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
Website: www.cts-forensics.com

# Quantitative Drug Analysis - Cocaine HCl
# Test No. 25-5061 Summary Report

Each sample pack consisted of two items with different concentrations of cocaine hydrochloride (HCl), which participants were asked to analyze. Data were returned from 77 participants and are compiled into the following tables:



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 two items with different concentrations of powdered cocaine hydrochloride (HCl) and phenacetin. Participants were asked to analyze each item and report the concentration of cocaine HCl in the sample.

SAMPLE PREPARATION: Prior to production, the appropriate amount of cocaine HCl and diluent for each item were combined and thoroughly mixed to ensure homogeneity. Each sample was portioned out into the appropriate sample size and placed into a glassine bag which was folded and secured with an item-specific label. The folded glassine bag was placed into a small zip top bag, which was heat sealed, then placed into a pre-labeled envelope.

SAMPLE PACK ASSEMBLY: One of each item was placed into a pre-labeled sample pack envelope.

VERIFICATION: The laboratories that participated in predistribution received additional specimens for duplicate testing of each item to verify uniformity among samples. Predistribution results were consistent with each other and the manufacturer's preparation information. The following methods were used to examine the items: NMR and GC/FID.

| Item | Preparation Concentration - Cocaine HCl |
|---|---|
| 1 | 75% |
| 2 | 57% |

Please note that the preparation concentration is the value used for calculations during the test preparation phase and may not necessarily represent the final concentration of the samples. It is advised to wait for the Grand Mean statistics available in this Summary Report as well as wait for the Individual Reports before evaluating performance.

# Summary Comments

This test was designed to allow participants to assess their proficiency in the determination of powdered cocaine hydrochloride (HCl) concentrations. Each sample pack included two items: Item 1 contained approximately 75% cocaine HCl, and Item 2 contained approximately 57% cocaine HCl. Refer to the Manufacturer's Information for preparation details.

The results are separated into two tables: reported results (Table 1) and raw analytical data (Table 3). The table of reported results shows the concentration that each participant would report according to their normal reporting procedures (e.g. mean, lowest result, truncated results). The table of raw analytical data shows the results from each determination made by the laboratory to produce their reported results. The majority of the population used the mean of duplicate/several determinations for their quantitative reporting procedures.

The raw data was used to calculate the grand mean and the standard deviation for each item. If a participant's data was marked with an "X", it was considered extreme data (±5 STD from grand mean) and the results were excluded from the calculations of the grand mean and standard deviation. Of the 77 responding participants, no participants were marked as extreme for either item. The calculated grand mean concentration of Item 1 was 73.61% with a standard deviation of 4.336, and the grand mean concentration of Item 2 was 56.00% with a standard deviation of 3.655. These calculations are supplied to assist the participants and accrediting bodies in determining the acceptability of the results.

The most utilized method of analysis among participants was GC/FID.

As a supplemental examination of the raw data, Bivariate Control Analysis was also performed to analyze the measurement of both samples simultaneously. In this analysis, a comparative performance value (CPV) is provided for each participant, which is a unitless ratio indicating the number of standard deviations a participant's results are from the Grand Mean. The closer a participant's CPV is to zero, the more consistent their results are with the other participants' data. For the graphical portion, an ellipse was drawn so that 99% of the time, a randomly selected participant was inside of it. If a participant's data was marked with an "X", it fell outside the 99.5% control limit and the results were excluded from the calculations for this supplemental examination. For more information regarding Bivariate Control Analysis, please see the supplemental section at the end of this report.

# Reported Results

*What is the concentration of cocaine HCl in each of the samples?*

TABLE 1

| WebCode | Item 1<br>Reported Concentration (units) | Item 2<br>Reported Concentration (units) | Uncertainty (k) |
|---|---|---|---|
| **Preparation concentration:** | **75%** | **57%** | |
| 2B96JG | 77.4 ± 6.8 (%) | 59.0 ± 5.2 (%) | 3 |
| 2ULPGK | 70 ± 5 (%) | 53 ± 4 (%) | 2 |
| 47ABYK | 67.9 ± 9.6 (%) | 51.7 ± 7.3 (%) | 3.07 |
| 6CEUBJ | 71.2 ± 10.0 (%) | 52.6 ± 7.4 (%) | 3.07 |
| 6ZKDLH | 78.65 ± 5.18 (%) | 58.43 ± 3.9 (%) | 2 |
| 8BTWXA | 75.3 ± 3.7 (%w/w) | 56.9 ± 3.4 (%w/w) | 2 |
| 8C84LC | 76.7 ± 6.7 (%) | 58.5 ± 5.1 (%) | 3 |
| 8EA3UJ | 76 ± 5 (%) | 58 ± 4 (%) | 2 |
| 8NZMZH | 70.1 ± 9.9 (%) | 52.7 ± 7.4 (%) | 3.07 |
| 93DF4E | 73.41 ± 3.93 (% mg) | 56.87 ± 3.25 (% mg) | 2.57 |
| 9ZQWXB | 75.2 ± 6.6 (%) | 57.7 ± 5.1 (%) | 3 |
| AA9XTB | 84 ± 16 (%) | 63 ± 12 (%) | 2.576 |
| ATNAJF | 69.7 ± 4.46 (%) | 58.0 ± 2.20 (%) | 2 |
| B2V74D | 61.8 ± 8.7 (percent) | 46.6 ± 6.6 (percent) | 3.07 |
| BJD8XE | 74.5 ± 5.07 (%) | 57.9 ± 3.94 (%) | 2 |
| BUERZ8 | 76.2 ± 6.7 (%) | 58.3 ± 5.1 (%) | 3 |
| C6BXU7 | 71 ± 5 (%) | 53 ± 4 (%) | 2 |
| CZE9BD | 69.6 ± 9.8 (%) | 52.0 ± 7.3 (%) | 3.07 |
| D26UGA | 69 ± 5 (%) | 54 ± 4 (%) | 2 |

TABLE 1

| WebCode | Item 1<br>Reported Concentration (units) | Item 2<br>Reported Concentration (units) | Uncertainty (k) |
|---|---|---|---|
| **Preparation concentration:** | **75%** | **57%** | |
| D3ZDJB | 79.67 ± 9.66 (%) | 61.31 ± 7.94 (%) | 2.048 |
| DGLTMA | 76.25 ± 8.42 (% Cocaine HCl) | 55.66 ± 7.44 (% Cocaine HCl) | 2.57 |
| DGYJD7 | 77.0 ± 6.7 (%) | 59.2 ± 5.2 (%) | 3 |
| DKK4HA | 76.45 ± 11.58 (% Cocaine HCl) | 54.75 ± 7.77 (% Cocaine HCl) | 2.048 |
| DYJBC6 | 75.7 ± 6.6 (%) | 59.7 ± 5.2 (%) | 3 |
| E3WC4H | 77.8 ± 3.3 (%) | 58.8 ± 3.3 (%) | 2 |
| E6Z32A | 68.6 ± 9.7 (%) | 51.5 ± 7.3 (%) | 3.07 |
| EAVWXB | 241 ± 13 (mg) | 184 ± 13 (mg) | 2 |
| ENEK89 | 76.62 ± 13.23 (% Cocaine HCl) | 57.57 ± 9.63 (% Cocaine HCl) | 2.571 |
| EULAHG | 77.5 ± 3.3 (%) | 59.0 ± 3.3 (%) | 2 |
| FL33N4 | 77.4 ± 6.8 (%) | 59.6 ± 5.2 (%) | 3 |
| FT4GA6 | 74.5 ± 7.6 (%) | 59.9 ± 6.3 (%) | 2.65 |
| FUYZC7 | 70 ± 5 (%) | 54 ± 4 (%) | 2 |
| FV8CT9 | 65.9 ± 9.3 (%) | 49.6 ± 7.0 (%) | 3.07 |
| GEZFA9 | 73.4 ± 5.799 (%) | 57.2 ± 4.519 (%) | 2 |
| GKNXQ7 | 72 ± 5 (%) | 54 ± 4 (%) | 2 |
| GQHW62 | 78.3 ± 2.1 (percent) | 61.7 ± 2.1 (percent) | 3 |
| J2NPHC | 257.70 ± 30.92 (milligrams) | 193.56 ± 23.23 (milligrams) | 2 |
| J7Y236 | 72.4 ± 11 (%) | 52.8 ± 7.4 (%) | 3.07 |
| K7CTTZ | 71 ± 5 (%) | 55 ± 4 (%) | 2 |

TABLE 1

| WebCode | Item 1<br>Reported Concentration (units) | Item 2<br>Reported Concentration (units) | Uncertainty (k) |
|---|---|---|---|
| **Preparation concentration:** | **75%** | **57%** | |
| KCKEGX | 77.3 ± 6.8 (%) | 58.1 ± 5.1 (%) | 3 |
| KM3X7B | 234.07 ± 28.09 (milligrams) | 176.76 ± 21.21 (milligrams) | 2 |
| KTRDP2 | 77.3 ± 6.0 (%) | 58.7 ± 4.6 (%) | 2.65 |
| KVTEPX | 76.9 ± 6.7 (%) | 58.7 ± 5.1 (%) | 3 |
| KZBGW4 | 74.53 ± 4.14 (%) | 55.54 ± 3.34 (%) | 2 |
| LE6KEY | 75.6 ± 6.0 (%) | 58.1 ± 5.2 (%) | 2.65 |
| LEP2U3 | 85.27 ± 3.51 (% Cocaine HCl) | 61.43 ± 2.99 (% Cocaine HCl) | 2.57 |
| LW9WFC | 74.365 (%) | 58.145 (%) | |
| M4ZVA4 | 75.9 ± 5.161 (%) | 54.7 ± 3.720 (%) | 2 |
| MUEUUT | 75.42 ± 2.4 (%) | 57.62 ± 2.1 (%) | |
| NM7PGZ | 68.4 ± 9.6 (%) | 51.0 ± 7.2 (%) | 3.07 |
| PY3TLU | 76.7 ± 6.7 (%) | 58.8 ± 5.1 (%) | 3 |
| Q7WK8T | 73.6 ± 6.4 (%) | 57.1 ± 5.0 (%) | 3 |
| QAG9Y8 | 70.6 (%) | 51.4 (%) | |
| QRZ4GU | 80 ± 15 (%) | 65 ± 12 (%) | |
| R7THUT | 72.0 ± 9.7 (%) | 55.3 ± 9.7 (%) | 2.576 |
| RDDET4 | 250.22 ± 30.03 (milligrams) | 188.24 ± 22.59 (milligrams) | 2 |
| RE7AKR | 73 ± 5 (%) | 59 ± 4 (%) | 2 |
| RE9XU6 | 74 ± 5 (%) | 57 ± 5 (%) | 2 |
| RH7FYX | 64.1 ± 9.0 (%) | 48.3 ± 6.8 (%) | 3.07 |

TABLE 1

| WebCode | Item 1<br>Reported Concentration (units) | Item 2<br>Reported Concentration (units) | Uncertainty (k) |
|---|---|---|---|
| **Preparation concentration:** | **75%** | **57%** | |
| RHK376 | 69.48 ± 0.84 (%) | 52.18 ± 0.84 (%) | 2 |
| RYTXRX | 74.3 ± 5.87 (%) | 58.9 ± 4.65 (%) | 2 |
| T3BFMN | 74 ± 5 (%) | 55 ± 4 (%) | 2 |
| T4G3ZT | 73 ± 5 (%) | 55 ± 4 (%) | 2 |
| T6CL3U | 69 (%) | 51 (%) | |
| UU9PJP | 72 ± 5 (%) | 55 ± 4 (%) | 2 |
| UUBDT3 | 73.8 ± 4.7 (%) | 58.3 ± 4.7 (%) | 2 |
| VNEB8M | 78.5 ± 6.9 (%) | 58.0 ± 5.1 (%) | 3 |
| VTBYNU | 74.9 ± 2.846 (%) | 57.9 ± 2.198 (%) | 2 |
| WA2ZCZ | 73,9 (%) | 57,4 (%) | |
| WGBNTR | 73.4 ± 0.2 (%) | 55.7 ± 05 (%) | 2 |
| XPKC7Q | 65.7 ± 9.2 (%) | 48.9 ± 6.9 (%) | 3.07 |
| XZ6NKN | 71 ± 5 (%) | 55 ± 4 (%) | 2 |
| YFRLYP | 61.7 ± 8.7 (%) | 46.9 ± 6.6 (%) | 3.07 |
| YFV7JY | 76.1 ± 7.1 (%w/w) | 49.3 ± 4.6 (%w/w) | 2 |
| YP3MKP | 64.0 ± 9.0 (%) | 51.5 ± 7.3 (%) | 3.07 |
| Z4J29W | 76.8 ± 6.7 (%) | 58.3 ± 6.7 (%) | 2 |
| ZD66FV | 248.89 ± 29.87<br>(milligrams) | 192.64 ± 23.12<br>(milligrams) | 2 |

# Reporting Procedures

TABLE 2

| WebCode | Reporting Procedures |
|---|---|
| 2B96JG | single sample |
| 2ULPGK | The mean of duplicate/several determinations. |
| 47ABYK | The mean of duplicate/several determinations. |
| 6CEUBJ | The mean of duplicate/several determinations. |
| 6ZKDLH | The mean of duplicate/several determinations. |
| 8BTWXA | The mean of duplicate/several determinations. |
| 8C84LC | single sample |
| 8EA3UJ | The mean of duplicate/several determinations. |
| 8NZMZH | The mean of duplicate/several determinations. |
| 93DF4E | The mean of duplicate/several determinations. |
| 9ZQWXB | single sample |
| AA9XTB | The mean of duplicate/several determinations. |
| ATNAJF | The mean of duplicate/several determinations. |
| B2V74D | The mean of duplicate/several determinations. |
| BJD8XE | The mean of duplicate/several determinations. |
| BUERZ8 | single sample |
| C6BXU7 | The mean of duplicate/several determinations. |
| CZE9BD | The mean of duplicate/several determinations. |
| D26UGA | The mean of duplicate/several determinations. |
| D3ZDJB | The mean of duplicate/several determinations. |
| DGLTMA | The mean of duplicate/several determinations. |
| DGYJD7 | Single Sample |
| DKK4HA | The mean of duplicate/several determinations. |
| DYJBC6 | single sample |
| E3WC4H | The mean of duplicate/several determinations. |
| E6Z32A | The mean of duplicate/several determinations. |
| EAVWXB | The mean of duplicate/several determinations. |
| ENEK89 | The mean of duplicate/several determinations. |
| EULAHG | The mean of duplicate/several determinations. |
| FL33N4 | single sample |

# TABLE 2

| WebCode | Reporting Procedures |
|---|---|
| FT4GA6 | The mean of duplicate/several determinations. |
| FUYZC7 | The mean of duplicate/several determinations. |
| FV8CT9 | The mean of duplicate/several determinations. |
| GEZFA9 | The mean of duplicate/several determinations. |
| GKNXQ7 | The mean of duplicate/several determinations. |
| GQHW62 | The mean of duplicate/several determinations. |
| J2NPHC | The mean of duplicate/several determinations. |
| J7Y236 | The mean of duplicate/several determinations. |
| K7CTTZ | The value of a single determination |
| KCKEGX | Single Sample |
| KM3X7B | The mean of duplicate/several determinations. |
| KTRDP2 | The mean of duplicate/several determinations. |
| KVTEPX | single sample |
| KZBGW4 | The mean of duplicate/several determinations. |
| LE6KEY | The mean of duplicate/several determinations. |
| LEP2U3 | The mean of duplicate/several determinations. |
| LW9WFC | The mean of duplicate/several determinations. |
| M4ZVA4 | The mean of duplicate/several determinations. |
| MUEUUT | The mean of duplicate/several determinations. |
| NM7PGZ | The mean of duplicate/several determinations. |
| PY3TLU | Single Sample Measurement for both |
| Q7WK8T | single sample |
| QAG9Y8 | The mean of duplicate/several determinations. |
| QRZ4GU | The mean of duplicate/several determinations. |
| R7THUT | The mean of duplicate/several determinations. |
| RDDET4 | The mean of duplicate/several determinations. |
| RE7AKR | The mean of duplicate/several determinations. |
| RE9XU6 | The mean of duplicate/several determinations. |
| RH7FYX | The mean of duplicate/several determinations. |
| RHK376 | The mean of duplicate/several determinations. |
| RYTXRX | The mean of duplicate/several determinations. |

# TABLE 2

| WebCode | Reporting Procedures |
|---|---|
| T3BFMN | The mean of duplicate/several determinations. |
| T4G3ZT | The mean of duplicate/several determinations. |
| T6CL3U | The mean of duplicate/several determinations. |
| UU9PJP | The mean of duplicate/several determinations. |
| UUBDT3 | The mean of duplicate/several determinations. |
| VNEB8M | Single Sample |
| VTBYNU | The mean of duplicate/several determinations. |
| WA2ZCZ | The mean of duplicate/several determinations. |
| WGBNTR | The lowest value of duplicate/several determinations. |
| XPKC7Q | The mean of duplicate/several determinations. |
| XZ6NKN | The mean of duplicate/several determinations. |
| YFRLYP | The mean of duplicate/several determinations. |
| YFV7JY | The mean of duplicate/several determinations. |
| YP3MKP | The mean of duplicate/several determinations. |
| Z4J29W | The mean of duplicate/several determinations. |
| ZD66FV | The mean of duplicate/several determinations. |

## Response Summary

Participants: **77**

| | | |
|---|---|---|
| The mean of duplicate/several determinations: | 63 | (81.8%) |
| The lowest value of duplicate/several determinations: | 1 | (1.3%) |
| Single determination: | 13 | (16.9%) |
| Other: | 0 | (0.0%) |

# Raw Data & Statistical Analysis

*List of raw data determinations in percent cocaine HCl.*

TABLE 3 - Item 1

| WebCode | Preparation concentration : 75% | | | | Mean |
|---|---|---|---|---|---|
| 2B96JG | 77.46 | | | | 77.46 |
| 2ULPGK | 70.67 | 70.46 | | | 70.57 |
| 47ABYK | 66.80 | 69.10 | | | 67.95 |
| 6CEUBJ | 71.40 | 71.00 | | | 71.20 |
| 6ZKDLH | 78.15 | 78.31 | | | 78.23 |
| 8BTWXA | 74.62 | 75.97 | | | 75.30 |
| 8C84LC | 76.71 | | | | 76.71 |
| 8EA3UJ | 72.80 | 74.00 | 80.30 | 80.60 | 76.93 |
| 8NZMZH | 67.90 | 72.30 | | | 70.10 |
| 93DF4E | 72.50 | 73.71 | 72.73 | 74.71 | 73.41 |
| 9ZQWXB | 75.24 | | | | 75.24 |
| AA9XTB | 88.97 | 80.35 | 83.76 | | 84.36 |
| ATNAJF | 68.80 | 69.09 | 70.23 | 70.58 | 69.68 |
| B2V74D | 61.40 | 62.20 | | | 61.80 |
| BJD8XE | 74.20 | 74.80 | | | 74.50 |
| BUERZ8 | 76.27 | | | | 76.27 |
| C6BXU7 | 71.59 | 71.43 | | | 71.51 |
| CZE9BD | 70.10 | 69.30 | | | 69.70 |
| D26UGA | 70.07 | 69.84 | | | 69.96 |
| D3ZDJB | 70.40 | 71.86 | | | 71.13 |
| DGLTMA | 77.20 | 75.32 | | | 76.26 |
| DGYJD7 | 77.05 | | | | 77.05 |
| DKK4HA | 80.44 | 72.46 | | | 76.45 |
| DYJBC6 | 75.76 | | | | 75.76 |

# TABLE 3 - Item 1

| WebCode | Preparation concentration : 75% | | | | | | Mean |
|---|---|---|---|---|---|---|---|
| E3WC4H | 78.40 | 78.48 | 77.15 | 77.21 | | | 77.81 |
| E6Z32A | 68.60 | 68.60 | | | | | 68.60 |
| EAVWXB | 74.75 | 75.21 | 73.64 | 73.55 | 74.75 | 74.39 | 74.38 |
| ENEK89 | 76.95 | 76.29 | 76.65 | 76.57 | | | 76.62 |
| EULAHG | 78.19 | 78.22 | 76.89 | 76.95 | | | 77.56 |
| FL33N4 | 77.41 | | | | | | 77.41 |
| FT4GA6 | 76.25 | 75.14 | 73.36 | 75.21 | 75.67 | 71.12 | 74.46 |
| FUYZC7 | 70.77 | 70.66 | | | | | 70.71 |
| FV8CT9 | 66.40 | 65.50 | | | | | 65.95 |
| GEZFA9 | 72.90 | 73.90 | | | | | 73.40 |
| GKNXQ7 | 72.53 | 72.54 | | | | | 72.54 |
| GQHW62 | 78.70 | 78.00 | | | | | 78.35 |
| J2NPHC | 76.30 | 76.20 | | | | | 76.25 |
| J7Y236 | 73.20 | 71.60 | | | | | 72.40 |
| K7CTTZ | 71.97 | | | | | | 71.97 |
| KCKEGX | 77.32 | | | | | | 77.32 |
| KM3X7B | 72.30 | 73.80 | | | | | 73.05 |
| KTRDP2 | 77.21 | 77.44 | 77.06 | 77.52 | 77.89 | 76.58 | 77.28 |
| KVTEPX | 76.99 | | | | | | 76.99 |
| KZBGW4 | 73.16 | 75.92 | | | | | 74.54 |
| LE6KEY | 74.70 | 75.33 | 76.28 | 75.70 | 76.30 | 75.46 | 75.63 |
| LEP2U3 | 84.63 | 85.91 | | | | | 85.27 |
| LW9WFC | 74.91 | 74.27 | 73.92 | | | | 74.37 |
| M4ZVA4 | 75.50 | 76.30 | | | | | 75.90 |
| MUEUUT | 75.35 | 75.49 | | | | | 75.42 |
| NM7PGZ | 69.70 | 67.00 | | | | | 68.35 |

# TABLE 3 - Item 1

| WebCode | Preparation concentration : 75% | | | | | | | | Mean |
|---|---|---|---|---|---|---|---|---|---|
| PY3TLU | 76.76 | | | | | | | | 76.76 |
| Q7WK8T | 73.67 | | | | | | | | 73.67 |
| QAG9Y8 | 66.43 | 68.62 | 74.60 | 72.87 | | | | | 70.63 |
| QRZ4GU | 80.00 | 79.00 | 80.00 | | | | | | 79.67 |
| R7THUT | 71.58 | 72.47 | | | | | | | 72.03 |
| RDDET4 | 74.70 | 73.80 | | | | | | | 74.25 |
| RE7AKR | 73.41 | 72.67 | | | | | | | 73.04 |
| RE9XU6 | 71.00 | 77.00 | 75.00 | | | | | | 74.33 |
| RH7FYX | 64.00 | 64.30 | | | | | | | 64.15 |
| RHK376 | 66.29 | 66.41 | 73.12 | 73.23 | 68.65 | 68.53 | 69.88 | 69.88 | 69.50 |
| RYTXRX | 73.59 | 73.54 | 75.06 | 74.82 | | | | | 74.25 |
| T3BFMN | 74.45 | 74.58 | | | | | | | 74.52 |
| T6CL3U | 67.73 | 69.94 | | | | | | | 68.83 |
| UU9PJP | 72.43 | 72.20 | | | | | | | 72.31 |
| UUBDT3 | 74.60 | 73.00 | | | | | | | 73.80 |
| VNEB8M | 78.58 | | | | | | | | 78.58 |
| VTBYNU | 75.20 | 74.60 | | | | | | | 74.90 |
| WA2ZCZ | 74.10 | 73.70 | | | | | | | 73.90 |
| WGBNTR | 73.30 | 73.40 | 73.50 | 73.30 | | | | | 73.38 |
| XPKC7Q | 66.10 | 65.40 | | | | | | | 65.75 |
| XZ6NKN | 71.72 | 71.64 | | | | | | | 71.68 |
| YFRLYP | 61.30 | 62.10 | | | | | | | 61.70 |
| YFV7JY | 78.30 | 77.50 | 73.10 | 76.20 | 78.20 | 73.40 | 76.30 | 75.90 | 76.11 |
| YP3MKP | 66.00 | 62.10 | | | | | | | 64.05 |
| Z4J29W | 77.75 | 77.80 | 77.83 | 75.80 | 75.97 | 76.09 | | | 76.87 |
| ZD66FV | 75.40 | 75.80 | | | | | | | 75.60 |

| Statistical Analysis for Item 1 | | | Participants: **77** |
|---|---|---|---|
| Preparation Concentration: | 75% | Number of Participants Included: | 76 |
| Grand Mean: | 73.61 | Number of Participants Excluded: | 0 |
| Standard Deviation: | 4.336 | Number of Participants without Raw Data: | 1 |

# TABLE 3 - Item 2

| WebCode | Preparation concentration : 57% | | | | Mean |
|---|---|---|---|---|---|
| 2B96JG | 59.00 | | | | 59.00 |
| 2ULPGK | 53.33 | 53.39 | | | 53.36 |
| 47ABYK | 50.90 | 52.60 | | | 51.75 |
| 6CEUBJ | 51.60 | 53.60 | | | 52.60 |
| 6ZKDLH | 59.76 | 58.03 | | | 58.90 |
| 8BTWXA | 56.13 | 57.77 | | | 56.95 |
| 8C84LC | 58.51 | | | | 58.51 |
| 8EA3UJ | 58.80 | 59.30 | 58.30 | 57.80 | 58.55 |
| 8NZMZH | 52.50 | 52.90 | | | 52.70 |
| 93DF4E | 55.54 | 58.64 | 57.01 | 56.71 | 56.98 |
| 9ZQWXB | 57.79 | | | | 57.79 |
| AA9XTB | 61.87 | 62.73 | 64.79 | | 63.13 |
| ATNAJF | 59.20 | 56.70 | | | 57.95 |
| B2V74D | 46.60 | 46.60 | | | 46.60 |
| BJD8XE | 57.70 | 58.10 | | | 57.90 |
| BUERZ8 | 58.39 | | | | 58.39 |
| C6BXU7 | 53.03 | 52.98 | | | 53.01 |
| CZE9BD | 51.80 | 52.40 | | | 52.10 |
| D26UGA | 54.73 | 54.88 | | | 54.80 |
| D3ZDJB | 54.90 | 54.58 | | | 54.74 |
| DGLTMA | 55.50 | 55.82 | | | 55.66 |
| DGYJD7 | 59.23 | | | | 59.23 |
| DKK4HA | 53.26 | 56.22 | | | 54.74 |
| DYJBC6 | 59.74 | | | | 59.74 |
| E3WC4H | 58.77 | 58.88 | 58.76 | 58.81 | 58.81 |
| E6Z32A | 51.50 | 51.60 | | | 51.55 |

# TABLE 3 - Item 2

| WebCode | Preparation concentration : 57% | | | | | | Mean |
|---|---|---|---|---|---|---|---|
| EAVWXB | 55.01 | 55.08 | 54.92 | 54.76 | 55.56 | 55.23 | 55.09 |
| ENEK89 | 57.79 | 57.99 | 57.12 | 57.38 | | | 57.57 |
| EULAHG | 59.18 | 59.19 | 58.87 | 58.85 | | | 59.02 |
| FL33N4 | 59.62 | | | | | | 59.62 |
| FT4GA6 | 61.42 | 62.47 | 58.56 | 59.49 | 58.70 | 58.80 | 59.91 |
| FUYZC7 | 54.23 | 54.26 | | | | | 54.24 |
| FV8CT9 | 50.10 | 49.10 | | | | | 49.60 |
| GEZFA9 | 57.00 | 57.40 | | | | | 57.20 |
| GKNXQ7 | 54.05 | 54.05 | | | | | 54.05 |
| GQHW62 | 62.10 | 61.40 | | | | | 61.75 |
| J2NPHC | 58.00 | 57.90 | | | | | 57.95 |
| J7Y236 | 53.70 | 52.00 | | | | | 52.85 |
| K7CTTZ | 55.52 | | | | | | 55.52 |
| KCKEGX | 58.18 | | | | | | 58.18 |
| KM3X7B | 55.20 | 55.40 | | | | | 55.30 |
| KTRDP2 | 58.23 | 58.46 | 58.70 | 58.77 | 59.03 | 59.26 | 58.74 |
| KVTEPX | 58.72 | | | | | | 58.72 |
| KZBGW4 | 55.51 | 55.57 | | | | | 55.54 |
| LE6KEY | 57.50 | 57.51 | 57.36 | 58.89 | 59.88 | 57.53 | 58.11 |
| LEP2U3 | 64.50 | 58.36 | | | | | 61.43 |
| LW9WFC | 58.34 | 58.18 | 57.91 | | | | 58.14 |
| M4ZVA4 | 57.20 | 52.20 | | | | | 54.70 |
| MUEUUT | 57.75 | 57.50 | | | | | 57.63 |
| NM7PGZ | 51.70 | 50.40 | | | | | 51.05 |
| PY3TLU | 58.85 | | | | | | 58.85 |
| Q7WK8T | 57.18 | | | | | | 57.18 |

# TABLE 3 - Item 2

| WebCode | Preparation concentration : 57% | | | | | | | | Mean |
|---|---|---|---|---|---|---|---|---|---|
| QAG9Y8 | 52.09 | 53.34 | 51.50 | 48.66 | | | | | 51.40 |
| QRZ4GU | 66.00 | 67.00 | 63.00 | | | | | | 65.33 |
| R7THUT | 55.33 | 55.44 | | | | | | | 55.39 |
| RDDET4 | 56.60 | 56.50 | | | | | | | 56.55 |
| RE7AKR | 59.47 | 59.87 | | | | | | | 59.67 |
| RE9XU6 | 55.00 | 57.00 | 58.00 | | | | | | 56.67 |
| RH7FYX | 47.90 | 48.90 | | | | | | | 48.40 |
| RHK376 | 50.73 | 50.84 | 50.95 | 50.84 | 52.97 | 52.97 | 53.64 | 54.54 | 52.19 |
| RYTXRX | 59.15 | 59.17 | 58.83 | 58.48 | | | | | 58.91 |
| T3BFMN | 55.78 | 55.72 | | | | | | | 55.75 |
| T6CL3U | 51.31 | 51.70 | | | | | | | 51.51 |
| UU9PJP | 55.09 | 55.05 | | | | | | | 55.07 |
| UUBDT3 | 58.50 | 58.00 | | | | | | | 58.25 |
| VNEB8M | 58.05 | | | | | | | | 58.05 |
| VTBYNU | 57.80 | 57.90 | | | | | | | 57.85 |
| WA2ZCZ | 58.40 | 56.40 | | | | | | | 57.40 |
| WGBNTR | 56.10 | 55.50 | 55.40 | 55.80 | | | | | 55.70 |
| XPKC7Q | 49.10 | 48.70 | | | | | | | 48.90 |
| XZ6NKN | 55.06 | 55.06 | | | | | | | 55.06 |
| YFRLYP | 46.90 | 46.90 | | | | | | | 46.90 |
| YFV7JY | 48.90 | 48.20 | 48.70 | 52.90 | 48.60 | 48.90 | 48.60 | 50.10 | 49.36 |
| YP3MKP | 51.70 | 51.20 | | | | | | | 51.45 |
| Z4J29W | 58.01 | 58.17 | 57.93 | 58.69 | 58.73 | 58.62 | | | 58.36 |
| ZD66FV | 58.20 | 59.20 | | | | | | | 58.70 |

| Statistical Analysis for Item 2 | | | Participants: **77** |
|---|---|---|---|
| Preparation Concentration: | 57% | Number of Participants Included: | 76 |
| Grand Mean: | 56.00 | Number of Participants Excluded: | 0 |
| Standard Deviation: | 3.655 | Number of Participants without Raw Data: | 1 |

# TABLE 3 - Response Summary

| Response Summary | Participants: 77 [No Response:1] | |
|---|---|---|
| | **Item 1** | **Item 2** |
| **Preparation Concentration:** | **75%** | **57%** |
| Grand Mean: | 73.61 | 56.00 |
| Standard Deviation: | 4.336 | 3.655 |

# Method of Analysis

TABLE 4

| WebCode | GC | GC/MS | GC/FID | LC | LC/MS | NMR | Other |
|---|---|---|---|---|---|---|---|
| 2B96JG | | | | ✓ | | | |
| 2ULPGK | | | | ✓ | | | |
| 47ABYK | | ✓ | ✓ | | | | |
| 6CEUBJ | | | ✓ | | | | |
| 6ZKDLH | | | ✓ | | | | |
| 8BTWXA | | | | ✓ | | | |
| 8C84LC | | | | ✓ | | | |
| 8EA3UJ | | | | | | | HPLC UV/DAD |
| 8NZMZH | | | | | | | GC/FID/MS |
| 93DF4E | | | ✓ | | | | |
| 9ZQWXB | | | | ✓ | | | electronic balance |
| AA9XTB | | | | | ✓ | | |
| ATNAJF | | | | | ✓ | ✓ | |
| B2V74D | | | ✓ | | | | |
| BJD8XE | | | ✓ | | | | ATR |
| BUERZ8 | | | | ✓ | | | |
| C6BXU7 | ✓ | | | | | | |
| CZE9BD | | ✓ | ✓ | | | | |
| D26UGA | ✓ | | | | | | |
| D3ZDJB | | | ✓ | | | | |
| DGLTMA | | ✓ | | | | | |
| DGYJD7 | | | | ✓ | | | |
| DKK4HA | | | ✓ | | | | |
| DYJBC6 | | | | ✓ | | | |
| E3WC4H | | | ✓ | | | | |
| E6Z32A | | | ✓ | | | | |
| EAVWXB | | | ✓ | | | | |
| ENEK89 | | | ✓ | | | | |
| EULAHG | | | ✓ | | | | |
| FL33N4 | | | | ✓ | | | |
| FT4GA6 | | | ✓ | | | | |
| FUYZC7 | | | ✓ | | | | |
| FV8CT9 | | | ✓ | | | | |

TABLE 4

| WebCode | GC | GC/MS | GC/FID | LC | LC/MS | NMR | Other |
|---|---|---|---|---|---|---|---|
| GEZFA9 | | | | | | ✓ | |
| GKNXQ7 | | | ✓ | | | | |
| GQHW62 | | | | | | | HPLC |
| J2NPHC | | ✓ | | | | | |
| J7Y236 | | ✓ | ✓ | | | | |
| K7CTTZ | | | | | | ✓ | |
| KCKEGX | | | | ✓ | | | |
| KM3X7B | | ✓ | | | | | |
| KTRDP2 | | | ✓ | | | | Weight Measurement, IR |
| KVTEPX | | | | ✓ | | | |
| KZBGW4 | | | ✓ | | | | |
| LE6KEY | | | ✓ | | | | |
| LEP2U3 | | | ✓ | | | | |
| LW9WFC | | | | | | | HPLC-diode array |
| M4ZVA4 | | | | | | ✓ | |
| MUEUUT | | | | ✓ | | | |
| NM7PGZ | | | ✓ | | | | |
| PY3TLU | | | | ✓ | | | Electronic Balance |
| Q7WK8T | | | | ✓ | | | |
| QAG9Y8 | | | ✓ | | | | |
| QRZ4GU | | | | | ✓ | | |
| R7THUT | | | ✓ | | | | |
| RDDET4 | | ✓ | | | | | |
| RE7AKR | ✓ | | | | | | |
| RE9XU6 | | ✓ | ✓ | | | | IONSCAN |
| RH7FYX | | | ✓ | | | | |
| RHK376 | | | | ✓ | | | |
| RYTXRX | | | | ✓ | | | |
| T3BFMN | | | ✓ | | | | |
| T4G3ZT | | | | | | | |
| T6CL3U | | | | | ✓ | | |
| UU9PJP | ✓ | | | | | | |
| UUBDT3 | | ✓ | | | | | |
| VNEB8M | | | | ✓ | | | |
| VTBYNU | | | | | | ✓ | |

TABLE 4

| WebCode | GC | GC/MS | GC/FID | LC | LC/MS | NMR | Other |
|---|---|---|---|---|---|---|---|
| WA2ZCZ | | | | ✓ | | | |
| WGBNTR | | | | | | ✓ | |
| XPKC7Q | | ✓ | ✓ | | | | |
| XZ6NKN | ✓ | | | | | | |
| YFRLYP | | | ✓ | | | | |
| YFV7JY | | ✓ | | | | | |
| YP3MKP | | | ✓ | | | | |
| Z4J29W | | | ✓ | | | | |
| ZD66FV | | ✓ | | | | | |

**Analysis Methods Response Summary** Participants: **77**

| Method: | GC | GC/MS | GC/FID | LC | LC/MS | NMR |
|---|---|---|---|---|---|---|
| Participants: | 5 | 12 | 33 | 18 | 4 | 6 |
| Percent: | 6% | 16% | 43% | 23% | 5% | 8% |

# Additional Comments

TABLE 5

| WebCode | Additional Comments |
|---|---|
| 6ZKDLH | Results are routinely reported as Base values These have been determined to be Item 1 = 69.62% Item 2 = 52.42% |
| 8BTWXA | Phenacetin was indicated in both samples. |
| ATNAJF | phenacetin was also detected |
| BJD8XE | phenacetin was also detected |
| GEZFA9 | phenacetin was also detected |
| LE6KEY | Infrared Spectroscopy used for salt form determination, and DART-TOF used to screen for any adulterants. |
| M4ZVA4 | phenacetin was also detected |
| MUEUUT | Item 1: PHENACETIN is also present. Item 2: PHENACETIN is also present. |
| R7THUT | Data are from pre-distribution Participant Code [Code] which contained two specimen for each item (item 1 and item 2). Item 1, Specimen A was selected for reporting of final result. Item 2, Specimen C was selected for reporting of final result. |
| RE9XU6 | Phenacetin used as a cutting agent |
| RHK376 | both samples contains phenacetin as adulterant Both samples confirmed by GC MS Screening performed by Raman |
| RYTXRX | phenacetin was also detected |
| UUBDT3 | Our lab advice send the samples a glass conteiner like vial 2 ml GCMS |
| VNEB8M | The lab I am in typically reports the base form. For Item 1, I found the purity in the base form to be 70.1% +/- 6.1%. For Item 2, I found the purity in the base form to be 51.8% +/- 4.5%. |
| VTBYNU | phenacetin was also detected |
| Z4J29W | Phenacetin was presumptively identified in both items. |

# Supplemental: Hotelling T-Squared Bivariate Control Analysis

Hotelling T-Squared Bivariate Control Analysis is used in many other industries to examine results. Although not typically used in forensic science, CTS is presenting an introduction to this type of statistical data analysis. A laboratory may choose to delve deeper in a participant's results by studying both sets of statistics available in this report. The statistics presented in Table 3 (Raw Data) of this report examine the results of each item independently of each other. However, because the same materials are chosen for both samples, there should be a correlation of measurement performance between the two samples. A bivariate analysis technique judges measurement performance on both samples simultaneously, represented as an ellipse. For each participant, the mean of Item 1 (x-axis) is plotted against the mean of Item 2 (y-axis). The horizontal and vertical cross-hairs are the grand means for each Item. When 20 or more participants are included in the statistics, an ellipse is drawn so that 99% of the time a randomly selected participant will be included inside.

When considering your participant's position on the plot relative to the ellipse, remember that, generally speaking, if a participant's plotted point falls on the major axis outside of the ellipse, the participant is consistent in its measurements between the two samples but exhibits an offset from the grand mean (systematic difference). If a plotted point falls to the side of the ellipse, it indicates possible differences in the way that the participant tested the two samples or differences in sample behavior (consistency difference). The two-sample plot enables you to see which sample, if either, is "extreme" and to ascertain the nature of the "extreme" data.

### Systematic Difference

Bias is illustrated in the control ellipse on the two sample plot. If a particular analysis/sample combination did not show bias, the control ellipse would become a circle. Differences in procedures, conditions, instrumentation and sample preparation all contribute to the bias of a participant. When these differences become too large, a participant may receive a Data Flag. When the test results for both samples are both high or low compared to the group, a participant has a fixed set of factors on which to focus to identify a cause. Furthermore, since additional testing on similar samples should produce similar high or low results, it is possible to determine that a systematic error has been successfully corrected.

### Consistency Difference

The participant's results indicate that there are differences in the way the two samples are tested (the plotted point falls to the side of the ellipse). This type of error may be attributed to the analyst deviating from the procedure when testing one of the samples or a material interaction occurrence with the instrument or room conditions. The inconsistency is reflected in the Comparative Performance Values (CPV) for the two samples, such as a +1.5 CPV for Item 1 and a -2.2 CPV for Item 2. CPV is the number of standard deviations a value is from the grand mean.

### Key for Data Flags

| Data Flag | Statistically Included/Excluded | Explanation |
|---|---|---|
| * | Included | Results fall outside 99% ellipse, but within a 99.5% control limit (ellipse) that is calculated. |
| X | Excluded | Results fall outside 99.5% control limit. |
| M | Excluded | Data is missing for at least one item. |

# Bivariate Control Analysis

| WebCode | Data Flag | Item 1 Participant Mean | Item 1 Difference from Grand Mean | Item 1 CPV | Item 2 Participant Mean | Item 2 Difference from Grand Mean | Item 2 CPV |
|---|---|---|---|---|---|---|---|
| 2B96JG | | 77.46 | 3.854 | 0.89 | 59.00 | 3.001 | 0.82 |
| 2ULPGK | | 70.57 | -3.043 | -0.70 | 53.36 | -2.644 | -0.72 |
| 47ABYK | | 67.95 | -5.659 | -1.31 | 51.75 | -4.252 | -1.16 |
| 6CEUBJ | | 71.20 | -2.409 | -0.56 | 52.60 | -3.402 | -0.93 |
| 6ZKDLH | | 78.23 | 4.621 | 1.07 | 58.90 | 2.893 | 0.79 |
| 8BTWXA | | 75.30 | 1.686 | 0.39 | 56.95 | 0.948 | 0.26 |
| 8C84LC | | 76.71 | 3.105 | 0.72 | 58.51 | 2.509 | 0.69 |
| 8EA3UJ | | 76.93 | 3.316 | 0.76 | 58.55 | 2.548 | 0.70 |
| 8NZMZH | | 70.10 | -3.509 | -0.81 | 52.70 | -3.302 | -0.90 |
| 93DF4E | | 73.41 | -0.197 | -0.05 | 56.98 | 0.973 | 0.27 |
| 9ZQWXB | | 75.24 | 1.627 | 0.38 | 57.79 | 1.792 | 0.49 |
| AA9XTB | | 84.36 | 10.751 | 2.48 | 63.13 | 7.128 | 1.95 |
| ATNAJF | | 69.68 | -3.934 | -0.91 | 57.95 | 1.948 | 0.53 |
| B2V74D | | 61.80 | -11.809 | -2.72 | 46.60 | -9.402 | -2.57 |
| BJD8XE | | 74.50 | 0.891 | 0.21 | 57.90 | 1.898 | 0.52 |
| BUERZ8 | | 76.27 | 2.662 | 0.61 | 58.39 | 2.387 | 0.65 |
| C6BXU7 | | 71.51 | -2.099 | -0.48 | 53.01 | -2.997 | -0.82 |
| CZE9BD | | 69.70 | -3.909 | -0.90 | 52.10 | -3.902 | -1.07 |
| D26UGA | | 69.96 | -3.650 | -0.84 | 54.80 | -1.199 | -0.33 |
| D3ZDJB | | 71.13 | -2.479 | -0.57 | 54.74 | -1.262 | -0.35 |
| DGLTMA | | 76.26 | 2.651 | 0.61 | 55.66 | -0.342 | -0.09 |
| DGYJD7 | | 77.05 | 3.441 | 0.79 | 59.23 | 3.224 | 0.88 |
| DKK4HA | | 76.45 | 2.841 | 0.66 | 54.74 | -1.262 | -0.35 |
| DYJBC6 | | 75.76 | 2.148 | 0.50 | 59.74 | 3.741 | 1.02 |
| E3WC4H | | 77.81 | 4.200 | 0.97 | 58.81 | 2.804 | 0.77 |

| WebCode | Data Flag | Item 1 Participant Mean | Item 1 Difference from Grand Mean | Item 1 CPV | Item 2 Participant Mean | Item 2 Difference from Grand Mean | Item 2 CPV |
|---|---|---|---|---|---|---|---|
| E6Z32A | | 68.60 | -5.009 | -1.16 | 51.55 | -4.452 | -1.22 |
| EAVWXB | | 74.38 | 0.773 | 0.18 | 55.09 | -0.910 | -0.25 |
| ENEK89 | | 76.62 | 3.006 | 0.69 | 57.57 | 1.568 | 0.43 |
| EULAHG | | 77.56 | 3.953 | 0.91 | 59.02 | 3.020 | 0.83 |
| FL33N4 | | 77.41 | 3.805 | 0.88 | 59.62 | 3.616 | 0.99 |
| FT4GA6 | | 74.46 | 0.849 | 0.20 | 59.91 | 3.904 | 1.07 |
| FUYZC7 | | 70.71 | -2.897 | -0.67 | 54.24 | -1.760 | -0.48 |
| FV8CT9 | | 65.95 | -7.659 | -1.77 | 49.60 | -6.402 | -1.75 |
| GEZFA9 | | 73.40 | -0.209 | -0.05 | 57.20 | 1.198 | 0.33 |
| GKNXQ7 | | 72.54 | -1.072 | -0.25 | 54.05 | -1.954 | -0.53 |
| GQHW62 | | 78.35 | 4.741 | 1.09 | 61.75 | 5.748 | 1.57 |
| J2NPHC | | 76.25 | 2.641 | 0.61 | 57.95 | 1.948 | 0.53 |
| J7Y236 | | 72.40 | -1.209 | -0.28 | 52.85 | -3.152 | -0.86 |
| K7CTTZ | | 71.97 | -1.638 | -0.38 | 55.52 | -0.480 | -0.13 |
| KCKEGX | | 77.32 | 3.714 | 0.86 | 58.18 | 2.174 | 0.59 |
| KM3X7B | | 73.05 | -0.559 | -0.13 | 55.30 | -0.702 | -0.19 |
| KTRDP2 | | 77.28 | 3.674 | 0.85 | 58.74 | 2.739 | 0.75 |
| KVTEPX | | 76.99 | 3.377 | 0.78 | 58.72 | 2.718 | 0.74 |
| KZBGW4 | | 74.54 | 0.931 | 0.21 | 55.54 | -0.462 | -0.13 |
| LE6KEY | | 75.63 | 2.019 | 0.47 | 58.11 | 2.109 | 0.58 |
| LEP2U3 | * | 85.27 | 11.661 | 2.69 | 61.43 | 5.428 | 1.49 |
| LW9WFC | | 74.37 | 0.756 | 0.17 | 58.14 | 2.142 | 0.59 |
| M4ZVA4 | | 75.90 | 2.291 | 0.53 | 54.70 | -1.302 | -0.36 |
| MUEUUT | | 75.42 | 1.811 | 0.42 | 57.63 | 1.623 | 0.44 |
| NM7PGZ | | 68.35 | -5.259 | -1.21 | 51.05 | -4.952 | -1.36 |
| PY3TLU | | 76.76 | 3.150 | 0.73 | 58.85 | 2.850 | 0.78 |
| Q7WK8T | | 73.67 | 0.058 | 0.01 | 57.18 | 1.174 | 0.32 |

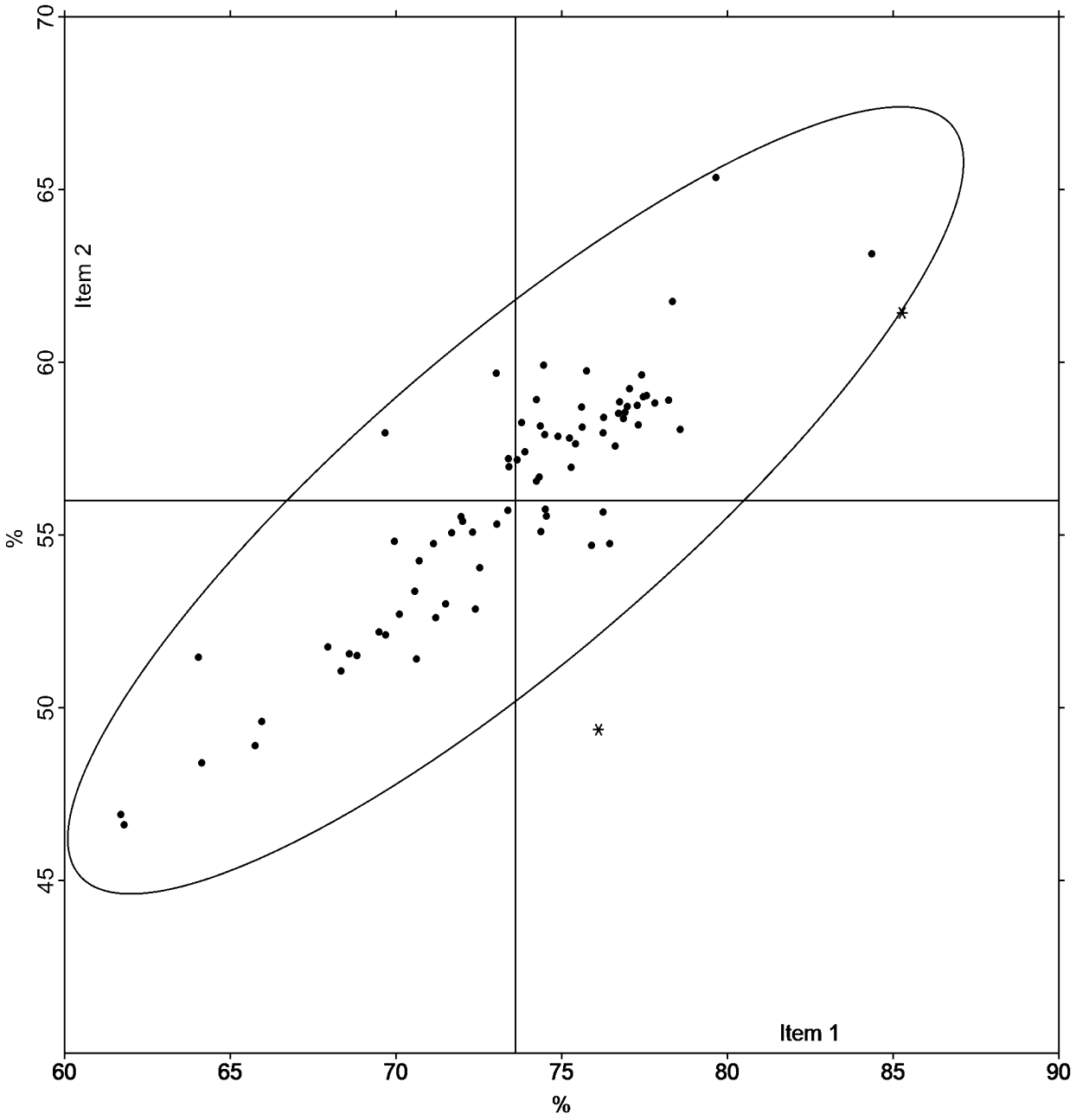
| WebCode | Data Flag | Item 1 Participant Mean | Item 1 Difference from Grand Mean | Item 1 CPV | Item 2 Participant Mean | Item 2 Difference from Grand Mean | Item 2 CPV |
|---|---|---|---|---|---|---|---|
| QAG9Y8 | | 70.63 | -2.979 | -0.69 | 51.40 | -4.605 | -1.26 |
| QRZ4GU | | 79.67 | 6.057 | 1.40 | 65.33 | 9.331 | 2.55 |
| R7THUT | | 72.03 | -1.584 | -0.37 | 55.39 | -0.617 | -0.17 |
| RDDET4 | | 74.25 | 0.641 | 0.15 | 56.55 | 0.548 | 0.15 |
| RE7AKR | | 73.04 | -0.570 | -0.13 | 59.67 | 3.671 | 1.00 |
| RE9XU6 | | 74.33 | 0.724 | 0.17 | 56.67 | 0.664 | 0.18 |
| RH7FYX | | 64.15 | -9.459 | -2.18 | 48.40 | -7.602 | -2.08 |
| RHK376 | | 69.50 | -4.110 | -0.95 | 52.19 | -3.817 | -1.04 |
| RYTXRX | | 74.25 | 0.642 | 0.15 | 58.91 | 2.906 | 0.80 |
| T3BFMN | | 74.52 | 0.909 | 0.21 | 55.75 | -0.256 | -0.07 |
| T4G3ZT | M | | | | | | |
| T6CL3U | | 68.83 | -4.775 | -1.10 | 51.51 | -4.495 | -1.23 |
| UU9PJP | | 72.31 | -1.296 | -0.30 | 55.07 | -0.931 | -0.25 |
| UUBDT3 | | 73.80 | 0.191 | 0.04 | 58.25 | 2.248 | 0.61 |
| VNEB8M | | 78.58 | 4.971 | 1.15 | 58.05 | 2.051 | 0.56 |
| VTBYNU | | 74.90 | 1.291 | 0.30 | 57.85 | 1.848 | 0.51 |
| WA2ZCZ | | 73.90 | 0.291 | 0.07 | 57.40 | 1.398 | 0.38 |
| WGBNTR | | 73.38 | -0.234 | -0.05 | 55.70 | -0.302 | -0.08 |
| XPKC7Q | | 65.75 | -7.859 | -1.81 | 48.90 | -7.102 | -1.94 |
| XZ6NKN | | 71.68 | -1.930 | -0.45 | 55.06 | -0.942 | -0.26 |
| YFRLYP | | 61.70 | -11.909 | -2.75 | 46.90 | -9.102 | -2.49 |
| YFV7JY | * | 76.11 | 2.503 | 0.58 | 49.36 | -6.640 | -1.82 |
| YP3MKP | | 64.05 | -9.559 | -2.20 | 51.45 | -4.552 | -1.25 |
| Z4J29W | | 76.87 | 3.264 | 0.75 | 58.36 | 2.358 | 0.65 |
| ZD66FV | | 75.60 | 1.991 | 0.46 | 58.70 | 2.698 | 0.74 |

| Response Summary | Item 1 | Item 2 | Participants: 77 |
|---|---|---|---|
| **Preparation Concentration** | **75%** | **57%** | |
| Grand Mean | 73.61 | 56.00 | |
| Standard Deviation | 4.34 | 3.65 | |

Participants Included: 76 Participants Excluded: 0 Participants without Raw Data for both items: 1

# Bivariate Control Analysis

Item 1 Grand Mean: 73.61 Item 2 Grand Mean: 56.00




-End of Report-
(Appendix may follow)

**Collaborative Testing Services ~ Forensic Testing Program**

# Test No. 25-5061: Quantitative Drug Analysis - Cocaine HCl

DATA MUST BE SUBMITTED BY **Nov. 24, 2025, 11:59 p.m. EST** TO BE INCLUDED IN THE REPORT

Participant Code: U1234A WebCode: QMKVRA

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.

**Test Description:**
Investigators have submitted two powdered cocaine HCl samples from separate cases to be quantitatively examined. Using your laboratory's procedures, analyze each sample and report the quantitative determination of cocaine HCl present in the samples.

*-Please follow your laboratory's policies and procedures for sample homogenization.*

*-This is not intended as a qualitative test but rather as a quantitative examination of the cocaine hydrochloride present in the samples.*

**Items Submitted (Sample Pack DQ2):**
Items 1 and 2: Powdered cocaine HCl samples

**1a.) What is the concentration of cocaine HCl in each of the samples? (Results should be reported using your laboratory reporting criteria for decimal places, uncertainty, and units.)**

| | Reported Concentration | Uncertainty (k= ) | Units |
|---|---|---|---|
| Item 1: | | ± | ( ) |
| Item 2: | | ± | ( ) |

**1b.) Are the values listed above:**

- ○ The mean of duplicate / several determinations?
- ○ The lowest value of duplicate / several determinations?
- ○ Other? (Specify):

**2.) Please list your raw data determinations below in percent of cocaine HCl. (Results not reported in % will be excluded from statistical calculations.) For the purposes of data submission, express results below in the HCl salt form. If your laboratory typically reports the base form, you may do so in the additional comments.**

| **Item 1** (%) | **Item 2** (%) |
|---|---|
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

**3.) What methods were used to quantitatively examine the items?**

- ☐ GC
- ☐ GC/MS
- ☐ GC/FID
- ☐ LC
- ☐ LC/MS
- ☐ Other (specify):
- ☐ NMR

**4.) Additional Comments**

***Note:*** *Please use appropriate punctuation to indicate the end of sentences, sections, and statements in the free-form space below. Extra spacing and returns used for separation within your text will not transfer and may cause your information to be illegible in the Summary Report. The use of lists and tabular formats to deliver information is also cautioned against, as these do not transfer.*

# 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 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 ANAB and/or A2LA. (Accreditation Release section below must be completed.)
○ This participant's data is **not** intended for submission to 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.

**A2LA** Certificate No.

**Step 2: Complete the Laboratory Identifying Information in its entirety**

Authorized Contact Person and Title

Laboratory Name

Location (City/State)