEMS 1 and 2 (IDENTIFICATION): For the known fabric (Item 1) and the questioned polyester fibers (Item 2), a 2-yard section of fabric was first cut into 2" x 2" swatches. A predetermined number of full swatches were then packaged into glassine bags and prelabeled manila envelopes (Item 1); the remaining swatches were used to prepare the questioned fibers (Item 2). For each item in this set, two warp and two weft fibers were teased from the edges of one fabric swatch, then packaged into a glassine bag and prelabeled Item 2 coin envelope.

SAMPLE PACK ASSEMBLY: For each sample pack, an Item 1 and 2 were placed in a sample pack envelope along with an Item 3 and sealed with invisible tape. This process was repeated until all of the sample pack envelopes were prepared. Once verification was completed, the sample pack envelopes were sealed with evidence tape and initialed with "CTS".

VERIFICATION-

Predistribution laboratories reported Items 1 and 2 as consisting of polyester fibers and Item 3 as consisting of acetate fibers. These laboratories also concluded that Items 1 and 2 could have originated from the same source and Item 3 could not have originated from the same source as Item 1.

Summary Comments

This test was designed to allow participants to assess their proficiency in the examination, identification and comparison of fibers. Participants were provided with a section of known orange fabric (Item 1) and two sets of questioned fibers (Items 2 and 3). They were requested to examine the submitted items and determine if the questioned fibers could share a common origin with the known fabric. Items 1 and 2 were from the same bolt of polyester fabric; Item 3 was from a bolt of acetate fabric. [Refer to the Manufacturer's Information for preparation details.]

In Table 1 "Association Results", 211 participants reported fiber associations. Of the 211 participants, 210 reported that Item 2 could share a common origin with Item 1 and that Item 3 could not have originated from Item 1. One participant reported that neither of Items 2 and 3 could share a common origin with Item 1. This participant relied only on polarized light microscopic examination and identified Item 1 as nylon.

In Table 2 "Identification Results", 208 of the 211 participants (99%) identified polyester fibers in Items 1 and 2. Two participants reported that it was not their procedure to identify the fiber types. The remaining one participant identified nylon fibers in Item 1 and polyester fibers in Item 2. Of the 211 participants, 198 (94%) identified acetate fibers in Item 3. Seven participants reported only "manufactured" for fiber type. Two participants reported that it was not their procedure to identify fiber types. One participant identified rayon fibers in Item 3 and one participant identified vinyl fibers in Item 3. One additional participant identified acetate fibers in Item 3, but classified them as vegetable.

Association Results

Could the questioned fibers (Items 2 and/or 3) have originated from the victim's jacket (Item 1)?

TABLE 1

WebCode	ASSOCIATION		WebCode	ASSOCIATION	
	Item 2	Item 3		Item 2	Item 3
23PMFN	Yes	No	8Q2A9U	Yes	No
278KB6	Yes	No	8YVJMJ	Yes	No
2FY4PE	Yes	No	93TER4	Yes	No
2MLXWX	Yes	No	94ZXDT	Yes	No
2PQDE2	Yes	No	9G6UWV	Yes	No
32WX7T	Yes	No	9U9FYK	Yes	No
373MDE	Yes	No	9WMQ9B	Yes	No
3FT9HD	Yes	No	A74Q67	Yes	No
3HYT9Y	Yes	No	ABMRKC	Yes	No
3JXVDV	Yes	No	ABZLYR	Yes	No
46Q8JE	Yes	No	AD3JAJ	Yes	No
49RFYA	Yes	No	AGJXP	Yes	No
4GLCVK	Yes	No	AMR86L	Yes	No
4HCMLD	Yes	No	AQQG43	Yes	No
4V3CJX	Yes	No	AXBHKF	Yes	No
6A8U96	Yes	No	AY3M6Z	Yes	No
6AF8AE	Yes	No	AZEGRR	Yes	No
6CH6L8	Yes	No	B7469J	Yes	No
6UMKWZ	Yes	No	B7NPYN	Yes	No
6XNCJE	Yes	No	B8ZMAK	Yes	No
77G2LZ	Yes	No	BLWP3K	Yes	No
78RYYH	Yes	No	BUPWNC	Yes	No
7CXN66	Yes	No	C3VJFB	Yes	No
7KYWTK	Yes	No	C6LMHH	Yes	No
7NXAEN	Yes	No	C7DGBT	Yes	No
7U9A32	Yes	No	CAFFLK	Yes	No
7W7ZZZ	Yes	No	CHAKEL	Yes	No
84Q9C4	Yes	No	CHV3Q9	Yes	No
8C6YVA	Yes	No	CWRD3T	Yes	No
8CJGWU	Yes	No	CWU8VY	Yes	No
8JH8WB	Yes	No	D2H2DH	Yes	No
8LRXKU	Yes	No	D2MJCG	Yes	No

TABLE 1

WebCode	ASSOCIATION		WebCode	ASSOCIATION	
	Item 2	Item 3		Item 2	Item 3
D92AVM	Yes	No	GQUAFJ	Yes	No
DHP9K8	Yes	No	GU6KTK	Yes	No
DMVXQU	Yes	No	H24B79	Yes	No
DWAL6U	Yes	No	H49323	Yes	No
DYPDFV	Yes	No	H6KPL3	Yes	No
DZKWHW	Yes	No	HAYFYA	Yes	No
E684DA	Yes	No	HERDQL	Yes	No
ECY434	Yes	No	HHQRCQ	Yes	No
EDTYVR	Yes	No	HNFCF7	Yes	No
EEGGMQ	Yes	No	HRBYZU	Yes	No
EFFHWP	Yes	No	HRWPVZ	Yes	No
EJHCXF	Yes	No	HY2DVG	Yes	No
ENBKYZ	Yes	No	HYFT33	Yes	No
ETJ29P	Yes	No	J2JWHW	Yes	No
EVTTMW	Yes	No	J7WUMX	Yes	No
EY8QTY	Yes	No	JFLHKL	Yes	No
EZYHTJ	Yes	No	JKT8Q8	Yes	No
F32Z6K	Yes	No	JQXURN	Yes	No
F43WQ2	Yes	No	K6VB9A	Yes	No
F8J3KQ	Yes	No	KTNEE8	Yes	No
FAMTUQ	Yes	No	L7RYGW	Yes	No
FRRZ9T	Yes	No	LC9L2Z	Yes	No
FU9TKT	Yes	No	LJUKJL	Yes	No
FV4BLU	Yes	No	LMR6CK	Yes	No
FVNTXG	Yes	No	LQXGJL	Yes	No
FXRNGJ	Yes	No	LUBEPN	Yes	No
FYQPRH	Yes	No	M2NPGE	Yes	No
G7D944	Yes	No	M2UTJ7	Yes	No
GBNLL3	Yes	No	M6RGQF	Yes	No
GC4K6R	Yes	No	MCCCVP	Yes	No
G CJ4M4	Yes	No	MFCJGM	Yes	No
GJTY3Y	Yes	No	MGLR6E	Yes	No
GKDAG6	Yes	No	MJQFLP	Yes	No
GKPH6Z	Yes	No	MLWN6G	Yes	No
GQ3PAH	Yes	No			

TABLE 1

WebCode	ASSOCIATION		WebCode	ASSOCIATION	
	Item 2	Item 3		Item 2	Item 3
MVPYGX	Yes	No	V6U3ND	Yes	No
MXLTPY	Yes	No	V8RAA4	Yes	No
NLCLFK	Yes	No	VGHVF3	Yes	No
NR4REF	Yes	No	VLNKLN	Yes	No
NZ6C2G	No	No	VTTBEU	Yes	No
P3UVPZ	Yes	No	VTU4EM	Yes	No
PFCTN9	Yes	No	VW2PF	Yes	No
PJKLFN	Yes	No	VXJKQD	Yes	No
PYF8HA	Yes	No	W92N9W	Yes	No
Q3U6MC	Yes	No	W9EDCA	Yes	No
Q6XZ7E	Yes	No	WA9ZUE	Yes	No
Q7TH9F	Yes	No	WE6JB6	Yes	No
QAQ7GA	Yes	No	WGLBM7	Yes	No
QCG3CV	Yes	No	WKQLAV	Yes	No
QKN2MT	Yes	No	WMZLDG	Yes	No
QNB2W	Yes	No	WN78PV	Yes	No
QPKNEL	Yes	No	WPM6EE	Yes	No
R3NAGB	Yes	No	WT793C	Yes	No
RAA86X	Yes	No	WUWKN3	Yes	No
REZHFW	Yes	No	WWYJLN	Yes	No
RL3MBL	Yes	No	X4EKKX	Yes	No
RPGJGN	Yes	No	X77H6C	Yes	No
RV3G4Q	Yes	No	XCXRFA	Yes	No
RYZY6X	Yes	No	XJPCBA	Yes	No
T6M4GY	Yes	No	XQFFTE	Yes	No
TCATG2	Yes	No	XZJQZ4	Yes	No
TGFHMM	Yes	No	Y32C4B	Yes	No
TZEN3A	Yes	No	Y8QRJH	Yes	No
U4EADC	Yes	No	YA6D9B	Yes	No
U9KYJY	Yes	No	YBV9ZL	Yes	No
UCKBFY	Yes	No	YHJZGF	Yes	No
UPBPBM	Yes	No	YMDUG2	Yes	No
URQGLN	Yes	No	YN468U	Yes	No
UVRKDB	Yes	No	YPGPZ6	Yes	No
UZD7J6	Yes	No			

TABLE 1

WebCode	ASSOCIATION		WebCode	ASSOCIATION	
	Item 2	Item 3		Item 2	Item 3
YTZR44	Yes	No			
Z2ZTNM	Yes	No			
Z4967N	Yes	No			
ZBUPY4	Yes	No			
ZC3BZP	Yes	No			
ZDHD63	Yes	No			
ZFM7WF	Yes	No			
ZJZP2Q	Yes	No			
ZWCY3M	Yes	No			

Response Summary

Participants: 211

Could the questioned fibers (Items 2 and/or 3) have originated from the victim's jacket (Item 1)?

	<u>Item 2</u>	<u>Item 3</u>
Yes	210	0
No	1	211
Inc	0	0

Fiber Type Determination

What types of fibers were identified in Items 1-3?

TABLE 2

WebCode	Fiber Type Determination		
	Item 1	Item 2	Item 3
23PMFN	manufactured, polyester	manufactured, polyester	manufactured, acetate
278KB6	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
2FY4PE	Manufactured: Polyester (both warp and fill directions)	Manufactured: Polyester	Manufactured: Acetate
2MLXWX	Polyester	Polyester	Acetate
2PQDE2	Manufactured/both types are polyester	Manufactured/both types are polyester	Manufactured/Acetate
32WX7T	Polyester/Polyester	Polyester/Polyester	Acetate
373MDE	Polyester	Polyester	Acetate
3FT9HD	Manufactured Polyester	Manufactured Polyester	Manufactured Acetate
3HYT9Y	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
3JXVDV	Polyester (Manufactured)	Polyester (Manufactured)	Acetate (Manufactured)
46Q8JE	Manufactured Polyester	Manufactured Polyester	Manufactured Acetate
49RFYA	manufactured, polyester	manufactured, polyester	manufactured, acetate
4GLCVK	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
4HCMLD	Polyester (Manufactured)	Polyester (Manufactured)	Acetate (Manufactured)
4V3CJX	Manufactured, Polyester (2 types - semi - dull & lust)	Manufactured, Polyester (2 types - semi - dull & lust)	Manufactured, Acetate (Diacetate)
6A8U96	Polyester	Polyester	Cellulose acetate
6AF8AE	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
6CH6L8	manufactured, polyester	manufactured, polyester	manufactured, acetate
6UMKWZ	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
6XNCJE	Polyester	Polyester	N/A

TABLE 2

WebCode	Fiber Type Determination		
	Item 1	Item 2	Item 3
77G2LZ	Manufactured, Polyester/Polyester	Manufactured, Polyester/Polyester	Manufactured, Acetate
78RYYH	Manufactured and Polyester	Manufactured and Polyester	Manufactured and Acetate
7CXN66	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
7KYWTK	Manufactured Polyester	Manufactured Polyester	Manufactured Acetate
7NXAEN	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
7U9A32	Two Manufactured Fibres - Both Polyester	Two Manufactured Fibres - Both Polyester	One Manufactured Fibre - Acetate
7W7ZZZ	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
84Q9C4	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
8C6YVA	Manufactured, polyester	Manufactured, polyester	Manufactured, acetate
8CJGWU	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
8JH8WB	Polyester PET	Polyester PET	Acetate
8LRXKU	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
8Q2A9U	manufactured, polyester	manufactured, polyester	manufactured, acetate
8YVJMJ	manufactured, polyester	manufactured, polyester	manufactured, acetate
93TER4	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
94ZXDT	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate (di-acetate)
9G6UWV	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
9U9FYK	manufactured, polyester	manufactured, polyester	manufactured, acetate
9WMQ9B	manufactured, polyester	manufactured, polyester	manufactured, acetate
A74Q67	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
ABMRKC	Manufactured, polyester	Manufactured, polyester	Manufactured, acetate
ABZLYR	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Triacetate
AD3JAJ	Manufactured -> Polyester	Manufactured -> Polyester	Manufactured -> Acetate

TABLE 2

WebCode	Fiber Type Determination		
	Item 1	Item 2	Item 3
AGJXPD	Manufactured/Polyester (2 models)	Manufactured/Polyester (2 models)	Manufactured/Acetate
AMR86L	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
AQQG43	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
AXBHKF	Manufactured - polyester	Manufactured - polyester	Manufactured - ~not further characterized*
AY3M6Z	Two types of manufactured[sic], polyester	Manufactured, Polyester	Manufactured, Acetate
AZEGRR	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
B7469J	Manufactured polyester	Manufactured polyester	Manufactured acetate
B7NPYN	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
B8ZMAK	polyester	polyester	acetate
BLWP3K	Polyester/Polyester	Polyester/Polyester	Acetate/Acetate
BUPWNC	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
C3VJFB	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
C6LMHH	Polyester	Polyester	Acetate
C7DGBT	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Vinal
CAFFLK	Manufactured: Polyester (with delustrants), Polyester (no delustrant)	Manufactured: Polyester (no delustrants)	Acetate: Manufactured
CHAKEL	manufactured polyester (two morphological types)	manufactured polyester (two morphological types)	manufactured acetate
CHV3Q9	polyester	polyester	acetate
CWRD3T	(Is not part of our procedure)*	(Is not part of our procedure)*	(Is not part of our procedure)*
CWU8VY	Manufactured, Polyester (delust. & non-delust.)	Manufactured, Polyester (delust. & non-delust.)	Manufactured, Acetate
D2H2DH	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
D2MJCG	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate

TABLE 2

WebCode	Fiber Type Determination		
	Item 1	Item 2	Item 3
D92AVM	Polyester	Polyester	Acetate
DHP9K8	Manufactured, Polyesters (2)	Manufactured, Polyesters (2)	Manufactured, Acetate (1)
DMVXQU	Manufactured - Polyester	Manufactured - Polyester	Manufactured - Acetate
DWAL6U	manufactured, polyester	manufactured, polyester	manufactured, acetate
DYPDFV	Polyester	Polyester	Cellulose Acetate
DZKWHW	Polyester	Polyester	Acetate
E684DA	Manufactured[sic]: Polyester	Manufactured: Polyester	Manufactured (not further characterized)
ECY434	Manufactured, Polyester	Manufactured, Polyester	Manufactured
EDTYVR	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
EEGGMQ	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
EFFHWP	Polyester (delustered + non-delustered)	Polyester (delustered + non-delustered)	Cellulose Acetate
EJHCXF	Manufactured - Polyester	Manufactured - Polyester	Manufactured - Acetate
ENBKYZ	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
ETJ29P	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
EVTTMW	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
EY8QTY	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
EZYHTJ	Manufactured, Polyester	Manufactured, Polyester	Vegetable, Acetate
F32Z6K	manufactured polyester	manufactured polyester	manufactured acetate
F43WQ2	Manufactured, polyester (warp & weft threads)	Manufactured, polyester	Manufactured, acetate
F8J3KQ	manufactured - polyester	manufactured - polyester	manufactured - acetate
FAMTUQ	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
FRRZ9T	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate

TABLE 2

WebCode	Fiber Type Determination		
	Item 1	Item 2	Item 3
FU9TKT	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
FV4BLU	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
FVNTXG	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
FXRNGJ	Manufactured, Polyester - 2 types	Manufactured, Polyester - 2 types	Manufactured, Acetate
FYQPRH	manufactured, polyester	manufactured, polyester	manufactured, acetate
G7D944	K1 & K2-Manufactured, Polyester	Q1 & Q2-Manufactured, Polyester	Q3-Manufactured, Acetate
GBNLL3	Manufactured, polyester	Manufactured, polyester	Manufactured, acetate
GC4K6R	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
G CJ4M4	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
GJTY3Y	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
GKDAG6	Polyester	Polyester	Acetate
GKPH6Z	Manufactured, polyester	Manufactured, polyester	Manufactured, acetate (diacetate)
GQ3PAH	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
GQUAFJ	manufactured, polyester	manufactured, polyester	manufactured, acetate
GU6KTK	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
H24B79	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
H49323	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
H6KPL3	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Not Characterized
HAYFYA	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
HERDQL	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
HHQRCQ	Manufactured - Polyester	Manufactured - Polyester	Manufactured - Acetate
HNFCF7	Polyester	Polyester	Acetate

TABLE 2

WebCode	Fiber Type Determination		
	Item 1	Item 2	Item 3
HRBYZU	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
HRWPVZ	Manufactured, polyester	Manufactured, polyester	Manufactured, acetate
HY2DVG	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
HYFT33	Manufactured - polyester	Manufactured - polyester	Manufactured - undetermined
J2JWHW	Polyester	Polyester	Acetate
J7WUMX	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
JFLHKL	Manufactured, polyester	Manufactured, polyester	Manufactured, acetate
JKT8Q8	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
JQXURN	Manufactured, polyester	Manufactured, polyester	Manufactured, acetate
K6VB9A	Manufactured; Polyester	Manufactured; Polyester	Manufactured; Acetate
KTNEE8	manufactured, polyester	manufactured, polyester	manufactured, acetate
L7RYGW	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
LC9L2Z	Manufactured, polyester	Manufactured, polyester	Manufactured, Acetate
LJUKJL	Manufactured - Polyester	Manufactured - Polyester	Manufactured - Acetate
LMR6CK	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
LQXGJL	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
LUBEPN	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
M2NPGE	manufactured, polyester	manufactured, polyester	manufactured, acetate
M2UTJ7	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
M6RGQF	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
MCCCVP	Manufactured - Polyester	Manufactured - Polyester	Manufactured - Acetate
MFCJGM	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
MGLR6E	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate

TABLE 2

WebCode	Fiber Type Determination		
	Item 1	Item 2	Item 3
MJQFLP	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
MLWN6G	Manufactured; polyester	Manufactured; polyester	Manufactured; acetate
MVPYGX	manufactured, polyester	manufactured, polyester	manufactured, acetate
MXLTPY	Manufactured, polyester	Manufactured, polyester	Manufactured, acetate
NLCLFK	Manufactured, polyester	Manufactured, polyester	Manufactured, acetate
NR4REF	Manufactured, polyester	Manufactured, polyester	Manufactured, acetate
NZ6C2G	Manufactured, Nylon	Manufactured, Polyester	Manufactured, Acetate
P3UVPZ	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
PFCTN9	manufactured, polyester (Two different types)	manufactured, polyester (Two different types)	manufactured, triacetate
PJKLFN	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
PYF8HA	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
Q3U6MC	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
Q6XZ7E	Manufactured - Polyester	Manufactured - Polyester	Manufactured - Acetate
Q7TH9F	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
QAQ7GA	Manufactured - polyester	Manufactured - polyester	Manufactured - Acetate
QCG3CV	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
QKN2MT	Polyester	Polyester	Acetat[sic]
QNB2W	Polyester	Polyester	Acetate
QPKNEL	Manufactured - polyester	Manufactured - polyester	Manufactured - Acetate
R3NAGB	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
RAA86X	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
REZHFW	manufactured - Polyester	manufactured - Polyester	manufactured - Acetate
RL3MBL	polyester	polyester	acetate

TABLE 2

WebCode	Fiber Type Determination		
	Item 1	Item 2	Item 3
RPGJGN	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
RV3G4Q	Manufactured - Polyester	Manufactured - Polyester	Manufactured - Acetate
RYZY6X	Manufactured - both warp & fill - polyester wrap is delustered polyester	Manufactured - polyester	Manufactured - acetate
T6M4GY	Polyester - Manufactured	Polyester - Manufactured	Acetate - Manufactured
TCATG2	Manufactured, polyester	Manufactured, polyester	Manufactured, acetate
TGFHMM	Manufactured - Polyester	Manufactured - Polyester	Manufactured - not further characterized
TZEN3A	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
U4EADC	Polyester/Manufactured	Polyester/Manufactured	Acetate/Manufactured
U9KYJY	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Cellulose Acetate
UCKBFY	Manufactured, Polyester (PET)	Manufactured, Polyester (PET)	Manufactured, Acetate
UPBPBM	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
URQGLN	Manufactured, polyester	Manufactured, polyester	Manufactured, acetate
UVRKDB	Our procedure is for fiber comparison, not for ID.	Our procedure is for fiber comparison, not for ID.	Our procedure is for fiber comparison, not for ID.
UZD7J6	Polyester	Polyester	Acetate
V6U3ND	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
V8RAA4	manufactured, polyester	manufactured, polyester	manufactured[sic], acetate
VGHVF3	Polyester	Polyester	Acetate
VLNKLN	Manufactured - polyester	Manufactured - polyester	Manufactured - rayon
VTTBEU	Polyester / Polyester	Polyester / Polyester	Acetate / Acetate
VTU4EM	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
VW2PF	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
VXJKQD	Mfg - Polyester	Mfg - Polyester	Mfg - Acetate

TABLE 2

WebCode	Fiber Type Determination		
	Item 1	Item 2	Item 3
W92N9W	PET - polyester	PET - polyester	acetate
W9EDCA	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
WA9ZUE	Manufactured, polyester	Manufactured, polyester	Manufactured, acetate
WE6JB6	Manufactured - Polyester	Manufactured - Polyester	Manufactured - Acetate
WGLBM7	Polyester	Polyester	Acetate
WKQLAV	Synthetic, Polyester	Synthetic, Polyester	Synthetic, Acetate
WMZLDG	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
WN78PV	synthetic polyester (PET)	synthetic polyester (PET)	synthetic Acetate
WPM6EE	Manufactured, Polyester (x2 types)	Manufactured, Polyester (x2 types)	Manufactured, Acetate
WT793C	Manufactured Polyester (warb[sic]: bright/weft: dull)	Manufactured Polyester	Manufactured Acetate (Triacetate)
WUWKN3	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
WWYJLN	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
X4EKKX	Polyester and Polyester (warp & filling)	Polyester and Polyester	Acetate
X77H6C	polyester	polyester	acetate
XCXRFA	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
XJPCBA	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
XQFFTE	manufactured, polyester	manufactured, polyester	manufactured, acetate
XZJQZ4	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
Y32C4B	Polyester	Polyester	Acetate
Y8QRJH	Polyester	Polyester	Acetate
YA6D9B	bright - polyester; delustered polyester	polyester	acetate
YBV9ZL	manufactured - polyester	manufactured - polyester	manufactured

TABLE 2

WebCode	Fiber Type Determination		
	Item 1	Item 2	Item 3
YHJZGF	Manufactured, polyester	Manufactured, polyester	Manufactured, cellulose acetate
YMDUG2	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
YN468U	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
YPGPZ6	Polyester	Polyester	acetate
YTZR44	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
Z2ZTNM	polyester one type delustered, one type not	polyester one type delustered, one type not	acetate
Z4967N	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
ZBUPY4	Manufactured, Polyester (two different types)	Manufactured, Polyester (two different types)	Manufactured, Acetate
ZC3BZP	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Triacetate
ZDHD63	Polyester	Polyester	Acetate
ZFM7WF	Manufactured, Polyester	manufactured, Polyester	manufactured, Acetate
ZJZP2Q	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate
ZWCY3M	Manufactured, Polyester	Manufactured, Polyester	Manufactured, Acetate

Response Summary

Participants: 211

What types of fibers were identified in Items 1-3?

Polyester Fibers were identified in Items 1 and 2.

Acetate Fibers were identified in Item 3.

Item 1

Item 2

Item 3

208 (99%)

209 (99%)

198 (94%)

* See Conclusions or Additional Comments (Table 4 or 5).

Examination Methods

TABLE 3

WebCode	Stereomicroscope	Comparison	Polarized Light	Fluorescence	Macroscopic Exam	IR/FTIR	Microspectrophotometry	Solubility Tests	Cross-Section	Melting Point	Other
23PMFN	✓	✓	✓			✓	✓				
278KB6	✓	✓	✓	✓		✓	✓				
2FY4PE	✓		✓			✓					
2MLXWX	✓		✓	✓		✓	✓				
2PQDE2	✓	✓	✓	✓	✓	✓	✓				
32WX7T	✓	✓	✓		✓	✓					
373MDE	✓	✓	✓	✓	✓	✓	✓	✓	✓		Berek Compensator
3FT9HD			✓			✓					
3HYT9Y	✓	✓	✓		✓			✓	✓	✓	TLC - Thin Layer Chromatography
3JXVDV	✓	✓	✓			✓	✓				
46Q8JE	✓	✓	✓	✓	✓	✓	✓	✓	✓		Berek Compensator
49RFYA	✓	✓	✓	✓	✓	✓	✓				
4GLCVK	✓	✓	✓	✓	✓	✓		✓	✓		
4HCMLD	✓	✓	✓			✓					
4V3CJX	✓	✓	✓	✓		✓	✓	✓			
6A8U96	✓		✓	✓		✓	✓		✓		Thin-layer Chromatography (TLC)
6AF8AE	✓	✓	✓		✓	✓	✓		✓		
6CH6L8	✓	✓	✓		✓	✓					
6UMKWZ	✓	✓	✓		✓	✓	✓		✓		PGC-MS
6XNCJE	✓	✓	✓	✓	✓	✓	✓		✓		
77G2LZ	✓	✓	✓		✓	✓			✓		
78RYYH	✓	✓	✓			✓		✓	✓		Stereomicroscopic
7CXN66					✓	✓					
7KYWTK	✓	✓	✓			✓					

TABLE 3

WebCode	Stereomicroscope	Comparison	Polarized Light	Fluorescence	Macroscopic Exam	IR/FTIR	Microspectrophotometry	Solubility Tests	Cross-Section	Melting Point	Other
7NXAEN	✓	✓			✓	✓		✓			
7U9A32	✓	✓	✓	✓	✓	✓	✓	✓			Cross section assessment by longitudinal view.
7W7ZZZ	✓	✓	✓		✓	✓	✓	✓			Alternate Light Source
84Q9C4	✓	✓	✓	✓	✓	✓	✓	✓	✓		TLC
8C6YVA	✓	✓	✓		✓	✓	✓				
8CJGWU	✓	✓	✓	✓		✓	✓			✓	
8JH8WB	✓	✓	✓	✓	✓	✓	✓		✓		
8LRXKU	✓	✓	✓		✓	✓	✓		✓		
8Q2A9U	✓	✓	✓	✓	✓	✓		✓	✓		Pyrolysis-GC/MS, TLC, VSC6000
8YVJMJ	✓	✓	✓		✓	✓	✓				
93TER4	✓	✓	✓	✓		✓	✓	✓	✓		
94ZXDT	✓	✓	✓	✓	✓	✓	✓	✓			
9G6UWV					✓	✓					PyGC/MS, SEM/EDS
9U9FYK	✓	✓	✓	✓		✓	✓				
9WMQ9B		✓	✓		✓	✓			✓		
A74Q67	✓		✓		✓			✓			Burning Test
ABMRKC	✓	✓	✓	✓	✓	✓	✓		✓		
ABZLYR	✓	✓	✓		✓	✓		✓		✓	
AD3JAJ	✓	✓	✓		✓	✓	✓		✓		
AGJXPD	✓		✓		✓	✓	✓				TLC, Pyrolysis GC/MS
AMR86L	✓	✓	✓		✓	✓	✓				
AQQG43	✓	✓	✓		✓	✓					
AXBHKF	✓	✓	✓	✓	✓	✓	✓		✓		
AY3M6Z	✓		✓	✓	✓	✓			✓		
AZEGRR	✓	✓	✓	✓	✓	✓	✓		✓		

TABLE 3

WebCode	Stereomicroscope	Comparison	Polarized Light	Fluorescence	Macroscopic Exam	IR/FTIR	Microspectrophotometry	Solubility Tests	Cross-Section	Melting Point	Other
B7469J	✓	✓	✓	✓	✓	✓	✓				
B7NPYN	✓	✓	✓		✓	✓		✓			Alternate light source
B8ZMAK	✓	✓	✓		✓	✓		✓			
BLWP3K	✓	✓	✓		✓	✓					Optical cross-section
BUPWNC	✓		✓		✓	✓	✓	✓			
C3VJFB	✓	✓	✓		✓	✓	✓	✓			
C6LMHH	✓		✓		✓	✓	✓	✓			
C7DGBT	✓					✓					
CAFFLK	✓		✓			✓					
CHAKEL	✓		✓		✓	✓	✓				
CHV3Q9	✓	✓	✓	✓	✓	✓					Dye extraction - TLC
CWRD3T	✓	✓		✓	✓	✓					Pyrolysis
CWU8VY	✓	✓	✓	✓	✓	✓	✓	✓	✓		
D2H2DH	✓	✓	✓		✓	✓	✓		✓		
D2MJCG	✓	✓	✓	✓	✓	✓	✓		✓		
D92AVM	✓	✓	✓	✓	✓	✓	✓				
DHP9K8	✓	✓	✓	✓	✓	✓			✓		
DMVXQU	✓	✓	✓			✓					
DWAL6U	✓		✓	✓	✓	✓	✓		✓	✓	
DYPDFV	✓		✓			✓					
DZKWHW	✓					✓					
E684DA	✓	✓	✓	✓	✓	✓	✓		✓		
ECY434		✓				✓	✓				
EDTYVR	✓	✓	✓	✓	✓	✓			✓		Alternate Light Source
EEGGMQ	✓	✓	✓	✓	✓	✓	✓	✓	✓		PGC-MS
EFFHWP	✓	✓	✓	✓		✓	✓				

TABLE 3

WebCode	Stereomicroscope	Comparison	Polarized Light	Fluorescence	Macroscopic Exam	IR/FTIR	Microspectrophotometry	Solubility Tests	Cross-Section	Melting Point	Other
EJHCXF	✓	✓	✓	✓	✓	✓	✓				
ENBKYZ	✓	✓	✓	✓	✓	✓	✓				
ETJ29P	✓	✓	✓	✓	✓	✓		✓	✓		
EVTTMW	✓	✓	✓		✓	✓			✓		Thin Layer Chromatography
EY8QTY	✓	✓	✓	✓	✓	✓	✓	✓	✓		
EZYHTJ	✓	✓	✓	✓	✓	✓	✓		✓		
F32Z6K			✓		✓	✓					FTIR Microscope
F43WQ2	✓	✓	✓	✓		✓	✓		✓		
F8J3KQ	✓	✓	✓		✓	✓	✓		✓		
FAMTUQ	✓	✓	✓	✓	✓	✓			✓		
FRRZ9T	✓	✓	✓	✓	✓	✓			✓		
FU9TKT			✓			✓		✓			
FV4BLU	✓		✓		✓	✓		✓			
FVNTXG	✓	✓	✓		✓	✓	✓				
FXRNGJ	✓	✓	✓		✓	✓	✓		✓		
FYQPRH	✓	✓	✓	✓	✓	✓	✓		✓		
G7D944	✓	✓	✓	✓	✓	✓			✓		
GBNLL3	✓		✓			✓		✓		✓	Pyrolysis - GC-FID
GC4K6R	✓	✓	✓	✓	✓	✓	✓		✓		
G CJ4M4	✓	✓	✓		✓	✓			✓		Refractive Index oils
GJTY3Y	✓	✓	✓		✓	✓					
GKDAG6	✓	✓	✓		✓	✓					
GKPH6Z	✓	✓	✓			✓	✓		✓		Thin layer chromatography (TLC)
GQ3PAH	✓					✓			✓		SEM/EDX
GQUAFJ	✓	✓	✓	✓		✓			✓	✓	
GU6KTK	✓		✓		✓	✓					

TABLE 3

WebCode	Stereomicroscope	Comparison	Polarized Light	Fluorescence	Macroscopic Exam	IR/FTIR	Microspectrophotometry	Solubility Tests	Cross-Section	Melting Point	Other
H24B79	✓	✓	✓	✓	✓	✓		✓			
H49323	✓	✓	✓		✓	✓		✓			
H6KPL3	✓	✓	✓	✓	✓	✓	✓	✓			
HAYFYA	✓	✓	✓	✓	✓	✓	✓	✓			
HERDQL	✓	✓	✓		✓	✓	✓				
HHQRCQ	✓	✓	✓		✓	✓	✓		✓		
HNFCF7	✓	✓	✓		✓	✓	✓		✓		
HRBYZU	✓		✓			✓	✓				
HRWPVZ	✓				✓	✓					
HY2DVG	✓	✓	✓	✓	✓	✓			✓		
HYFT33	✓	✓	✓	✓		✓					
J2JWHW	✓		✓								
J7WUMX	✓	✓	✓		✓	✓	✓	✓			Thin Layer Chromatography
JFLHKL	✓	✓	✓		✓	✓	✓		✓		
JKT8Q8	✓		✓			✓		✓	✓		SEM/EDX, Multispectral Imaging System
JQXURN	✓	✓	✓		✓	✓					
K6VB9A			✓		✓	✓			✓		TLC
KTNEE8	✓	✓	✓		✓	✓	✓		✓		
L7RYGW	✓	✓	✓	✓	✓	✓	✓		✓		
LC9L2Z	✓		✓	✓		✓		✓	✓	✓	
LJUKJL	✓	✓	✓	✓	✓			✓			
LMR6CK	✓			✓	✓	✓					Raman Microspectroscopy; VSC 5000
LQXGJL	✓	✓	✓	✓		✓	✓	✓	✓		
LUBEPN	✓	✓	✓	✓	✓	✓	✓		✓		
M2NPGE	✓	✓	✓		✓	✓	✓				

TABLE 3

WebCode	Stereomicroscope	Comparison	Polarized Light	Fluorescence	Macroscopic Exam	IR/FTIR	Microspectrophotometry	Solubility Tests	Cross-Section	Melting Point	Other
M2UTJ7	✓	✓	✓	✓	✓	✓	✓				
M6RGQF	✓	✓	✓	✓	✓	✓	✓				
MCCCVP	✓	✓	✓	✓	✓	✓	✓	✓			
MFCJGM	✓		✓		✓						Dispersion Staining[sic] Objective
MGLR6E	✓	✓	✓		✓	✓	✓				
MJQFLP	✓	✓	✓	✓	✓	✓	✓	✓			
MLWN6G	✓	✓	✓	✓	✓	✓	✓				
MVPYGX	✓	✓	✓	✓	✓	✓		✓			
MXLTPY	✓	✓	✓	✓		✓	✓	✓			
NLCLFK	✓	✓	✓			✓	✓				
NR4REF	✓	✓	✓	✓	✓	✓		✓			
NZ6C2G			✓								
P3UVPZ	✓	✓	✓	✓	✓	✓	✓	✓			
PFCTN9	✓	✓	✓		✓						✓ Micro FTIR, Dyes Extraction and classification
PJKLFN	✓	✓	✓	✓	✓	✓	✓				
PYF8HA	✓	✓	✓		✓	✓	✓				
Q3U6MC	✓	✓	✓	✓	✓	✓	✓	✓			
Q6XZ7E	✓	✓	✓	✓	✓	✓	✓				
Q7TH9F	✓	✓	✓	✓	✓	✓	✓				
QAQ7GA	✓	✓	✓	✓		✓	✓				
QCG3CV	✓		✓		✓	✓	✓				
QKN2MT	✓	✓				✓		✓			Raman, TLC
QNB2W	✓	✓	✓		✓	✓					
QPKNEL	✓	✓	✓	✓		✓		✓			
R3NAGB	✓	✓	✓		✓	✓	✓				

TABLE 3

WebCode	Stereomicroscope	Comparison	Polarized Light	Fluorescence	Macroscopic Exam	IR/FIR	Microspectrophotometry	Solubility Tests	Cross-Section	Melting Point	Other
RAA86X	✓	✓	✓	✓	✓	✓	✓	✓			
REZHFW	✓		✓		✓	✓	✓	✓			
RL3MBL	✓	✓		✓	✓	✓	✓	✓			dye classification and comparison by TLC
RPGJGN	✓	✓	✓	✓	✓	✓					High Performance Thin layer Chromatography (dye comparison)
RV3G4Q	✓	✓	✓		✓	✓	✓	✓			
RYZY6X	✓		✓		✓						
T6M4GY	✓	✓	✓	✓		✓	✓				Raman Spectroscopy
TCATG2	✓	✓	✓	✓	✓	✓	✓				
TGFHMM	✓	✓	✓	✓	✓	✓	✓				optical cross-section
TZEN3A	✓	✓	✓	✓	✓	✓	✓		✓		
U4EADC	✓	✓	✓	✓	✓	✓			✓		
U9KYJY	✓		✓		✓	✓	✓		✓		Observation Under Crimescope
UCKBFY	✓		✓	✓	✓	✓	✓		✓		TLC
UPBPBM	✓	✓	✓	✓	✓	✓	✓				Pyrolysis GC/MS, UPLC
URQGLN	✓	✓		✓	✓	✓	✓	✓	✓		
UVRKDB	✓	✓			✓	✓					Pyrolysis-GC, Behavior under short and long UV radiation
UZD7J6	✓	✓	✓	✓	✓	✓	✓				
V6U3ND	✓		✓		✓			✓			
V8RAA4	✓	✓	✓	✓	✓	✓	✓		✓		
VGHVF3	✓	✓	✓	✓	✓	✓	✓				
VLNKLN	✓	✓	✓	✓		✓	✓		✓		optical cross section
VTTBEU	✓	✓	✓	✓		✓	✓	✓	✓	✓	
VTU4EM	✓	✓	✓	✓	✓	✓	✓		✓		Raman

TABLE 3

WebCode	Stereomicroscope	Comparison	Polarized Light	Fluorescence	Macroscopic Exam	IR/FTIR	Microspectrophotometry	Solubility Tests	Cross-Section	Melting Point	Other
VW2PF	✓		✓		✓	✓		✓			
VXJKQD	✓	✓	✓		✓			✓			
W92N9W	✓	✓	✓		✓	✓	✓	✓			measurement of crimp
W9EDCA	✓	✓	✓	✓	✓	✓	✓				
WA9ZUE	✓					✓					
WE6JB6	✓	✓	✓		✓	✓	✓		✓		
WGLBM7	✓	✓	✓		✓	✓					
WKQLAV	✓	✓	✓	✓	✓	✓		✓			
WMZLDG	✓	✓	✓	✓	✓	✓	✓				
WN78PV	✓		✓	✓	✓	✓					
WPM6EE	✓	✓	✓			✓		✓			Thin-Layer Chromatography
WT793C	✓	✓	✓	✓	✓	✓	✓	✓	✓		
WUWKN3	✓	✓	✓		✓	✓		✓			
WWYJLN	✓	✓	✓		✓	✓		✓			
X4EKKX			✓		✓	✓		✓	✓		
X77H6C	✓	✓	✓			✓	✓		✓		
XCXRFA	✓	✓	✓					✓		✓	
XJPCBA	✓	✓	✓	✓	✓		✓	✓			
XQFFTE	✓	✓	✓	✓	✓	✓		✓			alternate light source
XZJQZ4	✓	✓	✓	✓	✓		✓			✓	
Y32C4B	✓	✓	✓			✓	✓		✓		
Y8QRJH			✓			✓		✓			
YA6D9B	✓	✓	✓		✓	✓			✓		SEM/EDS
YBV9ZL	✓	✓	✓	✓		✓	✓				
YHJZGF			✓			✓		✓			
YMDUG2	✓	✓	✓	✓	✓	✓	✓				

TABLE 3

WebCode	Stereomicroscope	Comparison	Polarized Light	Fluorescence	Macroscopic Exam	IR/FTIR	Microspectrophotometry	Solubility Tests	Cross-Section	Melting Point	Other
YN468U	✓	✓	✓	✓	✓	✓	✓	✓			
YGPZ6	✓	✓	✓	✓	✓	✓	✓	✓	✓		LC/MS
YTZR44	✓	✓	✓	✓	✓	✓	✓	✓			
Z2ZTNM	✓	✓	✓			✓					
Z4967N	✓	✓	✓	✓	✓	✓	✓	✓			
ZBUPY4	✓	✓	✓	✓	✓	✓	✓	✓			
ZC3BZP	✓	✓	✓	✓		✓	✓				Raman Spectroscopy
ZDHD63	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	LC/MS
ZFM7WF	✓		✓		✓	✓		✓			TLC
ZJZP2Q	✓	✓	✓		✓	✓		✓			
ZWCY3M	✓		✓		✓	✓	✓	✓			

Response Summary											
Participants	Stereomicroscope	Comparison	Polarized Light	Fluorescence	Macroscopic Exam	IR/FTIR	Microspectrophotometry	Solubility Tests	Cross-Section	Melting Point	
211	199	165	196	106	159	197	121	42	133	14	
Percent	94%	78%	93%	50%	75%	93%	57%	20%	63%	7%	

Conclusions

TABLE 4

WebCode	Conclusions
23PMFN	The question fibers from the inner door latch (Item 2) are similar in color, microscopical characteristics and chemical composition to the fabric from the victim's jacket (Item 1). Therefore, the fabric from the door latch could have come from the victim's jacket. The fibers from the driver's seat (Item 3) are different than the fabric from the victim's jacket (Item 1).
278KB6	Door latch on the passenger side of the suspect's truck: Orange polyester fibres (item 2) of two types, indistinguishable from the two types of polyester fibres used in construction of the jacket lining (item 1), were found on the inner door latch on the passenger side of the suspect's truck. In interpreting the scientific findings I have considered two alternative propositions: The jacket lining (item 1) had been in contact with the inner door latch on the passenger side of the suspect's truck. The jacket lining (item 1) had not been in contact with the inner door latch on the passenger side of the suspect's truck and the polyester fibres originated from another item(s) constructed of the same two types of indistinguishable orange polyester fibres. In my opinion, the scientific findings provide strong scientific support for the former proposition rather than the latter. In expressing the evidential significance of my findings, I have used the following scale: no scientific support, limited, moderate, moderately strong, strong, very strong and extremely strong scientific support. Driver's seat of the suspect's truck: In my opinion, the fibres (item 3) recovered from the driver's seat of the suspect's truck did not originate from the lining of the jacket (item 1).
2FY4PE	The known sample, a section of orange fabric from the victim's jacket, comprises polyester (filament) fiber in both the warp and fill directions. Of the two questioned fibers, Item Two, orange fibers recovered from the passenger side inner door latch of the suspect's vehicle, are also polyester (filament) fiber. It is possible, therefore, that they originated from the victim's garment. Item Three, questioned fibers (also orange) recovered from the driver's side seat of the suspect's vehicle, are acetate (filament) fiber. Item Three, therefore, could not have originated from the victim's garment, which comprises polyester fiber.
2MLWX	Examination of the fibers in Exhibit 2 showed the presence of two different polyester fibers that were consistent in color, fiber type, size, delusterant, cross sectional shape and optical properties with the two different polyester fibers present in Exhibit 1; therefore, the fibers from Exhibit 2 could have the same origin as fibers from Exhibit 1. Examination of the fibers from Exhibit 3 showed that they were not consistent in fiber type with fibers from Exhibit 1; therefore, Exhibit 3 did not originate from Exhibit 1.
2PQDE2	Item #1 is a piece of woven fabric comprised of two microscopically distinct types of orange polyester fibers. Item #2 also consists of two microscopically distinct types of orange polyester fibers which exhibit the same microscopic, spectroscopic, and spectrophotometric properties as the fibers comprising item #1. Accordingly, the fibers in item #2 could have originated from item #1. Item #3 consists of orange acetate fibers. Therefore, the fibers in item #3 could not have originated from item #1.
32WX7T	The questioned strands of orange fibers from the door latch of the passenger side of truck, item 2, and the orange fabric from the inner lining of victim's jacket, item 1, were examined and determined to be composed of two (2) different fibers which are macroscopically, microscopically, and chemically (Fourier transform infrared (FT-IR) Spectroscopy) indistinguishable, and therefore could have a common origin. The question orange fibers from the driver's seat of truck, item 3, are different from those the orange fabric from the inner lining of victim's jacket, item 1, and therefore could not have originated from the jacket.[sic]
373MDE	The fibers recovered from Exhibit 2 are similar to fibers recovered from Exhibit 1, therefore the fibers from Exhibit 2 could have originated from the same source as the fibers from Exhibit 1. The fibers recovered from Exhibit 3 are dissimilar to the fibers recovered from Exhibit 1.
3FT9HD	Item 1 consisted of a piece of woven orange fabric. The fibers in the perpendicular sets of threads creating the weave were identified as orange polyester fibers. In one direction, all of the polyester fibers were delustered, distinctly trilobal and nominally measured approximately 20um in diameter. Perpendicular to these were threads/fibers, the orange polyester fibers were found not to show any delustering, were indistinctly trilobal and nominally measured approximately 15-17 um in diameter. Both types of orange fibers described in Item 1 (above) were located in Item 2. The fibers of Item 2 could

TABLE 4

WebCode	Conclusions
	have originated from Item 1. The fibers in Item 3 were orange, multilobed, showed a diameter ranging from 15-22.5 um depending on the orientation of the fiber and were identified as acetate fibers. The fibers in Item 3 could not have originated from Item 1.
3HYT9Y	1. The questioned polyester fibers from the vehicle (Item 2) match the polyester fibers in the victim's jacket (Item 1). 2. The questioned acetate fibers (Item 3) could not originate from the victim's jacket (Item 1).
3JXVDV	Items 2 and 3 were compared to Item 1 to determine if there exists a possible common origin. Item 2 was found to be consistent microscopically, in color, and in chemical composition to Item 1. Item 3 was found to be inconsistent microscopically and in chemical composition to Item 1. Therefore Item 2 could have come from Item 1 or from a source with similar physical, chemical, and optical characteristics.
46Q8JE	The question orange polyester fibers identified in Sample 2 are similar to the orange polyester fibers which comprise the fabric swatch identified in Sample 1. Therefore, the questioned fibers from Sample 2 could have originated from Sample 1.
49RFYA	The fibers recovered from the inner door latch on the suspect's truck (item 2) are composed of two types of orange polyester fibers. These fibers are similar in size, shape, color, microscopic characteristics, and composition as the two types of known orange polyester fibers composing the inner lining of the victim's jacket (item 1). It is our opinion that the fibers recovered from the inner door latch on the suspect's truck could have come from the inner lining of the victim's jacket. The fibers recovered from the driver's seat of the suspect's truck (item 3) are different from the known fibers from the inner lining of the victim's jacket.
4GLCVK	Fibers recovered from Item 2, questioned fibers "from the inner door latch on the passenger side of suspect's truck" were examined and compared visually and microscopically to fibers composing Item 1, known section of fabric "from the inner lining of the victim's jacket," and were found to be consistent in appearance, generic fiber type, and microscopic characteristics. Therefore, the fibers recovered from Item 2 could have come from Item 1. Fibers recovered from Item 3, questioned fibers "from the driver's seat of the suspect's truck," were examined and compared visually and microscopically to fibers composing Item 1 and were found to be different in appearance, generic fiber type, and microscopic characteristics. Therefore, the fibers recovered from Item 3 did not come from Item 1.
4HCMLD	An examination of the known fibers from Item #1.1 and the questioned fibers from both Items #2.1 and #3.1 revealed the Items to be composed of orange synthetic fibers. A comparison of the questioned fibers (Item #2.1) to the known fiber standard (Item #1.1) revealed them to be the same with respect to color, microscopic characteristics, and organic chemical composition by FTIR. Based on this finding, these questioned fibers could have originated from the standard. A comparison of the questioned fibers (Item #3.1) to the known fiber standard (Item #1.1) revealed them to be different with respect to microscopic characteristics, and organic chemical composition by FTIR. Based on this finding, these questioned fibers could not have originated from the standard.
4V3CJX	I have considered the following propositions for the finding of the orange polyester fibres of two types (item 2) indistinguishable from the two types of polyester fibres that comprised the lining of the victim's jacket (item 1) on the inner door latch of the passenger side of the suspect's truck: The victim had been inside the vehicle and fibres were transferred from the victim's jacket to the door latch. The victim had not been inside the vehicle and the fibres found originated from another item(s) composed of the same two types of indistinguishable fibres. In my opinion, the findings provide strong scientific support for the former proposition rather than the latter. In my opinion, the fibres recovered from the driver's seat (item 3) did not originate from the lining of the victim's jacket.
6A8U96	The known section of fabric item 1 from the inner lining of the victim's jacket was made up of two types of orange polyester fibres, having trilobal and round cross-section respectively. The questioned fibres item 2 from the inner door latch on the passenger side of suspect's truck comprised two types of orange polyester fibres, having trilobal and round cross-section respectively. The orange trilobal and round polyester fibres in item 2 were found to agree in colour, fibre type, cross-sectional shape, microscopic appearance under various lighting conditions and dye composition with the respective control orange trilobal and round polyester fibres from the known fabric item 1, indicating that the questioned fibres item 2 could have originated from the victim's jacket from which the known section of fabric item 1 was taken.

TABLE 4

WebCode	Conclusions
	The questioned fibres item 3 from the driver's seat of the suspect's truck composed of orange cellulose acetate fibres, which differed in fibre type and microscopic appearance under various lighting conditions with the control orange polyester fibres from the known fabric item 1, suggesting that they did not come from the same source.
6AF8AE	The orange polyester fibers from the inner door latch on the passenger side of the suspect's truck (item 2) exhibit the same microscopic, optical, and chemical properties as the orange polyester fibers from the inner lining of the victim's jacket (item 1). The orange acetate fibers from the driver's seat of the suspect's truck (item 3) do not compare to the orange polyester fibers from the inner lining of the victim's jacket (item 1).
6CH6L8	Comparison of the questioned fibers from the door latch (item 2) with the known fibers (item 1) revealed them to be the same with respect to color, microscopic characteristics and chemical composition. Based on these findings, the samples could have originated from the same source. Comparison of the questioned fibers from the driver's seat (item 3) with the known fibers (item 1) revealed them to be different with respect to microscopic characteristics and chemical composition. Based on these findings, the samples did not originate from the same source.
6UMKWZ	Item 1 consists of one piece of orange colored fabric. Based on microscopic and instrumental methods, the fibers composing the fabric were identified as a blend of delustered and non-delustered polyester fibers. Item 2 consists of numerous orange colored fibers. Based on microscopic and instrumental methods, the fibers were identified as a blend of delustered and non-delustered polyester fibers. The fibers in item 2 were found to be similar to the polyester fiber types in item 1. Item 3 consists of numerous orange colored fibers. Based on microscopic and instrumental methods, the fibers were identified as acetate fibers. The fibers in item 3 were found to be different to the fibers in item 1. Item 1 could not be excluded as a possible source of the fibers in item 2. Item 1 was excluded as a possible source of the fibers in item 3.
6XNCJE	Two different types of orange polyester fibers were found in specimen Q1. These fibers exhibit the same microscopic characteristics and optical properties as the fibers in specimen K1. Accordingly, these fibers are consistent with originating from the Victim's jacket, the identified source of specimen K1. Orange fibers were found in specimen Q2. These fibers exhibit dissimilar microscopic characteristics as the fibers in specimen K1. Accordingly, these fibers are not consistent with originating from the Victim's jacket, the identified source of specimen K1. No other fibers were found in specimen Q1 and Q2. The specimens were examined visually using stereo-microscopy, comparison microscopy, polarized light microscopy, fluorescence microscopy, microspectrophotometry and fourier transform infrared spectroscopy.
77G2LZ	Two types of coral colored polyester fibers were identified in Item 02 (Questioned fibers from the inner door latch on the passenger's side of suspect's truck); one of the fibers was delustered and the other was not. Item 01 (Known section of fabric from the inner lining of the victim's jacket) was constructed of two types of coral colored polyester fibers; one of the fibers was delustered and the other was not. The questioned coral colored fibers from Item 02 were indistinguishable from the known coral colored fibers in Item 01 based on microscopic characteristics and chemical composition. Item 03 (Questioned fibers from the driver's seat of the suspect truck) contained pink colored acetate fibers which could not have originated from the known fibers in Item 01.
78RYHH	1. The orange polyester fibers from a sample of the Victim's jacket lining (Item 1) were microscopically and instrumentally consistent with the questioned orange polyester fibers from the door latch of Suspect's truck (Item 2). This indicates that the orange polyester fibers in Items 1 and 2 could share a common origin. 2. The questioned orange acetate fibers from the driver's seat of the Suspect's truck (Item 3) were microscopically and instrumentally inconsistent with the orange polyester fibers from the Victims jacket lining sample with respect to optical properties, relative morphology, and infrared spectra. This indicates that the fibers from Items 1 and 3 do not share a common origin.
7CXN66	The fibers in item 2 were similar to the fibers in item 1, but the fibers in item 3 were different from the fibers in item 1. Item 1 and 2 consisted of manufactured polyester fibers but item 3 consisted of manufactured acetate fibers.
7KYWTK	The fibers in Items 1 and 2 are the same type of fiber and have the same microscopic characteristics and

TABLE 4

WebCode	Conclusions
	could have come from the same source. The fibers in Items 1 and 3 are different types of fibers and did not come from the same source.
7NXAEN	Item 1: The fabric is composed of two (2) types of orange synthetic fibers. Item 2: The sample is composed of two (2) types of orange synthetic fibers. Based on visual, microscopic and chemical properties, the fibers from the inner door latch (Item 2) could not be differentiated from the fabric fibers of the victim's jacket (Item 1); and therefore, may have originated from the victim's jacket. Item 3: The sample is composed of orange synthetic fibers. The fibers from the driver's seat (Item 3) are visually, microscopically and chemically dissimilar to the fabric fibers of the victim's jacket (Item 1); and therefore, did not originate from the victim's jacket.
7U9A32	These findings provide very strong support for the suggestion that the fibres from the inner door latch on the passenger's side of the suspect's truck came from the inner lining of the victim's jacket. These findings show that the fibres from the driver's seat of the suspect's truck did not come from the inner lining of the victim's jacket. I have chosen the above phrases from the following scale; weak support, moderate support, moderately strong support, strong support, very strong support and extremely strong support. The conclusion was addressed at source level due to the limited samples received. In a case situation the jacket and further samples from the truck would have been available, in which case the activity level could have been addressed.
7W7ZZZ	Item 1 is constructed of two different types of polyester fibers. Item 2 also consists of two different types of polyester fibers. The fibers from item 1 were found to be indistinguishable to the corresponding fiber-type in item 2, based on microscopic, cross-section and instrumental analysis. Therefore, item 1 cannot be excluded as a possible source of the fibers in item 2. Item 3 consists of acetate fibers. Therefore, item 1 is excluded as a possible source of the fibers in item 3. Because textile materials are mass produced, it is not possible to state that a fiber originated from a particular textile source to the exclusion of all other textile materials composed of fibers which exhibit the same chemical and optical properties.
84Q9C4	There were numerous orange polyester fibres from the inner door latch, passenger side of suspect's vehicle (Item 2), which either originated from the victim's jacket (Item 1) or originated from another garment with indistinguishable characteristics.
8C6YVA	Physical and microscopic comparison of the fibers in Item 2 with fibers in Item 1, revealed them to be consistent with respect to optical properties, color and fiber type. Therefore, Item 2 could have come from Item 1 or another source consistent with these properties. Physical and microscopic comparison of the fibers in Item 3 with fiber in Item 1, revealed them to be inconsistent. Therefore, Item 3 did not originate from Item 1.
8CJGWU	1. Exhibit 1 consists of a small piece of fabric containing two types of synthetic, polyester fibers. Fiber type one consists of nondelustered, orange, polyester fibers. Fiber type two consists of delustered, orange, polyester fibers. 2. Exhibit 2 consists of nondelustered and delustered, orange, polyester fibers. Both types of orange, polyester fibers from Exhibit 2 share similarities in both microscopic characteristics and in organic composition with the two types of orange, polyester fibers that make up Exhibit 1. As such, Exhibit 1 could not be excluded as a possible source for the two types of orange, polyester fibers contained in Exhibit 2. 3. Exhibit 3 consists of nondelustered, orange, acetate fibers. As such, Exhibit 1 was excluded as a possible source for the fibers contained in Exhibit 3.
8JH8WB	Item 2 consists of two polyester fiber types which are similar in size, shape, color, and polymer composition to the known polyester fibers from Item 1. It is our opinion that the fibers from Item 2 could have come from Item 1. The fibers from Item 3 are dissimilar in fiber type to the known fibers from Item 1.
8LRXKU	Examination of the fibers that compose the "inner lining of the victim's jacket" (item 1) revealed a blend of two different polyester fibers. These polyester fibers have similar colors and chemistry. However, in comparison there are several different physical characteristics that distinguish them from one another. Examination of the fibers collected "from the inner door latch on the passenger side of the suspect's truck" (item 2) also revealed a blend of two different polyester fibers that are similar to the fibers that compose the "inner lining of the victim's jacket" (item 1). They have similar color, chemistry and microscopic characteristics. The fibers collected "from the inner door latch on the passenger side of the suspect's

TABLE 4

WebCode	Conclusions
	truck" (item 2) could have originated from the victim's jacket (item 1) or from another source that is composed of the same polyester fibers. Examination of the fibers collected "from the driver's seat of the suspect's truck" (item 3) were identified as acetate fibers. They have different color, chemical and microscopic characteristics in comparison to the fibers that compose the "inner lining of the victim's jacket" (item 1).
8Q2A9U	Item 1 have two different polyester type about filling and wrap. one cross-section is triangular shape, the other cross-section is round. One of Item 1 that has triangular shape and Item 2 has the same characteristic on the color, thickness, cross-section shape, IR spectrum, Py-GC/MS patterns and mass spectra, fluorescence peak, Rf of dye in TLC and properties of polarized light. Thus, the fibers found at the inner door latch on the passenger side of suspect's truck have originated from the inner lining of the victim's jacket. But Item 3 has some different characteristic on the thickness, cross-section shape, IR spectrum, Py-GC/MS patterns and mass spectra, fluorescence peak, Rf of dye in TLC and properties of polarized light. [sic]
8YVJMJ	Item 1A was found to consist of light orange polyester fibers. Item 1B was found to consist of very light orange polyester fibers. Item 2A was found to consist of light orange polyester fibers. Item 2B was found to consist of very light orange polyester fibers. Item 3A was found to consist of light orange acetate fibers. Item 3B was found to consist of light orange acetate fibers. The fibers from Item 1A were found to be dissimilar to the fibers from Item 1B in microscopic characteristics and color but similar in chemical composition. The fibers from Item 2A were found to be dissimilar to the fibers from Item 2B in microscopic characteristics and color but similar in chemical composition. The fibers from Item 1A were found to be similar to the fibers from Item 2A in microscopic characteristics, color and chemical composition. The fibers from Item 1B were found to be similar to the fibers in Item 2B in microscopic characteristics, color and chemical composition. The fibers from Items 1A, 1B, 2A, and 2B were found to be dissimilar to the fibers in Items 3A and 3B in microscopic characteristics, color and chemical composition.
93TER4	The result of the examination support that the fibers from the inner door latch on the passenger side of the suspect's truck (Item 2) originate from the victim's school jacket (Item 1). The results of the examination support with certainty that the fibers from the driver's seat of the suspect's truck (Item 3) do not originate from the victim's jacket (Item 1).
94ZXDT	The orange polyester fibres of Item 2 were indistinguishable in terms of their microscopical appearance and colour from the orange polyester fibres used in the construction of Item 1. In assessing the laboratory findings and drawing my conclusions, I have considered the following two alternative propositions: The fibres recovered from the inner door latch of the passenger side of the truck, Item 2, originated from the inner lining of the jacket, Item 1. The fibres recovered from the inner door latch of the passenger side of the truck, Item 2, did not originate from the inner lining of the jacket, Item 1. In my opinion, the laboratory findings are more likely if the first proposition were true rather than the second alternative. In my opinion, the laboratory findings provide very strong scientific support for the proposition that the fibres recovered from the inner door latch of the passenger side of the truck, Item 2, originated from the inner lining of the jacket, Item 1.
9G6UWV	The samples received in three separate envelops[sic] identified as Item 1, Item 2 and Item 3 were identified as follows: Item 1, known section of fabric from the inner lining of the victim's jacket is a orange fabric, made of multifilament yarns wholly composed of Polyester. Item 2, questioned fibers from the inner door latch on the passenger side of suspect's truck are orange multifilament yarns wholly made of Polyester, with class characteristics similar to the victim's jacket. Item 3, questioned fibers from the driver's seat of the suspect's truck are orange multifilament yarns wholly made of Acetate, and is not associated with the victim's jacket.
9U9FYK	Samples of orange filaments were removed from items 1, 2 and 3 and analyzed. Item 1 is composed of two types of orange polyester filaments. Item 2 is composed of numerous orange polyester filaments. The orange filaments present in item 2 exhibit the same microscopic characteristics as well as the same optical and chemical properties as both types of orange filaments present in item 1. Accordingly, the orange filaments in item 2 are consistent with originating from the same source as the item 1 fabric cutting. The orange filaments present in item 3 are dissimilar to the filaments present in item 1 and did

TABLE 4

WebCode	Conclusions
	not originate from the same source as the item 1 fabric cutting.
9WMQ9B	Questioned fibers from items 2 and 3 were compared to known fibers from item 1 microscopically and instrumentally. Polyester fibers from item 2 were consistent with polyester fibers from item 1. Acetate fibers from item 3 were not consistent with item 1.
A74Q67	The sample consists of three different envelopes marked test no. 10-539 item 1,2,3. The fibers from test no 10-539 item 2 (fibers from the inner door latch on the passenger side of suspect's truck) has the same fiber content as the fibers from test no. 10-539 item 1 (inner lining of the victim's jacket). Both are manufactured, Polyester fibers. The fiber from test no. 10-539 item 3 (fiber from the driver's seat of the suspect's truck) is manufactured Acetate which is different from the test no. 10-539 item 1 (inner lining of the victim's jacket).
ABMRKC	Microscopical examination of Item #1, (Known section of orange fabric from the inner lining of the victim's jacket) revealed it to be comprised of two types of polyester fibers. One is triangular in cross section with no delustering pigments and the other is elliptical in cross section with delustering pigments. Microscopical examination of Item #2 (Questioned fibers from the inner door latch on the passenger side of the suspect's truck) revealed them to be comprised of two types of polyester fibers. One is triangular in cross section with no delustering pigments and the other is elliptical in cross section with delustering pigments. Comparison of the questioned fibers (Item #2) to the known section of fabric (Item #1) revealed the questioned fibers to be indistinguishable in optical and chemical properties from the known fibers, therefore the questioned fibers from the inner door latch (Item #2) could have come from the known section of orange fabric from the victim's jacket (Item #1). Microscopical examination of Item #3 (Questioned fibers from the driver's seat of the suspect's truck) revealed them to be acetate fibers, differing in optical and chemical properties from the known fibers (Item #1). Therefore the questioned fibers from Item #3 did not originate from the known section of fabric from the inner lining of the victim's jacket.
ABZLYR	The orange fibers from the inner door latch on the passengers side of the suspects truck, Item 2, exhibited the same microscopic and physical characteristics as the orange lining of the victim's jacket, Item 1, and therefore could have come from the jacket. The orange fibers from the driver's seat of the suspects truck, Item 3, exhibited microscopic and physical characteristics different from the orange lining of the victim's jacket and therefore could not have come from the jacket.
AD3JAJ	The questioned orange polyester fibers from the door latch (Item 1-2) were found to be consistent in microscopic appearance and in spectrophotometric properties with orange polyester fibers from the known fiber standard (Item 1-1). Accordingly, the fibers from the door latch could have originated from the fiber standard. The questioned orange acetate fibers from the driver's seat (Item 1-3) were found to be different in microscopic appearance and in spectrophotometric properties from the orange polyester fibers from the known fiber standard (Item 1-1). Accordingly, the fibers from the driver's seat could not have originated from the fiber standard.
AGJXPD	The fibers of item 1 (2 models) and item 2 (2 models) have the same characteristics. Thus the fibers found on the inner door latch on the passenger side of suspect's truck come from the victim's jacket or from another source of indistinguishable fibers. The fibers of item 3 were inconsistent with Item 1 and 2, and could not have the same source.
AMR86L	Item 1 was found to consist of orange polyester fibers. Item 2 was found to consist of orange polyester fibers. Item 3 was found to consist of orange acetate fibers. The fibers from Item 2 were similar in microscopic characteristics (PLM - Polarized Light Microscopy), color (MSP - Microspectrophotometry) and chemical composition (FTIR - Fourier Transform Infrared Microspectroscopy) to the fibers from Item 1. The fibers from Item 3 were dissimilar in microscopic characteristics (PLM), color (MSP) and chemical composition (FTIR) to the fibers from Item 1.
AQQG43	Comparison of the questioned fibers (item #2) to the known section of fabric (item #1) revealed them to be the same with respect to color, microscopic characteristics, and chemical composition. Based on these findings, the questioned fibers (item #2) could have originated from the known section of fabric. Comparison of the questioned fibers (item #3) to the known section of fabric (item #1) revealed them to be different with respect to color, microscopic characteristics, and chemical composition. Based on these

TABLE 4

WebCode	Conclusions
	findings, the questioned fibers (item #3) could not have originated from the known section of fabric.
AXBHKF	Numerous orange polyester fibers were found in Item 2. These fibers exhibit the same microscopic characteristics and optical properties as orange polyester fibers comprising Item 1. Accordingly, the fibers found in Item 2 are consistent with originating from the source of Item 1. Numerous orange textile fibers were also found in Item 3. These fibers are microscopically dissimilar to the fibers comprising Item 1. Accordingly, the fibers present in Item 3 can be excluded from originating from the source of Item 1, based on the sample of Item 1 that was provided. It should be noted that based on the microscopic exclusion of the Item 3 fibers, Item 3 was not further characterized.
AY3M6Z	The item 1 is composed by two types of fibers. One type constitutes the warp threads of the fabric. Its analysis by IR/FTIR gives polyester as result. Under the microscope it is a fiber, with delustrant, 15 micrones[sic] of width, without dichroism, fluorescent and the cross section is polygonal. The other fiber constitutes the weft threads of the fabric. Its analysis by IR/FTIR gives polyester as result. Under the microscope it is a fiber, without delustrant, 15 micrones[sic] of width, without dichroism, fluorescent and the cross section is trilobal. The item 2 shows the same characteristis[sic] as the fibers of the warp threads. The item 3 is acetate according IR/FTIR analysis. It is a fiber, without delustrant, with dichroism, not fluorescent and the cross section is multilobal and the color is different to item 1. The conclusion is "The item 2 picked up from the inner door latch on the passanger[sic] side of suspect's truck is very similar to the fabric from the inner lining of the victim's jacket." "It's highly probable that the fibers of item 2 belong to the fabric of the item 1."
AZEGRR	Two (2) different types of orange polyester fibers were found in Item 2. These two (2) fibers types were identical to the orange polyester fibers used in the construction of Item 1 in color, general fiber type, and microscopic characteristics.* The orange acetate fibers in Item 3 were different from the orange polyester fibers in Item 1.** *This means that the questioned fibers from the inner door latch on the passenger side of the suspect's truck could have originated from the inner lining of the victim's jacket. **This means that the questioned fibers from the driver's seat of the suspect's truck did not originate from the inner lining of the victim's jacket.
B7469J	Exhibit 1 is composed of light orange polyester fibers. The fibers from Exhibit 2 were identified as light orange polyester fibers. The light orange polyester fibers identified in Exhibit 2 are consistent both microscopically and in organic composition with the light orange polyester fibers in Exhibit 1. It is this examiners opinion that the light range polyester fibers in Exhibit 2 could have originated from Exhibit 1. The fibers in Exhibit 3 were identified as acetate fibers. These fibers were excluded as having originated from Exhibit 1.
B7NPYN	Examination identified the presence of two distinct orange polyester fibers in Item 1 and two distinct orange polyester fibers in Item 2. Comparison of the lustrous polyester fibers present in Item 1 and Item 2 revealed that they have similar physical and optical properties and chemical composition. Comparison of the delustered polyester fibers in Item 1 and 2 revealed that they have similar physical and optical properties and chemical composition. Items 1 and 2 could have had the same source. Examination identified the presence of orange acetate fibers in Item 3. Item 3 could not have had the same source as Item 1.
B8ZMAK	The orange fibers in Item 2 were found to be indistinguishable from the orange fibers in Item 1 and may have come from the same source as the fibers in Item 1. The orange fibers in Item 3 were found to be dissimilar to the fibers in Item 1.
BLWP3K	Orange polyester fibers recovered from the inner door latch of the truck, item 2, were determined to be physically, microscopically and chemically (Fourier Transform Infrared Spectroscopy) consistent with both types of orange polyester fibers from the fabric of the jacket in item 1, and therefore may have a common origin. The orange acetate fibers from the driver's seat of the truck, item 3, are physically, microscopically and chemically dissimilar to the orange polyester fibers from the jacket item 1, and therefore could not have a common origin.
BUPWNC	1) Fiber standards. 2) Orange polyester fibers found. The unknown fibers and the standard fibers (item #1) are the same in physical and chemical characteristics. The standard can be considered as a possible source of the unknown fibers. 3) Orange acetate fibers found. The unknown fibers and the standard

TABLE 4

WebCode	Conclusions
	fibers (item #1) are not the same. The unknown fibers could not have originated from the standard.
C3VJFB	The questioned fibers (Item 2) from the inner door latch on the passenger side of the suspect's truck have been associated with the section of fabric from the inner lining of the victim's jacket (Item 1). No significant differences have been found between the fibers from these two items. The questioned fibers from item 2 came from another source with the same characteristics as the victim's jacket lining, or from the jacket lining itself. The questioned fibers (Item 3) were significantly different from the victim's jacket lining and could not be associated with it.
C6LMHH	The fibers found on the door latch (Item 1-2) were consistent in microscopic appearance and instrumental properties as the fibers from the known fiber standard (Item 1-1). Accordingly, the fibers from Item 1-2 could have originated from Item 1-1. The fibers from the driver's seat (Item 1-3) were different in microscopic appearance and instrumental properties than the fibers from the known fiber standard (Item 1-1). Therefore, the fibers found on the driver's seat could not have originated from the known fiber standard.
C7DGBT	The fibers were identified on basis of IR spectra of items. The inner lining of the victim's jacket was made from polyester. Fibers came from the inner door latch are polyester, too. The third sample contains vinal fibers that can be distinguished from the Item 1 definitely.
CAFFLK	Fibres from "Item 1" and fibres from "Item 2" are comparable regarding morphology, optical properties, chemical class properties and generic class and could be from the same source. Fibres from "Item 3" do not compare with fibres from "Item 1" and therefore not consistent with having originated from the same source.
CHAKEL	Orange polyester fibers from the inner door latch on the passenger side of suspect's truck (item 2) are highly probable from victim's jacket inner lining (item 1). The probability is very high that questioned fibers (item 2) are from jackets lining but categorical answer couldn't be given (look (5) additional comments). Orange acetate fibers from the driver's seat of the suspect's truck (item 3) are not from victim's jacket inner lining (item 1).
CHV3Q9	A comparison of the fibers from the suspect's vehicle (exhibits 2 and 3) to the jacket standard (exhibit 1) was performed using microscopic, instrumental, and chromatographic methods ¹ . The fibers in exhibits 1 and 2 were identified as polyester. The fibers in exhibit 3 were identified as acetate. The fibers from the inner door latch of the suspect's truck (exhibit 2) were similar to the jacket standard (exhibit 1) and therefore, could have originated from the victim's jacket or another garment having the same type of fabric. The fibers from the driver's seat of the suspect's truck (exhibit 3) were dissimilar to the jacket standard (exhibit 1) and therefore, could not have originated from that garment. ¹ Stereomicroscopic comparison, light microscopic comparison, polarized light microscopic comparison, single-stage fluorescence microscopic examinations, microscopic FT/IR spectroscopic analysis, and dye extraction and thin layer chromatography (TLC) methods.
CWRD3T	The fibers contained in Item 1, 2 and 3, were microscopically and instrumentally examined, and the resulting data were compared. The examinations revealed that Item 1 and Item 2 present similar characteristics. It is therefore concluded that the fibers recovered from the suspect's trunk[sic] (Item 2) are the same distinct type of fibers as the ones recovered from the victim's jacket (Item 1), or another source of fibers having the same characteristics.
CWU8VY	Item 1 was examined visually. Fibers composing Items 1, 2, and 3 were analyzed using stereomicroscopy, comparison microscopy, polarized light microscopy (PLM), Fourier Transform Infrared Spectrophotometry (FTIR), microchemical tests, and microsolvability tests. Fibers composing Items 1 and 2 were further analyzed using fluorescence microscopy and Microspectrophotometry (MSP). Item 2 consisted of two different types of orange polyester fibers. These Item 2 orange polyester fibers were consistent in physical, chemical and optical properties with the fibers composing Item 1. It was concluded that the Item 2 orange polyester fibers could have originated from Item 1 or another source of fibers with the same physical, chemical, and optical properties. The Item 3 acetate fibers could not be associated with the Item 1 polyester fibers due to differences in physical properties and type.
D2H2DH	Items #1 and #2 both consisted of orange polyester fibers. Item #3 consisted of orange acetate fibers. Item #2 was similar in fiber type, color, physical and microscopic characteristics to Item #1. Therefore,

TABLE 4

WebCode	Conclusions
	the fibers from the inner door latch on the passenger side of the suspect's truck, Item #2, could have originated from the fibers from the inner lining of the victim's jacket, Item #1, or from another fiber source having the same characteristics. Item #3 was dissimilar to the known, Item #1. Therefore, the fibers from the driver's seat of the suspect's truck, Item #3, did not originate from the inner lining of the victim's jacket, Item #1.
D2MJCG	Item 1 (section of fabric) was composed of a mixture of orange delustered and non-delustered polyester fibers. Items 2 and 3 were examined for fibers which could have originated from Item 1. Comparative examinations of the fibers from Items 1, 2 and 3 disclosed the following: a. The orange fibers (mixture of delustered and non-delustered fibers) in Item 2 were consistent with the fibers in Item 1 in their microscopic characteristics, color and organic composition. Therefore, the fibers in Item 2 could have originated from the fabric of Item 1. The fibers in Items 1 and 2 were identified as polyester. b. The orange fibers in Item 3 were dissimilar to the fibers composing the fabric of Item 1 in their microscopic characteristics and organic composition. The fibers in Item 3 were identified as acetate.
D92AVM	Items 1 & 2 were identified as polyester fibers with similar color and microscopic characteristics. Items 1 & 2 could have originated from the same source of fibers. Item 3 was identified as acetate fibers and could not have originated from the same source of fibers.
DHP9K8	Microscopical examination of the fabric standard from the victim's jacket (Item 1) revealed it was composed of two different polyester fibers. Comparison of the questioned fibers from the suspect's door latch (Item 2) revealed they were the same as the fibers in Item 1 with respect to color, microscopic characteristics & composition. Therefore, the fibers in Item 2 are consistent with originating from the coat in Item 1. Comparison of the questioned fibers from the driver's seat of the suspect's trunk[sic] (Item 3) with the fiber standards in Item 1 revealed they were different with respect to composition. Therefore, the questioned fibers in Item 3 are not consistent with originating from the victim's jacket in Item 1.
DMVXQU	Preliminary microscopic and FTIR examinations revealed the following: Polyester fibers were detected in the known item 1 orange fabric lining sample. Polyester fibers were detected in the item 2 orange fiber sample. Item 2 is consistent in some physical and chemical properties with item 1. Item 2 cannot be excluded from item 1 at this time. Items 1 and 2 will be transferred to a full-service laboratory for further comparison analysis for exclusion or inclusion. Acetate fibers were detected in the item 3 orange fiber sample. Item 3 is inconsistent in physical and chemical properties with item 1. Item 3 can be excluded from item 1 at this time.
DWAL6U	Item 1 and item 2 each contain two distinct polyester fibers. The two fibers from item 2 are similar in fiber type, color, cross-sectional shape, melting point range, and microscopic characteristics to the two fibers from item 1. The fibers from item 2 could have come from the same source as item 1, or any other source containing fibers with similar chemical and microscopic properties. The fibers in item 3 are acetate and are different from the fibers in item 1 and item 2 in fiber type, cross-sectional shape, and microscopic properties.
DYPDFV	Item 1: The known fibers were consistent with polyester. Item 2: The questioned fibers were consistent with polyester. Item 3: The questioned fibers were consistent with cellulose acetate. The questioned fibers, Item 2, were consistent with the known fibers Item 1. The questioned fibers, Item 3, were not consistent with the known fibers Item 1.
DZKWHW	[No Conclusions Reported.]
E684DA	Orange polyester fibers found in Item 2 exhibit the same microscopic characteristics and optical properties as the orange polyester fibers comprising Item 1. Accordingly, these fibers are consistent with originating from the source of Item 1. No other apparent textile fiber transfers were detected between Item 1 and Items 2 and 3. The specimens were examined using stereo-microscopy, comparison microscopy, polarized light microscopy, fluorescence microscopy, microspectrophotometry, and infrared spectroscopy.
ECY434	Sixteen fibres from the driver's seat (Item 3) was recovered for examination by comparison microscopy. No fibres matched the component fibres of the jacket inner lining (Item 1). Sixteen fibres from the inner door latch (Item 2) were recovered for examination by comparison microscopy. A sample of these fibres were further analysed by microspectrophotometry and infrared spectroscopy. All were indistinguishable

TABLE 4

WebCode	Conclusions
	from the component fibres of the jacket inner lining. These findings would support the proposition that there had been direct contact between the inner door latch and the lining of the jacket.
EDTYVR	The fibers recovered from the inner door latch on the passenger side of the suspect's truck (Item 2) could have come from the victim's jacket lining (Item 1). Assuming the reference sample from the victim's jacket lining (Item 1). Assuming the reference sample from the victim's jacket lining (Item 1) is representative of the whole lining, then the fibers recovered from the driver's seat of the suspect's truck (Item 3) are from a source other than the jacket lining.
EEGGMQ	The swatch of fabric from Item 1 is excluded as being a possible source of fibers from Item 3. Item 1 could not be excluded as being a possible source of fibers from Item 2.
EFFHWP	In our opinion, orange polyester fibres from a yarn recovered from the passenger side inner door latch of the suspect's truck (Item 2), correspond to the orange polyester fibres of the victim's inner jacket lining. In addition, the presence of the orange polyester fibres in the form of a yarn, in our opinion, means that it must have been shed from a damaged garment, such as the victim's jacket. In assessing the evidential significance of these findings, we have considered two possible explanations for the matching fibres: (1) The yarn of orange polyester fibres from the passenger side inner door latch of the suspect's truck, is from the inner lining of the victim's jacket; Or, (2) The yarn of orange polyester fibres from the passenger side door latch of the suspect's truck is NOT from the inner lining of the victim's jacket, but originates from another damaged garment that sheds yarns that happen to match the orange polyester fibres of the jacket lining by coincidence. In our opinion, the orange polyester fibres of two types found on the passenger side door latch of the suspect's truck are relatively uncommon. The presence of these two fibre types matching the inner lining of the victim's jacket in our opinion provides greater evidence of a link between the victim's jacket and the passenger side inner door latch of the suspect's truck, than would have been the case with an apparent transfer of a single fibre type alone. Therefore in our view this makes the first explanation for the findings far more likely than the second. In our opinion, the fibre transfer evidence therefore provides strong scientific evidence of a link between the victim's jacket and the inner door latch on the passenger side of the suspect's car. No fibres matching the component fibres of the victim's jacket lining were found within Item 3.
EJHCXF	The known fabric (Exhibit 1) is composed of orange polyester fibers. Examination of the questioned fibers collected from Exhibit 2 disclosed the presence of numerous orange polyester fibers. These fibers were consistent in microscopic characteristics and organic composition to the fibers composing the fabric (Exhibit 1). Therefore, the orange polyester fibers removed from Exhibit 2 could have originated from the fabric (Exhibit 1). The questioned fibers collected from Exhibit 3 disclosed the presence of numerous orange acetate fibers. No fibers comparable to the orange polyester fibers composing Exhibit 1 were observed among the questioned fibers from Exhibit 3.
ENBKYZ	Fibers recovered from the inner door latch on the passenger side of the suspect's truck are similar in color, size, shape and fiber type as the known section of the fabric from the inner lining of the victim's jacket. It is our opinion that these fibers from the suspect's truck could have come from the victim's jacket. The fibers recovered from the driver's seat of the suspect's truck are different than the known section of fabric from the inner lining of the victim's jacket.
ETJ29P	The questioned fibers from the inner door latch on the passenger side of the suspect's truck (item 2) were consistent with the known fibers from the inner lining of the victim's jacket (item 1) with respect to their color, apparent cross-section, type, diameter and degree of delusterant. Based on these results, the fibers from the door latch and the fibers from the inner lining of the jacket could have a common origin. This analyst recognizes that other sources of fibers with properties consistent with the above fibers do exist. The questioned fibers from the driver's seat of the suspect's truck (item 3) were inconsistent with the known fibers (item 1) with respect to their apparent cross-section and fiber type. Based on these results, the fibers from the driver's seat could not have a common origin with the fibers from the inner lining of the jacket.
EVTTMW	Orange polyester fibers recovered from the inner door latch of the suspect's truck (Item 2) contain two different types of fibers. These two types of orange polyester fibers are similar in size, shape, fiber type, and dye composition to the two types of known orange polyester fibers from the victim's jacket (Item 1). It is my opinion that the orange polyester fibers from the inner door latch of the suspect's truck could have

TABLE 4

WebCode	Conclusions
	come from the victim's jacket or any other source with the same characteristics. Red-orange acetate fibers recovered from the driver's seat of the suspect's truck (Item 3) are dissimilar to the known orange polyester fibers from the victim's jacket (Item 1).
EY8QTY	The questioned fibers recovered from the inner door latch on the passenger side of the suspect's truck (Item 2) were composed of two microscopically distinguishable types of orange polyester fibers. These orange fibers were similar in size, shape, color, and polymer composition to the two microscopically distinguishable types of orange polyester fibers that compose the inner lining of the victim's jacket. It is the examiner's opinion that these fibers could have come from the victim's jacket. The fibers recovered from the driver's seat of the suspect's truck were dissimilar to the polyester fibers that composed the inner lining of the victim's jacket.
EZYHTJ	The findings in this case, and the information provided, have been used to address the following propositions: a) The damaged lining of the victim's jacket has been in contact with the inner door latch of the suspect's vehicle. b) Some other item left the fibres on the inner door latch of the suspect's vehicle and any matching fibres recovered are due to chance. Taking the results of the examinations in this case together with published studies and casework experience, in my opinion, the likelihood of finding two distinct fibre types of an orange colour randomly in the population is fairly low. In addition, given that these fibres would shed only due to the lining being damaged, that there are two distinctly different fibres comprising the warp and weft of the fabric, and that both of these fibre types were recovered from the inner door latch and are found to be indistinguishable in terms of colour, dye and chemical composition, to the polyester fibres of the warp and weft of the jacket lining then, in my opinion, there is very strong support for the view that the damaged lining of the victim's jacket has been in contact with the inner door latch of the suspect's vehicle rather than the fibres transferred originating from some other item by chance. The term "very strong support" is selected from a scale of standard terms used to express the relative level of scientific support for a proposition over its alternative, as discussed above. These terms are: Limited, Moderate, Moderately Strong, Strong, Very Strong, Extremely strong Additionally, in some instances, a proposition may be conclusively supported, if the findings are such that the alternative can be dismissed. If the findings provide no greater support for one proposition over the other, then the findings are described as inconclusive. My interpretations and conclusions are based on the background information available to me at present. If any of this information changes, or is found to be incorrect, then I may need to reassess my findings.
F32Z6K	Questioned fibers (Item 2) could have come from the victim's jackets (Item 1).
F43WQ2	Item 1 comprised a square of orange fabric with one glossy side and one matte side. The fabric was composed of orange, delustered, polyester warp fibres with hexagonal cross section and orange, non-delustered, trilobal polyester weft fibres woven together to form a 2:1 twill. Item 2 comprised orange, delustered, polyester fibres with hexagonal cross section. These fibres corresponded in appearance, composition and colour with fibres from the warp threads in Item 1. The results support the proposition that the fibres recovered from the inner door latch on the passenger side of the suspect's truck shared a common origin with the known section of fabric from the inner lining of the victim's jacket (Item 1). Item 3 comprised orange, multilobal acetate fibres. These fibres differed in appearance, composition and colour with the fibres from Item 1. The results do not support the proposition that the fibres recovered from the driver's seat of the suspect's truck shared a common origin with the known section of fabric from the inner lining of the victim's jacket (Item 1).
F8J3KQ	The questioned fibers in item 2 are similar in all examined characteristics to fibers in item 1. Item 2 could have originated from the same source as item 1 or another source of similar fibers. The questioned fibers in item 3 are different from the fibers in item 1 and did not originate from the same source as represented by item 1.
FAMTUQ	The orange fibers (Item 2) recovered from the inner door latch on the passenger side of the suspect's truck and orange fibers from the section of fabric (Item 1) from the inner lining of the victim's jacket were examined for microscopic appearance and chemical composition and no differences were identified; therefore, the orange fibers examined from Item 2 could have come from the section of fabric (Item 1) or any other source containing similar fibers. The orange fibers (Item 3) recovered from the driver's seat of the suspect's truck were examined for microscopic appearance and chemical composition and were

TABLE 4

WebCode	Conclusions
	found to be different than the orange fibers from the section of fabric (Item 1) from the inner lining of the victim's jacket.
FRRZ9T	The orange fibers (Item 2) from the inner door latch on the passenger side of the suspect's truck could have come from the same source as orange fibers (Item 1) from the inner lining of the victim's jacket or from another source containing similar fibers. The orange fibers (Item 3) from the driver's seat of the suspect's truck could not have come from the same source as orange fibers (Item 1) from the inner lining of the victim's jacket.
FU9TKT	The sample consists of three items: Item 1: a small swatch of orange woven fabric taken from the inner lining of the victim's jacket. Item 2: orange fibers taken from the door of the suspect's truck. Item 3: orange fibers taken from the driver's seat of the suspect's truck. Item 1, fibers in both directions, and item 2 are composed of polyester fibers. Item 3 is of acetate fibers. Fibers from the door latch of the suspect's truck (item 2) could have originated from the inner lining of the victim's jacket (item 1).
FV4BLU	The questioned fibers from the inner door latch on the passenger side of suspect's truck (item 2) have been associated with the known section of fabric (item 1) - morphological, fiber type, and chemical composition. The questioned fibers from the driver's seat of the suspect's truck (item 3) is different to the known section of fabric (item 1).
FVNTXG	Items 1 and 2 were found to consist of pale orange polyester fibers. Item 3 was found to consist of pale orange acetate fibers. The fibers of Items 1 and 2 were found to be similar in color (MSP), microscopic characteristics and chemical composition (FTIR). The fibers of Items 1 and 3 were found to be dissimilar in color (MSP), microscopic characteristics and chemical composition (FTIR).
FXRNGJ	Examination of the fibers from Item 1 and Item 2 revealed 2 different types of orange polyester fibers. The 2 different types of orange polyester fibers from Item 2 are correspondingly similar in color, microscopic characteristics, and chemistry to the 2 different types of orange polyester fibers from the standard, Item 1. The fibers from Item 2 could have come from Item 1 or from another source consisting of similar fibers. Examination of the fibers from Item 3 revealed 1 type of orange acetate fibers that were not similar in color, microscopic characteristics, or chemistry to the standard, Item 1. The fibers from Item 3 could not have originated from the victim's jacket (Item 1).
FYQPRH	1. Exhibit 1 is composed of orange polyester fibers. 2. Examination of fibers submitted as Exhibit 2 disclosed the presence of numerous orange polyester fibers. These fibers were consistent in microscopic characteristics and organic composition to the orange polyester fibers composing the fabric of Exhibit 1. This finding serves as the basis for the conclusion that the fibers from Exhibits 2 could have originated from Exhibit 1. 3. No fibers comparable to the orange polyester fibers composing Exhibit 1 were observed among the foreign fibers submitted as Exhibit 3. 4. No hairs were observed on Exhibits 1, 2, or 3.
G7D944	Microscopic and instrumental comparison of Q1 with K1 showed them to possess similarities in their physical appearance, optical properties, and chemical properties. Microscopic and instrumental comparison of Q2 with K2 showed them to possess similarities in their physical appearance, optical properties, and chemical properties. It is the opinion of the undersigned that Q1 and Q2 could have originated from the source represented by K1 and K2 or from a similarly manufactured and colored item. Microscopic and instrumental comparison of Q3 with K1 and K2 showed them to be dissimilar in their physical appearance, optical properties, and chemical properties. It is the opinion of the undersigned that Q3 could not have originated from the source represented by K1 and K2.
GBNLL3	The fibers from item 2 could have originated from the victim's jacket (item 1). The fibers from item 3 are not consistent with the victim's jacket (item 1), therefore the jacket is not the source of fibers in item 3.
GC4K6R	Microscopic and instrumental examination of Items 1 and 2 revealed delustered wavy orange polyester fibers and lusterous[sic] slightly wavy orange polyester fibers. Items 1 and 2 were determined to have similar microscopic, chemical, optical and color properties. They could have come from the same source, or any other source with similar properties. Microscopic and instrumental examination of Item 3 revealed lusterous[sic] wavy orange acetate fibers. Items 1 and 3 were determined to have dissimilar microscopic, chemical, and optical. They could not have come from the same source.

TABLE 4

WebCode	Conclusions
GCJ4M4	Item 1, the orange fabric collected from the inner lining of the victim's jacket, was examined by stereomicroscopy, light microscopy, polarized light microscopy, comparison microscopy, and Fourier Transform infra-red spectroscopy and is identified as polyester. Item 2, the questioned fibers from the inner door latch on the passenger side of the suspect's truck, were examined by stereomicroscopy, light microscopy, polarized light microscopy, comparison microscopy, and Fourier Transform infra-red spectroscopy and are consistent with item 1, the orange polyester reference fibers from the inner lining of the victim's jacket. Item 3, the questioned fibers from the driver's seat of the suspect's truck, were examined by stereomicroscopy, light microscopy, polarized light microscopy, and Fourier Transform infra-red spectroscopy and are not consistent with item 1, the orange polyester reference fibers from the inner lining of the victim's jacket.
GJTY3Y	The fiber standards found in item 1 consisted of orange synthetic fibers composed of polyester. The fibers found in item 2 consisted of orange synthetic fibers composed of polyester. These fibers exhibit the same microscopic appearance and characteristics as item 1. Therefore, these fibers could have originated from the inner jacket lining. The fibers found in item 3 consisted of pink synthetic fibers composed of acetate. These fibers exhibit different microscopic appearance and characteristics from item 3. Therefore, these fibers can be excluded as having originated from the inner jacket lining.
GKDAG6	Item-1 and Item-2 are composed of polyester. Item-3 is composed of acetate fibers. Analysis indicates that Item-1 and Item-2 shared all the class characters observed. Items-3 does not share a common origin with Item-1. Item-2 can not be excluded from sharing a common provenance with Item-1.
GKPH6Z	Light orange polyester fibers, consisting of two microscopically distinguishable groups of fibers, were recovered from the inner door latch on the passenger side of the suspect's truck (Item 2) which are similar in size, shape, color, polymer composition, and dye composition to the known two microscopically distinguishable light orange polyester fibers from the inner lining of the victim's jacket (Item 1). It is our opinion that the light orange polyester fibers from the inner door latch on the passenger side of the suspect's truck (Item 2) could have come from the victim's jacket (Item 1). The light pink-orange acetate fibers recovered from the driver's seat of the suspect's truck (Item 3) are microscopically dissimilar to the known light orange polyester fibers from the victim's jacket (Item 1).
GQ3PAH	According to above mentioned analyses and examinations, item 2 was found to have similar physical and chemical structure with item 1, but item 3 has different physical and chemical structure from item 1. So, item 2 may have originated from item 1.
GQUAFJ	The inner lining of the victim's jacket (Item 1) could be the source of the fibers from the inner door latch on the passenger side of the suspect's truck (Item 2). The fibers from the inner door latch (Item 2) were physically and chemically indistinguishable from the fibers from the inner lining of the victim's jacket (Item 1). The fibers from the driver's seat of the suspect's truck (Item 3) are not from the inner lining of the victim's jacket (Item 1). The fibers from the driver's seat (Item 3) are physically and chemically different from the fibers from the inner lining of the victim's jacket (Item 1).
GU6KTK	Based on the analyses performed, no differences were observed in the composition, physical, and chemical properties of Item 1, known section of fabric from the inner lining of the victim's jacket, and Item 2, questioned fibers from the inner door latch on the passenger side of suspect's truck. Item 1 and Item 2 could have originated from the same source. Item 3, questioned fibers from the driver's seat of the suspect's truck, have a different chemical composition than the known sample, Item 1. The fibers of Item 3 could not have originated from the victim's jacket, Item 1.
H24B79	Item 1 contains orange polyester fibers. Item 2 contains orange polyester fibers. The fibers in item 2 are similar in size, shape, color and optical characteristics as the fibers in item 1 and may share a common origin with item 1 or any other textile fiber with similar characteristics. Item 3 contains orange acetate fibers. The fibers in item 3 are dissimilar to the fibers in item 1 or item 2 and are not associated with either item 1 or item 2.
H49323	Item 1, the orange fabric collected from the inner lining of the victim's jacket, was examined by stereomicroscopy, light microscopy, polarized light microscopy, comparison microscopy, and Fourier Transform infra-red spectroscopy and is identified as polyester. Item 2, the questioned fibers from the inner door latch on the passenger side of the suspect's truck, were examined by stereomicroscopy, light

TABLE 4

WebCode	Conclusions
	microscopy, polarized light microscopy, comparison microscopy, and Fourier Transform infra-red spectroscopy and are consistent with item 1, the orange polyester reference fibers from the inner lining of the victim's jacket. Item 3, the questioned fibers from the driver's seat of the suspect's truck, were examined by stereomicroscopy, light microscopy, polarized light microscopy, and Fourier Transform infra-red spectroscopy and are not consistent with item 1, the orange polyester reference fibers from the inner lining of the victim's jacket.
H6KPL3	Orange and pink polyester fibers found in the debris from the inner door latch on the passenger side of the suspect's truck (Item #2) exhibit the same microscopic characteristics and optical properties as the orange and pink polyester fibers that comprise the fabric sample from the inner lining of the victim's jacket (Item #1). Accordingly, these fibers are consistent with having originated from the source of the fabric sample. The specimens were examined visually using stereo-microscopy, comparison microscopy, polarized light microscopy, fluorescence microscopy, microspectrophotometry, and infrared spectroscopy.
HAYFYA	Examination of Item #2 revealed the presence of numerous orange polyester fibers of two different types. These two different types of polyester fibers were found to be consistent with the polyester warp and polyester fill fibers in Item #1. Therefore, the fibers in Item #2 could have originated from the same source as the fabric in Item #1. Examination of Item #3 revealed the presence of numerous orange acetate fibers. These fibers were found to be different than the fibers composing Item #1.
HERDQL	Item 1 is comprised of two types of light orange polyester fibers. Item 2 is comprised of two types of light orange polyester fibers. Item 3 is comprised of light orange acetate/triacetate fibers. The fibers that comprised Items 1 and 2 are similar in all examined characteristics; therefore, the fibers from Item 2 may have originated from the lining of the victim's jacket as represented by Item 1 or another source constructed of the same type of fibers. The fibers from Item 3 were dissimilar to the fibers that comprised Item 1; therefore, Item 3 could not be associated to the lining of the victim's jacket as represented by Item 1.
HHQRCQ	The orange acetate fibers from the driver's seat of the suspect's truck (Item 3) are microscopically and compositionally different from the orange polyester fibers from the known section of the inner lining of the victim's jacket (Item 1). The two microscopically distinguishable groups of orange polyester fibers from the inner door latch on the passenger side of the suspect's truck (Item 2) are similar in size, shape, color, and composition to the two microscopically distinguishable groups of orange polyester fibers from the known section of inner lining of the victim's jacket (Item 1). It is our opinion that the fibers from the inner door latch on the passenger side of the suspect's truck (Item 2) could have come from the inner lining of the victim's jacket.
HNFCF7	The questioned fibers from the truck door latch (Item 2) and the known fibers from the victim's jacket (Item 1) are similar in color, microscopical characteristics and chemical composition; therefore the victim's jacket cannot be excluded as the source of the questioned fibers from the vehicle door. The questioned fibers from the truck driver's seat (Item 3) and the known fibers from the victim's jacket are different in color, microscopical characteristics and chemical composition; therefore the victim's jacket is not the source of the questioned fibers from the driver's seat.
HRBYZU	Item 3 from driver's seat is different from Items 1 and 2 in color, polarized light microscopic image, microscopic visible absorption spectrum and infrared absorption spectrum. Item 2 from inner door latch is consistent with Item 1 in color, polarized image and infra-red absorption spectra and microscopic absorption spectrum. Therefore Item 2 could have originated from victim's jacket.
HRWPVZ	On analysis, I found: i. The questioned fibers from the inner door latch on the passenger side of suspect's truck (Item 2) and the known section of fabric from the inner lining of the victim's jacket (Item 1) to be similar in colour and microscopic characteristics. ii. The questioned fibers from the driver's seat of the suspect's truck (Item 3) and the known section of fabric from the inner lining of the victim's jacket (Item 1) to be similar in colour but dissimilar in microscopic characteristics. Hence, I am of the opinion that the questioned fibers from the inner door latch on the passenger side of suspect's truck (Item 2) could have come from the jacket worn by the victim.
HY2DVG	The polyester fibers in Exhibit 2 have the same physical characteristics and chemical composition as the polyester fibers in Exhibit 1. The fibers in Exhibit 2 could have originated from Exhibit 1 or from any other

TABLE 4

WebCode	Conclusions
	fabric consisting of polyester fibers with the same physical characteristics and chemical composition. The fibers in Exhibit 3 were identified as acetate and could not have originated from Exhibit 1.
HYFT33	Numerous orange polyester fibers found in specimen Q1 (Item 2) exhibit the same microscopic characteristics and optical properties as the orange polyester fibers that comprise specimen K1. Accordingly, it can be concluded that these fibers are consistent with originating from specimen K1 (Item 1). Numerous orange manufactured fibers found in specimen Q2 (Item 3) are microscopically dissimilar to the orange polyester fibers that comprise specimen K1 (Item 1). Accordingly, it can be concluded that these fibers could not have originated from specimen K1. These specimens were examined using the following methods as appropriate: stereo-microscopy, comparison microscopy, polarized light microscopy, fluorescence microscopy, microspectrophotometry, and Fourier transform infrared spectroscopy.
J2JWHW	Item 1 consisted of peach polyester fibers. The peach polyester fibers found in item 2 were the same in microscopic appearance and characteristics as the fibers found in item 1. Therefore, these fibers can not be excluded as having originated from the victim's jacket. The pink acetate fibers found in item 3 were different in microscopic appearance and characteristics from the fibers found in item 1. Therefore, these fibers can be excluded as having originated from the victim's jacket.
J7WUMX	The known section of the fabric from the victim's jacket consisted of two types of orange polyester fibers. The questioned fibers from the inner door latch on the passenger side of the suspect's truck (Item 2) consisted of two types of orange polyester fibers that are similar in size, shape, color and polymer composition to the two types of orange polyester fibers from the victim's jacket (Item 1). It is this examiner's opinion that the orange polyester fibers collected from the inner door latch on the passenger side of the suspect's truck (Item 2) could have come from the victim's jacket (Item 1), or any other source with the same characteristics. Orange acetate fibers from the driver's seat of the suspect's truck (Item 3) were dissimilar in type of fiber to known fibers from the victim's jacket (Item 1). It is this examiner's opinion that the orange acetate fiber from the driver's seat of the suspect's truck (Item 3) did not originate from the area sampled from the victim's jacket (Item 1).
JFLHKL	Item #1 is composed of two different polyester fiber types. Item #2 is composed of two different polyester fiber types. Item #3 is composed of acetate fibers. The polyester fibers in Item #2 are consistent in all examined characteristics to the polyester fibers in Item #1, and thus could have originated from Item #1 or another source with the same type of fibers. The acetate fibers of Item #3 could not have originated from the victim's jacket as represented by Item #1.
JKT8Q8	According to the results of above mentioned examination and analysis procedures, the fibers of Item 2 could have originated from Item 1. The fibers of Item 3 could not have originated from Item 1.
JQXURN	A representative sampling of fibers from items 1, 2 and 3 were analyzed by visual examination, comparison microscopy, polarized light microscopy and infrared spectroscopy. Based on these analyses, the fibers which make up items 1 and 2 are microscopically and chemically consistent. Additionally, these fibers are visually consistent in color. These results indicate the fibers could have the same source. Based on these analyses, the fibers which make up items 1 and 3 are not microscopically and chemically consistent. Additionally, these fibers are not visually consistent in color. These results indicate the fibers could not have the same source. Microscope slides prepared for these analyses from Items 1, 2 and 3 were placed in Hair and Fiber Packet #1. Items 1 and 2 along with the prepared slides were forwarded to the [Laboratory] for further instrumental analysis (microspectrophotometer[sic]). Results will be contained in a separate report. All items will be returned to the submitting agency upon completion of analyses.
K6VB9A	The questioned fibers from the driver's seat of the suspect's truck (Item 3) are different from the known section of fabric from the inner of victim's jacket (Item 1). The questioned fibres (two types) from the inner door latch on the passenger side of the suspect's truck (Item 2) are similar by their aspect and their composition in the known section of fabric from the inner lining of the victim's jacket (two types of fibers) (Item 1).
KTNEE8	Item 1 consisted of one small section of orange colored fabric composed of polyester textile fibers. The orange polyester fibers comprising Item 1 demonstrate similar physical and chemical properties as those

TABLE 4

WebCode	Conclusions
	orange polyester fibers in Item 2. Accordingly, Item 1 cannot be excluded as a source of the orange polyester fibers in Item 2. Item 3 consisted of many orange colored acetate textile fibers. Accordingly, Item 1 is excluded as a source of the orange acetate fibers in Item 3.
L7RYGW	The inner lining of the victim's jacket was composed of orange polyester fibers. The orange polyester fibers from the inner lining of the victim's jacket are similar in color, size, shape, and polymer composition to the orange polyester fibers from the inner door latch of the suspect's truck. It is our opinion that the orange polyester fibers from the inner door latch of the suspect's truck could have come from the inner lining of the victim's jacket. It should be noted that the orange polyester fibers consisted of two microscopically distinguishable groups of fibers. The two microscopically distinguishable groups of orange polyester fibers from the inner door latch of the suspect's truck are similar in color, size, shape, and polymer composition to the two microscopically distinguishable groups of orange polyester fibers from the inner lining of the victim's jacket. The orange acetate fibers from the driver's seat of the suspect's truck are different than the orange polyester fibers from the lining of the victim's jacket. It [sic] our opinion that the orange acetate fibers from the driver's seat of the suspect's truck could not have come from the lining of the victim's jacket.
LC9L2Z	Item 1 was examined and found to consist of orange fibres along one direction of the weave and brownish-orange fibres along the perpendicular direction. Item 2 was found to consist of a mixture of orange fibres and brownish-orange fibres that were similar to those of Item 1. These fibres were found to be similar in color, microscopic characteristics, fluorescence, melting range, cross sectional shape and chemical composition respectively to each type of the fibres. Item 3 was found to consist of reddish-orange acetate fibres, and they were different from fibres of Item 1 in color, microscopic characteristics and chemical composition. Hence, the fibres of Item 2 could have originated from the fabric fibres of Item 1. The fibres of Item 3 did not originate from the fabric fibres of Item 1.
LJUKJL	The known fabric from the victim's jacket (item 1) was examined; it was found to consist of a woven fabric with weft and warp fibers composed of two types of orange polyester. The questioned fibers from the suspect's door latch (item 2) were examined. These questioned fibers were found to consist of two types of orange polyester fibers. The questioned fibers from item 2 were consistent with the fibers from item 1 with respect to their color, morphology, diameter, degree of delusterant and optical properties. Based on these findings[sic], the known fibers from item 1 and the questioned fibers from item 2 could have a common source. This analyst recognizes that other sources of fibers consistent with the above fibers do exist. The questioned fibers from the suspect's seat (item 3) were examined; they were found to consist of orange acetate. Based on this result, the known fibers from item 1 could not have a common source with the questioned fibers from item 3.
LMR6CK	The fibers in fabric from the inner lining of the victim's jacket (Item 1) and the fibers from the inner door latch on the passenger side of suspect's truck (Item 2) were found to be polyester fibers by microscopic and instrumental analyses, while the fibers from the driver's seat of the suspect's truck (Item 3) were found to be acetate fibers. Additionally, the fibers in Item 1 and Item 2 were found to be consistent in appearance, microscopic characteristics and spectroscopic properties. Therefore, the fibers in Item 2 could have originated from the victim's jacket (Item 1) while the fibers in Item 3 could not have originated from the victim's jacket (Item 1).
LQXGJL	The known fabric sample submitted in Item 1 consisted of polyester fibers in both the warp and weft, with one direction having bright fibers while the other was semi dull. The semi dull fibers from Item 1 were found to be similar in color, composition and appearance to the orange fibers in Item 2. Therefore, Items 1 and 2 could have a possible common origin. The questioned fibers in Item 3 were dissimilar to the fibers in Item 1, and therefore could not have originated from the same source.
LUBEPN	Microscopic and instrumental examination of item 2 revealed orange polyester fibers that were consistent in physical characteristics and chemical composition to known fibers from item 1. Therefore, the questioned fibers from item 2 could have originated from the source represented by item 1. Examination of item 3 revealed orange acetate fibers that were not consistent to known fibers from item 1 and, accordingly, could not have originated from the source represented by item 1.
M2NPGE	Fibers collected from items 1, 2 and 3 were analyzed using comparison polarized light microscopy, infrared spectroscopy and microspectrophotometry. Results of these examinations revealed that fibers

TABLE 4

WebCode	Conclusions
	from items 1 and 2 are microscopically and chemically consistent; and, additionally, consistent in color. These results indicate items 1 and 2 could have the same source. Results of analyses of item 3 revealed these fibers are microscopically and chemically not consistent with fibers from item 1; additionally they are not consistent in color. These results indicate items 1 and 3 could not have the same source.
M2UTJ7	1. Fibers were collected from Exhibits 1 through 3. No Hairs were found on Exhibits 1 through 3. 2. Exhibit 1 (fabric lining of the victim's jacket) is composed of two types (delustered and non-delustered) of orange polyester fibers. Examination of the fibers removed from Exhibit 2 (inner door latch on the passenger's side of the subject's truck) disclosed numerous orange polyester fibers which are similar in microscopic characteristics to the orange polyester fibers of Exhibit 1. Additional examinations disclosed the fibers to be similar in organic composition when compared to similar fibers originating from Exhibit 1. In conclusion, the two types of orange polyester fibers recovered from Exhibit 2 could have originated from Exhibit 1. 3. Foreign fibers removed from Exhibit 3 (fibers from driver's seat of the subject's vehicle) disclosed numerous orange acetate fibers. Therefore, these fibers are not consistent with having originated from Exhibit 1. If these foreign fibers are of evidential value and if a possible source(s) for the orange acetate fibers collected and preserved from Exhibit 3 becomes available, please resubmit this exhibit along with the possible source(s).
M6RGQF	Two different types of orange polyester fibers found in Item 2 were identical to orange polyester fibers found in Item 1 in color and microscopic characteristics.(1) Fibers found in Item 3 were different than fibers found in Item 1.(2) (1) When fiber samples are determined to be identical, it means that the samples may have a common source. (2) When fiber samples are determined to be different, it means that the samples do not have a common source.
MCCCVP	Items 1, 2 and 3 were examined visually. The Item 2 and 3 fibers and the fibers composing Item 1 were analyzed using stereomicroscopy, polarized light microscopy (PLM), comparison microscopy, fluorescence microscopy, Fourier Transform Infrared Spectrophotometry (FTIR), Microspectrophotometry (MSP), microchemical tests and microsolubility tests. Item 1 was composed of two types of orange polyester fibers. Item 2 consisted of two types of orange polyester fibers and Item 3 consisted of orange acetate fibers. The orange polyester fibers in Item 2 were consistent with the orange polyester fibers composing Item 1 in physical, optical and chemical properties. It was concluded that the Item 2 orange polyester fibers could have originated from Item 1 or from another source composed of fibers with the same physical, optical and chemical properties. The orange acetate fibers in Item 3 could not be associated with the orange polyester fibers composing Item 1 due to differences in fiber type.
MFCJGM	Questioned fibers item 2 could have originated from the victim's jacket item 1. Each of the sample 1 and 2 have polyester fibers: one delustrated[sic] the other one bright. Same item 3 could not have originated from the victim's jacket item 1. There is acetate fibers in item 3.
MGLR6E	Microscopic and instrumental examination of the questioned fibers identified as from the inner door latch on the passenger side of suspect's truck (Item #2) found them to be orange polyester fibers, similar in all respects examined to the known orange polyester fibers from the known section of fabric from the inner lining of the victim's jacket (Item #1). Therefore, Item #2 could have originated from the same source as Item #1. Microscopic and instrumental examination of the questioned fibers from the driver's seat of the suspect's truck (Item #3) found them to be orange acetate fibers dissimilar to the known orange polyester fibers from the known section of fabric from the inner lining of the victim's jacket (Item #1). Therefore, Item #3 could not have originated from the same source as Item #1.
MJQLP	The questioned fibers in Item #2 are physically and chemically similar to the known fibers in Item #1. Therefore, the questioned fibers could have originated from the known source. The questioned fibers in Item #3 are dissimilar to the known fibers in Item #1. Therefore, the questioned fibers in Item #3 could not have originated from the known section of fabric in Item #1.
MLWN6G	The questioned fibers from the inner door latch of the passenger side of the suspect's truck (item 2) are consistent with the known section of fabric from the inner lining of the victim's jacket (item 1) with respect to color, physical properties, and chemical composition. The fibers from the inner door latch of the passenger side of the suspect's truck (item 2) cannot be excluded as originating from the known section of fabric from the inner lining of the victim's jacket (item 1); therefore the fibers from the inner door latch (item 2) could have come from the victim's jacket lining (item 1). The questioned fibers from the driver's

TABLE 4

WebCode	Conclusions
	seat of the suspect's truck (item 3) are not consistent with the known section of fabric from the inner lining of the victim's jacket (item 1). The questioned fibers from the driver's seat of the suspect's truck (item 3) are excluded as originating from the submitted section of fabric from the inner lining of the victim's jacket (item 1).
MVPYGX	The fabric sample of exhibit 1 and the fiber samples of exhibits 2 and 3 were subject to an examination involving visual, microscopic and instrumental analysis and comparison. The fabric sample of exhibit 1 and the fiber sample of 2 are similar with regard to fiber type, color, physical and microscopic characteristics and therefore could have originated from a common origin. The fiber sample of exhibit 3 is dissimilar to the fabric sample of exhibit 1 with regard to fiber type.
MXLTPY	Item 1 contains a section of cloth that is composed of two separate and distinct manufactured orange colored polyester fibers. Item 2 contains strands of fiber that are composed of two separate and distinct manufactured orange colored polyester fibers. The color composition and texture of these polyester fibers are similar to that exhibited in the polyester fibers of item 1. These polyester fibers could have originated from the same source as the polyester fibers in item 1. Item 3 contains strands of fibers that are composed of two separate and distinct manufactured orange colored acetate fibers. These acetate fibers are different from the polyester fibers found in item 1. Therefore, the fibers in item 3 did not originate from the same source as the fibers in item 1.
NLCLFK	The known section of fabric from the inner lining of the victim's jacket consists of two fiber types. The questioned fibers recovered from the inner door latch on the passenger side of the suspect's truck exhibit the same visual appearance, cross sectional shape, fiber composition and color as both types of fibers from the known section of fabric from the inner lining of the victim's jacket. The sampled area of the victim's jacket cannot be excluded as a possible source of these questioned fibers or another item of the same color and composition. The questioned fibers recovered from the driver's seat of the suspect's truck exhibit differences in visual appearance, fiber composition and color in comparison to the known section of fabric from the inner lining of the victim's jacket. The sampled area of the victim's jacket is excluded as a possible source of these questioned fibers.
NR4REF	1. The fibers collected from the inner door latch on the passenger side of the suspect's truck (item #2) are microscopically and chemically consistent to the control piece of fabric from the inner lining of the victim's jacket (item #1) and could have originated from the same source. These fibers have been identified as polyester. 2. The fibers collected from the driver's seat of the suspect's truck (item #3) are microscopically and chemically dissimilar to the control piece of fabric from the inner lining of the victim's jacket (item #1) and did not originate from this piece of fabric. The source of these acetate fibers in[sic] unknown.
NZ6C2G	Under polarized light, Item 1 produced interference colours that differed from the interference colours produced by the fibres of Items 2 and 3. The appearance of fibres for Items 1, 2 and 3 was also different under a high powered light microscope. Conclusion: The fibres found in the suspect's trunk[sic] did not come from the jacket worn by the victim, i.e. Items 2 and 3 could not have come from the victim's jacket.
P3UVPZ	Item 2, questioned fibers "from the inner door latch on the passenger side of suspect's truck, " were visually and microscopically examined and compared to Item 1, known section of fabric "from the inner lining of the victim's jacket," and were found to be consistent in appearance, generic fiber type, and microscopic characteristics. Therefore, Item 2 could have come from Item 1. Item 3, questioned fibers "from the driver's seat of the suspect's truck," were visually and microscopically examined and compared to Item 1, known section of fabric "from the inner lining of the victim's jacket," and were found to be different in appearance, genetic fiber type, and microscopic characteristics. Therefore, Item 3 could not have come from Item 1.
PFCTN9	1- The mixture reference fibres obtained from the inner lining of the victim's jacket (item 1) have the same evaluated physical and chemical properties than the questioned fibers recovering from the inner door latch on the passenger side of the suspect's truck (item 2). According with the analytical results obtained, the compared items are indistinguishable, however it must be considered any other fabric with the same mixture and type of fibers as a possible source. 2. According with the evaluated physical and chemical properties, the samples coming from the known section of fabric from the inner lining of the victim's jacket (item 1) are different to the questioned fibers coming from the driver's seat of the suspect's

TABLE 4

WebCode	Conclusions
	truck (item 3).
PJKLFN	The sample from the victim's jacket (item 1) contained two types of orange polyester fibres. The sample from the inner door latch of the suspect's truck (item 2) contained two types of orange polyester fibres. These fibres could not be distinguished from the fibres from the victim's jacket (item 1) by microscopy, colour comparison and infrared spectroscopy. The sample from the driver's seat of the suspect's truck (item 3) contained orange acetate fibres. These fibres were different to the fibres of the victim's jacket (item 1) and therefore are not from the victim's jacket. In my opinion the scientific evidence strongly supports the proposition that the fibres from the inner door latch of the suspect's truck (item 2) are from the victim's jacket (item 1). I have chosen the term "strongly supports" used in describing the scientific evidence above from the following scale of terms: inconclusive, slightly supports, supports, strongly supports, very strongly supports and conclusive.
PYF8HA	The Item 2 questioned fibers corresponded in microscopic characteristics (Stereoscope and PLM), fiber type (Polyester by FTIR), cross-sectional shape, and color (Microspectrophotometer) to the fibers making up the Item 1 jacket fabric sample. Therefore, the questioned fibers from Item 2 could have come from the victim's jacket. The Item 2[sic] questioned fibers did not correspond to the Item 1 known sample in microscopic characteristics. Therefore, the victim's jacket could not be the source of the fibers found on the driver's seat of the suspect's truck.
Q3U6MC	Fibers from the known fabric (item 1) and fibers from item 2 (question) were examined using stereo microscopy, polarized light microscopy, fluorescence microscopy, micro-visible spectrophotometry and infrared spectrometry. The questioned delustered polyester fibers from item 2 were consistent in microscopic and chemical properties and in fiber type to the known delustered polyester fibers from item 1. The question delustered polyester fibers from item 2 could have originated from the known fabric of item 1 (Type III Association). The question delustered polyester fibers from item 2 were not similar to the known non-delustered polyester fibers of the fabric (item 1). The question fibers from item 3 were examined using stereo microscopy and polarized light microscopy. The question acetate fibers from item 3 were dissimilar in physical and chemical composition to both the known delustered polyester and non-delustered polyester fibers in item 1, and did not originate from that source.
Q6XZ7E	Item 1 contains one piece of orange colored fabric composed of polyester. Item 2 consists of approximately 100 orange colored polyester fibers which are similar to item 1 in all physical and chemical properties tested. The fibers in item 2 could have originated from the inner lining of the jacket reportedly worn by the victim. Item 3 consists of approximately 35 orange colored acetate fibers which are dissimilar to the fibers from item 1. The fibers from item 3 did not originate from the inner lining of the victim's jacket.
Q7TH9F	Orange fibers from Item 1, known fabric from the victim's jacket, were examined microscopically and instrumentally and were identified as polyester fibers. Orange fibers from Item 2, fibers from the door latch of the suspect's truck, were examined microscopically and instrumentally and were identified as polyester fibers. Orange fibers from Item 3, fibers from the driver's seat of the suspect's truck, were examined microscopically and instrumentally and were identified as acetate fibers. Fiber Comparison: Item 1, known fabric from the victim's jacket, was examined as a possible source for Item 2 (fibers from door latch of suspect's truck) and Item 3 (fibers from driver's seat of the suspect's truck). Item 1 and Item 2 are consistent in observed microscopic optical and physical characteristics. No differences in chemical properties were observed. It is therefore concluded that the orange polyester fibers from Item 1 and Item 2 could have originated from the same source of fibers. The orange polyester fibers of Item 1 were found to differ from and are therefore excluded as being the source of the orange acetate fibers of Item 3.
QAQ7GA	Item #1 (victim's jacket) known control (fabric). Item #2 (suspect's truck) similar microscopic and chemical characteristics to item #1. Item #1 could be a source of item #2. Item #3 (suspect's truck). Dissimilar microscopic and chemical characteristics to item #1. Item #1 can be excluded as being a source of item #3.
QCG3CV	1, Fiber standard. 2, Orange polyester fibers found. The unknown fibers and the standard fibers (item 1) are the same in physical and chemical characteristics. The standard can be considered as a possible source of the unknown fibers. 3, Orange acetate fibers found. The unknown fibers and the standard

TABLE 4

WebCode	Conclusions
	fibers (item 1) are not the same. The unknown fibers could not have originated from the standard.
QKN2MT	The Item 2 questioned fibers could have originated from the victim's jacket. The Item 3 questioned fibers could not have originated from the victim's jacket.
QNB2W	Polyester fibers found in item #2 revealed the same microscopic and chemical characteristics as the polyester fibers in item #1, and therefore could have originated from the same source as item #1.
QPKNEL	Item 2: The fibers collected from the door latch are similar to the known fibers from the jacket in regards to optical properties, chemical properties and other physical properties. Item 3: Fibers from item 3 could not be associated with fibers from Item 1 due to differences in optical properties and chemical properties.
R3NAGB	The orange polyester fibers from the inner door latch of the suspect's truck (Item 2) are similar to the fibers composing the victim's jacket (Item 1), and could have come from that jacket. The orange acetate fibers from the driver's seat of the suspect's truck (Item 3) are dissimilar to fibers composing the victim's jacket (Item 1) and could not have originated from that jacket. These determinations were made based on comparison of the microscopic, physical and chemical characteristics of the fibers.
RAA86X	The questioned fibers from Item 2 corresponded to the known section of fabric from the victim's jacket, Item 1 with respect to color (orange), fiber type (polyester), microscopic characteristics (polarized light microscope), cross-sectional shape (hexagonal and triangular), fluorescence, chemical composition (infrared spectrophotometer), and visible spectra (microspectrophotometer). Therefore, the questioned fibers from Item 2 could have originated from the victim's jacket, Item 1. The questioned fibers from Item 3 were different with respect to fiber type (acetate) and chemical composition (infrared spectrophotometer) than the Item 1 known fibers. Therefore, the questioned fibers from Item 3 could not have originated from the victim's jacket, Item 1.
REZHFV	1. Fiber standard. 2. Orange polyester fibers found. These fibers & the fiber standard (item #1) are the same in physical & chemical characteristics. This standard can be considered as a possible source of the unknown fibers. 3. Orange acetate fibers found. These fibers & the standard fibers (item #1) are not the same. These unknown fibers could not have originated from the standard.
RL3MBL	The orange fabric (Item 1) was woven from two distinguishable yarns (the warp and the weft). Although both the warp and weft yarns were composed of polyester fibres and contained the same dyes, the weft fibres were bright whereas the warp fibres were semi-dull (that is, they contained delustrant). In addition, the warp and weft fibres were different in appearance (cross-sectional shape). The orange fibres (Item 2) consisted of both bright and semi-dull polyester fibres. There were no significant differences between the color, appearance and range of diameters of the respective bright and semi-dull, orange, polyester fibres in Item 2 and those in the orange fabric, Item 1. In addition, the orange fibres in Item 2 contained the same dyes as those on the orange fabric. It is my opinion that it is likely that the orange fibres in Item 2 originated from the same source as those in the orange fabric (Item 1). The orange fibres in Item 3 were cellulose acetate and, hence, could not originate from the orange polyester fabric.
RPGJGN	I am of the opinion that, based on the testing conducted, I am unable to exclude the proposition that the questioned fibres from the inner door latch on the passenger side of the suspect's truck (item 2) could have originated from the known section of fabric from the inner lining of the victim's jacket (item 1) or from a similar source of fabric. I am of the opinion that, based on the testing conducted, I am able to exclude the known section of fabric from the inner lining of the victim's jacket (item 1) as being a source of the questioned fibres from the driver's seat of the suspect's truck (item 3).
RV3G4Q	Fibers from Item #2 have the same optical properties, chemical composition, color, size, and shape as the known fibers from Item #1. The fibers from Item #2 could have come from Item #1.
RZY6X	It is our opinion that the fibers from Item two are the same type as the non-delustered polyester fibers found in Item 1. Further, the fiber sample, Item 3, does not match the fibers from Item 1.
T6M4GY	The fibres recovered from the inner door latch of the suspect's truck (Item 2) were microscopically and chemically indistinguishable from those used in the construction of the victim's jacket lining (Item 1). The fibres recovered from the driver's seat of the suspect's truck (Item 3) could not have come from the inner lining of the victim's jacket (Item 1).

TABLE 4

WebCode	Conclusions
TCATG2	1. Exhibit 1 was examined and found to contain 2 distinct types of orange polyester fibers. Exhibits 2 and 3 were examined and compared to Exhibit 1. 2. Exhibit 2 was found to contain 2 distinct types of orange polyester fibers. These fibers were found to be consistent with the 2 distinct types of polyester fibers of Exhibit 1 in their microscopic appearance and chemical composition. Based on these findings, the fibers in Exhibit 2 could have originated from Exhibit 1. 3. Exhibit 3 was found to be different from Exhibit 1 in appearance and chemical composition. Based on these findings, Exhibit 3 could not have originated from Exhibit 1.
TGFHMM	Light orange polyester fibers found in specimen Q1 (Item #2) exhibit the same microscopic characteristics and optical properties as the fibers comprising the K1 (Item #1) sample. Accordingly, these fibers are consistent with originating from the same source as the K1 (Item #1) fiber sample. Fibers found in specimen Q2 (Item #3) are microscopically dissimilar to the K1 (Item #1) fiber sample. Accordingly, these fibers are not consistent with originating from the same source as the K1 (Item #1) sample. The specimens were examined visually using stereo-microscopy, comparison microscopy, polarized light microscopy, fluorescence microscopy, microspectrophotometry and infrared spectroscopy.
TZEN3A	Two types of light orange polyester fibers in Item 2 were identical to the two types of light orange polyester fibers in Item 1 in color and microscopic characteristics. This means the fibers in Item 2 could have come from the fabric sampled in Item 1. Item 3 was different from Item 1. This means the fibers in Item 3 did not come from the fabric sampled in Item 1.
U4EADC	Fibers (item #2) recovered from the inner door latch of the suspect's truck could've come from the lining of the victim's jacket (item #1). Fibers (item #3) from the driver's seat of the suspect's truck did not come from item #1.
U9KYJY	Fibres of item 3 are cellulose acetate fibres. Fibres of item 1 and fibres of item 2 are not differentiated with the procedure used. Consequently, they could have the same origin. Items 1 and 2 are constituted by PET Polyester delustered fibres and PET polyester bright fibres. Delustered fibres have a hexagonal cross-section and bright fibres have a triangular cross section. The dyestuff is of disperse type and TLC separation shows 2 dyes (yellow and pink). The MSP spectra of the delustered fibres are identical for the two items.
UCKBFY	The differences[sic] examinations and analyses carried out show that: the fibres recovered from the inner door latch on the passenger side of suspect's truck (item 2) are the same (morphological, optical characters, fibre type, dye analysis) as the fibres of the victim's jacket (item 1). Items 1 and 2 could have originated from the same source.
UPBPBM	The forensic significance of fibres is partly dependant on the number of fibres present, and how common that fibre type and/or colour is in textile manufacturing. The fabric in Item #1 was constructed from two different types of orange polyester fibre. The orange polyester fibres from Item #2 were indistinguishable from one type of the fibres in Item #1. The number, colour and length of the fibres present strongly supports the hypothesis that the fibres in Item #2 originated from the same source as Item #1. The fibres in Item #3 were different to those from Item #1 and, as such, could not have originated from the same source.
URQGLN	The questioned fibers, item 2, recovered from the inner door latch on the passenger side of suspect's truck, exhibit the same morphologic, composition, fluorescence, cross-section, and colour features as the fibers of the known fabric from inner lining of the victim's jacket. The questioned fibers from the driver's seat of the suspect's truck, item 3, don't show the same morphologic properties as item 1 and 2.
UVRKDB	By means of physical and chemical analysis was determined that: 1. Fibers of Items #1 and #2 present similar physical and chemical characteristics, which is consistent with a common origin. 2. Fibers of Items #3 and #1 present different physical characteristics, indicating that they do not come from the same origin.
UZD7J6	Ex. #2 contains orange Polyester fibers. These fibers are consistent with the fibers that compose Ex. #1; therefore, could have originated from the same source as Ex. #1. Ex. #3 contains orange Acetate fibers. These fibers are dissimilar to the fibers that compose Ex. #1; therefore, did not originate from the same source as Ex. #1.

TABLE 4

WebCode	Conclusions
V6U3ND	The sample has three item numbers. Item number 1 is a small swatch of orange colored woven fabric. Item numbers 2 and 3 are packets of orange colored multifilament fibers. Item number 1 is composed of multifilament polyester fibers. Item number 2 is composed of multifilament polyester fibers. Item number 3 is composed of multifilament acetate fibers. Items number 1 and 2 match. Item number 3 does not match items 1 and 2.
V8RAA4	1. The orange manufactured[sic] fibers located in the trace material of submission #2 (Questioned fibers from the inner door latch on the passenger side of suspect's truck) exhibited similar microscopic and instrumental characteristics as the orange manufactured fibers of submission #1 (Known section of fabric from the inner lining of the victim's jacket). 2. The orange manufactured fibers located in the trace material of submission #3 (Questioned fibers from the driver's seat of the suspect's truck) exhibited dissimilar microscopic and instrumental characteristics as the orange manufactured fibers of submission #1 (Known section of fabric from the inner lining of the victim's jacket).
VGHVF3	The submitted standard (fabric from the inner lining of the jacket) in Exhibit 1 is composed of orange polyester fibers. The questioned fibers from the inner door latch on the passenger's side of the truck (Exhibit 2) are similar in physical, microscopic, and organic characteristics to the orange polyester fibers that compose the fabric in Exhibit 1. It is this examiner's opinion that the questioned fibers from the inner door latch of the passenger's side of the truck could have originated from the inner lining of the jacket. The questioned fibers from the driver's seat of the truck (Exhibit 3) are composed of acetate fibers; therefore these fibers could not have originated from the inner lining of the jacket represented in Exhibit 1.
VLNKLN	Light orange lustrous polyester fibers were found in Item 2 that exhibit the same microscopic characteristics and optical properties as the fibers comprising the Item 1 known fabric sample. Accordingly, these fibers are consistent with having come from the same source. Light orange delustered polyester fibers were found in Item 2 that exhibit the same microscopic characteristics and optical properties as the fibers comprising the Item 1 known fabric sample. Accordingly, these fibers are consistent with having come from the same source. No fibers microscopically like the fibers comprising the Item 1 known fabric sample were found in the Item 3 debris. The specimens were examined visually using stereo-microscopy, comparison microscopy, polarized light microscopy, fluorescent light microscopy, microspectrophotometry and Fourier Transform Infrared Spectroscopy.
VTTBEU	Orange fibers in Item 2 (from the inner door latch on the passenger side of suspect's truck) were found that corresponded in fiber type (polyester), infrared spectra, crimp, color (microspectrophotometer), size, cross-section and other microscopic characteristics to the fibers composing the Item 1 polyester fabric from the inner lining of the victim's jacket. Therefore, the questioned orange fibers in Item 2 could have come from the victim's jacket. It should be noted that since similar items may have been manufactured which would be indistinguishable from the submitted evidence, an individual source cannot be determined. The questioned fibers in Item 3 (from the driver's seat of the suspect truck) were different than the known fibers in Item 1 and therefore could not have a common source.
VTU4EM	Based on visual, chemical and colour analysis the two types of orange polyester fibres recovered from the inner door latch on the passenger's side of the suspect's truck (item 2) could have come from the inner lining of the victim's jacket (as represented by item 1), or from a textile containing fibres with the same visual, chemical and colour features. Based on visual, chemical and colour analysis the fibres recovered from the driver's seat of the suspect's truck (item 3) could not have come from the inner lining of the victim's jacket (as represented by item 1). In my opinion, this fibre evidence supports the proposition that the inner lining of the victim's jacket (item 1) came into contact, either directly or indirectly, with the door latch on the passenger's side of the suspect's truck. Note that as fibres are mass produced another source of fibres with the same visual, chemical and colour is possible.
VWV2PF	Item #2 exhibits the same microscopic & physical characteristics and chemical composition to Item #1. Therefore Item #2 could have come from the same source as Item #1. Item #3 exhibits different microscopic & physical characteristics and chemical composition to Item #1. Therefore, Item #3 could not have come from the same source as Item #1.
VXJKQD	Known fibers (Item 1), reportedly from the victim's jacket, were examined and found to be bright and delustered light orange polyester fibers. Questioned fibers (Item 2), reportedly from the door latch of the

TABLE 4

WebCode	Conclusions
	<p>suspect's truck, were examined and found to be bright and delustered light orange polyester fibers. These questioned fibers (Item 2) were found to be consistent with the known fibers (Item 1), with respect to color, morphology, optical properties and fiber type. Based upon these observations, it is the opinion of this analyst that the questioned fibers (Item 2) and the known fibers (Item 1) are of the same type and could have come from the same source. This analyst recognizes that another source of fibers with properties consistent with the above fibers exists. Questioned fibers (Item 3), reportedly from the driver's seat of the suspect's truck, were examined and found to be light pinkish orange acetate fibers. These questioned fibers (Items 3) were found to be inconsistent with the known fibers (Item 1), with respect to color, morphology and fiber type.</p>
W92N9W	<p>Item #1 - The known swatch of orange fabric was about 5 cm square. One side was shiny and the other side dull. The shiny yarns were designated warp yarns, while the dull yarns were designated weft yarns. Weft and warp fibers could be differentiated by crimp and by microscopical appearance. Both weft and warp fibers were identified by infrared microspectroscopy as polyethylene terephthalate (PET) polyester, a common type of polyester. Item #2 - The questioned orange fibers from the passenger door latch of the suspect's truck consisted of two differently-appearing fibers similar to the two differently-appearing known fibers in crimp, microscopical appearance/optical properties, color by microspectrophotometry (MSP), and chemical properties by infrared microspectroscopy (IMS). The two differently-appearing questioned fibers were identified as PET polyester by IMS. The victim's jacket lining cannot be excluded as a source of the questioned fibers in item #2. Item #3 - The questioned orange fibers from the driver's seat of the suspect's truck were dissimilar to the two differently-appearing known fibers in crimp, microscopical appearance/optical properties, and chemical properties by IMS. The questioned fibers were identified as acetate by IMS. The victim's jacket lining can be excluded as a source of the questioned fibers in item #3.</p>
W9EDCA	<p>The orange polyester fibers found from the inner door latch on the passanger[sic] side of suspect's truck (item 2) are consistent with generic class and microscopic characteristics[sic] with the fibers of the orange inner lining of the victim's jacket (item 1). Item 2 could be originated from item 1. The orange acetate fibers found from the driver's seat of the suspect's truck (item 3) are not consistent with the fibers of the orange inner lining of the victim's jacket (item 1). Item 3 could not be originated from item 1.</p>
WA9ZUE	<p>1. Microscopic Analysis: Item 1 and Item 2 are same orange color fibers but Item 3 is a little different dark orange color from the others. 2. FT-IR Analysis: Item 1 and Item 2 are the same manufactured, polyester fibers. Item 3 is manufactured, acetate fibers. 5. Result: The fibers from the inner door latch on the passenger side of suspect's trunk[sic] (Item 2) have originated from the fabric from the victim's jacket (Item 1).</p>
WE6JB6	<p>Examination of the above-mentioned items revealed that item #2 consists of two microscopically different orange polyester fibers that match the microscopic, infrared spectroscopic, and microspectrophotometric characteristics of the orange polyester fibers composing the fabric sample in item #1. Therefore, the fibers found in item #2 could have originated from the item #1 source of fibers. The fibers found in item #3 consist of orange acetate fibers and could not have originated from the item #1 source of fibers.</p>
WGLBM7	<p>The source of the exemplar fibers in item 1 is included as a possible source of the unknown fibers in item 2. The source of the exemplar fibers in item 1 is excluded as a possible source of the unknown fibers in item 3. Note: Fibers are mass produced.</p>
WKQLAV	<p>Microscopical examination of Item# 1 ("Known section of fabric from the inner lining of the victim's jacket") reveals this fabric to be comprised of two different types of polyester fibers. One is triangular in cross-section, slightly fluoresces a brownish color under violet (405nm) excitation, and exhibits no delusterant while the other type is polygonal in cross-section, slightly fluoresces a brownish color under violet (405nm) excitation, and does exhibit delusterant pigments. Microscopical examination of the questioned fibers found in Item# 2 ("Questioned fibers from the inner door latch on the passenger side of suspect's truck") reveals similar polyester fibers exhibiting indistinguishable optical, florescence, and cross-sectional properties from the two types of fibers found in Item# 1. Therefore, these fibers found in Item# 2, could have come from the known section of fabric from the inner lining of the victim's jacket (Item# 1). Microscopical examination and Fourier Transform Infrared microspectrophotometry analysis of the questioned fibers found in Item# 3 ("Questioned fibers from the driver's seat of the suspect's truck")</p>

TABLE 4

WebCode	Conclusions
	reveals these fibers to be consistent with the generic class[sic] of acetate fibers. These fibers are inconsistent in generic class, color, and fluorescence and therefore could not have originated from the known section of fabric from the inner lining of the victim's jacket (Item# 1).
WMZLDG	Microscopic and spectroscopic examination of the fibres in exhibits #1 - #3 have distinguished the known fibres #1 from the recovered fibres #3 but not from the recovered fibre #2. Therefore a possible source for the fibres #2 recovered from the inner door latch on the passenger side of the truck is the inner lining of the victim's jacket. The fibres #3 recovered from the driver's seat of the truck have not originated from the lining of the victim's jacket as represented by the known fibres #1.
WN78PV	Using several examination techniques as mentioned above, no difference between Item 1 and Item 2 could be found. Item 3 is different from Item 1 in appearance and chemical composition.
WPM6EE	Orange acetate fibers recovered from the driver's seat of the suspect's truck are a different fiber type to the known orange polyester fibers from the victim's jacket. Orange polyester fibers recovered from the door latch of the suspect's truck are similar in visual color, size, shape, fiber type and dye composition to the known polyester fibers from the victim's jacket. It is my opinion these fibers could have originated from the victim's jacket or any other garment with similar fiber characteristics.
WT793C	Based on our exams the questioned fibres recovered from the inner door latch on the passenger's side (Item 2) could not have been differentiated from the fibres of comparison of the victim's jacket (Item 1) whereas the questioned fibres from the driver's seat (Item 3) could have been distinguished from the fibres of comparison (Item 1). Therefore the fibres from Item 2 could have originated from the victim's jacket. The fibres from Item 3 could be excluded as having originated from the victim's jacket.
WUWKN3	Items #1 and #2 are each composed of two types of orange polyester fibers with different microscopic, optical, and cross-sectional characteristics. The two types of orange polyester fibers in item #2 have similar microscopic, optical, and cross-sectional characteristics, and similar infrared spectral patterns to the two types of fibers composing item #1. Therefore, the fibers of item #2 could have originated from item #1, or any other textiles with the same class characteristics. Item #3 is composed of orange acetate fibers. Therefore, item #3 could not have originated from item #1.
WWYJLN	Item 1, the orange fabric collected from the inner lining of the victim's jacket, was examined by light microscopy, polarized light microscopy, and Fourier Transform Infra-red spectroscopy and is identified as polyester. Item 2, the orange polyester fibers collected from the inner door latch on the passenger side of the suspect's truck, was examined by light microscopy, polarized light microscopy, and Fourier Transform Infra-red spectroscopy and is consistent with item 1, the orange polyester reference fabric collected from the inner lining of the victim's jacket. Item 3, the orange acetate fibers collected from the inner door latch on the passenger side of the suspect's truck, was examined by light microscopy, polarized light microscopy, and Fourier Transform Infra-red spectroscopy and is not consistent with item 1, the orange polyester reference fabric collected from the inner lining of the victim's jacket.
X4EKKX	The sample, a Forensic Proficiency Test Program sample package, Test No. 10-539 - Fiber Analysis, consists of three items in separate envelopes. Item 1 is composed of two kinds of orange colored fibers, one is Polyester with round cross section and the other is Polyester with trilobal cross section. Item 2 is composed of two kinds of orange colored fibers, one is Polyester with round cross section and the other is Polyester with trilobal cross section. Item 3 is composed of orange colored fibers composed of Acetate. Based on the above results, the fibers in item 2 could have originated from the same source as the fibers in item 1. The fibers in item 3 are composed of acetate and could not have originated from the same source as the fibers in item 1.
X77H6C	Two separate types of orange polyester fibers were recovered from the inner door latch on the passenger side of the suspect's truck (#2). Both these polyester fiber types are similar in color, shape, size and type of fiber to corresponding orange polyester fibers composing the inner lining of the victim's jacket (#1). It is my opinion that the two types of orange polyester fibers that were recovered from the inner door latch on the passenger side of the suspect's truck could have originated from the inner lining of the victim's jacket. The orange acetate fibers from the driver's seat of the suspect's truck (#3) are a different type of fiber than the submitted orange polyester fibers composing the inner lining of the victim's jacket (#1). It is my opinion that the orange acetate fibers from the driver's seat of the suspect's truck did not originate

TABLE 4

WebCode	Conclusions
	from the sampled area of the inner lining of the victim's jacket.
XCXRFA	Known fibers which compose the fabric from the inner lining of the victim's jacket (item 1) were examined and found to be delustered and bright orange polyester fibers. Questioned fibers (item 2), reportedly from the inner door latch on the passenger side of the suspect's truck, were examined and found to be delustered and bright orange polyester fibers. These questioned fibers (item 2) were subsequently found to be consistent with the known fibers (item 1) regarding their morphology and optical properties. Based on the above observations, it is the opinion of this analyst that the questioned fibers (item 2) and the known fibers which compose item 1 are of the same type and could have originated from the same source. This analyst recognizes that other sources of fibers with properties consistent with the above fibers exist. Questioned fibers (item 3), reportedly from the driver's seat of the suspect's truck, were examined and found to be bright orange acetate fibers. Known fibers which compose item 1 were subsequently found to be inconsistent with the questioned fibers (item 3) regarding their morphology and optical properties.
XJPCBA	The questioned fiber Item 2 could have originated from the victims jacket (Item 1).
XQFFTE	Item 1, reportedly a known fabric section from the victim's jacket lining, was composed of polyester fibers. Although both polyester, the fabric's warp fibers were distinguishable from the fill fibers. Item 2 fibers, reportedly recovered from the suspect's truck door latch, were composed of two distinguishable types of polyester. One type of Item 2 polyester fibers was found to be similar to Item 1 warp fibers in all examined physical, optical and chemical properties. The other type of Item 2 fibers was found to be similar to Item 1 fill fibers in all examined physical, optical and chemical properties. The fibers from Item 2 could have originated from Item 1, or any other source of similar textile fibers. Item 3 fibers, reportedly recovered from the suspect's truck driver's seat, were found to be acetate. The fibers from Item 3 could not have originated from the fabric of the victim's jacket lining Item 1.
XZJQZ4	Examination and comparison of questioned fibers identified as recovered from the inner door latch on the passenger side of the subject's truck (Item 2) with known fibers of the lining of the victim's jacket (Item 1) reveals they are consistent in microscopic/instrumental characteristics. It is therefore concluded the questioned fibers originated from the jacket or another source possessing fibers with the same distinct microscopic/instrumental characteristics. Examination and comparison of questioned fibers identified as recovered from the driver's seat of the suspect's truck (Item 3) with known fibers of the lining of the victim's jacket (item 1) reveals they are inconsistent in microscopic characteristics. It is therefore concluded the questioned fibers did not originate from this area of the jacket. Examinations were performed by stereo microscopy, comparison microscopy, fluorescence microscopy, microspectrophotometry, and thermal microscopy.
Y32C4B	Orange polyester fibers recovered from the inner door latch on the passenger side of the suspect's truck (item 2) are the same color, size, shape and fiber type as the orange polyester fibers composing the known section of fabric from the inner lining of the victim's jacket (item 1). It is my opinion that the orange polyester fibers recovered from the inner passenger side door latch of the suspect's truck could have come from the inner lining of the victim's jacket. Orange acetate fibers recovered from the driver's seat of the suspect's truck (item 3) is a different fiber type than the orange polyester fibers composing the known section of fabric from the inner lining of the victim's jacket (item 1).
Y8QRJH	The fibers in Items 1 and 2 are similar in color, optical properties, solubility and infra-red absorbance spectra. Therefore the fibers in Items 1 and 2 could have originated from the same source. The fibers in Item 3 are similar in color to the fibers in Item 1, however they are dissimilar in infra-red absorbance spectra. Therefore the fibers in Items 1 + 3 could not have come from the same source.
YA6D9B	The fibers from item 2 are similar to delustered fibers from Item 1 and could share a common origin. The fibers from Item 3 are not similar to the fibers from Item 1 and do not share a common origin.
YBV9ZL	The orange polyester fibers comprising specimen Q1 (Item #2) exhibit the same microscopic characteristics and optical properties as the orange polyester fibers comprising specimen K1 (Item #1). Accordingly, these fibers are consistent with originating from specimen K1 (Item #1). The fibers comprising specimen Q2 (Item #3) exhibited dissimilar microscopic characteristics and optical properties as the fibers comprising specimen K1 (Item #1). Accordingly, these fibers could not have originated from

TABLE 4

WebCode	Conclusions
	specimen K1 (Item #1). The specimens were examined visually using stereo-microscopy, comparison microscopy, polarized light microscopy, fluorescence microscopy, microspectrophotometry, and infrared spectroscopy where appropriate.
YHJZGF	Item 2 could have come from Item 1. Item 3 could not have come from item 1.
YMDUG2	1. Exhibit 1 contained a small piece of orange colored woven fabric. This piece of fabric contained two microscopically distinct continuous filament yarns. One yarn was found to be composed of delustered, texturized, polyester fibers (Type I fibers). The other yarn was found to be composed of nondelustered, trilobal, polyester fibers (Type II fibers). 2. Examinations of the contents of Exhibit 2 disclosed the presence of numerous orange colored fibers. Microscopic examination of these fibers disclosed the presence of several fibers which were microscopically and chemically consistent with the Type I fibers of Exhibit 1. In addition, several fibers were found to be microscopically and chemically consistent with the Type II fibers of Exhibit 1. As a result of these findings, the Type I and Type II fibers in Exhibit 2 could have originated from the source of the fabric submitted as Exhibit 1. 3. Examinations of the contents of Exhibit 3 disclosed the presence of two microscopically distinct types of orange colored fibers. Examinations of both types of fibers disclosed them to be acetate fibers. As a result, the fibers within Exhibit 3 did not originate from the source of the fabric submitted as Exhibit 1.
YN468U	Examination of item #1 revealed the presence of orange polyester fibers. Examination of item #2 revealed the presence of orange polyester fibers that were consistent with the fibers found in item #1. Examination of item #3 revealed the presence of orange acetate fibers that were not consistent with the fibers found in item #1. Therefore, the fibers in item #1 and the fibers in item #2 could have originated from the same source.
YGPZ6	The orange fibers recovered from the latch on the passenger's side door could have come from the victim's jacket lining or from another orange textile composed of fibers having the same physical & chemical properties.
YTZR44	The fabric of Item #1 was found to consist of two different types of orange polyester fibers. Two different types of orange polyester fibers were found in the questioned sample of Item #2. These fibers were found to be consistent in microscopic appearance, diameter, cross sectional shape, fluorescence, measured color properties and chemical composition to the fibers of Item #1 and could have originated from that source. Because similar items have been manufactured and would be indistinguishable from the submitted evidence, an individual source cannot be determined. The fibers of Item #3 were found to be dissimilar in microscopic appearance and chemical composition to the fibers of Item #1 and did not originate from that source.
Z2ZTNM	It was determined utilizing polarized light microscopy, Fourier Transform Infrared Spectroscopy, and comparison microscopic techniques of analysis, that the orange polyester fibers comprising item 1 and the questioned orange polyester fibers comprising item 2 exhibit consistent characteristics. Therefore, item 1 can not be eliminated as being the source of the questioned fibers. It was determined utilizing polarized light microscopy and Fourier Transform Infrared Spectroscopy techniques of analysis that questioned orange fibers detected in item 3 are comprised of acetate. Therefore, item 1 and item 3 are dissimilar.
Z4967N	Fibers recovered from Item 2, questioned fibers "from the inner door latch on the passenger side of suspect's truck," were examined and compared visually and microscopically to fibers composing Item 1, known section of fabric "from the inner lining of the victim's jacket," and were found to be consistent in appearance, generic fiber type, and microscopic characteristics. Therefore, the fibers recovered from Item 2 could have come from Item 1. Fibers recovered from Item 3, questioned fibers "from the driver's seat of the suspect's truck," were examined and compared visually and microscopically to fibers composing Item 1 and were found to be different in appearance, generic fiber type, and microscopic characteristics. Therefore, the fibers recovered from Item 3 did not come from Item 1.
ZBUPY4	Item 1 - The fabric was a blend of two different orange, polyester fibers. Item 2 - The sample contained two different orange, polyester fibers. The optical, chemical, and color characteristics of the fibers in Item 1 were compared to the optical, chemical, and color characteristics of Item 2. The two orange, polyester fibers of Item 2 were indistinguishable in all respects to the two orange, polyester fibers of Item 1.

TABLE 4

WebCode	Conclusions
	<p>Therefore, the fibers found on the inner door latch on the passenger side of the suspect's truck (Item 2) could have come from the inner lining of the victim's jacket (reported source of Item 1) or any other source containing indistinguishable orange, polyester fibers. Item 3 - The sample contained orange, acetate fibers. The fibers of Item 3 have a different chemical composition than fibers from Item 1. Therefore, the fibers found on driver's seat of the suspect's truck (Item 3) could not have come from the inner lining of the victim's jacket (reported source of Item 1).</p>
ZC3BZP	<p>The fibers found in the inner door latch on the passenger side of the suspect's truck correspond to the fiber type present in the weft yarn of the orange lining of the victim's school jacket. On the other hand, the fibers found on the driver's seat of the suspect's truck do not correspond to the fiber types present in the orange lining of the victim's school jacket.</p>
ZDHD63	<p>The known section of fabric, Item 001-#1, from the victim's jacket is composed of two different types of polyester fibers. I compared these fibers to the tuft of fibers, Item 001-#2, from the door latch on the passenger side of the suspect's truck and the tuft of fibers, Item 001-#3, from the driver's seat of the suspect's truck. The tuft of fibers, Item 001-#2, also is a mixture of two types of polyester fibers. I used stereo microscopy, polarized light microscopy, fluorescence microscopy, thermal microscopy, infrared microspectrophotometry, visible microspectrophotometry, and liquid chromatography mass spectrometry in these examinations. I found the fibers in Item 001-#2 are similar in physical appearance, microscopical appearance, color, and polymer composition to the[sic] both types of reference fibers, Item 001-#1. The tuft of fiber, Item 001-#2, could have come from the victim's jacket lining as represented by Item 001-#1 or another woven fabric that is indistinguishable from Item 001-#1. The tuft of fibers, Item 001-#3, are acetate fibers and did not come from the same fabric as represent[sic] by Item 001-#1.</p>
ZFM7WF	<p>The swatch of fabric from the lining of the victim's jacket (item 1) consisted of a mixture of orange de-lustered polyester fibres and non de-lustered polyester fibres. The fibres from the inner door latch (item 2) consisted of a mixture of orange delustered polyester fibres and non-delustered polyester fibres. In relation to colour, chemical composition, dye composition, longtudinal[sic] appearance and cross sectional appearance the orange delustered polyester fibres from this item were indistinguishable from the orange delustered polyester fibres from the victims jacket. These fibres may therefore share a common origin. In relation to colour, chemical composition, dye composition, longtudinal[sic] appearance and cross sectional appearance the orange non-delustered polyester fibres from this item were indistinguishable from the orange non-delustered polyester fibres from the victims jacket. These fibres may therefore share a common origin. The orange fibres from the drivers seat (item 3) had a different chemical composition to the fibres from the lining of victims jacket (item 1) and therefore these items could not share a common origin.</p>
ZJZP2Q	<p>Items 1 & 2 were composed of Polyester, orange fibers. Item 2 could not be distinguished from Item 1, therefore fibers from Item 2 could have come from Item 1. Item 3 was composed of orange acetate fibers. The fibers from Item 3 could not have come from Item 1.</p>
ZWCY3M	<p>Item 1: Fiber Standard. Item 2: Orange polyester fibers were found. These unknown fibers and the standard fibers (Item 1) are the same in chemical and physical characteristics. The standard can be considered a possible source of the unknown fibers. Item 3: Orange acetate fibers were found. These unknown fibers and the standard fibers (Item 1) are not the same. The unknown fibers could not have originated from the standard.</p>

Additional Comments

TABLE 5

WebCode	Additional Comments
278KB6	Assumptions: 1. The suspect has had no contact with other pupils with the same jacket as the victim and therefore no reason for such pupils to have been inside the suspect's truck. 2. The jacket lining sample (item 1) received is representative of the jacket lining. Additional work: 1. Possible further work would be discussed with the police at this stage.
4GLCVK	Due to the fact that textile materials are mass produced, it is not possible to state that a fiber originated from a particular source to the exclusion of all other textile materials composed of fibers which exhibit the same physical, optical, and/or chemical properties.
4V3CJX	I have given the strength of support based on the two types of fibres found and the rarity of these in the population. The conclusions with respect to item 3 are based on the assumption that the sample of the lining from the victim's jacket (item 1) is representative of the jacket lining.
6UMKWZ	Because textile materials are mass produced, it is not possible to state that a fiber originated from a particular textile source to the exclusion of all other textile materials composed of fibers which exhibit the same chemical and optical properties.
78RYYH	Microspectrophotometry was not available at this laboratory.
7U9A32	Items 1 and 2 each contained 2 polyester fibre types which were distinguishable by microscopy/morphological features. The victim's jacket is a school jacket and during the case assessment stage the likelihood of any legitimate occupants of the car, e.g. child of the suspect having a similar jacket would be followed up and taken into account.
84Q9C4	Results - The Item 2 consisted of a piece of yarn with orange fibres, and a clump of orange fibres, which were indistinguishable in microscopic appearance, composition, and colour to the orange polyester fibres comprising the victim's jacket (Item 1).
94ZXDT	Items 1 and 2 both consisted of two types of orange polyester fibres. One type was delustered, the other lustrous (i.e. non-delustered). Both types occurred in approximate equal quantities.
A74Q67	Fibers from inner door latch (passenger side) appears to match fabric from victims jacket.
BLWP3K	There are two physically different types of orange polyester fibers (delustrant and number of crimps per cm) in the warp and weft directions in item 1. Both examples of the fiber types were observed in item 2.
CAFFLK	The polyester fibres with no delustrants from "Item 1" are comparable with the polyester fibres (no delustrants) from "Item 2".
CHAKEL	Orange polyester fibers are rarely distributed yet this type of fibers could originate from other textile objects for example other jacket linings. For categorical answer it is necessary to examine torn of the victim's jacket lining to establish its originations mechanism. [sic]
CWRD3T	Our procedures do not include the identification of the fiber type, and that's why question #2 was not answered.
DMVXQU	We only perform preliminary fiber analysis at our laboratory.
ECY434	I have a used a scale of no support, weak support, support, strong support, conclusive to indicate the strength of evidence.
EEGGMQ	Because textile materials are mass produced, it is not possible to state that a fiber originated from a particular textile source to the exclusion of all other textile materials composed of fibers which exhibit the same chemical and optical properties.
EVTMW	The Microspectrophotometer in the [City] lab [sic] currently out of service. Due to time constraints and lack of a working instrument, MSP was not performed.
EZYHTJ	Item 1 Lining fabric: Non-sheddy surface if lining fabric is undamaged. Due to damage would expect it to shed its constituent fibres. Able to differentiate between warp and weft threads. Appears to be an Atlas weave. Warp = polyester fibre with delustrant. X-section round/oval. Weft = polyester fibre with no delustrant. X-section trilobal. Item 2 - Fibres recovered from the inner door latch. Multiple threads in sample. Both warp and weft fibres found. Indistinguishable in terms of HPM/MSP/FTIR/TLC/X-section

TABLE 5

WebCode	Additional Comments
	to control lining item 1. Item 3 - Fibres recovered from the drivers seat. Multiple threads in sample. Fibre = acetate. Non-match to lining control item 1 via HPM. Suggest to customer that jacket submitted to determine if there is any other area on the jacket which may shed, be a source for these fibres.
H49323	I would suggest expanding the report wording conclusion area so that each agency could provide their full report wording / conclusions / strength of association wording.
JKT8Q8	We found that there are two different cross-sections fibers in Item 1 and Item 2.
LC9L2Z	The melting point of fibres of Item 3 was found to be approximately 229-234 degrees Celsius. Solubility tests were performed using acetone and chloroform and these fibres were found to be soluble in acetone, and insoluble in chloroform.
P3UVPZ	Due to the fact that textile materials are mass produced, it is not possible to state that a fiber originated from a particular source to the exclusion of all other textile materials composed of fibers which exhibit the same physical, optical, and/or chemical properties. In a real case, all items, including all standard cuttings (if made), slides with known fibers (if made), and slides with questioned fibers (if made) would be returned to the submitting agency upon completion of the case.
PFCTN9	The fibers coming from the item 1 and 2 are composed for two different kind of polyester fibers. Under the microscope, one kind presents triangular transverse cutting and looks glossy. The other presents different transverse cut and looks opaque. According with the analytical data, the mixture of fibers coming from the items 1 and 2, present the same chemical dye composition. According with the results, the mixture of fibers from the items 1 and 2 are not distinguishable.
PYF8HA	Two different polyester fibers were observed, one with delustrant and one with no delustrant.
Q3U6MC	Type III Association: An association in which items are consistent in all measured physical properties and/or chemical composition and could have originated from the same source. Because similar items have been manufactured and would be indistinguishable from the submitted evidence, an individual source can not be determined.
QKN2MT	The common origination of the Item 2 and Item 1 are "strong".
QPKNEL	No working MSP at the lab.
RYZY6X	The control sample, Item 1, had two different types of polyester fibers. One had no delustering and was nearly cylindrical. The other was delustered and multi lobal. Only one of these types of fibers was observed in Item 2, the more cylindrical non-delustered polyester.
U9KYJY	Two eluent systems was used (toluene/methanol/acetone (20:2:1) - chloroform/ ethyl acetate, ethanol (7:2:1)). For fibres of items 1 and 2 we observed maximal fluorescence at 515 nm (it begins at 415 nm). Fibres of three items have a very great length. Diameter of delustered fibres is between 12 and 24 μm , whereas diameter of bright fibres is about 15 μm .
W92N9W	Only optical cross-section observations were made.
W9EDCA	There were two types of polyester fibers in item 2 as well as in item 1.
WMZLDG	The weft fibres are distinguishable from the warp fibres in the satin weave fabric #1 but not from the recovered fibres #2 by the tests used.
WN78PV	From each item 10 fibers have been examined. The PET fibers in Item 1 and 2 could both be assigned to two different classes, one with particles and without particles. No further comments to Item 3.
WPM6EE	Two different shapes and slightly different visual colors of polyester fibers were noted in Item 1 and Item 2. Due to broken equipment, I was unable to run MSP.
WT793C	Item 1 consists of two different fibre types (warb[sic]/weft). The same fibre types were recovered in Item 2.
WWYJLN	The following conclusion statements would be included in the final report: A conclusion of "consistent" indicates that the analyzed sample possesses identical physical, chemical, and/or optical characteristics as those detected within a comparison sample. However, the analyzed sample lacks sufficient individualizing characteristics to identify a unique source. A conclusion of "not consistent" indicates that

TABLE 5

WebCode	Additional Comments
	the physical, chemical, and/or optical characteristics of the analyzed sample are different from those of the comparison sample or from a unique source.
XJPCBA	Item 1 is a piece of fabric. The cross-sections of the fibers in the yarn in warp and weft are different. Item 2 contains matching fibers of both types of cross-sections.
Z4967N	Due to the fact that textile materials are mass produced, it is not possible to state that a fiber originated from a particular source to the exclusion of all other textile materials composed of fibers which exhibit the same physical, optical, and/or chemical properties.
ZC3BZP	The lining of the victim's jacket is a woven fabric. Only fibers from one of the directions (the weft) were found in the suspect's truck. For this reason it would have been interesting to get the victim's jacket in order to verify: if the unmatched fibers on the driver's seat can correspond to other fibers from the jacket (outer fabric, traces); if the transfer of only one fiber type from the lining is eventually due to the tear morphology.
ZJZP2Q	Item 1 & 2 blend of delustered & non-delustered fibers.

Appendix: Data Sheet

Collaborative Testing Services ~ Forensic Testing Program

Test No. 10-539: Fibers Analysis

DATA MUST BE RECEIVED BY March 22, 2010 TO BE INCLUDED IN THE REPORT

Participant Code:

WebCode:

Please Note: The Accreditation Release Section Has Moved

CTS submits external proficiency test data directly to ASCLD/LAB and FQS-International. Please select one of the following statements to ensure your data is handled appropriately.

This participant's data is intended for submission to ASCLD/LAB and/or FQS-International. (Accreditation Release section on the last page must be completed and submitted.)

This participant's data is NOT intended for submission to ASCLD/LAB or FQS-International.

Scenario:

Police are investigating the abduction and murder of a young boy. He was last seen walking home from school and his body was discovered the following day in an abandoned building. The victim was wearing his school jacket and the inner, orange lining was torn. Witnesses report that he was picked up by an unknown man and they drove off in a pick-up truck. A suspect, whose pick-up truck matched the description provided by witnesses, was apprehended and his truck searched. Fibers were recovered from the inner door latch on the passenger side and from the driver's seat of the suspect's truck. Police are requesting you to examine the fibers, report their identification(s), and determine if the fibers found in either location of the truck could have come from the jacket worn by the victim.

Items Submitted (Sample Pack FB):

- 1: Known section of fabric from the inner lining of the victim's jacket.
- 2: Questioned fibers from the inner door latch on the passenger side of suspect's truck.
- 3: Questioned fibers from the driver's seat of the suspect's truck.

1.) Could the questioned fibers (Items 2 and/or 3) have originated from the victim's jacket (Item 1)?

Item 2: Yes No Inconclusive

Item 3: Yes No Inconclusive

2.) Determination of Fiber Type.

Please enter the fiber type (Manufactured, Animal, or Vegetable) and generic name in the blank provided for each Item. For Manufactured fibers please use the appendix provided. (Example: Item 1 Vegetable, Cotton)

Item 1 _____

Item 2 _____

Item 3 _____

Please return all pages of this data sheet.

Page 1 of 3

Participant Code:

WebCode:

3.) Indicate the procedure(s) used to examine the submitted items:

Microscopic Exams:

- | | |
|-------------------------------------------|---------------------------------------|
| <input type="checkbox"/> Stereomicroscope | <input type="checkbox"/> Comparison |
| <input type="checkbox"/> Polarized Light | <input type="checkbox"/> Fluorescence |

- | | | |
|-------------------------------------------------|----------------------------------------|-------------------------------------------------|
| <input type="checkbox"/> Macroscopic Exam | <input type="checkbox"/> IR/FTIR | <input type="checkbox"/> Microspectrophotometry |
| <input type="checkbox"/> Solubility Tests | <input type="checkbox"/> Cross-Section | <input type="checkbox"/> Melting Point |
| <input type="checkbox"/> Other (specify): _____ | | |

4.) What would be the wording of the Conclusions in your report?

5.) Additional Comments

Return Instructions

Data Sheets can be mailed or faxed (please include a cover sheet) and must be received by March 22, 2010 to be included in the report.

MAIL: Collaborative Testing Services, Inc. Forensic Testing Program P.O. Box 650820 Sterling, VA 20165-0820 USA	FAX: +1-571-434-1937 or Toll-Free (U.S. only): 1-866-FAX-2CTS (329-2287) TEL: +1-571-434-1925 (8 am - 4:30 pm EST) EMAIL: forensics@cts-interlab.com
--------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------

www.ctsforensics.com

Participant Code:

Please return all pages of this data sheet.

Page 2 of 3

RELEASE OF DATA TO ACCREDITATION BODIES

The following Accreditation Releases will apply only to:

Participant Code:

WebCode:

for Test No. **10-539: Fibers Analysis**

This release page must be completed and received by **March 22, 2010** to have this participant's submitted data included in the reports forwarded to the respective Accreditation Bodies.

ASCLD/LAB RELEASE

If your lab has been accredited by ASCLD/LAB and you are submitting this data as part of their external proficiency test requirements, have the laboratory's designated individual complete the following.

The information below must be completed in its entirety for the results to be submitted to ASCLD/LAB.

ASCLD/LAB Legacy Certificate No. _____ ASCLD/LAB International Certificate No. _____

Signature _____ Date _____

Laboratory Name _____

Location (City/State) _____

FQS-INTERNATIONAL RELEASE

If your laboratory maintains its accreditation through FQS-International, please complete the following form in its entirety to have your results forwarded.

FQS-International Certificate No. _____

Signature and Title: _____ Date _____

Laboratory Name _____

Location (City/State) _____

Accreditation Release

Return Instructions

Please submit the completed Accreditation Release at the same time as your full data sheet. See Data Sheet Return Instructions on the previous page.

*Questions? Contact us 8 am-4:30 pm EST
Telephone: +1-571-434-1925
email: forensics@cts-interlab.com*

Please return all pages of this data sheet.

Page 3 of 3

Appendix: Manufactured Fibers - Names & Definitions

Federal Trade Commission Rules and Regulations Under the Textile Fiber Products Identification Act*

16 CFR Part 303

§303.7 Generic Names and Definitions for Manufactured Fibers

Pursuant to the provisions of Section 7(c) of the Act, the Commission hereby establishes the generic names for manufactured fibers, together with their respective definitions, set forth in this section, and the generic names for manufactured fibers, together with their respective definitions, set forth in International Organization for Standardization (ISO) Standard 2076: 1999(E), "Textiles – Man-made fibres – Generic names."

- (a) **Acrylic**
A manufactured fiber in which the fiber-forming substance is any long chain synthetic polymer composed of at least 85% by weight of acrylonitrile units.
- (b) **Modacrylic**
A manufactured fiber in which the fiber-forming substance is any long chain synthetic polymer composed of less than 85% but at least 35% by weight of acrylonitrile units, except fibers qualifying under paragraph (j)(2) of this section and fibers qualifying under paragraph (q) of this section.
- (c) **Polyester**
A manufactured fiber in which the fiber-forming substance is any long chain synthetic polymer composed of at least 85% by weight of an ester of a substituted aromatic carboxylic acid, including but not restricted to substituted terephthalate units, and para substituted hydroxy-benzoate units.
Where the fiber formed by the interaction of two or more chemically distinct polymers (of which none exceeds 85% by weight), and contains ester groups as the dominant functional unit (at least 85% by weight of the total polymer content of the fiber), and which, if stretched at least 100%, durably and rapidly reverts substantially to its unstretched length when the tension is removed, the term elasterell-p may be used as a generic description of the fiber.
- (d) **Rayon**
A manufactured fiber composed of regenerated cellulose, as well as manufactured fibers composed of regenerated cellulose in which substituents have replaced not more than 15% of the hydrogens of the hydroxyl groups. Where the fiber is composed of cellulose precipitated from an organic solution in which no substitution of the hydroxyl groups takes place and no chemical intermediates are formed, the term lyocell may be used as a generic description of the fiber.
- (e) **Acetate**
A manufactured fiber in which the fiber-forming substance is cellulose acetate. Where not less than 92% of the hydroxyl groups are acetylated, the term triacetate may be used as a generic description of the fiber.
- (f) **Saran**
A manufactured fiber in which the fiber-forming substance is any long chain synthetic polymer composed of at least 80% by weight of vinylidene chloride units.
- (g) **Azlon**
A manufactured fiber in which the fiber-forming substance is composed of any regenerated naturally occurring proteins.
- (h) **Nytril**
A manufactured fiber containing at least 85% of a long chain polymer of vinylidene dinitrile where the vinylidene dinitrile content is no less than every other unit in the polymer chain.
- (i) **Nylon**
A manufactured fiber in which the fiber-forming substance is a long chain synthetic polyamide in which less than 85% of the amide linkages are attached directly to two aromatic rings.
- (j) **Rubber**
A manufactured fiber in which the fiber-forming substance is comprised of natural or synthetic rubber, including the following categories:
(1) A manufactured fiber in which the fiber-forming substance is a hydrocarbon such as natural rubber, polyisoprene, polybutadiene, copolymers of dienes and hydrocarbons, or amorphous (noncrystalline) polyolefins.
(2) A manufactured fiber in which the fiber-forming substance is a copolymer of acrylonitrile and a diene (such as butadiene) composed of not more than 50% but at least 10% by weight of acrylonitrile units. The term lastrile may be used as a generic description for fibers falling within this category.
(3) A manufactured fiber in which the fiber-forming substance is a polychloroprene or a copolymer of chloroprene in which at least 35% by weight of the fiber-forming substance is composed of chloroprene units.

- (k) **Spandex**
A manufactured fiber in which the fiber-forming substance is any long chain synthetic polymer composed of at least 85% of a segmented polyurethane.
- (l) **Vinal**
A manufactured fiber in which the fiber-forming substance is any long chain synthetic polymer composed of at least 50% by weight of vinyl alcohol units, and in which the total of the vinyl alcohol units and any one or more of the various acetal units is at least 85% by weight of the fiber.
- (m) **Olefin**
A manufactured fiber in which the fiber-forming substance is any long chain synthetic polymer composed of at least 85% by weight of ethylene, propylene, or other olefin units, except amorphous (noncrystalline) polyolefins qualifying under paragraph (j)(1) of this section. Where the fiber-forming substance is a cross-linked synthetic polymer, with low but significant crystallinity, composed of at least 95% by weight of ethylene and at least one other olefin unit, and the fiber is substantially elastic and heat resistant, the term lastol may be used as a generic description of the fiber.
- (n) **Vinyon**
A manufactured fiber in which the fiber-forming substance is any long chain synthetic polymer composed of at least 85% by weight of vinyl chloride units.
- (o) **Metallic**
A manufactured fiber composed of metal, plastic-coated metal, metal-coated plastic, or a core completely covered by metal.
- (p) **Glass**
A manufactured fiber in which the fiber-forming substance is glass.
- (q) **Anidex**
A manufactured fiber in which the fiber-forming substance is any long chain synthetic polymer composed of at least 50% by weight of one or more esters of a monohydric alcohol and acrylic acid.
- (r) **Novoloid**
A manufactured fiber containing at least 85% by weight of a cross-linked novolac.
- (s) **Aramid**
A manufactured fiber in which the fiber-forming substance is a long chain synthetic polyamide in which at least 85% of the amide linkages are attached directly to two aromatic rings.
- (t) **Sulfar**
A manufactured fiber in which the fiber-forming substance is a long chain synthetic polysulfide in which at least 85% of the sulfide linkages are attached directly to two aromatic rings.
- (u) **PBI**
A manufactured fiber in which the fiber-forming substance is a long chain aromatic polymer having reoccurring imidazole groups as an integral part of the polymer chain.
- (v) **Elastoester**
A manufactured fiber in which the fiber-forming substance is a long chain synthetic polymer composed of at least 50% by weight of aliphatic polyether and at least 35% by weight of polyester, as defined in §303.7(c).
- (w) **Melamine**
A manufactured fiber in which the fiber-forming substance is a synthetic polymer composed of at least 50% by weight of a cross-linked melamine polymer.
- (x) **Fluoropolymer**
A manufactured fiber containing at least 95% of a long chain polymer synthesized from aliphatic fluorocarbon monomers.
- (y) **PLA**
A manufactured fiber in which the fiber-forming substance is composed of at least 85% by weight of lactic acid ester units derived from naturally occurring sugars.