



Adhesive Tape Analysis

Test No. 23-5471 Summary Report

Each sample set consisted of three pairs of known and questioned tape samples for comparison. Participants were requested to compare the items within each set and report their findings. Data were returned from 31 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 set consisted of three pairs of known and questioned adhesive tape samples for comparison (K1/Q1, K2/Q2, K3/Q3). Participants were requested to examine each pair of adhesive tape samples and determine if either 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 (Duck® black duct tape) and Q1 (T-Rex® black duct tape) were produced from two different rolls of duct tape and cut with the same pair of scissors.

Items K2 (Duck® general purpose clear packaging tape) and Q2 (Pen+Gear™ clear packaging tape) were produced from two different rolls and sheared from the same blade of one tape dispenser.

Items K3 and Q3 (Scotch® general purpose beige masking tape) were produced from the same roll and sheared from the blades of two different tape dispensers. The items were produced in a manner to eliminate the possibility of a physical end match.

All known and questioned items were affixed to silicone release paper, and then packed in their respective pre-labeled item envelopes.

SAMPLE SET ASSEMBLY: For each sample set, all three item pairs (K1/Q1, K2/Q2, and K3/Q3) were placed into a pre-labeled envelope and sealed. This process was repeated until all of the sample sets were prepared.

VERIFICATION: The predistribution laboratories reported the expected responses and used the following combined list of examination methods: Stereomicroscopy, Polarized Light Microscopy, Macroscopic Examination, Alternate Light Sources, FTIR, and SEM/EDX.

| Item | Color | Tape Type | Association | Physical End Match |
|---------|-------|--|-------------|--------------------|
| K1 & Q1 | Black | Duck® & T-Rex® duct tape | No | No |
| K2 & Q2 | Clear | Duck® general purpose & Pen+Gear™ packaging tape | No | No |
| K3 & Q3 | Beige | Scotch® general purpose masking tape | Yes | No |

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 adhesive tape samples, each containing one known item and one questioned item (K1/Q1, K2/Q2, K3/Q3). Participants were requested, using their laboratory procedures, 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. Items K1 and Q1 were produced from two different rolls of black colored duct tape of differing brands and cut with the same pair of scissors. Items K2 and Q2 were produced from two different rolls of clear colored packaging tape of differing brands and sheared from the same blade of one tape dispenser. Items K3 and Q3 were produced from the same roll of beige colored masking tape and sheared from the blades of two different tape dispensers. (Refer to Manufacturer's Information for preparation details.)

ITEMS K1 AND Q1: All 31 responding participants reported no association between the questioned tape sample (Q1) and the known tape sample (K1). In regard to the physical end match, all 10 participants that performed this comparison reported that Item Q1 did not exhibit a physical end match to Item K1.

ITEMS K2 AND Q2: All 31 responding participants reported no association between the questioned tape sample (Q2) and the known tape sample (K2). In regard to the physical end match, 19 participants performed this comparison and of those, 18 reported that Items Q2 and K2 did not exhibit a physical end match and the remaining participant reported "inconclusive."

ITEMS K3 AND Q3: Of the 31 responding participants, 29 reported an association between the questioned tape sample (Q3) and the known tape sample (K3). Of the remaining two participants, one reported that there was no association between Items Q3 and K3 and the remaining participant reported "inconclusive." In regard to the physical end match, 30 participants performed this comparison and of those, 28 reported that Item Q3 and Item K3 did not exhibit a physical end match, one reported that Items Q3 and K3 did exhibit a physical end match, and the remaining participant reported "inconclusive."

The most commonly reported examination methods included: Stereomicroscopy, Macroscopic Examination, and FTIR.

Examination Results

For each set of items, is the questioned tape 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 | | | | | | | |
|----------------------------|--------------------------------------|------------------|---------------------|----------------|--------------------------------------|------------------|---------------------|
| <u>WebCode</u> | <u>Physical End Match Comparison</u> | | | <u>WebCode</u> | <u>Physical End Match Comparison</u> | | |
| | <u>Association</u> | <u>Performed</u> | <u>End Match ID</u> | | <u>Association</u> | <u>Performed</u> | <u>End Match ID</u> |
| 3QLCCZ | No | Yes | No | ML24E2 | No | No | |
| 3YYDFE | No | Yes | No | PEW8JU | No | No | |
| 4PPA6B | No | No | | PJJ2CL | No | Yes | No |
| 6CUE88 | No | No | | QZ8EQD | No | No | |
| 8NJ38Y | No | No | | RFJC9J | No | No | |
| AR8L2T | No | Yes | No | RL4M4Y | No | Yes | No |
| AVT4NK | No | No | | RNCKTA | No | No | |
| B2UZMB | No | Yes | No | T3TXQ2 | No | No | |
| BAN6FC | No | No | | VJ898K | No | Yes | No |
| DM8A3Y | No | No | | VUNX7Q | No | No | |
| HHFV37 | No | No | | VZVJUM | No | Yes | No |
| HK483B | No | Yes | No | W7UCJ9 | No | No | |
| J6AZJ4 | No | Yes | No | WBQWRY | No | N/A | |
| JLA8DV | No | N/A | | XJF6PU | No | No | |
| KU4C8W | No | No | | Y9FUWD | No | No | |
| LCFQTK | No | No | | | | | |

| K1 & Q1 - Summary Response | | Physical End Match Comparison | | Participants: 31 |
|---------------------------------------|--------------------|--------------------------------------|---------------------|------------------------------|
| <u>Association</u> | | <u>Performed</u> | <u>End Match ID</u> | |
| Yes | 0 (0.0%) | Yes | 10 (32.3%) | Yes 0 (0.0%) |
| No | 31 (100.0%) | No | 19 (61.3%) | No 10 (100.0%) |
| Inc | 0 (0.0%) | N/A | 2 (6.5%) | Inc 0 (0.0%) |
| No Response | 0 (0.0%) | No Response | 0 (0.0%) | |

TABLE 1 - K2 and Q2

| <u>Physical End Match Comparison</u> | | | | <u>Physical End Match Comparison</u> | | | |
|--------------------------------------|--------------------|------------------|---------------------|--------------------------------------|--------------------|------------------|---------------------|
| <u>WebCode</u> | <u>Association</u> | <u>Performed</u> | <u>End Match ID</u> | <u>WebCode</u> | <u>Association</u> | <u>Performed</u> | <u>End Match ID</u> |
| 3QLCCZ | No | Yes | No | PEW8JU | No | Yes | No |
| 3YYDFE | No | Yes | No | PJJ2CL | No | Yes | Inc |
| 4PPA6B | No | Yes | No | QZ8EQD | No | No | |
| 6CUE88 | No | Yes | No | RFJC9J | No | No | |
| 8NJ38Y | No | Yes | No | RL4M4Y | No | Yes | No |
| AR8L2T | No | No | | RNCKTA | No | Yes | No |
| AVT4NK | No | No | | T3TXQ2 | No | No | |
| B2UZMB | No | Yes | No | VJ898K | No | Yes | No |
| BAN6FC | No | Yes | No | VUNX7Q | No | Yes | No |
| DM8A3Y | No | Yes | No | VZVJUM | No | Yes | No |
| HHFV37 | No | No | | W7UCJ9 | No | No | |
| HK483B | No | Yes | No | WBQWRY | No | N/A | |
| J6AZJ4 | No | Yes | No | XJF6PU | No | No | |
| JLA8DV | No | N/A | | Y9FUWD | No | Yes | No |
| KU4C8W | No | No | | | | | |
| LCFQTK | No | No | | | | | |
| ML24E2 | No | Yes | No | | | | |

| K2 & Q2 - Summary Response | | Physical End Match Comparison | | Participants: 31 | |
|---------------------------------------|--------------------|--------------------------------------|---------------------|-------------------------|-------------------|
| <u>Association</u> | | <u>Performed</u> | <u>End Match ID</u> | | |
| Yes | 0 (0.0%) | Yes | 19 (61.3%) | Yes | 0 (0.0%) |
| No | 31 (100.0%) | No | 10 (32.3%) | No | 18 (94.7%) |
| Inc | 0 (0.0%) | N/A | 2 (6.5%) | Inc | 1 (5.3%) |
| No Response | 0 (0.0%) | No Response | 0 (0.0%) | | |

TABLE 1 - K3 and Q3

| <u>Physical End Match Comparison</u> | | | | <u>Physical End Match Comparison</u> | | | |
|--------------------------------------|--------------------|------------------|---------------------|--------------------------------------|--------------------|------------------|---------------------|
| <u>WebCode</u> | <u>Association</u> | <u>Performed</u> | <u>End Match ID</u> | <u>WebCode</u> | <u>Association</u> | <u>Performed</u> | <u>End Match ID</u> |
| 3QLCCZ | Yes | Yes | No | PEW8JU | Yes | Yes | No |
| 3YYDFE | Yes | Yes | No | PJJ2CL | Yes | Yes | Inc |
| 4PPA6B | Yes | Yes | No | QZ8EQD | Yes | Yes | Yes |
| 6CUE88 | Yes | Yes | No | RFJC9J | Yes | Yes | No |
| 8NJ38Y | Yes | Yes | No | RL4M4Y | Yes | Yes | No |
| AR8L2T | Yes | Yes | No | RNCKTA | Yes | Yes | No |
| AVT4NK | No | Yes | No | T3TXQ2 | Yes | Yes | No |
| B2UZMB | Yes | Yes | No | VJ898K | Yes | Yes | No |
| BAN6FC | Yes | Yes | No | VUNX7Q | Yes | Yes | No |
| DM8A3Y | Yes | Yes | No | VZVJUM | Yes | Yes | No |
| HHFV37 | Yes | Yes | No | W7UCJ9 | Inc | Yes | No |
| HK483B | Yes | Yes | No | WBQWRY | Yes | Yes | No |
| J6AZJ4 | Yes | Yes | No | XJF6PU | Yes | Yes | No |
| JLA8DV | Yes | Yes | No | Y9FUWD | Yes | Yes | No |
| KU4C8W | Yes | Yes | No | | | | |
| LCFQTK | Yes | No | | | | | |
| ML24E2 | Yes | Yes | No | | | | |

| K3 & Q3 - Summary Response | | Physical End Match Comparison | | Participants: 31 |
|---------------------------------------|--|--------------------------------------|----------------------|-------------------------|
| <u>Association</u> | | <u>Performed</u> | <u>End Match ID</u> | |
| Yes 29 (93.5%) | | Yes 30 (96.8%) | Yes 1 (3.3%) | |
| No 1 (3.2%) | | No 1 (3.2%) | No 28 (93.3%) | |
| Inc 1 (3.2%) | | N/A 0 (0.0%) | Inc 1 (3.3%) | |
| No Response 0 (0.0%) | | No Response 0 (0.0%) | | |

Examination Methods

TABLE 2 - K1 and Q1

| WebCode | Stereo Microscope | Polarized Light | Comparison | Macroscopic Exam | Fluorescence | FTIR | XRD | XRS/XRF | SEM/EDX | Pyrolysis GC | Other |
|---------|-------------------|-----------------|------------|------------------|--------------|------|-----|---------|---------|--------------|--------------------|
| 3QLCCZ | ✓ | | ✓ | | ✓ | | | | | | Toolscan |
| 3YYDF | ✓ | | ✓ | | | | | | | | |
| 4PPA6B | ✓ | | ✓ | | | | | | | | |
| 6CUE88 | ✓ | | ✓ | | | | | | | | |
| 8NJ38Y | ✓ | | ✓ | | | | | | | | |
| AR8L2T | ✓ | | ✓ | | ✓ | | | | | | |
| AVT4NK | ✓ | | ✓ | | | | | | | | |
| B2UZMB | ✓ | ✓ | ✓ | | ✓ | | | | | | |
| BAN6FC | ✓ | | ✓ | | | | | | | | |
| DM8A3Y | ✓ | | ✓ | ✓ | | | | | | | |
| HHFV37 | | | ✓ | | | | | | | | |
| HK483B | ✓ | ✓ | ✓ | | ✓ | | | | | | |
| J6AZJ4 | ✓ | ✓ | ✓ | | ✓ | | | | | | |
| JLA8DV | | | ✓ | | | | | | | | UV light |
| KU4C8W | ✓ | | ✓ | | | | | | | | |
| LCFQTK | ✓ | | | | | | | | | | |
| ML24E2 | ✓ | | ✓ | | | | | | | | |
| PEW8JU | ✓ | | ✓ | | | | | | | | Width measurements |
| PJJ2CL | | | ✓ | | | | | | | | |
| QZ8EQD | ✓ | | ✓ | ✓ | ✓ | | | | | | |
| RFJC9J | ✓ | | ✓ | | | | | | | | |
| RL4M4Y | ✓ | ✓ | | | ✓ | | | | | | |
| RNCKTA | ✓ | | ✓ | | | | | | | | width measurement |

TABLE 2 - K1 and Q1 - Examination Methods

| WebCode | Stereo Microscope | Polarized Light | Comparison | Macroscopic Exam | Fluorescence | FTIR | XRD | XRS/XRF | SEM/EDX | Pyrolysis GC | Other |
|---------|-------------------|-----------------|------------|------------------|--------------|------|-----|---------|---------|--------------|-----------------------|
| T3TXQ2 | ✓ | | ✓ | ✓ | | | | | | | |
| VJ898K | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | |
| VUNX7Q | ✓ | | ✓ | ✓ | | | | | | | |
| VZVJUM | ✓ | | | ✓ | | | | | | | |
| W7UCJ9 | ✓ | | | | | | | | | | |
| WBQWRY | ✓ | | ✓ | ✓ | ✓ | ✓ | | | | | Thickness measurement |
| XJF6PU | ✓ | | | ✓ | | | | | | | |
| Y9FUWD | ✓ | | | ✓ | | ✓ | | | | | |

| K1 & Q1 - Exam Methods Response Summary | | | | | | | | | | | Participants: 31 |
|---|-------------------|-----------------|------------|------------------|--------------|------|-----|---------|---------|--------------|------------------|
| | Stereo Microscope | Polarized Light | Comparison | Macroscopic Exam | Fluorescence | FTIR | XRD | XRS/XRF | SEM/EDX | Pyrolysis GC | |
| Participants | 28 | 3 | 8 | 27 | 3 | 10 | 0 | 0 | 0 | 0 | |
| Percent | 90% | 10% | 26% | 87% | 10% | 32% | 0% | 0% | 0% | 0% | |

TABLE 2 - K2 and Q2 - Examination Methods

| WebCode | Stereo Microscope | Polarized Light | Comparison | Macroscopic Exam | Fluorescence | FTIR | XRD | XRS/XRF | SEM/EDX | Pyrolysis GC | Other |
|---------|-------------------|-----------------|------------|------------------|--------------|------|-----|---------|---------|--------------|--|
| 3QLCCZ | ✓ | | | ✓ | | ✓ | | | | | Toolscan |
| 3YYDFE | ✓ | | | ✓ | ✓ | | | | | | |
| 4PPA6B | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | |
| 6CUE88 | ✓ | | | ✓ | | ✓ | | | | | |
| 8NJ38Y | ✓ | ✓ | | ✓ | | ✓ | | | | | |
| AR8L2T | ✓ | | | ✓ | | ✓ | | ✓ | | | |
| AVT4NK | ✓ | | | ✓ | | | | | | | |
| B2UZMB | ✓ | ✓ | ✓ | | | ✓ | | | | | |
| BAN6FC | ✓ | | | ✓ | | ✓ | | | | | |
| DM8A3Y | ✓ | ✓ | ✓ | ✓ | | ✓ | | | | | GC-MS (plasticisers), tape width, weight per unit area of tape backing, diameter of tape backing |
| HHFV37 | ✓ | | | ✓ | | ✓ | | | | | |
| HK483B | ✓ | | ✓ | ✓ | | ✓ | | | | | |
| J6AZJ4 | ✓ | | ✓ | ✓ | | ✓ | | | | | |
| JLA8DV | | | | ✓ | | | | | | | UV light |
| KU4C8W | ✓ | ✓ | | ✓ | | | | | | | |
| LCFQTK | ✓ | | | | | ✓ | | | | | |
| ML24E2 | ✓ | ✓ | | ✓ | | | | | | | |
| PEW8JU | ✓ | | | ✓ | | ✓ | | | | | Width Measurements |
| PJJ2CL | | | | ✓ | | ✓ | | | | | |
| QZ8EQD | ✓ | | | ✓ | ✓ | ✓ | | | | | |
| RFJC9J | ✓ | ✓ | | ✓ | | ✓ | | | | | |
| RL4M4Y | ✓ | ✓ | | | | ✓ | | | | | |
| RNCKTA | ✓ | | | ✓ | | | | | | | Width measurement and cross polarisation |

TABLE 2 - K2 and Q2 - Examination Methods

| WebCode | Stereo Microscope | Polarized Light | Comparison | Macroscopic Exam | Fluorescence | FTIR | XRD | XRS/XRF | SEM/EDX | Pyrolysis GC | Other |
|---------|-------------------|-----------------|------------|------------------|--------------|------|-----|---------|---------|--------------|-----------------------|
| T3TXQ2 | ✓ | ✓ | | ✓ | | | | | | | |
| VJ898K | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | |
| VUNX7Q | ✓ | | ✓ | ✓ | | ✓ | | | | | |
| VZVJUM | ✓ | ✓ | | ✓ | ✓ | | | | | | |
| W7UCJ9 | ✓ | | | | | | | | | | |
| WBQWRY | ✓ | | ✓ | ✓ | ✓ | ✓ | | | | | Thickness measurement |
| XJF6PU | ✓ | | | ✓ | ✓ | ✓ | | | | | |
| Y9FUWD | ✓ | | | ✓ | | ✓ | | | | | |

| K2 & Q2 - Exam Methods Response Summary | | | | | | | | | | | Participants: 31 |
|---|-------------------|-----------------|------------|------------------|--------------|------|-----|---------|---------|--------------|------------------|
| | Stereo Microscope | Polarized Light | Comparison | Macroscopic Exam | Fluorescence | FTIR | XRD | XRS/XRF | SEM/EDX | Pyrolysis GC | |
| Participants | 29 | 11 | 8 | 27 | 7 | 22 | 0 | 1 | 0 | 0 | |
| Percent | 94% | 35% | 26% | 87% | 23% | 71% | 0% | 3% | 0% | 0% | |

TABLE 2 - K3 and Q3 - Examination Methods

| WebCode | Stereo Microscope | Polarized Light | Comparison | Macroscopic Exam | Fluorescence | FTIR | XRD | XRS/XRF | SEM/EDX | Pyrolysis GC | Other |
|---------|-------------------|-----------------|------------|------------------|--------------|------|-----|---------|---------|--------------|--|
| 3QLCCZ | ✓ | | | ✓ | | ✓ | | | | | Toolscan |
| 3YYDFE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | | | |
| 4PPA6B | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ | | |
| 6CUE88 | ✓ | | | ✓ | | ✓ | | | ✓ | | |
| 8NJ38Y | ✓ | | | ✓ | | ✓ | | | | | |
| AR8L2T | ✓ | | | ✓ | ✓ | ✓ | | ✓ | | | Raman |
| AVT4NK | ✓ | | | ✓ | | ✓ | | | | | |
| B2UZMB | ✓ | ✓ | ✓ | | | ✓ | | | | | |
| BAN6FC | ✓ | | | ✓ | ✓ | ✓ | | | | | |
| DM8A3Y | ✓ | | ✓ | ✓ | | ✓ | | | | | GC-MS (plasticisers), tape width, weight per unit area of tape backing, diameter of tape backing |
| HHFV37 | ✓ | | | ✓ | | ✓ | | | | | PGC/MS |
| HK483B | ✓ | | ✓ | ✓ | | ✓ | | | | | |
| J6AZJ4 | ✓ | | ✓ | ✓ | | ✓ | | | | | |
| JLA8DV | | | | ✓ | | ✓ | | | ✓ | | UV light |
| KU4C8W | ✓ | | | ✓ | ✓ | ✓ | | | ✓ | | Physical Characteristics - Thickness and width |
| LCFQTK | ✓ | | | | | ✓ | | | | ✓ | |
| ML24E2 | ✓ | ✓ | | ✓ | | ✓ | | | ✓ | | |
| PEW8JU | ✓ | | | ✓ | ✓ | ✓ | | | ✓ | | Width Measurement, thickness measurements, fluorescence Emission Spectroscopy |
| PJJ2CL | | | | ✓ | | ✓ | | | | | |
| QZ8EQD | ✓ | | | ✓ | ✓ | ✓ | | | | | |
| RFJC9J | ✓ | ✓ | | ✓ | ✓ | ✓ | | | ✓ | | Raman-Spectroscopy |
| RL4M4Y | ✓ | ✓ | | | | ✓ | | | | ✓ | |

TABLE 2 - K3 and Q3 - Examination Methods

| WebCode | Stereo Microscope | Polarized Light | Comparison | Macroscopic Exam | Fluorescence | FTIR | XRD | XRS/XRF | SEM/EDX | Pyrolysis GC | Other |
|---------|-------------------|-----------------|------------|------------------|--------------|------|-----|---------|---------|--------------|-------------------------------|
| RNCKTA | ✓ | | | ✓ | ✓ | ✓ | | | | | width measurement, MSP, Raman |
| T3TXQ2 | ✓ | | ✓ | ✓ | | ✓ | | | ✓ | | Raman |
| VJ898K | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | Raman microscopy |
| VUNX7Q | ✓ | | ✓ | ✓ | | ✓ | | | | | |
| VZVJUM | ✓ | ✓ | | ✓ | ✓ | ✓ | | ✓ | | | |
| W7UCJ9 | ✓ | | | | | | | | | | |
| WBQWRY | ✓ | | ✓ | ✓ | ✓ | ✓ | | | | | Thickness measurement |
| XJF6PU | ✓ | | | ✓ | | ✓ | | | ✓ | | |
| Y9FUWD | ✓ | | | ✓ | | ✓ | | | | | |

| K3 & Q3 - Exam Methods Response Summary | | | | | | | | | | | Participants: 31 |
|---|-------------------|-----------------|------------|------------------|--------------|------|-----|---------|---------|--------------|------------------|
| | Stereo Microscope | Polarized Light | Comparison | Macroscopic Exam | Fluorescence | FTIR | XRD | XRS/XRF | SEM/EDX | Pyrolysis GC | |
| Participants | 29 | 8 | 10 | 27 | 12 | 30 | 0 | 3 | 9 | 2 | |
| Percent | 94% | 26% | 32% | 87% | 39% | 97% | 0% | 10% | 29% | 6% | |

Conclusions

TABLE 3

| WebCode | Conclusions |
|---------|---|
| 3QLCCZ | <p>(1) The questioned adhesive tape in Item Q1 was found to be consistent in backing colour, UV light, scrim pattern and chemical composition of backing to those of the known adhesive tape originated from the adhesive tape roll represented by Item K1. However, it was found that the width, thickness, adhesive colour, backing surface texture, scrim count and chemical composition of adhesive in questioned Item Q1 was inconsistent to those of the known adhesive tape Item K1. Neither one end of the adhesive tape in Item Q1 physically matches with the end of the adhesive tape roll represented by Item K1. (2) The questioned adhesive tape in Item Q2 was found to be consistent in width, backing surface texture, backing and adhesive colour, UV light and chemical composition of adhesive to those of the known adhesive tape originated from the adhesive tape roll represented by Item K2. However, it was found that the thickness and chemical composition of backing in questioned Item Q2 was inconsistent to those of the known adhesive tape Item K2. Neither one end of the adhesive tape in Item Q2 physically matches with the end of the adhesive tape roll represented by Item K2. (3) The questioned adhesive tape in Item Q3 was found to be consistent in width, thickness, backing surface texture, backing and adhesive colour, UV light and chemical composition of backing and adhesive to those of the known adhesive tape originated from the adhesive tape roll represented by Item K3. Neither one end of the adhesive tape in Item Q3 physically matches with the end of the adhesive tape roll represented by Item K3. Based on the above findings, in my professional opinion, (i) the adhesive tape in Items Q1 and Q2 could not have originated from the adhesive roll represented by Items K1 and K2, respectively. (ii) the adhesive tape in Item Q3 could have originated from the adhesive roll represented by Item K3.</p> |
| 3YYDF | <p>Comparative examinations of Exhibits 1.1 (known) and 1.2 (questioned) disclosed them to be inconsistent in their physical characteristics. As a result of these findings, Exhibit 1.2 could not have originated from the same source as Exhibit 1.1. Comparative examinations of Exhibits 2.1 (known) and 2.2 (questioned) disclosed them to be inconsistent in their physical characteristics. As a result of these findings, Exhibit 2.2 could not have originated from the same source as Exhibit 2.1. Exhibits 3.1 (known) and 3.2 (questioned) were not once physically connected at the ends. This does not imply whether the compared items originated from the same source or from different sources. Further comparative examinations of Exhibits 3.1 and 3.2 disclosed them to be consistent in their physical, chemical, and elemental characteristics. As a result of these findings, Exhibit 3.2 could have originated from Exhibit 3.1, or another source with the same characteristics. A tape association is not a means of positive identification and the number of possible tape sources for a specific tape is unknown.</p> |
| 4PPA6B | <p>The questioned tape Q1 was physically different from the known tape K1. Therefore the questioned tape Q1 cannot be associated with tape K1. The questioned tape Q2 was chemically different from the known tape K2. Therefore the questioned tape Q2 cannot be associated with tape K2. The questioned tape Q3 was similar in colour, layer sequence and chemical composition to the known tape K3. Therefore tape Q3 could be associated with tape K3, or another type of tape displaying the same physical and chemical properties.</p> |
| 6CUE88 | <p>Pair 1 K1/Q1: Item K1 comprised a length of scrim-reinforced, black tape with a clear adhesive. Item Q1 comprised a length of scrim-reinforced black tape with white adhesive. Item Q1 differed from K1 in width, scrim-dimensions and overall appearance. These results exclude Q1 as having originated from the roll of tape represented by K1. Pair K2/Q2: Item K2 comprised a length of clear adhesive tape. Item Q1 comprised a length of clear adhesive tape. No physical fit was established between Q2 and K2. Item Q2 corresponded in width but differed from K2 with the presence of a silicone-based release coat and slight differences in composition of the adhesive layer. These results do not support the proposition that Q2 originated from the roll of tape represented by K2. Pair K3/Q3: Item K3 comprised a length of beige masking tape. Item Q3 comprised a length of beige masking tape. No physical fit was established between Q3 and K3. Item Q3 corresponded in width, visual colour, appearance and composition to item K3. These results support the proposition that Q3 originated from the roll of tape represented by K3, or another indistinguishable roll. The frequency of tape from manufacturers indistinguishable from Item K3 is unknown.</p> |
| 8NJ38Y | <p>The source of K1 is excluded as a possible source of Q1, based on class characteristics including</p> |

TABLE 3

| WebCode | Conclusions |
|---------|--|
| | <p>physical properties. A physical fit was not achieved between K2 and Q2. The source of K2 is excluded as a possible source of Q2, based on class characteristics including optical and chemical properties. A physical fit was not achieved between K3 and Q3. The source of K3 is included as a possible source of Q3, based on class characteristics including physical and chemical properties. For another adhesive tape to be considered as a possible source of Q3, it would have to display the same physical and chemical properties. Note: adhesive tape is mass produced.</p> |
| AR8L2T | <p>K 1 tape and Q 1 tape have different morphological appearance (width, thickness, colour of glue, different mesh). The glues of both samples have different FTIR as well. K 2 tape and Q 2 tape have slightly different FTIR spectrum of glue. The glues of both samples have different elemental composition according to μXRF analysis. K 3 tape and Q 3 tape have the same FTIR spectrum of backing layers and glue layers. The layers of both samples have the same elemental composition according to μXRF analysis. General morphological appearance of both samples is similar, but both ends of sample Q 3 do not match with the end of sample K 3.</p> |
| AVT4NK | <p>Differences in class characteristics were observed between Q1 and K1. Based on these differences, Q1 was excluded as having the same source as K1. No physical fit examination was performed due to sufficient differences in class characteristics. Differences in class characteristics were observed between Q2 and K2. Based on these differences, Q2 was excluded as having the same source as K2. No physical fit examination was performed due to sufficient differences in class characteristics. A correspondence in class characteristics (dimensions, surface texture, color) and chemical composition (backing and adhesive) was observed between Q3 and K3. However, differences in teeth marks were observed between these two items which exclude the segment from Q3 as originating from the segment from K3. Additionally, no physical fit was observed between Q3 and K3. Additional information is required for a more thorough examination that could either support or refute a common source determination. Example: both items may have originated from the same roll due to similarities in class characteristics (association), but two different cutting tools were used to make the segments (exclusion).</p> |
| B2UZMB | <p>K1, Q1: Both tapes were rubber tapes, which have different adhesive layers, same backing materials and different widths. The width of the questioned tape Q1 was 48,5 mm and the width of the known tape K1 was 46.5 mm. There was no physical match with the end of the adhesive tape roll. The questioned tape Q1 could not have originated from the tape roll K1. K2, Q2: Both tapes were adhesive tapes, they have different adhesive layers and there were no differences in backing materials. The widths were equal to 48 mm. There was no physical match with the end of the adhesive tape roll. So the questioned tape Q2 could not have originated from the tape roll K2. K3, Q3: Both tapes were adhesive tapes, there were no differences neither in adhesive layers nor in backing materials. The widths were equal to 24.5 mm. There was no physical match with the end of the adhesive tape roll. So the questioned tape Q3 could probably have originated from the tape roll K3.</p> |
| BAN6FC | <p>The submitted sample K1 was examined and compared to the submitted sample Q1 using stereomicroscopy. The physical properties revealed discriminating differences between Q1 and K1. Thus, Q1 could not have come from the source as represented by the examined sample in K1. The fractured edges of the submitted sample Q2 were compared to the fractured edge of the submitted sample K2 for physical match. The fractured edges of Q2 do not fit uniquely to the fractured edge of K2; therefore, no physical match was established. Additionally, K2 was examined and compared to Q2 using stereomicroscopy and fourier transform infrared spectroscopy (FTIR). The FTIR results revealed discriminating differences between Q2 and K2. Thus, Q2 could not have come from the source as represented by the examined sample in K2. The fractured edges of the submitted sample Q3 were compared to the fractured edge of the submitted sample K3 for physical match. The fractured edges of Q3 do not fit uniquely to the fractured edge of K3; therefore, no physical match was established. Additionally, K3 was examined and compared to Q3 using stereomicroscopy, an alternate light source and fourier transform infrared spectroscopy (FTIR). Q3 and K3 are consistent in appearance, width, fluorescent properties, and chemical properties. Thus, Q3 could have come from the source as represented by the examined sample in K3 or another source of tape exhibiting the same analyzed characteristics.</p> |
| DM8A3Y | <p>On the basis of the examinations and testing conducted, I have formed the following opinions: The known length of tape in item K1 could not be a source of the length of questioned tape in item Q1.</p> |

TABLE 3

| WebCode | Conclusions |
|---------|---|
| | The known length of tape in item K2 could not be a source of the length of questioned tape in item Q2. I am unable to exclude the proposition that the known length of tape in item K3 could be a source of the questioned length of tape in item Q3. I am also unable to exclude the proposition that another roll of tape similar to that found in item K3 could also be a source of the questioned length of tape found in item Q3. |
| HHFV37 | Items K1 and Q1 have different appearance and width and, therefore, Item Q1 could not have come from the source represented by Item K1. Items K2 and Q2 have different number of layers and different chemical composition of adhesive layer and, therefore, Item Q2 could not have come from the source represented by Item K2. Items K3 and Q3 are consistent in color, appearance, and chemical composition. No physical fit was established for Items K3 and Q3. Therefore, the masking tape, Item K3, and the masking tape, Item Q3, originated from the same roll or from different rolls having the same analyzed characteristics. |
| HK483B | The tape Q1 doesn't originate from K1. The tape Q2 doesn't originate from K2. The tape Q3 could originate from K3. However the ends of Q3 and K3 don't match. |
| J6AZJ4 | Case 1: The morphology and the width of K1 and Q1 isn't the same. There isn't a physical end match between samples K1 and Q1. The composition of the backing of both tapes are indistinguishable with the techniques employed, but there are differences in the composition of the adhesive. According to these results, K1 and Q1 have different origins. Case 2: The morphology and the width of K2 and Q2 is the same. There isn't a physical end match between samples K2 and Q2. The composition of the backing of both tapes are indistinguishable with the techniques employed, but there are differences in the composition of the adhesive. According to these results, K2 and Q2 have different origins. Case 3: The morphology and the width of K3 and Q3 is the same. There is not a physical end match between samples K3 and Q3. The composition of the adhesive and backing of both tapes are indistinguishable with the techniques employed. Therefore, K3 and Q3 could have the same origin. |
| JLA8DV | Items 1-3 were examined visually with both UV and LED light sources. Item 3 was also analyzed instrumentally by Fourier Transform Infrared Spectrometry and Scanning Electron Microscopy Energy Dispersive Spectroscopy. Items 1A and 1B were visually different; therefore, do not share a common origin. Items 2A and 2B were visually different under UV light; therefore, do not share a common origin. Item 3B was visually and instrumentally consistent with Item 3A. This indicates the questioned tape (3B) and the known tape (3A) could share a common origin. Questioned tape 3B could also have originated from additional sources that are indistinguishable in all assessed examinations and analyses. No physical match exists between Items 3A and 3B. No statistical or numerical probabilities can be applied to the conclusions of this report. |
| KU4C8W | Item Q1 and K1 are sections of black duct tape. Item Q1 exhibits different physical characteristics in comparison to K1 including a different color adhesive and different calendaring marks. Item Q1 could not have originated from the same source as K1. Item Q2 and K2 are sections of clear, colorless packaging tape. Item Q2 exhibits different physical characteristics in comparison to K2 including a different color under crossed polars. Item Q2 could not have originated from the same source as K2. Item Q3 and K3 are sections of off-white masking tape. The ends of the masking tape from Q3 were examined to see if any of them could share a physical end match to K3. The ends from Item Q3 do not exhibit a physical end match to Item K3. The masking tape from Q3 is similar in color, construction, physical characteristics and chemistry in comparison to the masking tape from Item K3. The masking tape from Item Q3 could share a common origin with Item K3, or any other roll of masking tape with similar color, construction, physical characteristics, and chemistry. |
| LCFQTK | 1. K1 vs Q1: Not matched 2. K2 vs Q2: Not matched 3. K3 vs Q3: matched |
| ML24E2 | 1.1: Q1 could not have originated from the same source as 1.2, as represented by the submitted K1 sample. 1.3: Q2 could not have originated from the same source as 1.4, as represented by the submitted K2 sample. The questioned sample Q3 (1.5) could have originated from the same source as K3 (1.6) (as represented by submitted exemplar) or from another source of tape exhibiting all of the same analyzed/measured characteristics. |
| PEW8JU | Tape piece 'K1' was constructed with a black, semi-gloss backing, with a colourless, transparent, |

TABLE 3

| WebCode | Conclusions |
|---------|--|
| | <p>adhesive and embedded woven, colourless fibres. This tape piece had a width of approximately 47.1mm. Tape piece 'Q1' was constructed with a black, semi-gloss backing, with a white, translucent, adhesive and embedded woven fibres. The embedded woven fibres in this tape piece were a tighter weave than those present in the tape piece 'K1'. This tape piece had a width of approximately 49.2mm. The tape pieces 'K1' and 'Q1' were distinguishable with respect to their widths, appearance and construction. In my opinion, tape piece 'Q1' could not have originated from the same source as tape piece 'K1'. Tape pieces 'K2' and 'Q2' were both constructed with colourless, transparent, semi-gloss backings with colourless adhesives. Both tape pieces also had widths of approximately 48.1mm. Both ends of the two tape pieces appeared serrated as though they were cut with a tape dispenser. No physical fits were established between the ends of these tape pieces however, the appearance and size of the serrations on both tape pieces indicate these ends could have been cut with the same or similar dispenser. The chemical composition of the respective backings and adhesives of tape piece 'K2' and 'Q2' were distinguishable. In my opinion, tape piece 'Q2' could not have originated from the same source as tape piece 'K2'. Tape pieces 'K3' and 'Q3' were both constructed with off-white, paper-based backings with white adhesives. Both tape pieces had widths of approximately 24.5-24.6mm. Tape piece 'K3' had one straight end and one end which appeared serrated as though it had been cut with a tape dispenser. Both ends of tape piece 'Q3' appeared serrated as though they had both been cut with a tape dispenser. No physical fits were established between the ends of these tape pieces however, the appearance and size of the serrations on both tape pieces indicate the ends of tape pieces 'K3' and 'Q3' are likely to have been cut with different dispensers. Tape pieces 'K3' and 'Q3' were indistinguishable with respect to their appearances, widths, thicknesses, fluorescent properties, chemical, and elemental compositions. In my opinion, tape piece 'Q3' could have originated from the same source as tape piece 'K3' or another roll of the same manufacture.</p> |
| PJJ2CL | <p>From the results of the different studies made we can say that: Item K1 and Q1 don't have the same origin. Item K2 and Q2 don't have the same origin. Item K3 and Q3 may have the same origin.</p> |
| QZ8EQD | <p>item K1 and item Q1 are different in chemical composition. item K2 and item Q2 are different in chemical composition. item K3 and item Q3 are similar in chemical composition, constitute a physical match and at one time formed a single object.</p> |
| RFJC9J | <p>1. The adhesive tape in item Q1 was different from the adhesive tape represented by item K1. 2. The adhesive tape in item Q2 was different from the adhesive tape represented by item K2. 3. The adhesive tape in item Q3 agreed with the adhesive tape in item K3 with regard to the properties examined. So it is possible that the adhesive tape Q3 originated from the adhesive tape represented by item K3. But no end of the adhesive tape in item Q3 physically match with the end of the adhesive tape represented by item K3.</p> |
| RL4M4Y | <p>K1/Q1: In the spectra obtained from the elements that make up the K1 and Q1 samples, the following was found: The base of the two samples present similarity between the infrared spectra while the adhesive of the two samples presents differences between the infrared spectra. K2/Q2: In the spectra obtained from the elements that make up samples K2 and Q2, the following was found: The base of the two samples present spectral differences while the glue of the two samples presents similarity between their infrared spectra. K3/Q3: In the spectra obtained from the elements that make up samples K3 and Q3, the following was found: The base and the glue present similarity between their infrared spectra.</p> |
| RNCKTA | <p>The adhesive tapes Q3 and K3 are optically and analytically indistinguishable. With regard to the above-mentioned findings and results as well as the current state of knowledge, our findings provide moderate support to the hypothesis that the adhesive tape (Item Q3) originate from the adhesive tape of Item K3. The strength of the evidence is measured against the counter-hypothesis that the adhesive tape (Item Q3) originate from another, unknown source. In case of new information, the traces should be re-evaluated.</p> |
| T3TXQ2 | <p>1) Based on exclusionary differences in colour of adhesive and surface texture, the strip of tape marked "Q1" did not originate from the roll of tape marked "K1". 2) Based on exclusionary differences in polarising patterns, the strip of tape marked "Q2" did not originate from the roll of tape marked "K2". 3) The strip of tape marked "Q3" could have originated from the roll of tape marked "K3", or other</p> |

TABLE 3

| WebCode | Conclusions |
|---------|--|
| | rolls of tape with similar characteristics. |
| VJ898K | <p>Tape material analysis: Case 1: Items K1 and Q1 are both duct tapes with a clear surface backing layer and a black lower backing layer and a clear adhesive layer. The width of tape in item K1 is 47 mm and that of tape in item Q1 is 49 mm. Both items have support threads beneath the backing layers and thread structure of tape in item K1 is inconsistent with that of tape in item Q1. Items K1 and Q1 are inconsistent regarding the physical properties of the backing layers and support threads and chemical compositions of the adhesives. Therefore, the adhesive tape in item Q1 could not have originated from the tape roll represented by item K1. Case 2: Items K2 and Q2 are both packing tapes with clear surface backing layers and lower backing layers and clear adhesive layers. The width of both tapes is 48 mm. Items K2 and Q2 are indistinguishable regarding the colour and other physical properties and the chemical compositions of the backings but they are inconsistent regarding the chemical compositions of the adhesives. Therefore, the adhesive tape in item Q2 could not have originated from the tape roll represented by item K2. Case 3: Items K3 and Q3 are both masking tapes with yellowish paper backing layers and white adhesive layers. The width of both tapes is 24 mm. Items K3 and Q3 are indistinguishable regarding the colour and other physical properties and the chemical compositions of the backings and the adhesives. Therefore, the adhesive tape in item Q3 could have originated from the tape roll represented by item K3 or from tape rolls manufactured in the same manner. Physical Match In the item Q1 there is an adhesive tape which doesn't correspond in width and surface with the adhesive tape roll represented by item K1. Conclusion is that adhesive tape in item Q1 does not originate from the adhesive tape roll represented by item K1. In the item Q2 there is an adhesive tape which corresponds in width with the adhesive tape roll represented by item K2. Both ends of item Q2 are cut with a tape cutter. Ends of adhesive tape roll represented by item K2 are as well cut with a tape cutter. Neither end of item Q2 corresponds in shape and individual characteristics with tape roll ends represented by item K2. Item Q2 and adhesive tape roll represented by item K2 are not cut with the same tape cutter. However, conclusion whether the adhesive tape in item Q2 originated from the adhesive tape roll represented by item K2 is inconclusive. In the item Q3 there is an adhesive tape which corresponds in color and in width with the adhesive tape roll represented by item K3. Both ends of item Q3 are cut with a tape cutter. The other end of adhesive tape roll represented by item K3 is as well cut with a tape cutter and other end is cut with a tool, which leaves straight end. Neither end of item Q3 corresponds in shape with the end of tape roll represented by item K3. Item Q3 and adhesive tape roll represented by item K3 are not cut with the same tape cutter. However, conclusion whether the adhesive tape in Item Q3 originated from the adhesive tape roll represented by item K3 is inconclusive.</p> |
| VUNX7Q | <p>The results of the examination of K1 and Q1 exclude the same origin. The results of the examination of K2 and Q2 exclude the same origin. According to the results, K3 and Q3 could originate from the same adhesive tape roll.</p> |
| VZVJUM | <p>1. Comparative examinations of Exhibit 1.1 (known from Case 1) with Exhibit 1.2 (questioned from Case 1) disclosed them to be inconsistent in their gross physical characteristics. As a result of these findings, Exhibit 1.1 (known from Case 1) and Exhibit 1.2 (questioned from Case 1) did not originate from the same source. 2. Physical fit examinations disclosed that Exhibit 2.1 (known from Case 2) and Exhibit 2.2 (questioned from Case 2) did not reveal exclusionary differences in class characteristics and there was a disagreement of individual characteristics. Exhibit 2.1 (known from Case 2) and Exhibit 2.2 (questioned from Case 2) were not once physically connected. This does not imply whether the compared items originated from the same source or from different sources. Further comparative examinations of Exhibit 2.1 (known from Case 2) with Exhibit 2.2 (questioned from Case 2) disclosed them to be inconsistent in their microscopic characteristics. As a result of these findings, Exhibit 2.2 (questioned from Case 2) could not have originated from the same source as the roll of tape represented by Exhibit 2.1 (known from Case 2). 3. Physical fit examinations disclosed that Exhibit 3.1 (known Case 3) and Exhibit 3.2 (questioned from Case 3) did not reveal exclusionary differences in class characteristics and there was a disagreement of individual characteristics. Exhibit 3.1 (known from Case 3) and Exhibit 3.2 (questioned from Case 3) were not once physically connected. This does not imply whether the compared items originated from the same source or from different sources. Further comparative examinations of Exhibit 3.1 (known from Case 3) with Exhibit 3.2 (questioned from Case 3) disclosed them to be consistent in their physical, chemical, and elemental characteristics. As a result of these findings, Exhibit 3.2 (questioned sample) could have originated from the same source as the</p> |

TABLE 3

| WebCode | Conclusions |
|---------|---|
| | roll of tape represented by Exhibit 3.1 (known sample) or another source with the same characteristics. A tape association is not a means of positive identification and the number of possible sources for a specific tape is unknown. |
| W7UCJ9 | Case 1 – Questioned tape could not have originated from the known roll. Case 2 – Questioned tape could not have originated from the known roll. Case 3 – Questioned tape and the known roll have similar physical characteristics and, whilst there is no physical fit between them, I cannot exclude the possibility that the questioned tape originated from the known roll. |
| WBQWRY | Item 1: We can observe differences between K1 and Q1 (especially on warp yarn count and UV reaction). K1 and Q1 can't come from the same roll. Item 2: We can observe differences between K2 and Q2 (especially on thickness). K2 and Q2 can't come from the same roll. Item 3: There is no physical match between the ends of K3 and Q3. K3 and Q3 are undifferentiated. They can come from the same source (same roll) or from two different rolls with the same characteristics. |
| XJF6PU | Item Q-1 could not have originated from the same source as Item K-1. Item Q-2 could not have originated from the same source as Item K-2. The serrated cut ends of Item Q-3 do not physically fit the serrated cut end of Item K-3 and therefore, do not constitute a physical match. Microscopic and instrumental analysis of the construction and composition of the off-white masking tape reveal that Item Q-3 is consistent with Item K-3. |
| Y9FUWD | Item 1 consisted of two sections of black duct tape (K1 and Q1). The backing of the two tape samples (K1 and Q1) were found to have different patterning. In addition the adhesive of Q1 was found to have a different chemical composition to the adhesive of K1. Therefore Q1 could not have originated from the same source as K1. Item 2 consisted of two sections of clear cellophane tape (K2 and Q2). The tape backing and adhesive of Q2 were found to have a different chemical composition to the tape backing and adhesive of K2. Therefore Q2 could not have originated from the same source as K2. Item 3 consisted of two sections of masking tape (K3 and Q3). In relation to appearance, tape backing and adhesive chemical composition, width, thickness and mass per unit area the two masking tape samples (K3 and Q3) were found to be indistinguishable. Therefore these two masking tape samples may share a common origin. |

Additional Comments

TABLE 4

| WebCode | Additional Comments |
|---------|---|
| 4PPA6B | The above conclusions [Table 3: Conclusions] would be read in conjunction with the full court report that details the examinations performed and the observations supporting the stated conclusions. |
| KU4C8W | Items were examined visually and using stereomicroscopy, long wave and short wave ultraviolet (UV) fluorescence, polarized light microscopy (PLM), Fourier transform infrared spectroscopy (FTIR) and scanning electron microscopy/energy dispersive X-Ray spectroscopy (SEM/EDS). |
| LCFQTK | 1. K1 and Q1 have different patterns under ht microscope 2. K2 and Q2 have different IR spectrum results 3. K3 and Q3 identical microscope, IR, pyrolysis experimental results |
| ML24E2 | Because pressure sensitive tapes are mass produced, it is not possible to state that a piece of tape originated from a particular source of tape to the exclusion of all other tape sources exhibiting the same chemical and optical properties. Pyrolysis gas chromatography mass spectrometry (PGC-MS) was not able to be conducted on the paper tape samples at this time. PGC-MS is a technique that may provide additional discrimination. |

-End of Report-
(Appendix may follow)

Test No. 23-5471: Adhesive Tape Analysis

DATA MUST BE SUBMITTED BY **July 10, 2023, 11:59 p.m. EDT** TO BE INCLUDED IN THE REPORT

Participant Code: U1234A

WebCode: PEBD3Q

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:

In three unrelated cases, adhesive tape material was collected and submitted for analysis. Each Item (1-3) below represents a separate, independent case.

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.

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 section of adhesive tape represented by Item K1?

- Yes
- No
- Inconclusive

1.2) Was a physical match comparison performed?

- Yes
- No
- N/A

1.3) If a Physical match comparison was performed, does either end of the adhesive tape in Item Q1 physically match with the end of the section of adhesive tape represented by Item K1?

- Yes
- No
- Inconclusive

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

Please check all that apply.

| | | |
|--|--|-------------------------------------|
| <u>Microscopic Exams:</u> | <input type="checkbox"/> Stereo | <input type="checkbox"/> Comparison |
| | <input type="checkbox"/> Polarized Light | |
| <input type="checkbox"/> Macroscopic Exam | <input type="checkbox"/> Fluorescence | <input type="checkbox"/> FTIR |
| <input type="checkbox"/> XRD | <input type="checkbox"/> XRS/XRF | <input type="checkbox"/> SEM/EDX |
| <input type="checkbox"/> Pyrolysis GC | | |
| Other (specify): <input style="width: 50px;" type="text"/> | | |

Item 2:

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

- Yes No Inconclusive

2.2) Was a physical match comparison performed?

- Yes No N/A

2.3) If a Physical match comparison was performed, does either end of the adhesive tape in Item Q2 physically match with the end of the section of adhesive tape represented by Item K2?

- Yes No Inconclusive

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

Please check all that apply.

| | | |
|---|--|-------------------------------------|
| <u>Microscopic Exams:</u> | <input type="checkbox"/> Stereo | <input type="checkbox"/> Comparison |
| | <input type="checkbox"/> Polarized Light | |
| <input type="checkbox"/> Macroscopic Exam | <input type="checkbox"/> Fluorescence | <input type="checkbox"/> FTIR |
| <input type="checkbox"/> XRD | <input type="checkbox"/> XRS/XRF | <input type="checkbox"/> SEM/EDX |
| <input type="checkbox"/> Pyrolysis GC | | |
| Other (specify): <input type="text"/> | | |

Item 3:

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

- Yes
- No
- Inconclusive

3.2) Was a physical match comparison performed?

- Yes
- No
- N/A

3.3) If a Physical match comparison was performed, does either end of the adhesive tape in Item Q3 physically match with the end of the section of adhesive tape represented by Item K3?

- Yes
- No
- Inconclusive

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

Please check all that apply.

| | | |
|--|--|-------------------------------------|
| <u>Microscopic Exams:</u> | <input type="checkbox"/> Stereo | <input type="checkbox"/> Comparison |
| | <input type="checkbox"/> Polarized Light | |
| <input type="checkbox"/> Macroscopic Exam | <input type="checkbox"/> Fluorescence | <input type="checkbox"/> FTIR |
| <input type="checkbox"/> XRD | <input type="checkbox"/> XRS/XRF | <input type="checkbox"/> SEM/EDX |
| <input type="checkbox"/> Pyrolysis GC | | |
| Other (specify): <input style="width: 50px;" type="text"/> | | |

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

Questionnaire

1: What types of tape do you typically encounter in casework?

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)