Collaborative Testing Services, Inc
FORENSIC TESTING PROGRAM

P.O. Box 650820
Sterling, VA 20165-0820
e-mail: forensics@cts-interlab.com
Telephone: +1-571-434-1925
Web site: www.cts-forensics.com

Adhesive Tape Analysis Test No. 19-547
Summary Report

Each sample set consisted of three separate cases each containing a known and questioned tape sample for examination. Participants were requested to compare the items within each set and report their findings. Data were returned from 19 participants and are compiled into the following tables:

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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 three pairs of known and questioned tape samples for comparison (K1/Q1, K2/Q2, K3/Q3). Items K1 and Q1 were produced from the same roll of black duct tape. Items K2 and Q2 were produced from the same roll of beige masking tape. Items K3 and Q3 were produced from two different rolls of clear packaging tape of differing brands. For each item set, participants were requested to examine the adhesive tape samples and determine if both pieces were associated with a single source. Additionally, participants were asked to determine if a physical end match existed between the known item and the questioned item.

SAMPLE PREPARATION:
Each roll of tape was inspected and any debris removed.

Items K1 and Q1 were produced using a scissor cut to remove each item from one roll. A section of tape was removed from between the known and questioned items to prevent an end match.

Items K2 and Q2 were produced by hand-tearing each item from one roll. The paired items were produced in immediate succession to produce an end match.

Items K3 and Q3 were produced by using the cutting blade of a tape dispenser associated with each item. These items were produced from different rolls using different dispensers, so no end match was generated.

All questioned items were crumpled, reopened, affixed to silicone release paper, and then folded before being packed in their respective pre-labeled questioned item envelopes. Each known item was affixed to silicone release paper, folded, and then packed in their respective pre-labeled known item envelopes.

SAMPLE SET ASSEMBLY: Following the completion of sample production, associated and non-associated items were placed within a pre-labeled envelope and sealed with invisible tape until all sample sets were prepared. Once verification was completed, all sample sets were further sealed with evidence tape and initialed “CTS”.

VERIFICATION: The expected association and elimination results were confirmed by predistribution laboratories.

Item	Color	Tape Type	Association	Physical end match
K1 & Q1	Black	Duct tape	Yes	No
K2 & Q2	Beige	Masking tape	Yes	Yes
K3 & Q3	Clear	Packing tape	No	N/A

Summary Comments

This test was designed to allow participants to assess their proficiency in the examination and comparison of adhesive tape samples. Participants received three pairs of pressure sensitive tape samples each containing one known sample and one questioned item (K1/Q1, K2/Q2, K3/Q3). Using their laboratory procedures, participants were asked to determine within each pair if the questioned item could have originated from the known sample and if a physical end match existed between the two items. (Refer to Manufacturer's Information for preparation details).

There were 19 participants who reported examination results for all three pairs of known and questioned tape samples. For the sample pair K1 and Q1, 89.5% of participants reported that the questioned tape sample (Q1) could have originated from the adhesive roll represented by the known sample (K1). The remaining participants reported inconclusive results. With regards to a physical end match, 84.2% of participants reported that Item Q1 did not exhibit a physical end match to Item K1.

All participants reported that there was an association between the sample pair K2 and Q2. Of these participants, 94.7% also reported that Q2 exhibited a physical end match to K2.

For the sample pair K3 and Q3, all participants confirmed that Q3 could not have originated from K3. Eighteen participants reported that a physical end match between Q3 and K3 did not exist or was not applicable and one participant was inconclusive.

The most common methods utilized included Macroscopic Examinations, Stereo Microscopy, and FTIR.

Examination Results

For each set of items, is the questioned material associated with the submitted known sample and is there a physical end match between the known sample and questioned item?

TABLE 1 - K1 and Q1

	K1 and Q1	
WebCode	Association	Physical End Match
6A7GQU	Yes	No
7W2K8R	Yes	Yes
8U8E3L	Yes	No
ADTP3P	Yes	Yes
B3QN3Q	Yes	No
BQDRXM	Yes	No
EF3BW8	Yes	No
GZ37NL	Yes	No
HEWA7H	Yes	No
HZZV7N	Inc	No
JNYWP2	Yes	No
LNETE8	Yes	No
M9CQ7X	Yes	No
MR6MPD	Yes	No
QPBYKE	Yes	Yes
RCF9E2	Yes	No
UALYH6	Yes	No
UUAMPC	Inc	No
ZFBRU7	Yes	No

Response Summary		Participants: 19
	Association	Physical End Match
Yes	**17** *(89.5%)*	**3** *(15.8%)*
No	**0** *(0%)*	**16** *(84.2%)*
Inc	**2** *(0%)*	**0** *(0%)*
N/A	**0** *(0%)*	**0** *(0%)*

TABLE 1 - K2 and Q2

	K2 and Q2	
WebCode	Association	Physical End Match
6A7GQU	Yes	Yes
7W2K8R	Yes	Yes
8U8E3L	Yes	Yes
ADTP3P	Yes	Yes
B3QN3Q	Yes	Yes
BQDRXM	Yes	Yes
EF3BW8	Yes	Yes
GZ37NL	Yes	Yes
HEWA7H	Yes	Yes
HZZV7N	Yes	Yes
JNYWP2	Yes	Yes
LNETE8	Yes	Yes
M9CQ7X	Yes	Yes
MR6MPD	Yes	Yes
QPBYKE	Yes	Yes
RCF9E2	Yes	Yes
UALYH6	Yes	Yes
UUAMPC	Yes	Yes
ZFBRU7	Yes	No

Response Summary		Participants: 19
	Association	Physical End Match
Yes	**19** *(100%)*	**18** *(94.7%)*
No	**0** *(0%)*	**1** *(5.3%)*
Inc	**0** *(0%)*	**0** *(0%)*
N/A	**0** *(0%)*	**0** *(0%)*

TABLE 1 - K3 and Q3

	K3 and Q3	
WebCode	Association	Physical End Match
6A7GQU	No	No
7W2K8R	No	Inc
8U8E3L	No	No
ADTP3P	No	No
B3QN3Q	No	No
BQDRXM	No	No
EF3BW8	No	N/A
GZ37NL	No	No
HEWA7H	No	No
HZZV7N	No	No
JNYWP2	No	No
LNETE8	No	No
M9CQ7X	No	No
MR6MPD	No	No
QPBYKE	No	No
RCF9E2	No	No
UALYH6	No	No
UUAMPC	No	No
ZFBRU7	No	No

Response Summary		Participants: 19
	Association	Physical End Match
Yes	**0** *(0%)*	**0** *(0%)*
No	**19** *(100%)*	**17** *(89.5%)*
Inc	**0** *(0%)*	**1** *(5.3%)*
N/A	**0** *(0%)*	**1** *(5.3%)*

Examination Methods

TABLE 2 - K1 and Q1

WebCode	Stereo Microscope	Polarized Light	Comparison	Macroscopic Exam	Fluorescence	FTIR	XRD	XRS/XRF	SEM/EDX	LA-IC P-MS	Pyrolysis GC	Other
6A7GQU	✓		✓	✓		✓						
7W2K8R				✓		✓			✓			Comparison Microscope
8U8E3L	✓			✓	✓	✓		✓			✓	
ADTP3P	✓					✓						
B3QN3Q	✓	✓	✓	✓	✓	✓	✓		✓			Digital Caliper, Microspectrophotometry (MSP), microchemical testing, microsolubility testing
BQDRXM	✓			✓		✓						
EF3BW8	✓	✓		✓		✓		✓	✓		✓	
GZ37NL	✓	✓		✓	✓	✓						Raman
HEWA7H	✓			✓		✓						
HZZV7N				✓		✓						
JNYWP2	✓	✓	✓		✓	✓			✓			
LNETE8	✓			✓	✓	✓			✓			Raman
M9CQ7X	✓			✓		✓						Toolscan R360
MR6MPD	✓	✓	✓	✓		✓			✓			Alternate Light Source and UV light
QPBYKE				✓		✓		✓	✓			
RCF9E2	✓			✓		✓						GCMS
UALYH6	✓			✓		✓						
UUAMPC	✓		✓	✓								
ZFBRU7	✓	✓		✓	✓	✓		✓				Raman

Response Summary

Participants	Stereo Microscope	Polarized Light	Comparison	Macroscopic Exam	Fluorescence	FTIR	XRD	XRS/XRF	SEM/EDX	LA-ICP-MS	Pyrolysis GC
19	16	6	5	17	6	18	1	4	7	0	2
Percent	*84%*	*32%*	*26%*	89%	*32%*	*95%*	5%	*21%*	*37%*	0%	*11%*

TABLE 2 - K2 and Q2

WebCode	Stereo Microscope	Polarized Light	Comparison	Macroscopic Exam	Fluorescence	FTIR	XRD	XRS/XRF	SEM/EDX	LA-IC P-MS	Pyrolysis GC	Other
6A7GQU	✓		✓	✓		✓						
7W2K8R				✓		✓			✓			Comparison Microscope
8U8E3L	✓			✓								
ADTP3P	✓					✓						
B3QN3Q	✓			✓								Digital caliper
BQDRXM	✓			✓		✓						
EF3BW8	✓			✓								
GZ37NL	✓	✓		✓	✓	✓						Raman
HEWA7H	✓			✓		✓						
HZZV7N				✓		✓						
JNYWP2	✓	✓	✓		✓	✓			✓			
LNETE8				✓								
M9CQ7X	✓			✓		✓						Toolscan R360
MR6MPD	✓			✓								
QPBYKE				✓		✓		✓	✓			
RCF9E2	✓			✓		✓						GCMS
UALYH6	✓		✓	✓		✓						
UUAMPC	✓		✓	✓								
ZFBRU7	✓			✓		✓		✓				

Response Summary

Participants	Stereo Microscope	Polarized Light	Comparison	Macroscopic Exam	Fluorescence	FTIR	XRD	XRS/XRF	SEM/EDX	LA-ICP-MS	Pyrolysis GC
19	15	2	4	17	2	13	0	2	3	0	0
Percent	*79%*	*11%*	*21%*	89%	*11%*	*68%*	0%	*11%*	*16%*	0%	*0%*

TABLE 2 - K3 and Q3

WebCode	Stereo Microscope	Polarized Light	Comparison	Macroscopic Exam	Fluorescence	FTIR	XRD	XRS/XRF	SEM/EDX	LA-IC P-MS	Pyrolysis GC	Other
6A7GQU	✓		✓	✓		✓						
7W2K8R				✓		✓			✓			Comparison Microscope
8U8E3L	✓			✓	✓	✓						
ADTP3P	✓					✓						
B3QN3Q	✓			✓								Polarizing sheets on light box
BQDRXM	✓			✓		✓						
EF3BW8	✓	✓		✓								
GZ37NL	✓	✓		✓	✓	✓						Raman
HEWA7H	✓			✓		✓						
HZZV7N		✓		✓		✓						
JNYWP2	✓	✓	✓		✓	✓						
LNETE8		✓		✓								
M9CQ7X	✓			✓		✓						Toolscan R360
MR6MPD	✓	✓		✓								
QPBYKE				✓		✓		✓	✓			
RCF9E2	✓			✓		✓						
UALYH6	✓			✓		✓						
UUAMPC	✓		✓	✓								
ZFBRU7	✓			✓		✓		✓				

Response Summary

Participants	Stereo Microscope	Polarized Light	Comparison	Macroscopic Exam	Fluorescence	FTIR	XRD	XRS/XRF	SEM/EDX	LA-ICP-MS	Pyrolysis GC
19	15	6	3	17	3	14	0	2	2	0	0
Percent	*79%*	*32%*	*16%*	89%	*16%*	*74%*	0%	*11%*	*11%*	0%	0%

Conclusions

TABLE 3

WebCode	Conclusions
6A7GQU	Item 1 - samples K1 and Q1 have the similar chemical composition of glue and backing, but their physical ends do not match. Item 2 - samples K2 and Q2 have the same chemical composition of both glue and backing as well as their physical ends match. Item 3 - samples K3 and Q3 have the similar type of backing but differ in the kind of glue. Also their physical ends do not match. Samples K2 and Q2 could originate from the same source (from the same roll).
7W2K8R	1) Based on physical fitting and the comparison of physical characteristics (appearance, surface texture, scrim count and width), and chemical compositions of the sampled backings and adhesive layers of the tapes, the two strips of duct tape marked "K1" and "Q1" were originally a single strip of tape. 2) Based on physical fitting and the comparison of physical characteristics (appearance, surface texture and width), and chemical compositions of the sampled backings and adhesive layers of the tapes, the two strips of masking tape marked "K2" and "Q2" were originally a single strip of tape. 3) Based on differences in polarising patterns and chemical compositions of the sampled backings and adhesive layers of the tapes, the two strips of clear tape marked "K3" and "Q3" were not associated with each other.
8U8E3L	Based on the results of the examinations conducted, I am of the opinion that: i)the results strongly support the proposition that the length of duct tape in Q1 came from the known roll of duct tape (K1). ii)the length of masking tape in Q2 did come from the known roll of masking tape (K2). iii) the length of clear adhesive tape (Q3) could not have come from the known roll of adhesive tape (K3).
ADTP3P	K1, Q1: Each tape consisted of polyethylene and a rubber based adhesive. The widths were equal to 4,85 cm. There was also a physical match with the end of the adhesive tape roll. So the questioned tape Q1 probably could have originated from the tape roll K1. K2, Q2: Each tape consisted of cellulose and a rubber based adhesive. The widths were equal to 2,40 cm. There was also a totally physical match with the end of the adhesive tape roll. So the questioned tape Q2 highly probably could have originated from the tape roll K2. K3, Q3: Each tape consisted of polypropylene although there were some differences between the two tapes. The questioned tape Q3 consisted of a polyester based rubber, the width was 4,75 cm and the number of teeth was 31. The tape roll K3 consisted of an acrylic based rubber, the width was 5,00 cm and the number of teeth was 39. There was no physical match with the end of the adhesive tape roll. The questioned tape Q3 could definitely not have originated from the tape roll K3.
B3QN3Q	Items Q1, Q2, Q3, K1, K2 and K3 were each examined visually, using a digital caliper and using stereomicroscopy. Items Q1 and K1 were further examined using microsolubility tests, microchemical tests, polarized light microscopy (PLM), fluorescence microscopy, Fourier Transform Infrared Spectrophotometry (FTIR), Microspectrophotometry (MSP), Scanning Electron Microscopy-Energy Dispersive X-Ray Spectrometry (SEM-EDS), and X-Ray Diffraction (XRD). The Item Q1 piece of duct tape could not be physically fitted to the Item K1 piece of duct tape. The Item Q1 piece of duct tape was consistent with the Item K1 piece of duct tape in overall construction and in physical and chemical properties. It was concluded that the Item Q1 piece of duct tape could have originated from the duct tape source represented by Item K1 or another source of tape with the same overall construction, physical and chemical properties. Items Q2 and K2 were physically fitted together and were at one time a portion of a single unit. Item Q3 could not be associated with Item K3 due to differences in physical and optical properties.
BQDRXM	[No Conclusions Reported.]
EF3BW8	The adhesive tape in item Q1 could have come from the roll represented by K1. Since the analysis did not produce a physical match of item Q1 to item K1 and tape is mass-produced, Q1 could have come from any other roll of tape that has similar physical and chemical characteristics. One end of the adhesive tape in item Q2 physically fit to the roll of tape represented by K2. Item Q2 came from item

TABLE 3

WebCode	Conclusions
	K2. The adhesive tape in item Q3 has dissimilar chemical properties than the roll represented as item K3. Item Q3 did not come from item K3.
GZ37NL	Association of the questioned material with the submitted known sample material: Item K1, known tape and Item Q1, questioned tape from Case 1 were duct tapes. They both had a black polyethylene backing, fibre reinforcement and grey adhesive. The width of the tapes was 48 mm. Items K1 and Q1 were indistinguishable regarding colour and other physical properties and chemical composition of backing and adhesive. Therefore the questioned tape Item Q1 could have originated from the adhesive tape roll represented by Item K1 or from rolls manufactured in the same manner. Item K2, known tape and Item Q2, questioned tape from Case 2 were paper tapes (masking tapes). They had light yellow paper backing and yellowish adhesive. The width of the tapes was 24 mm. Items K2 and Q2 were indistinguishable regarding colour and other physical properties and chemical composition of backing and adhesive. Therefore the questioned tape Item Q2 could have originated from the adhesive tape roll represented by Item K2 or from rolls manufactured in the same manner. Item K3, known tape and Item Q3, questioned tape from Case 3 were packaging tapes. They had colourless, transparent polypropylene backing and colourless transparent adhesive. The width of the tapes was 48 mm. Items K3 and Q3 were inconsistent regarding chemical composition of adhesive. Therefore they could not share a common origin. Physical end match between the questioned item and the known sample: In the Item Q1 there is an adhesive tape which corresponds in width with the adhesive tape roll represented by item K1. On the surface of the adhesive tape Q1 there is a pattern which doesn't match with the pattern on the surface of the Item K1. Neither of the ends of the adhesive tape in Item Q1 corresponds in shape with the cut end of the adhesive tape roll represented by Item K1. The adhesive tape in Item Q1 has not been directly cut from the adhesive tape roll represented by Item K1. However conclusion whether the adhesive tape in Item Q1 originated from the adhesive tape roll represented by Item K1 is inconclusive. In the Item Q2 there is an adhesive tape of which the other end corresponds in width, shape and individual characteristics with the end of the adhesive tape roll represented by Item K2. The adhesive tape in Item Q2 originates from the adhesive tape roll represented by Item K2. In the Item Q3 there is an adhesive tape of which both of the ends have been cut with a tape cutter. Also the questioned end of the adhesive tape roll represented by K3 has been cut with a tape cutter. Neither of the ends of the adhesive tape in Item Q3 corresponds in shape with the cut end of the adhesive tape roll represented by Item K3. The adhesive tape in Item Q3 has not been cut with the same tape cutter as the end of the adhesive tape roll represented by Item K3. However conclusion whether the adhesive tape in Item Q3 originated from the adhesive tape roll represented by Item K3 is inconclusive.
HEWA7H	Item 1: There is not a physical end match between samples K1 and Q1, nevertheless, the composition of the adhesive, the composition of the fiber and the composition of both sides of the backing are indistinguishable in sample K1 and sample Q1. The K1 and Q1 fabric framework also is indistinguishable. In addition, the morphology and the width of K1 and Q1 is the same. According to these results, is not possible to discard that K1 and Q1 have the same origin. Item 2: There is a physical end match between samples K2 and Q2. The composition of the adhesive and backing of both tapes are indistinguishable. Also, the morphology and the width of K1 and Q1 is the same Therefore, K2 and Q2 have the same origin. Item 3: There is not a physical end match between samples K3 and Q3. The composition of the backing of both samples is indistinguishable, but the composition of the adhesive is different. Also the width of K3 and Q3 is different. According to these results, K3 and Q3 have different origins.
HZZV7N	The adhesive tape in Item Q1 is in all probability the same type as the adhesive tape in Item K1. We are inconclusive whether the adhesive tape in Item Q1 could have originated from the adhesive tape roll in Item K1. The adhesive tape in Item Q2 is in all probability the same type as the adhesive taperoll in Item K2. The adhesive tape in Item Q2 has in all probability originated from the adhesive taperoll in Item K2. The adhesive tape in Item Q3 is in all probability not the same type as the adhesive taperoll in Item K3.
JNYWP2	1. The adhesive tape in Item Q1 agreed with the adhesive tape originated from the adhesive tape roll represented by Item K1 with regard to the examined characteristics. No end of the adhesive tape in

TABLE 3

WebCode	Conclusions
	Item Q1 physically match with the end of the adhesive tape roll represented by Item K1. 2. The adhesive tape in Item Q2 agreed with the adhesive tape originated from the adhesive tape roll represented by Item K2 with regard to the examined characteristics. One end of the adhesive tape in Item Q2 physically match with the end of the adhesive tape roll represented by Item K2. 3. The adhesive tape in Item Q3 was different from the adhesive tape originated from the adhesive tape roll represented by Item K3. No end of the adhesive tape in Item Q3 physically match with the end of the adhesive tape roll represented by Item K3.
LNETE8	Request: Determine if the questioned material is associated with the submitted known sample material (consider physical fits). Examination: Samples Q1, Q2, Q3 and K1, K2, K3 were subjected to a visual examination. Samples Q1 and K1 were further examined with microscopy, FTIR, Raman and SEM-EDS. Result and conclusion: Q1: Based on visual, microscopic, FTIR, Raman and SEM-EDS examinations Q1 could not be differentiated from K1. Therefore Q1 could have come from K1 or any other source with similar physical and chemical characteristics. Q2: A unique physical fit was observed between K2 and Q2. Based on this unique physical fit, Q2 must have originated from K2. Q3: Based on visual examinations Q3 was differentiated from K3. Therefore, Q3 cannot have come from the same source as K3.
M9CQ7X	Item 1 (K1, Q1): Material Analysis: On further examination, the backing and adhesive material of item Q1 are consistent to that of item K1. The adhesive tape in item Q1 could have originated from the adhesive tape roll represented by item K1. Physical end match analysis: After examination of the physical ends of item Q1 and item K1, it was found that both ends of item Q1 did not physically fit the end of item K1 intended for physical end match analysis. Both ends of the adhesive tape item Q1 does not physically match with the adhesive tape roll represented by item K1. Item 2 (K2, Q2): Material Analysis: On further examination, the backing and adhesive material of item Q2 are consistent to that of item K2. The adhesive tape in Item Q2 could have originated from the adhesive tape roll represented by Item K2. Physical end match analysis: After examination of the physical ends of item Q2 and item K2, it was found that only one end of item Q2 physically fit the end of item K2 intended for physical end match analysis. Only one end of the adhesive tape item Q2 physically match with the adhesive tape roll represented by item K2. Item 3 (K3, Q3): Material Analysis: On further examination, the backing material of item Q3 is consistent to that of item K3. However, the adhesive material of item Q3 is inconsistent to that of item K3. Therefore, the adhesive tape in item Q3 could not have originated from the adhesive tape roll represented by item K3. Physical end match analysis: After examination of the physical ends of item Q3 and item K3, it was found that both ends of item Q3 did not physically fit the end of item K3 intended for physical end match analysis. Both ends of the adhesive tape Item Q3 does not physically match with the adhesive tape roll represented by item K3.
MR6MPD	Q1 could have originated from the roll of tape (as represented by K1) or from another roll of tape exhibiting all of the same analyzed characteristics. Q2 and K2 were at one time joined together. Q3 could not have originated from the roll of tape represented by K3.
QPBYKE	Q1 and Q2 of adhesive tape in Item 1 and Item 2 are originated from K1 and K2 series, respectively. According to test, chemical properties of two of tape are same IR spectrum and XRF signal. But, Q3 adhesive tape of chemical properties was different from K3 tape.
RCF9E2	The known (K1) and questioned (Q1) tape samples from case 1 were found to be indistinguishable in relation to colour, lustre, backing pattern, width, thickness, mass per unit area and chemical composition (backing and adhesive). Therefore these items may share a common origin. The known (K2) and questioned (Q2) tape samples from case 2 were found to physically match each other. Therefore these tape samples must share a common origin. The known (K3) and questioned (Q3) tape samples from case 3 were found to have different adhesive compositions and therefore these samples could not share a common origin.
UALYH6	Case 1: Both questioned and known sample exhibit the same macroskopic and material properties. Case 2: Both questioned and known sample exhibit the same macroskopic and material properties. The

TABLE 3

WebCode	Conclusions
	samples are connected via a physical match. Case 3: The material properties of the questioned sample and the known sample are different. The serration of the edges of the known sample is different from the serration of the edges of the questioned sample. A connection between both samples can not be established.
UUAMPC	Items Q1 and K1 have same relief, size and color, but their ends haven't physically match. It's impossible to determine is the Item Q1 from adhesive tape roll represented by Item K1. Items Q2 and K2 are from same adhesive tape roll, their ends are matching together. Items Q3 and K3 is not from same adhesive tape roll.
ZFBRU7	Item Q1 could have originated from the adhesive tape roll represented by Item K1. Item Q2 could have originated from the adhesive tape roll represented by Item K2. Item Q3 can not originated from the adhesive tape roll represented by Item K3, based on the results come from the microscopical, FTIR and XRF examinations.

Additional Comments

TABLE 4

WebCode	Additional Comments
M9CQ7X	Therefore, in my professional opinion; a) Item Q1 could have originated from the adhesive tape roll represented by item K1. However, both ends of the adhesive tape in item Q1 does not physically match with the adhesive tape roll represented by item K1. b) Item Q2 could have originated from the adhesive tape roll represented by item K2. Additionally, one end of the adhesive tape in item Q2 physically match with the adhesive tape roll represented by item K2. c) Item Q3 could not have originated from the adhesive tape roll represented by item K3. Additionally, both ends of the adhesive tape in item Q3 does not physically match with the adhesive tape roll represented by item K3.

-End of Report-
(Appendix may follow)

Collaborative Testing Services ~ Forensic Testing Program

Test No. 19-547: Adhesive Tape Analysis

DATA MUST BE SUBMITTED BY **June 10, 2019, 11:59 p.m.** TO BE INCLUDED IN THE REPORT

Participant Code: U1234A WebCode: 4X228J

The Accreditation Release section can be accessed by using the "Continue to Final Submission" button above. This information can be entered at any time prior to submitting to CTS.

Scenario:
Investigators have submitted adhesive tape material collected at three unrelated crime scenes for analysis.

Instructions:
A Hole Punch located at one end of the silicone release paper housing a known item indicates the end of tape which was removed from the roll and is not intended for physical end match analysis.

For each case, determine if the questioned material is associated with the submitted known sample material and if there is a physical end match between the known sample and the questioned item. Please indicate the method of analysis used to make determinations.

Items Submitted (Sample Pack TAPE):
Item 1- (K1, Q1): A known and a questioned sample from Case 1
Item 2- (K2, Q2): A known and a questioned sample from Case 2
Item 3- (K3, Q3): A known and a questioned sample from Case 3

Item 1:

1.1) Could the adhesive tape in Item Q1 have originated from the adhesive tape roll represented by Item K1?

○ Yes ○ No ○ Inconclusive

1.2) Does either end of the adhesive tape in Item Q1 physically match with the end of the adhesive tape roll represented by Item K1?

○ Yes ○ No ○ Inconclusive ○ N/A

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

Please check all that apply.

Microscopic Exams:	☐ Stereo	☐ Comparison
	☐ Polarized Light	
☐ Macroscopic Exam	☐ Fluorescence	☐ FTIR
☐ XRD	☐ XRS/XRF	☐ SEM/EDX
☐ LA-ICP-MS	☐ Pyrolysis GC	

Other (specify):

Item 2:

2.1) Could the adhesive tape in Item Q2 have originated from the adhesive tape roll represented by Item K2?

○ Yes ○ No ○ Inconclusive

2.2) Does either end of the adhesive tape in Item Q2 physically match with the end of the adhesive tape roll represented by Item K2?

○ Yes ○ No ○ Inconclusive ○ N/A

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

Please check all that apply.

Microscopic Exams:	☐ Stereo	☐ Comparison
	☐ Polarized Light	
☐ Macroscopic Exam	☐ Fluorescence	☐ FTIR
☐ XRD	☐ XRS/XRF	☐ SEM/EDX
☐ LA-ICP-MS	☐ Pyrolysis GC	

Other (specify):

Item 3:

3.1) Could the adhesive tape in Item Q3 have originated from the adhesive tape roll represented by Item K3?

○ Yes ○ No ○ Inconclusive

3.2) Does either end of the adhesive tape in Item Q3 physically match with the end of the adhesive tape roll represented by Item K3?

○ Yes ○ No ○ Inconclusive ○ N/A

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

Please check all that apply.

Microscopic Exams:	☐ Stereo	☐ Comparison
	☐ Polarized Light	
☐ Macroscopic Exam	☐ Fluorescence	☐ FTIR
☐ XRD	☐ XRS/XRF	☐ SEM/EDX
☐ LA-ICP-MS	☐ Pyrolysis GC	

Other (specify):

Please note: *Any additional formatting applied in the free form space below will not transfer to the Summary Report and may cause your information to be illegible. This includes additional spacing and returns that present your responses in lists and tabular formats.*

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

5.) Additional Comments

RELEASE OF DATA TO ACCREDITATION BODIES

The Accreditation Release is accessed by pressing the "Continue to Final Submission" button online and can be completed at any time prior to submission to CTS.

CTS submits external proficiency test data directly to ASCLD/LAB, ANAB, and/or A2LA. 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, ANAB, and/or A2LA. (Accreditation Release section below must be completed.)
○ This participant's data is **not** intended for submission to ASCLD/LAB, ANAB, and/or A2LA.

Have the laboratory's designated individual complete the following steps
only if your laboratory is accredited in this testing/calibration discipline
by one or more of the following Accreditation Bodies.

Step 1: Provide the applicable Accreditation Certificate Number(s) for your laboratory

ANAB Certificate No.
(Include ASCLD/LAB Certificate here)

A2LA Certificate No.

Step 2: Complete the Laboratory Identifying Information in its entirety

Authorized Contact Person and Title

Laboratory Name

Location (City/State)