DRUG ENFORCEMENT ADMINISTRATION

# CY 2024

# Annual Cocaine Report

**OFFICE OF FORENSIC SCIENCES**
Special Testing and Research Laboratory

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This report was prepared by the DEA Special Testing and Research Laboratory (SFL1) of the Office of Forensic Sciences.
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## SUMMARY

The United States Drug Enforcement Administration (DEA) Office of Forensic Sciences laboratory system is comprised of ten regional laboratories distributed across the United States. Cocaine seizures ranging in weight from residue to multiple kilograms are routinely analyzed in these laboratories. The analytical protocol requires the identification of cocaine, other controlled substances, and non-controlled adulterants. Diluents are not typically identified in the regional laboratories. Quantitative analysis of cocaine is conducted on most purchased exhibits. The information on the following pages summarizes the results of cocaine seizures analyzed in the regional laboratories; all seized in CY 2024. Trends for the last five years are also reported.

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A select number of cocaine samples are submitted by the regional laboratories from cocaine seizures containing 10 kg or more, under a specific sampling plan, to the Special Testing and Research Laboratory's Cocaine Signature Program (CSP). DEA foreign divisions also submit samples directly to the CSP in coordination with law enforcement counterparts. CSP samples are analyzed for purity, cutting agents, processing solvents, and classified to a geographic origin – thus, CSP provides additional scientific data and intelligence information on illicit cocaine. Findings from CSP provide a snapshot of current cocaine processing and trafficking trends; it may not reflect the domestic or global illicit cocaine supply in its entirety, nor is it representative of total federal cocaine seizures.

The second part of this report summarizes the collective results of CSP samples seized in or in transit to the United States during CY 2024. CSP analyzed 732 samples from CY 2024 domestic seizures, representing approximately 39 metric tons (MT). This is approximately 40% of cocaine analyzed in the regional laboratories (by weight). Results from exemplars of overseas cocaine seizures that were analyzed from April 2024 through the first quarter of CY 2025 are also summarized. This dataset also includes foreign submissions that were seized before CY 2024.

**Figure 1: Cocaine Brick and Packaging**


***Note:*** *Data is relative to seizure date and is subject to change as more exhibits are received and analyzed. Internal DEA data collection systems queried 04/01/25.* ***Cocaine exhibits are defined as exhibits in which cocaine was reported as the primary drug****. Each cocaine exhibit is considered an individual cocaine seizure for the purposes of this report. Net weight is the weight of drug evidence submitted to the laboratory, not including packaging, and may not represent the entire seizure weight.*

## KEY FINDINGS – LABORATORY SYSTEM

- Regional laboratories analyzed approximately **10,149 exhibits from CY 2024, representing 97.5 MT of seized cocaine.**
- Cocaine was identified as the primary drug in 20% of all the drug evidence submitted to regional laboratories.
- Cocaine was identified in various forms such as powder and rock-like substances to tablets, liquids, crystalline, gum, plant material, and blotter. Powder and rock-like forms represented approximately 95% of cocaine exhibits.
- Approximately 72% of the cocaine exhibits analyzed by the regional laboratories were submitted as DEA evidence. Regional laboratories also analyzed evidence from other federal agencies such as FBI, ATF, ICE, and HSI.
- The average purity of powder and rock-like cocaine exhibits analyzed by the regional laboratories was **84%** for CY 2024. An increase in the average purity has been observed each year since 2020. Note that this is a limited dataset; approximately 27% of powder and rock-like cocaine exhibits were analyzed for purity, and most of those analyses were conducted on exhibits ranging from 0.100 to 100 g of material.

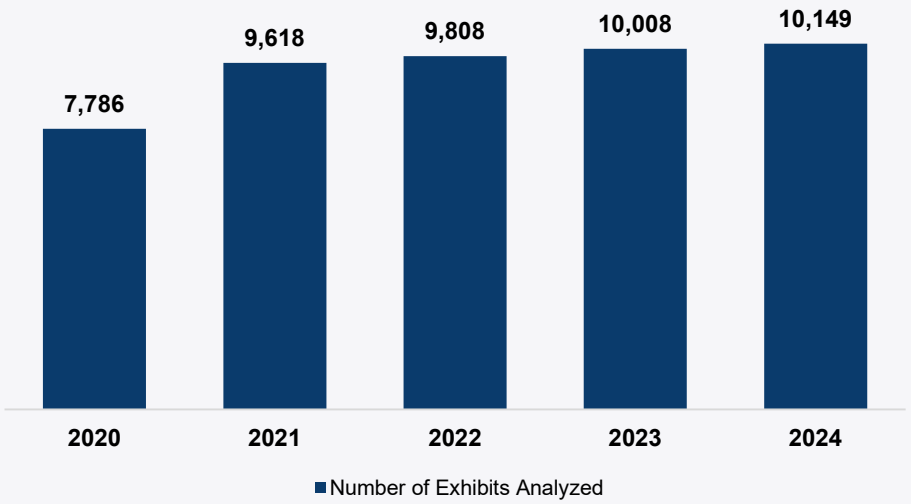
## KEY FINDINGS – COCAINE SIGNATURE PROGRAM

- The CSP received and analyzed 916 samples from CY 2024 domestic and foreign seizures.
- **Colombia was identified as the primary source of U.S. seized cocaine analyzed through the CSP.** Approximately **84%** of U.S. samples were classified as originating from Colombian coca, and all U.S. samples were converted to cocaine hydrochloride (HCl) using traditional Colombian solvents indicating manufacture of the finished product in Colombia or using Colombian methodology.
- **The predominant sub-regional source of U.S. samples was Southwestern Colombia (Col-SW), identified in approximately 42% of samples**. Nariño represented approximately 89% of samples classified as Col-SW. Northern Colombia (Col-North) was the second ranked source of U.S. samples, identified in approximately 25% of samples. Norte de Santander represented approximately 72% of samples classified as Col-North.
- Cocaine from Peruvian coca was identified in approximately 4% of U.S. samples; whereas, Bolivian cocaine was not identified in U.S. samples in CY 2024.
- Approximately 10% of U.S. samples contained signature profiles consistent with Colombia or Peru (Colombia-Peru) that could not be sourced to a country of origin within established CSP guidelines. By comparison, CSP classified 8% of U.S. samples in CY 2023 as Colombia-Peru.
- Less than 1% of U.S. samples could not be geographically sourced due to extensive cutting agents.
- **The average purity of U.S. cocaine HCl samples analyzed by CSP was 88%.** Similar to regional laboratory data, CSP has observed an increase in cocaine purity since 2020 and an increase in the percentage of uncut cocaine samples. In contrast to the regional laboratory dataset, CSP's findings represent U.S. cocaine seizures with a minimum seizure weight of 10 kg.
- CSP analyzed 391 samples from Africa, Europe, Central America, South America, and the Middle East. Samples seized before CY 2024 were also included in this dataset. Colombia was identified as the predominant source of foreign seized cocaine this reporting period. Approximately 39% of samples were classified as originating from Colombian coca, and 48% of samples were converted to cocaine HCl using traditional Colombian processes. Regional differences in cocaine source classifications were observed.

## LABORATORY SYSTEM – RESULTS AND TRENDS

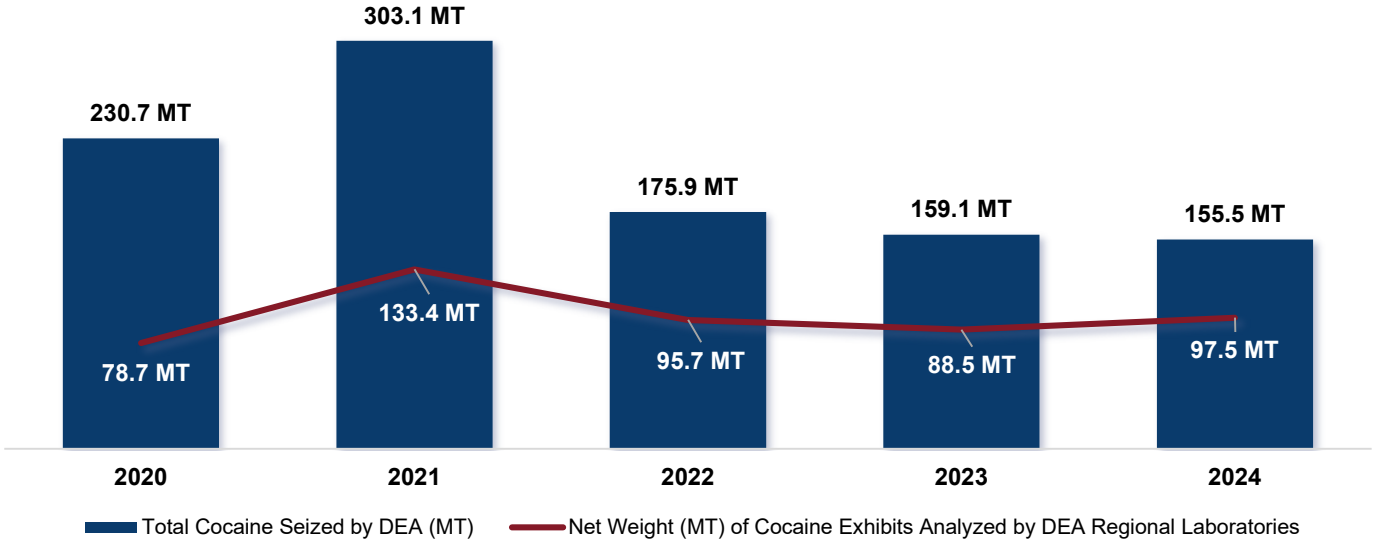
DEA regional laboratories analyzed 10,149 cocaine exhibits representing approximately 97.5 MT from CY 2024 seizures. The number of cocaine exhibits analyzed from the last five years is shown in Figure 2 below.

**Figure 2: Number of Cocaine Exhibits – Laboratory System**




DEA seized approximately 1024 MT of alleged cocaine in CY 2020 – 2024[1]. Regional laboratories analyzed approximately 494 MT (net weight) from confirmed cocaine exhibits during this same time frame. The cocaine identification rate of suspected or alleged cocaine seizures was approximately 90%[2]. Note that not all seized exhibits were submitted to DEA regional laboratories as some were retained in storage or processed by other law enforcement partners. Figure 3 compares the total alleged cocaine seized by DEA to the net weight of cocaine exhibits analyzed by the regional laboratories.

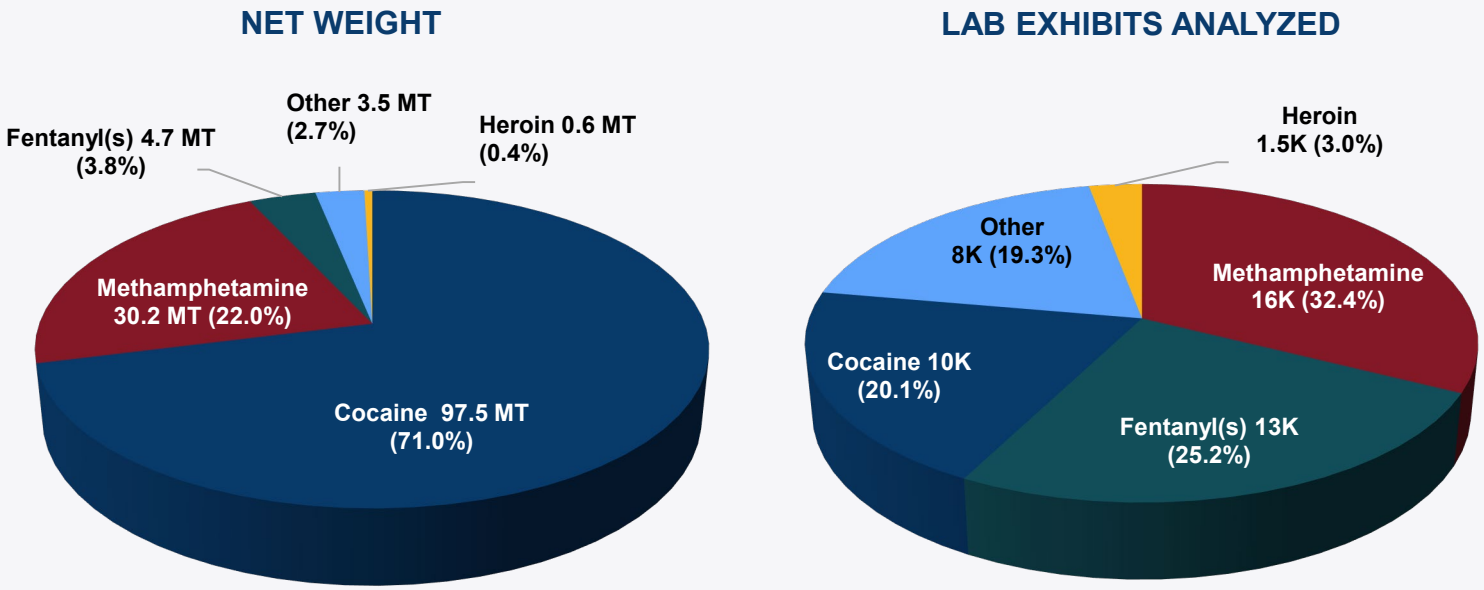
**Figure 3: Comparison of Total Alleged Cocaine Seized and Net Weight of Cocaine Exhibits Analyzed by DEA Regional Laboratories**




*[1]Total cocaine seized includes exhibits that were analyzed by DEA regional laboratories or other law enforcement partners, exhibits retained in storage only, and may include the entire gross weight of packaging. Not all DEA seized exhibits are submitted to regional laboratories for analysis.*
*[2]The alleged drug identification rate is the percentage of time that the exhibit is confirmed through analysis to contain the alleged drug.*

In CY 2024, cocaine was identified as the primary drug in **20%** of all the drug evidence submitted to regional laboratories. Figure 4 illustrates the net weight distribution and number of exhibits by primary drug.

**Figure 4: Net weight and Lab Exhibits by Primary Drug - Laboratory System CY 2024 Seizures**



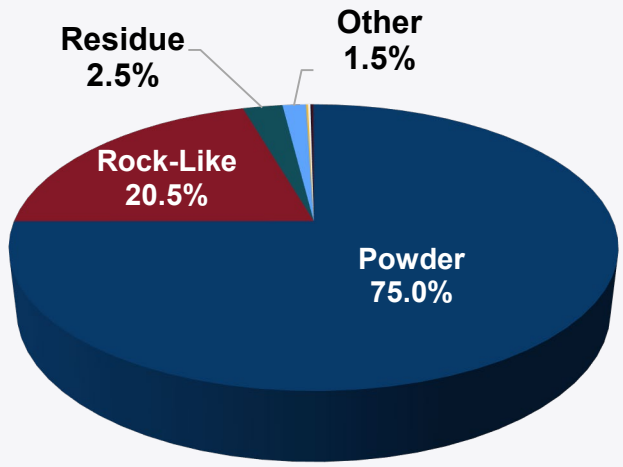

Cocaine was identified in exhibits that ranged in seizure weights from residue to multiple kilograms. A majority of regional laboratory exhibits containing cocaine (approximately 69%) weighed between 0 to 100 g. In CY 2024, cocaine was reported as the **primary drug** in approximately 94% of cocaine containing exhibits. Most cocaine exhibits were un-adulterated or contained typical cocaine adulterants. Fentanyl and fentanyl analogs were identified in approximately 1% of exhibits in which cocaine was reported as the primary drug. In some exhibits, cocaine was reported as a minor constituent with fentanyl(s). Figure 5 provides a summary by seizure weight.

**Figure 5: Cocaine Identifications by Seizure Weight; Exhibits Containing Fentanyl and Cocaine – CY 2024**

| SEIZED WEIGHT RANGE | NUMBER OF EXHIBITS COCAINE IDENTIFIED | NUMBER OF EXHIBITS COCAINE AND FENTANYL(S) IDENTIFIED | NUMBER OF EXHIBITS COCAINE PRIMARY DRUG | NUMBER OF EXHIBITS FENTANYL(S) IDENTIFIED IN COCAINE (PRIMARY DRUG) EXHIBITS |
|---|---|---|---|---|
| **0 to 5 g** | 3495 | 294 | 3165 | 59 |
| **> 5 g to 50 g** | 3097 | 186 | 2892 | 27 |
| **> 50 g to 100 g** | 912 | 53 | 853 | 6 |
| **> 100 g to 1 kg** | 1606 | 65 | 1542 | 13 |
| **> 1 kg to 10 kg** | 1231 | 18 | 1218 | 6 |
| **> 10 kg to 50 kg** | 325 | 0 | 325 | 0 |
| **> 50 kg to 100 kg** | 37 | 1 | 37 | 1 |
| **> 100 kg to 500 kg** | 69 | 0 | 69 | 0 |
| **> 500 kg to 1000 kg** | 19 | 0 | 19 | 0 |
| **> 1000 kg** | 29 | 0 | 29 | 0 |

Exhibits ranged from powder and rock-like substances to tablets, liquids, crystalline, gum, plant material, and blotter. Powder and rock-like forms represented approximately 95% of cocaine exhibits obtained in CY 2024. **The average cocaine purity of powder and rock-like forms was 84%.** Findings on the following pages will be reported on powder and rock-like forms.

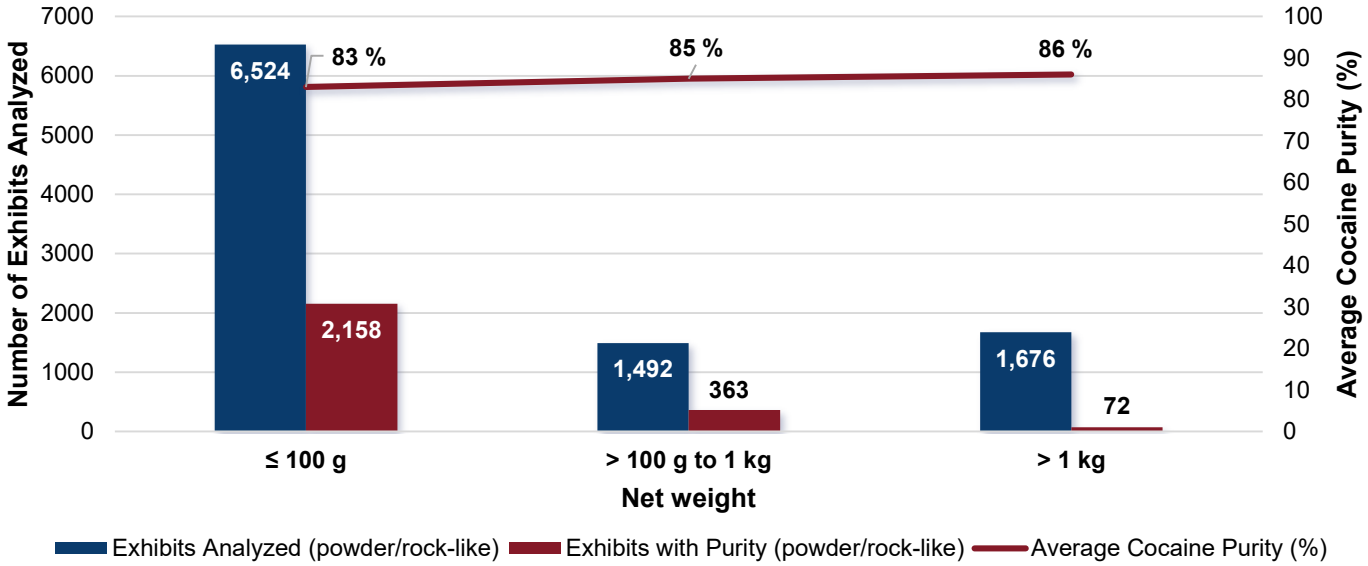
**Figure 6: CY 2024 Seizures - Forms of Cocaine Exhibits Analyzed by DEA Regional Laboratories**




Approximately 83% of regional laboratory powder and rock-like cocaine exhibits analyzed for purity ranged in seizure weight from 0.100 to 100 g. This is an important distinction from CSP's dataset which represents seizures with a minimum weight of 10 kg. CSP is typically considered an indicator of the domestic wholesale market. Regional laboratory data, thus, may provide additional information on national cocaine trends.

The average purity of cocaine exhibits with seizure weights from 0.100 to 100 g was 83% compared to 86% in exhibits greater than one kg. Exhibits with seizure weights less than or equal to 100 g also had a lower percentage of un-adulterated exhibits than exhibits greater than one kg; approximately 87% and 93% of exhibits were identified as un-adulterated, respectively. This observation is understandable as cutting agents are often added to cocaine intended for street level distribution.

**Figure 7: CY 2024 Seizures - Average Purity by Seizure Weight in Cocaine Powder and Rock-like Exhibits**



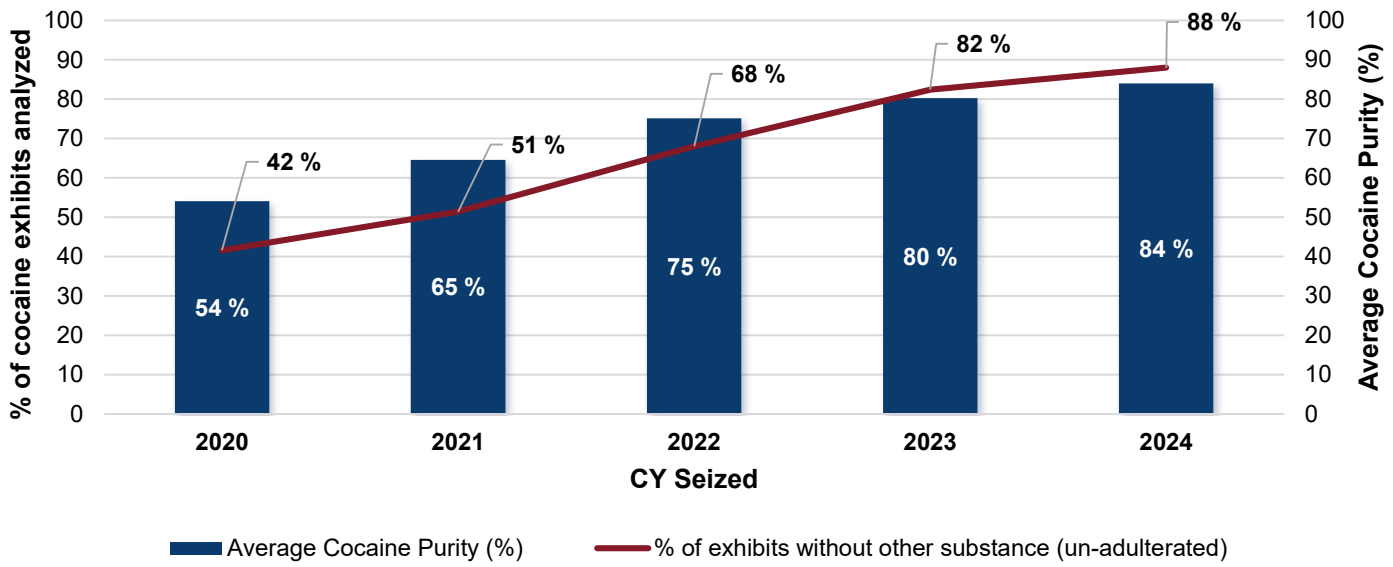
Commonly reported substances identified in cocaine exhibits in CY 2024 are reported below. Consistent with previous years, phenyltetrahydroimidazothiazole (PTHIT) is the most frequently identified adulterant in cocaine exhibits.

**Figure 8: CY 2024 - Commonly Reported Substances in Cocaine Powder and Rock-like Exhibits by Net Weight Range (percent of exhibits containing the reported substance)**

| COMMONLY REPORTED SUBSTANCE | ≤ 100 G | > 100 G TO 1 KG | > 1 KG |
|---|---|---|---|
| **Un-adulterated** | 87.3% | 87.7% | 93.1% |
| **PTHIT** | 4.8% | 7.2% | 5.5% |
| **Phenacetin** | 3.0% | 1.8% | 0.8% |
| **Lidocaine** | 2.4% | 2.1% | 0.2% |
| **Caffeine** | 2.2% | 1.9% | 0.5% |
| **Fentanyl** | 0.9% | 0.7% | 0.1% |
| **Methamphetamine** | 0.7% | 0.1% | --- |
| **Benzocaine** | 0.6% | 0.5% | 0.3% |
| **Xylazine** | 0.4% | 0.1% | --- |
| **Hydroxyzine** | --- | --- | 0.1% |
| **Acetaminophen** | 0.3% | 0.3% | 0.2% |
| **Ketamine** | 0.3% | 0.1% | --- |
| **Procaine** | --- | 0.5% | 0.2% |
| **p-Fluorofentanyl** | --- | 0.1% | --- |
| **Niacinamide** | --- | 0.3% | --- |
| **Ibuprofen** | --- | 0.1% | --- |

From CY 2020 – 2024, average purity of powder and rock-like cocaine exhibits increased each year. Correspondingly, the percent of un-adulterated cocaine exhibits also increased.

**Figure 9: CY 2020 – 2024 Seizures – Average Cocaine Purity (%) and Adulteration Trends**



Commonly reported substances identified in cocaine exhibits from CY 2020 – 2024 are reported below. Frequency of PTHIT adulteration in cocaine exhibits has decreased significantly over the last five years.

**Figure 10: CY 2020 – 2024 – Top 10 Commonly Reported Substances in Cocaine Powder and Rock-like Exhibits (percent of exhibits containing the reported substance)**

| TOP 10 COMMONLY REPORTED SUBSTANCES | CY 2020 | CY 2021 | CY 2022 | CY 2023 | CY 2024 |
|---|---|---|---|---|---|
| **PTHIT** | 40.0% | 35.6% | 24.7% | 10.4% | 5.3% |
| **Phenacetin** | 19.7% | 13.1% | 5.7% | 3.4% | 2.5% |
| **Lidocaine** | 7.4% | 3.7% | 2.6% | 2.5% | 2.0% |
| **Caffeine** | 6.7% | 5.5% | 3.4% | 2.3% | 1.8% |
| **Fentanyl** | --- | 0.3% | 0.5% | 0.8% | 0.7% |
| **Benzocaine** | 2.4% | 0.9% | 0.6% | 0.7% | 0.5% |
| **Methamphetamine** | 0.6% | 0.3% | 0.2% | 0.2% | 0.5% |
| **Procaine** | 2.0% | 1.1% | 0.7% | 0.3% | 0.3% |
| **Xylazine** | --- | --- | --- | 0.3% | 0.3% |
| **Acetaminophen** | 0.5% | 0.3% | --- | --- | 0.3% |

**Figure 11: Bundles of Cocaine Seized From Go-Fast Vessels in the Eastern Pacific**

## DOMESTIC SUBMISSIONS

CSP analyzed 732 samples from domestic cocaine seizures totaling approximately 39 MT in CY 2024. Domestic submissions were obtained from seizures within the United States (CONUS) and in transit through the Caribbean and Eastern Pacific (EPAC). While not all cocaine shipments through the Caribbean and EPAC are destined for the U.S. market, samples obtained from these seizures have historically been summarized in CSP's domestic dataset as these regions are considered significant cocaine trafficking routes to the United States. Comparison of cocaine signature and chemical profiles of samples seized in these regions may indicate cocaine production trends and trafficking patterns and are, thus, discussed in detail throughout this report.

**Figure 12: CY 2024 CONUS CSP Samples Analyzed and Seizure Weight by State**

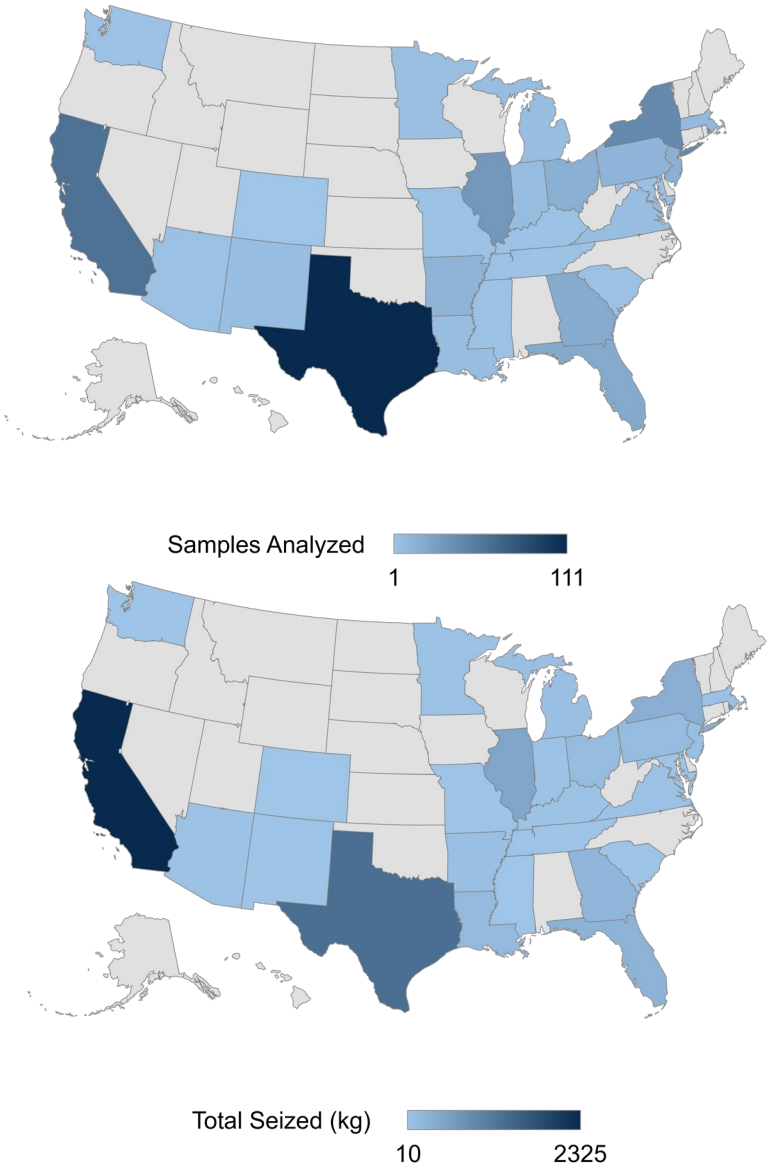



**Figure 13: Domestic seizure weights represented by CSP samples**

**Seizure Weight (MT) Represented by CSP Samples CY 2020 - 2024**

| CY SEIZED | CONUS | CARIBBEAN | EPAC |
|---|---|---|---|
| **2020** | 7.3 | 4.5 | 20.3 |
| **2021** | 7.7 | 6.6 | 15.1 |
| **2022** | 6.0 | 9.8 | 31.6 |
| **2023** | 6.6 | 7.9 | 16.4 |
| **2024** | 6.2 | 12.1 | 20.7 |

DOMESTIC SUBMISSIONS | RESULTS & TRENDS

## SOURCE CLASSIFICATION

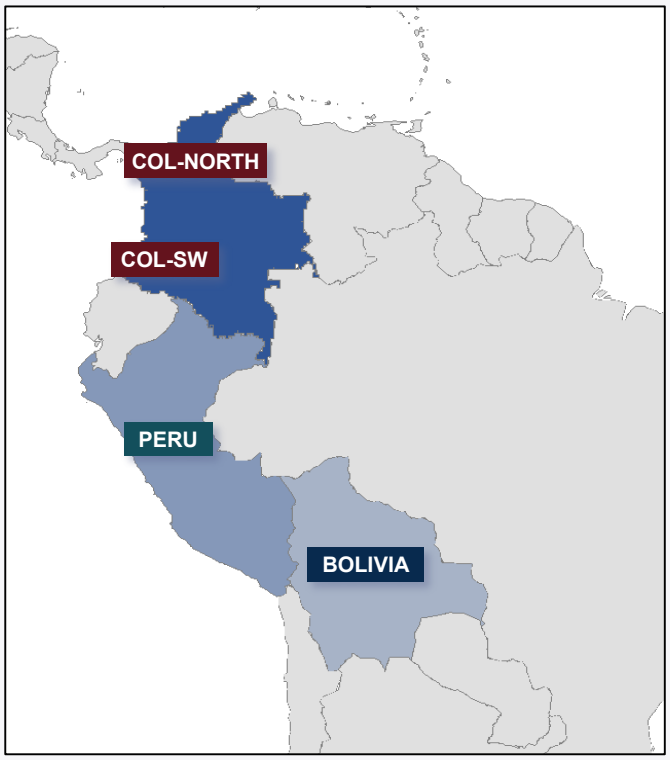
CSP has identified Colombia as the primary source of cocaine in the United States since 2000. Approximately 84% of samples from CY 2024 were classified as originating from Colombian coca. Peruvian coca leaf signatures were identified in approximately 4% of samples. Bolivian coca leaf signatures were not identified in the samples. Less than 1% of samples could not be analyzed due to extensive cutting agents.

Approximately 10% of samples contained signature profiles consistent with Colombia or Peru (Colombia-Peru) but could not be sourced to a country of origin within established guidelines. An increase in the percent of samples classified as Colombia-Peru has been observed since 2020.

Southwestern Colombia (Col-SW) was the predominant Colombian sub-region classified in CY 2024 domestic samples. This region includes Cauca, Nariño, and Putumayo.

All domestic seized cocaine HCl samples were processed into cocaine hydrochloride using traditional Colombian solvents indicating manufacture of the finished product in Colombia or using Colombian methodology.

**Figure 14: Primary CSP geographic origin classifications**




See Figures 15 and 16 below for a summary of cocaine geographic origin classifications from CY 2020 – 2024.

**Figure 15: Geographic Origin of Cocaine – U.S. Seized CSP Samples (CY 2020 – 2024)**

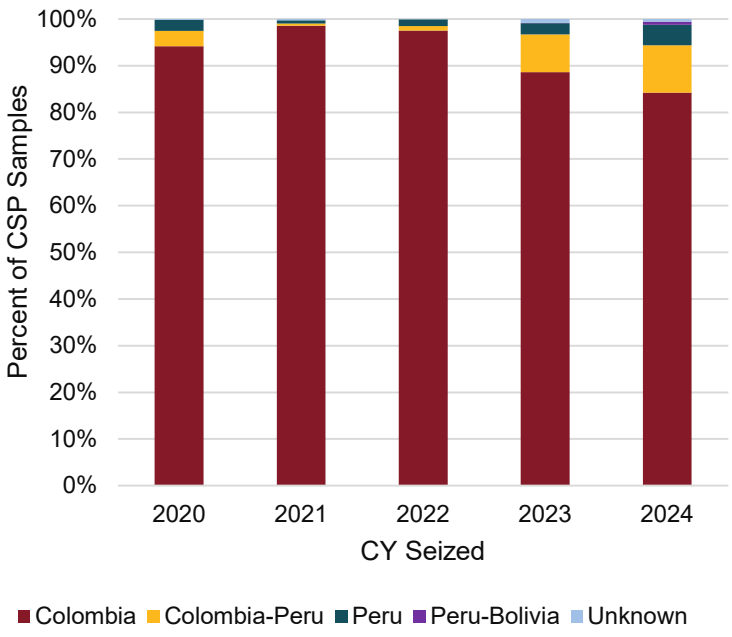



**Figure 16: Sub-Regional Geographic Origin - U.S. Seized CSP Samples (CY 2020 – 2024).** Data reported as percent of samples.
*(*New cocaine classification model used in CY 2022)*

| SUB-REGION | CY2020 | CY2021 | CY2022* | CY2023 | CY2024 |
|---|---|---|---|---|---|
| Col-SW | 52% | 38% | 49% | 34% | 42% |
| Col-North | 1% | 1% | 25% | 29% | 25% |
| Col-RND | 39% | 60% | 24% | 24% | 17% |
| Peru | 2% | <1% | 1% | 2% | 4% |
| Colombia-Peru | 3% | <1% | <1% | 8% | 10% |
| Colombia-Other | 1% | <1% | --- | 1% | --- |
| Bolivia | --- | --- | --- | --- | --- |
| Peru-Bolivia | --- | --- | --- | <1% | <1% |
| UNK | <1% | <1% | <1% | <1% | <1% |

DOMESTIC SUBMISSIONS | RESULTS & TRENDS

## PROCESSING ARTIFACTS

CSP results continue to indicate the high availability of oxidizing agents such as potassium permanganate in illicit cocaine production. All CY 2024 domestic cocaine HCl samples were highly oxidized (or re-oxidized).

## COCAINE HCL PROCESSING SOLVENTS

Figure 17 summarizes cocaine HCl occluded solvent profiles from CY 2020 - 2024. Results are reported as the percent of samples in which the solvent(s) were identified as predominant. Multiple solvents may be present within a sample. Processing solvents traditionally associated with Colombia were observed in all CY 2024 domestic cocaine HCl samples indicating cocaine HCl conversion in Colombia or using traditional Colombian methodology.

Mixed acetates was the profile most frequently identified and includes a mixture of commonly used acetates in which the primary solvent could not be determined.

**Figure 17: Domestic Cocaine HCl Processing Solvent Trends. Percentage of samples by CY seized.**

| PRIMARY SOLVENTS | CY 2020 | CY 2021 | CY 2022 | CY 2023 | CY 2024 |
|---|---|---|---|---|---|
| **Acetone** | --- | --- | <1% | --- | --- |
| **Ethyl Acetate** | 7% | 11% | 22% | 27% | 18% |
| **Ethyl Ether** | <1% | --- | --- | --- | --- |
| **Methyl Acetate** | 8% | 5% | <1% | --- | --- |
| **Methyl Ethyl Ketone** | 30% | 28% | 25% | 31% | 33% |
| **Mixed Acetates** | 41% | 50% | 35% | 40% | 41% |
| **n-Butyl Acetate** | <1% | 2% | <1% | 2% | 7% |
| **n-Propyl Acetate** | 43% | 32% | 41% | 31% | 34% |

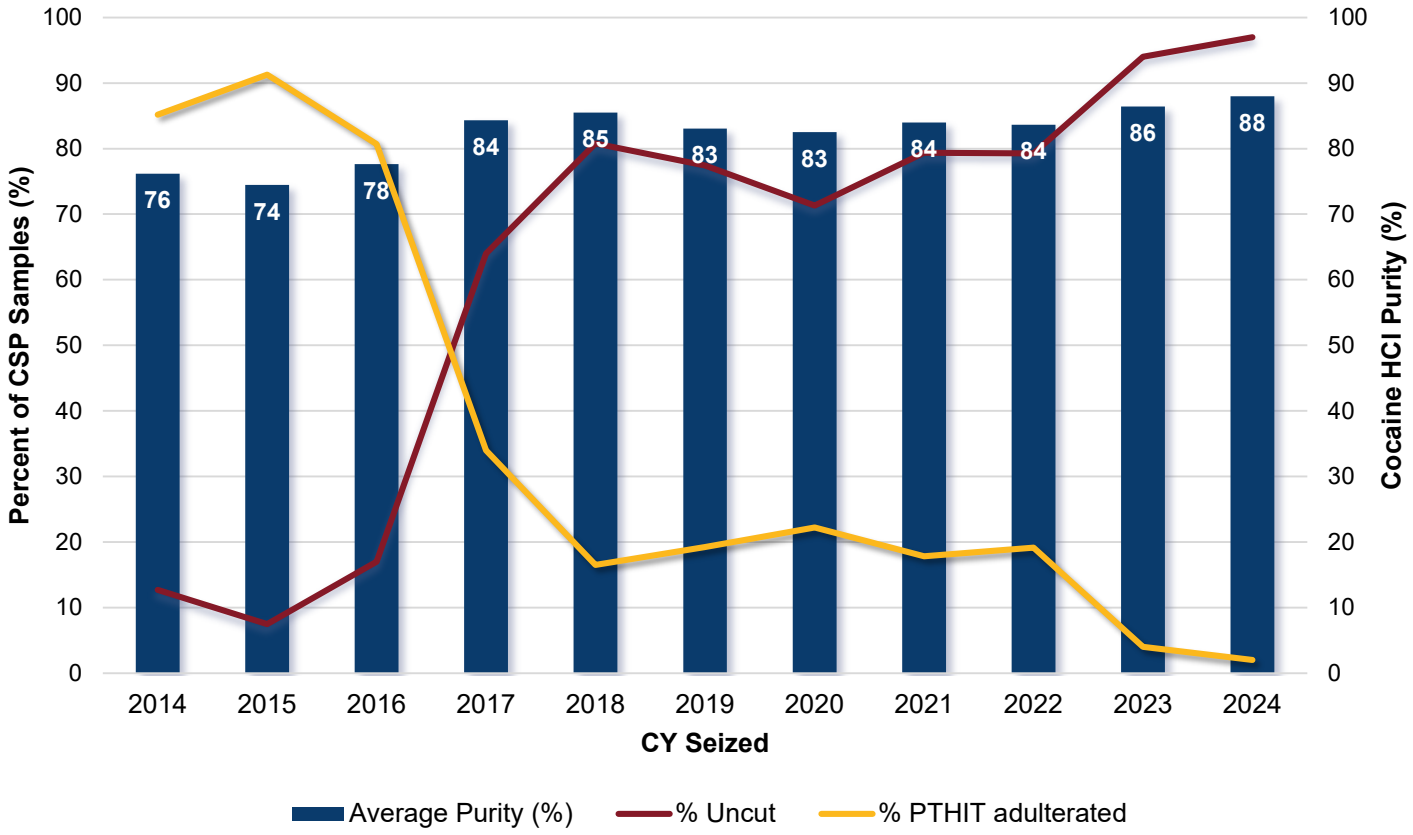
DOMESTIC SUBMISSIONS | RESULTS & TRENDS

## PURITY AND ADULTERANT/DILUENTS

The average cocaine HCl purity in CY 2024 domestic CSP samples was the highest documented by the CSP during the last ten years with an average purity of **88%.** The percentage of samples without cutting agents this reporting period was also significantly high with 97% of samples identified as uncut. The CSP reports adulterants and diluents as cutting agents when they are present in a concentration at or above one percent. Multiple cutting agents may be identified per sample.

While most CSP samples were identified as uncut, the primary cutting agent was phenyltetrahydroimidazothiazole (PTHIT, i.e., levamisole and/or levamisole mixtures containing its optical isomer dexamisole). Levamisole (l-isomer) and tetramisole (d,l-isomer), reported by DEA as PTHIT, are anthelmintic drugs used in veterinary medicine. Cocaine producers may use PTHIT as an adulterant because of its similar reactivity to a commonly used cocaine colorimetric field test and similar chemical solubility properties as cocaine. PTHIT also reportedly has the potential to enhance the euphoric effects of cocaine on users. PTHIT has been identified as the most prominent cocaine adulterant in domestic seized samples since 2009. Only 2% of domestic samples, however, identified PTHIT as a cutting agent in CY 2024. Various other cutting agents such as benzocaine, boric acid, lactose, lidocaine, mannitol, nicotinamide, and phenacetin were identified less frequently, for a combined total of approximately 1% of samples. Figure 18 illustrates cocaine purity and adulteration trends from the last ten years.

**Figure 18: Domestic Cocaine HCl Purity and Adulteration Trends (CY 2014 – 2024)**



DOMESTIC SUBMISSIONS | RESULTS & TRENDS

**Figure 19:** Cutting Agents in CY 2024 Domestic CSP Samples

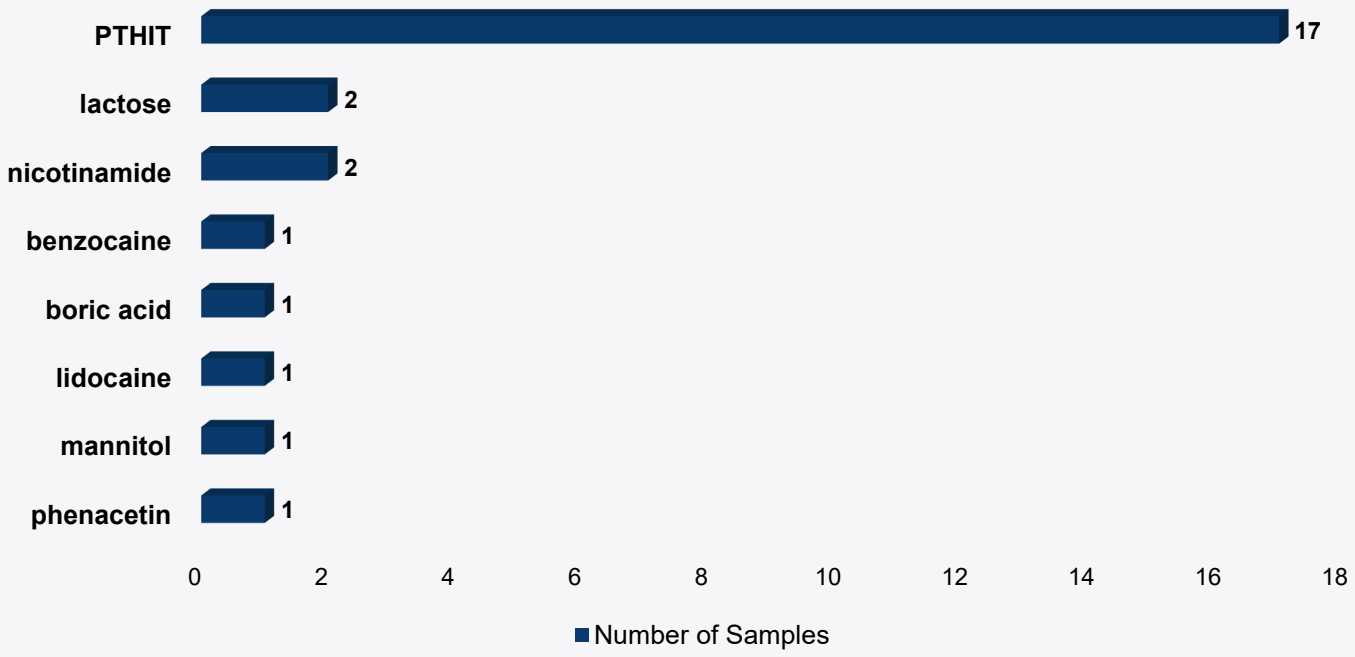
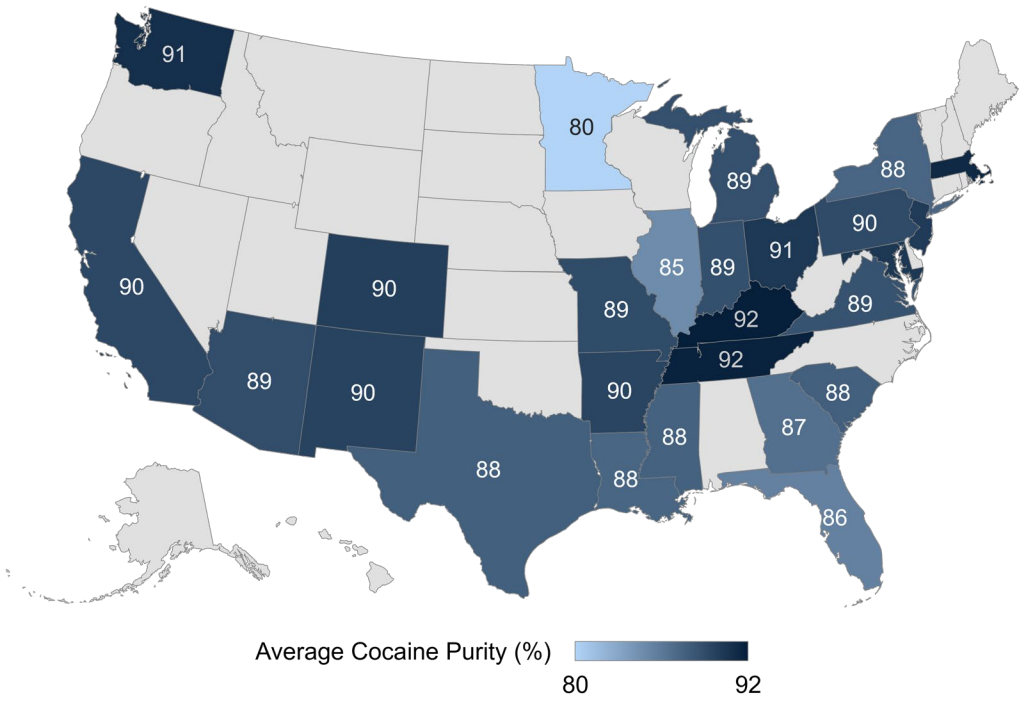



**Figure 20:** Average Cocaine Purity in CSP Samples by State – CY 2024




**The average cocaine purity by state (CY 2024) is illustrated in Figure 20.**

Domestic samples also included seizures in the Eastern Pacific and Caribbean regions. Findings from each domestic region are discussed in more detail on pages 14 – 16.

DOMESTIC SUBMISSIONS

RESULTS & TRENDS

## CONUS SEIZURES (CY 2024)

A total of 413 samples representing approximately 6.2 MT were examined from CONUS seizures. California and Texas represented approximately 59% of the total seizure weight (kg) and 41% of samples. See Figure 21 for detailed results.

Col-SW was the primary source of cocaine in the CONUS region. Cocaine origin classifications for California, Texas, and Florida are listed in Figure 22.

**Figure 22: CY 2024 Sub-Regional Geographic Origin Summary – Percent of Samples by State or Region**

| GEOGRAPHIC ORIGIN | CONUS | CA | FL | TX |
|---|---|---|---|---|
| Col-North | 16% | 13% | 35% | 19% |
| Col-SW | 47% | 52% | 55% | 50% |
| Col-RND | 16% | 20% | 10% | 16% |
| Peru | 4% | 2% | --- | 3% |
| Colombia-Peru | 15% | 13% | --- | 11% |
| Peru-Bolivia | 1% | --- | --- | 1% |
| UNK | 1% | --- | --- | --- |

**Figure 21: CY 2024 CONUS Findings by State**

| STATE | SAMPLES ANALYZED | SEIZURES ANALYZED | SEIZURE WEIGHT (KG) | AVERAGE COCAINE HCL PURITY (%) | MIN. COCAINE HCL PURITY (%) | MAX. COCAINE HCL PURITY (%) |
|---|---|---|---|---|---|---|
| AR | 13 | 5 | 84 | 90 | 86 | 94 |
| AZ | 4 | 2 | 54 | 89 | 86 | 92 |
| CA | 60 | 26 | 2325 | 90 | 75 | 96 |
| CO | 1 | 1 | 10 | 90 | 90 | 90 |
| FL | 20 | 8 | 281 | 86 | 73 | 90 |
| GA | 19 | 7 | 227 | 87 | 79 | 93 |
| IL | 33 | 14 | 473 | 85 | 10 | 96 |
| IN | 7 | 3 | 55 | 89 | 85 | 94 |
| KY | 3 | 1 | 40 | 92 | 92 | 93 |
| LA | 6 | 2 | 170 | 88 | 85 | 90 |
| MA | 9 | 3 | 67 | 92 | 87 | 94 |
| MD | 3 | 1 | 16 | 91 | 90 | 91 |
| MI | 6 | 4 | 84 | 89 | 84 | 94 |
| MN | 5 | 3 | 56 | 80 | 42 | 91 |
| MO | 3 | 1 | 20 | 89 | 89 | 90 |
| MS | 3 | 1 | 16 | 88 | 87 | 89 |
| NJ | 15 | 7 | 98 | 91 | 84 | 96 |
| NM | 6 | 2 | 20 | 90 | 88 | 93 |
| NY | 43 | 15 | 334 | 88 | 34 | 95 |
| OH | 16 | 6 | 149 | 91 | 88 | 93 |
| PA | 12 | 4 | 151 | 90 | 87 | 93 |
| SC | 3 | 1 | 31 | 88 | 87 | 90 |
| TN | 3 | 1 | 32 | 92 | 91 | 94 |
| TX | 111 | 49 | 1298 | 88 | 21 | 94 |
| VA | 6 | 4 | 57 | 89 | 79 | 92 |
| WA | 3 | 1 | 19 | 91 | 91 | 92 |

***NOTE:*** *Seizure amounts, reported as total kilograms (kg), are estimations.*

DOMESTIC SUBMISSIONS | RESULTS & TRENDS

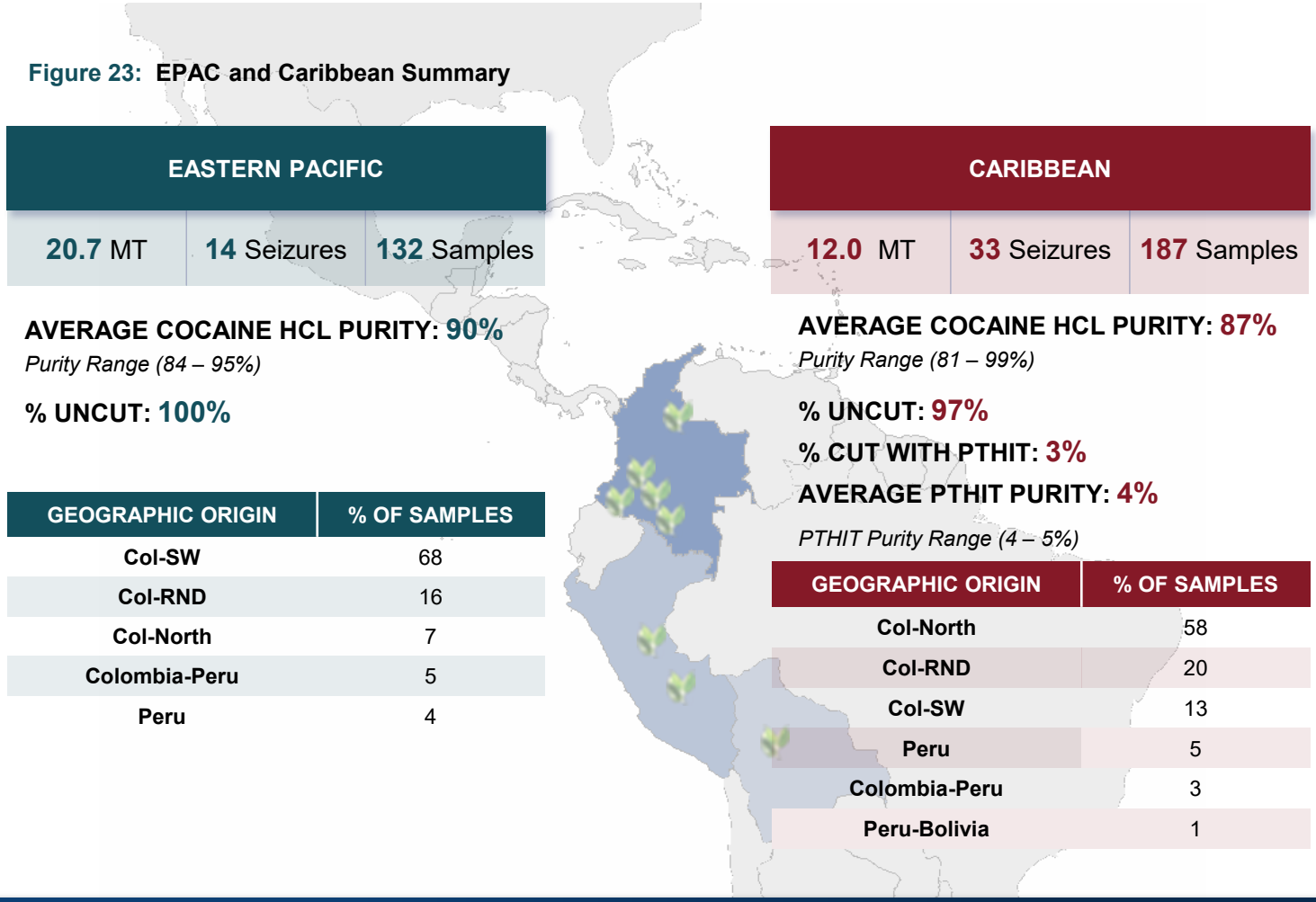
## EASTERN PACIFIC AND CARIBBEAN SEIZURES (CY 2024)

Two major maritime cocaine trafficking routes are through the Eastern Pacific (EPAC) and Caribbean regions. Comparison of cocaine chemical and signature profiles between samples seized in these regions may indicate cocaine production trends and trafficking patterns.

The average cocaine HCl purity was slightly higher in samples seized in the EPAC compared to the Caribbean region. Cutting agents were not identified in any EPAC samples. Caribbean samples also contained a high percentage of uncut samples. PTHIT was the only adulterant identified in Caribbean seized samples.

Differences in the geographic origin were observed. Northern Colombia was the predominant source of cocaine in samples seized in the Caribbean. Southwestern Colombia was the predominant source in the EPAC. Northern Colombian classifications in the Caribbean were most consistent with Norte de Santander; whereas, samples in the EPAC classified as Northern Colombia were most consistent with Antioquia. Nariño was the predominant Southwestern Colombian classification reported in both regions. All cocaine HCl samples seized in the EPAC and Caribbean were converted to cocaine HCl using traditional Colombian solvents indicating manufacture of the finished product in Colombia or using Colombian methodology.

**Figure 23:** EPAC and Caribbean Summary



### EASTERN PACIFIC

| 20.7 MT | 14 Seizures | 132 Samples |
|---|---|---|

**AVERAGE COCAINE HCL PURITY: 90%**
*Purity Range (84 – 95%)*

**% UNCUT: 100%**

| GEOGRAPHIC ORIGIN | % OF SAMPLES |
|---|---|
| Col-SW | 68 |
| Col-RND | 16 |
| Col-North | 7 |
| Colombia-Peru | 5 |
| Peru | 4 |

### CARIBBEAN

| 12.0 MT | 33 Seizures | 187 Samples |
|---|---|---|

**AVERAGE COCAINE HCL PURITY: 87%**
*Purity Range (81 – 99%)*

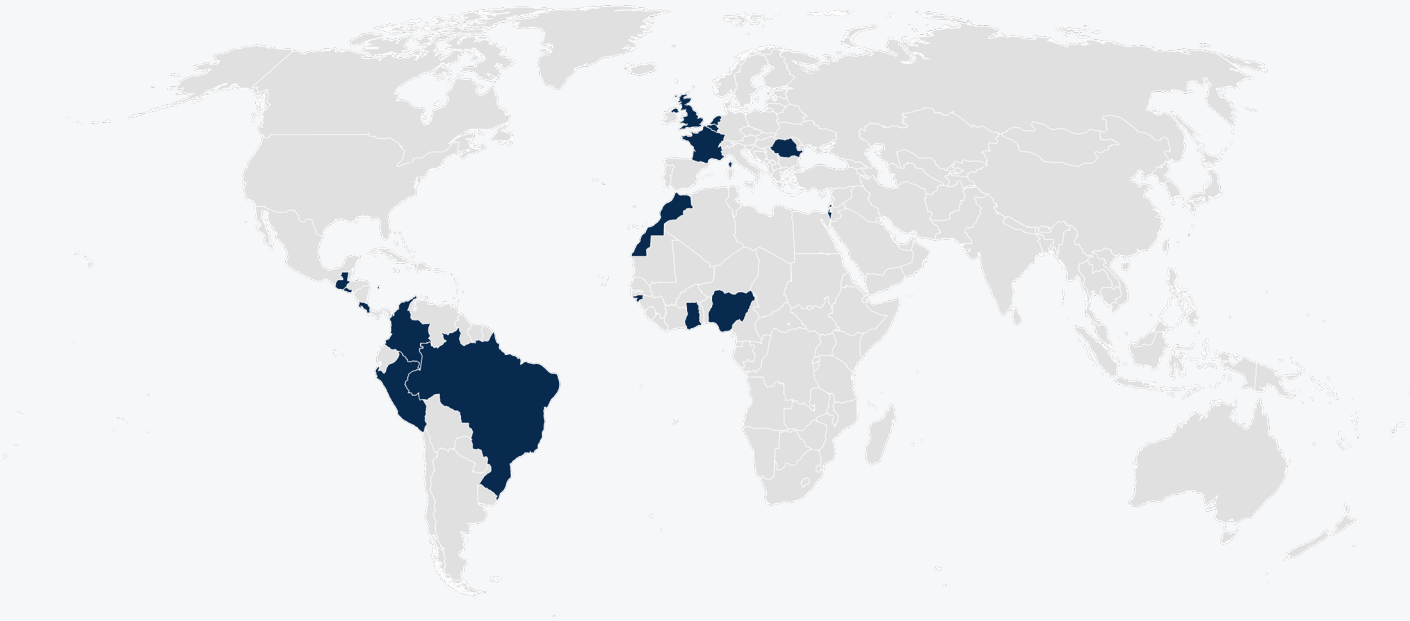
**% UNCUT: 97%**
**% CUT WITH PTHIT: 3%**
**AVERAGE PTHIT PURITY: 4%**
*PTHIT Purity Range (4 – 5%)*

| GEOGRAPHIC ORIGIN | % OF SAMPLES |
|---|---|
| Col-North | 58 |
| Col-RND | 20 |
| Col-SW | 13 |
| Peru | 5 |
| Colombia-Peru | 3 |
| Peru-Bolivia | 1 |

## FORIEGN SUBMISSIONS

A total of 391 samples seized outside the United States were analyzed this reporting period. Samples were submitted by DEA Foreign Divisions and as exemplars from DEA regional laboratory exhibits. This dataset differs from domestic submissions as they are not necessarily from wholesale cocaine seizures but also include samples seized at the street level or unusual samples of interest. While the total number of samples analyzed from each geographic region is limited, cocaine signature results may provide an indication of global cocaine trafficking trends. Regions and notable findings are discussed over the next few pages. Detailed results can be found in Figures 26 and 27.

**Figure 24: Foreign Submissions –** CSP analyses from April 2024 through the first quarter of CY 2025



| COUNTRY SEIZED | NUMBER OF SAMPLES | COUNTRY SEIZED | NUMBER OF SAMPLES |
|---|---|---|---|
| **Belgium** | 6 | **Guinea Bissau** | 9 |
| **Brazil** | 175 | **Israel** | 1 |
| **Colombia** | 57 | **Morocco** | 1 |
| **Costa Rica** | 4 | **Netherlands** | 21 |
| **El Salvador** | 11 | **Nigeria** | 26 |
| **France** | 49 | **Peru** | 3 |
| **Ghana** | 7 | **Romania** | 3 |
| **Guatemala** | 3 | **United Kingdom** | 15 |

FORIEGN SUBMISSIONS | RESULTS & TRENDS

## CENTRAL AMERICA

CSP analyzed samples obtained during CY 2018 – 2024 in Costa Rica, El Salvador, and Guatemala. The predominant geographic source of cocaine samples was Colombia.

### Costa Rica

Three samples of uncut cocaine HCl were analyzed from a 21 kg seizure in San Jose (CY 2024). The average purity was 91%. CSP models classified the cocaine base origin as Col-SW (Nariño), Peru, and Colombia-Peru; the HCl process for each sample was classified as Colombia.

One sample of uncut cocaine HCl was analyzed from a 1 kg seizure in Limon, Costa Rica (CY 2023). The average purity was 88%. The cocaine base origin was classified as Col-North (Antioquia), and the HCl process was classified as Colombia.

### El Salvador

CSP analyzed ten uncut cocaine HCl samples from a CY 2018 seizure of unknown size. The average purity was 89%. The cocaine base origin and HCl process for each sample was classified as Colombia. The predominant sub-regional cocaine base origin was Col-SW (Nariño), but samples were also sourced to Col-North (Antioquia and Norte de Santander).

CSP also analyzed one exhibit seized in CY 2024 from plastic roller skate wheels suspected to contain cocaine; however, no controlled substances were identified in the exhibit.

### Guatemala

CSP analyzed three samples from a 2 kg seizure in Coban, Guatemala (CY 2024). The original exhibit consisted of two bricks of cocaine HCl, inside of which, one of the bricks contained a small sample of cocaine base wrapped in plastic. See Figure 25 below.

Similar cocaine signature profiles were observed in each sample. The average purity of the cocaine HCl was 91%, and the cocaine base purity was 92%. CSP models classified the cocaine base origin of each sample as Colombia-Peru, and the HCl process as Colombia.

**Figure 25: Cocaine base sample (approximately 1 g) within a kilogram brick of cocaine HCl**

FORIEGN SUBMISSIONS | RESULTS & TRENDS

## SOUTH AMERICA

South America is the world's primary source of coca and primary producer of cocaine – with coca cultivation and cocaine production centered in Colombia, Peru, and Bolivia. Samples from this region provide CSP critical data to maintain geo-sourcing models and monitor trafficking trends. CSP analyzed samples from multiple seizures in Brazil, Colombia, and Peru this reporting period. The predominant geographic source of cocaine samples analyzed from seizures in South America differed depending on the country. Brazilian samples were primarily sourced to Peru and Bolivia; Peruvian samples were sourced to Peru; and Colombian samples were primarily sourced to Colombia. Additional details are summarized below.

### Brazil

CSP analyzed 173 samples obtained from Brazilian cocaine base and cocaine HCl seizures from CY 2019 – 2022. The predominant geographic source of Brazilian cocaine was Peru, followed by Bolivia. Samples with signature profiles consistent with Peruvian coca represented approximately 62% of samples, and signature profiles consistent with Bolivian coca represented approximately 16% of samples. Cocaine signature profiles that could not be sourced to a specific country of origin but were consistent with Peru and Bolivia (Peru-Bolivia) were classified in 7% of samples. Several cocaine base samples were cut with irganox and could not be geographically sourced due to interference.

The predominant HCl process identified in Brazilian samples was Bolivia/Peru-Ethyl Acetate representing approximately 58% of samples; followed by Peru-Acetone, identified in 22% of samples. Approximately 18% of samples contained solvent profiles not yet associated with a specific country and were classified as Unknown. Unknown solvent profiles included acetone with MEK and various acetates with acetone.

Additionally, two samples from a CY 2025 seizure of maca powder suspected to contain cocaine were analyzed. No controlled substances were identified.

### Colombia

CSP analyzed fifty-seven cocaine HCl samples from multiple exhibits obtained in CY 2024. The average purity was 90%. Similar to CSP's domestic findings, samples from Colombian seizures contained minimal cutting agents. Only one sample was cut with PTHIT. Samples with signature profiles consistent with Colombian coca represented approximately 88% of samples. Col-SW (Nariño) was the predominant sub-regional geographic source, identified in 22% of samples. All samples were converted to cocaine HCl using traditional Colombian solvents. The predominant HCl processing solvent was n-propyl acetate. Primary processing solvents included ethyl acetate, n-butyl acetate, acetate mixtures, and methyl ethyl ketone.

CSP data indicates that cocaine base from Peru may be converted to cocaine HCl in Colombia or using Colombian methodology. One sample was classified as originating from Peruvian cocaine base, but was converted to cocaine HCl using Colombian solvents.

### Peru

CSP analyzed three uncut cocaine HCl samples from a 30 kg seizure in Peru. The average purity was 96%. The samples were geographically sourced to Peru, and the cocaine HCl process used was Peru-Acetone (traditional Peruvian process).

FORIEGN SUBMISSIONS | RESULTS & TRENDS

## MIDDLE EAST AND AFRICA

Submissions analyzed by the CSP from DEA offices in the Middle East and Africa regions included samples from seizures in Ghana, Guinea Bissau, Israel, Morocco, and Nigeria. The predominant geographic source of cocaine samples was Colombia. The average cocaine HCl purity of samples seized in the African region was 88%. One cocaine HCl sample was analyzed from a seizure in Israel with a purity of 92%.

### Ghana

Five cocaine HCl samples were analyzed from five different CY 2024 seizures totaling approximately 322 kg. Three of the samples were classified as Col-SW, and two were classified as Colombia-Peru. All of the cocaine HCl samples were uncut. Due to insufficient sample, solvent analysis was not performed on two samples. Of the samples that were evaluated for solvents, the HCl processes were classified as Colombia.

Two samples were also analyzed from a CY 2023 seizure of cooking oil suspected to contain cocaine, but no controlled substances were identified.

### Guinea-Bissau

Nine cocaine HCl samples were analyzed from an approximately 2,633 kg seizure obtained from a private jet in CY 2024. The predominant source of the cocaine was Colombia, and each sample was converted to cocaine HCl using the Colombian process. The average purity was 91%.

### Morocco

One sample of cocaine HCl was analyzed from a seven kg seizure in Guercif, Morocco (CY 2024). The purity was 97%. The cocaine base was sourced to Peru, and the HCl process was classified as Colombia.

### Nigeria

Twenty-six samples of cocaine HCl were analyzed from multiple seizures in CY 2024. The average purity was 86%. While most of the samples were uncut, several samples contained adulterants. Cutting agents that were identified included acetaminophen, lactose, mepivacaine, phenacetin, and PTHIT. Caffeine was also identified as a trace component in five samples. The predominant origin of the cocaine was Colombia; however, six samples were sourced to Peru. Five of the Peruvian sourced samples were classified as Peru-Acetone, and one was classified as Bolivia/Peru-Ethyl Acetate.

### Israel

CSP analyzed one sample of cocaine HCl seized in CY 2024 from a shipping container at the Port of Ashdod, Israel. The sample was uncut with a purity of 92%. The cocaine base origin was classified as Col-SW (Antioquia), and the HCl process was Colombia.

FORIEGN SUBMISSIONS | RESULTS & TRENDS

## EUROPE

CSP analyzed 94 samples seized in the European region, including submissions from Belgium, France, the Netherlands, Romania, and the United Kingdom. Most of the samples were in the form of cocaine HCl. The predominant cocaine geographic origin was Colombia; however, a large number of samples were sourced to Peru and Bolivia.

### Belgium

Six samples of cocaine HCl were analyzed from seizures in CY 2024. Five samples were obtained from Belgium Customs in Zaventem, and one sample was obtained from a 120 kg seizure at the Port of Antwerp. The Zaventem samples contained uncut cocaine HCl with an average purity of 91%. Zaventem samples were sourced to Col-SW (Nariño) and converted to cocaine HCl using n-Propyl Acetate (Colombia HCl process). The Antwerp seized sample had a purity of 91% and was sourced to Peru. The HCl Process was Bolivia/Peru-Ethyl Acetate. Of note, the Antwerp sample was obtained from a shipping container that originated from the Port of Boma, Congo.

### France

Forty-nine cocaine HCl samples were analyzed from French seizures. Thirty-eight samples were from three maritime related events in which cocaine packages washed up on the beaches of Normandy, France (CY 2023). The predominant geographic sources of the samples were Bolivia and Peru, and the predominant HCl process was Bolivia/Peru-Ethyl Acetate. Three of the samples were sourced to Colombia and converted to cocaine HCl using n-Propyl Acetate (Colombia HCl process). The average cocaine purity was 92%. Most of the samples were uncut. PTHIT was identified as a cut in three samples and identified as a trace component in four samples.

In a separate study, eleven pellets were analyzed from waste collected from airplanes at Paris Orly airport during CY 2021. The predominant geographic sources were Colombia and Peru, but the HCl process for each sample was classified as Colombia. The average cocaine purity was 86%. PTHIT was identified as a cut in four samples and as a trace component in three samples. Guaifenesin was also identified as a trace component in one sample.

### Netherlands

Twenty-one cocaine HCl samples were analyzed from three seizures in Rotterdam during CY 2021. The predominant source of the cocaine was Col-SW (Nariño), and the HCl process for each sample was Colombia. The average cocaine purity was 83%. PTHIT was identified as a cut in five samples. Trace guaifenesin was also identified in one sample.

### Romania

CSP analyzed three samples from a seizure of raw and roasted coffee beans suspected to contain cocaine. No controlled substances were identified in the samples.

### United Kingdom

CSP analyzed fifteen samples seized in the UK during CY 2024. Thirteen cocaine HCl samples, one cocaine base sample, and one sample containing trace cocaine (salt form not determined) were analyzed. The predominant origin and HCl process was Colombia. Most samples were uncut. PTHIT was identified in two cocaine HCl samples, and sodium bicarbonate was identified in one cocaine HCl sample. One sample contained trace cocaine and boric acid.

FORIEGN SUBMISSIONS | RESULTS & TRENDS

**Figure 26:** Foreign Result Summary

| SEIZURE LOCATION | NUMBER OF SAMPLES | COCAINE SALT FORM | AVERAGE COCAINE PURITY (%) | COCAINE PURITY RANGE (%) | CUTTING AGENTS IDENTIFIED AND OTHER FINDINGS |
|---|---|---|---|---|---|
| **Belgium** | 6 | HCl | 91 | 88 - 92 | Uncut (6) |
| **Brazil** | 36 | Base | 73 | 25 - 83 | Uncut (24), irganox (8), phenacetin (3), aminopyrine (1) |
| | 137 | HCl | 92 | 66 - 98 | Uncut (127), PTHIT (7), caffeine (2) |
| | 2 | N/A | --- | --- | No controlled substance - maca powder suspected to contain cocaine |
| **Colombia** | 57 | HCl | 90 | 85 - 98 | Uncut (56), PTHIT (1) |
| **Costa Rica** | 4 | HCl | 90 | 88 - 91 | Uncut (4) |
| **El Salvador** | 10 | HCl | 89 | 88 - 90 | Uncut (10) |
| | 1 | N/A | --- | --- | No controlled substance - plastic roller skate wheels suspected to contain cocaine |
| **France** | 49 | HCl | 90 | 79 - 98 | Uncut (42), PTHIT (7) |
| **Ghana** | 5 | HCl | 92 | 89 - 93 | Uncut (5) |
| | 2 | N/A | --- | --- | No controlled substance (cooking oil suspected to contain cocaine) |
| **Guatemala** | 1 | Base | 92 | --- | Uncut (1) |
| | 2 | HCl | 91 | --- | Uncut (2) |
| **Guinea Bissau** | 9 | HCl | 91 | 89 - 95 | Uncut (9) |
| **Israel** | 1 | HCl | 92 | --- | Uncut (1) |
| **Morocco** | 1 | HCl | 97 | --- | Uncut (1) |
| **Netherlands** | 21 | HCl | 83 | 73 - 89 | Uncut (16), PTHIT (5) |
| **Nigeria** | 26 | HCl | 86 | 52 - 94 | Uncut (20), phenacetin (4), PTHIT (2), lactose (1), acetaminophen (1), mepivacaine (1) |
| **Peru** | 3 | HCl | 96 | 94 - 96 | Uncut (3) |
| **Romania** | 3 | N/A | --- | --- | No controlled substance - caffeine identified (3) Coffee beans suspected to contain cocaine. |
| **United Kingdom** | 1 | Base | 89 | --- | Uncut (1) |
| | 13 | HCl | 88 | 77 - 93 | Uncut (10), PTHIT (2), sodium bicarbonate (1) |
| | 1 | ND | Trace | --- | trace cocaine + boric acid (1) |

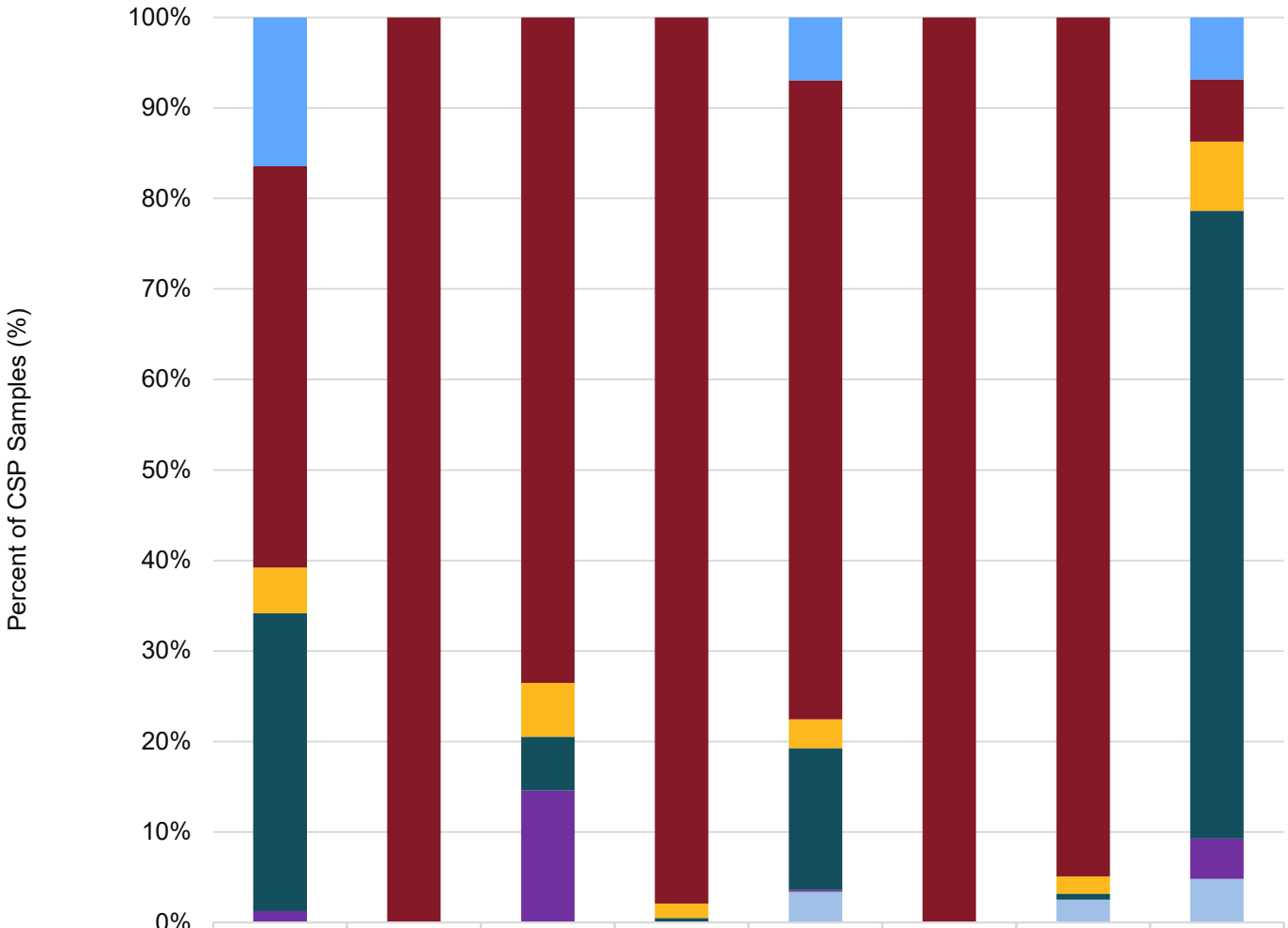
FORIEGN SUBMISSIONS | RESULTS & TRENDS

**Figure 27: Foreign Geographic Origin and Cocaine HCl Process Classification Summary**

| SEIZURE LOCATION | COCAINE SALT FORM | COCAINE BASE GEOGRAPHIC ORIGIN | HCL PROCESS (OCCLUDED SOLVENT PROFILES) |
|---|---|---|---|
| **Belgium** | HCl | Col-SW (5), Peru (1) | Colombia (5), Bolivia/Peru-Ethyl Acetate (1) |
| **Brazil** | Base | Bolivia (11), Peru (11), Not Determined (8), Colombia-Peru (4), Peru-Bolivia (1), Unknown (1) | N/A |
| | HCl | Peru (91), Bolivia (15), Peru-Bolivia (10), Colombia-Peru (9), Unknown (9), Col-SW (2), Col-RND (1) | Bolivia/Peru-Ethyl Acetate (80), Peru-Acetone (30), Unknown (24), Colombia (3) |
| **Colombia** | HCl | Col-SW (23), Col-RND (14), Col-North (13), Unknown (4), Colombia-Peru (2), Peru (1) | Colombia (57) |
| **Costa Rica** | HCl | Col-North (1), Col-SW (1), Peru (1), Colombia-Peru (1) | Colombia (4) |
| **El Salvador** | HCl | Col-SW (6), Col-North (4) | Colombia (10) |
| **France** | HCl | Bolivia (18), Peru (18), Col-RND (6), Col-SW (3), Col-North (2), Unknown (2) | Bolivia/Peru-Ethyl Acetate (33), Colombia (14), Unknown (2) |
| **Ghana** | HCl | Col-SW (3), Colombia-Peru (2) | Colombia (3), N/A-Insufficient Sample (2) |
| **Guatemala** | Base | Colombia-Peru (1) | N/A |
| | HCl | Colombia-Peru (2) | Colombia (2) |
| **Guinea Bissau** | HCl | Col-North (3), Col-SW (3), Col-RND (2), Bolivia (1) | Colombia (9) |
| **Israel** | HCl | Col-North (1) | Colombia (1) |
| **Morocco** | HCl | Peru (1) | Colombia (1) |
| **Netherlands** | HCl | Col-SW (10), Col-RND (8), Col-North (3) | Colombia (21) |
| **Nigeria** | HCl | Col-SW (15), Peru (6), Col-North (3), Col-RND (2) | Colombia (20), Peru-Acetone (5), Bolivia/Peru-Ethyl Acetate (1) |
| **Peru** | HCl | Peru (3) | Peru-Acetone (3) |
| **United Kingdom** | Base | Col-North (1) | N/A |
| | HCl | Col-SW (6), Col-RND (4), Col-North (2), Colombia-Peru (1) | Colombia (13) |

FORIEGN SUBMISSIONS | RESULTS & TRENDS

**Figure 28: Foreign Geographic Origin Trends: Cocaine HCl Samples Seized CY 2020 - 2024**




| | Africa | Asia-Pacific | Canada / Mexico | Central America | Europe | Middle East | South America: Andean | South America: Southern Cone |
|---|---|---|---|---|---|---|---|---|
| Bolivia | 13 | | | | 35 | | | 17 |
| Colombia | 35 | 8 | 111 | 188 | 355 | 2 | 149 | 17 |
| Colombia-Peru | 4 | | 9 | 3 | 16 | | 3 | 19 |
| Peru | 26 | | 9 | 1 | 79 | | 1 | 172 |
| Peru-Bolivia | 1 | | 22 | | 1 | | | 11 |
| Unknown | | | | | 17 | | 4 | 12 |

**Cocaine Base Origin (Number of Samples) by Region Seized**

## BACKGROUND INFORMATION

### SAMPLING PLAN

DEA regional laboratories and other U.S. law enforcement agencies submit cocaine HCl samples to the CSP from seizures with a minimum net weight of 10 kg. Three units are sampled from seizures with a net weight between 10 and 100 kg. An additional three units are sampled for each 100 kg up to a maximum of 21 samples per seizure. Seizures in CONUS and within major maritime corridors are sampled. A smaller number of samples are obtained in regions outside the United States by international law enforcement partners and submitted to the CSP through DEA foreign divisions.

### COCAINE SIGNATURE ANALYSIS

CSP analytical methodologies give evidence of where coca leaf was grown; and therefore, processed to cocaine base (geographic origin) and how cocaine base was converted into cocaine hydrochloride (HCl process). Analytical methodologies include five instrumental techniques through which cocaine purity, cutting agents, occluded solvents, and the geographic region of origin are determined. Cocaine signatures used to geographically source cocaine include alkaloid impurities and stable isotopes. Manufacturing impurities are also evaluated to monitor the extent of oxidation. The manufacturing process used to produce cocaine HCl (HCl process) is classified using occluded solvent profiles characteristic of the source country.

### COCAINE CLASSIFICATIONS

Coca crops grown in Colombia, Peru, and Bolivia are the primary sources of illicit cocaine. Since 2000, CSP classification models have sourced cocaine to a country of origin with an accuracy exceeding 90 percent. In 2015, the CSP began sourcing cocaine to 19 sub-regions within Colombia, Peru, and Bolivia. During the last few years, however, cocaine classifications beyond the country of origin have become more difficult as the CSP observed an increase in the number of samples that were classified to a source country that did not meet the criteria for sub-regional delineation. This loss of geospatial granularity was documented in the July 2022 Cocaine Signature Program Report.

To improve CSP's cocaine classification model, geographically authenticated cocaine samples from Colombia and Peru were analyzed from 2020 to 2022. CSP geo-sourcing datasets were updated by combining these results with previously analyzed authentic samples. A new classification model was established in early 2023. Under the new methodology, cocaine samples are geo-sourced to a country of origin and, when possible, classified to a region within Colombia. Cocaine is classified regionally in Colombia to Northern Colombia (compared to Antioquia and Norte de Santander) and Southwestern Colombia (compared to Cauca, Nariño, and Putumayo). According to U.S. government estimates, these five regions represent more than 85% of the area of coca cultivation and potential cocaine production in Colombia. Other coca growing regions within Colombia are still represented in the authentic dataset used for sample comparison, but the current model requires a broader regional classification (Northern vs Southwestern Colombia) compared to the model developed in 2015.

Cocaine sourced to Peru cannot currently be classified sub-regionally; however, Peruvian datasets have been updated to include Puno and additional samples from the Apurimac River Valley.

Chapare is the primary coca cultivation region in Bolivia. Samples analyzed by the CSP since 2014 indicate cocaine production in additional regions within Bolivia. The full description of CSP geographic origin classifications is listed in Figure 29.

## BACKGROUND INFORMATION

### CSP GEOGRAPHIC ORIGIN CLASSIFICATIONS

Geographic origin classifications for each cocaine source country/region reference the cocaine base origin and are listed in the table below. Authentic cocaine samples have been analyzed by the CSP from each of the below regions for sample comparison.

**Figure 29:** Geographic Origin Classifications

| COUNTRY-CLASSIFICATION | REGIONAL CLASSIFICATION-DESCRIPTION |
|---|---|
| COLOMBIA | **COLOMBIA-NORTH (COL-NORTH):** Antioquia, Norte de Santander |
| | **COLOMBIA-SOUTHWEST (COL-SW):** Cauca, Nariño, Putumayo |
| | **OTHER COLOMBIA REGIONS:** Arauca, Bolivar (San Lucas), Caquetá, Choco, Guaviare, Meta, Santander, Valle de Cauca, Vaupes, Vichada |
| | **COLOMBIA-REGION NOT DETERMINED (COL-RND):** Characteristic of Colombian coca leaf signatures – regional classification not determined |
| PERU | Apurimac River Valley, Cusco, Huallaga Valley, Puno, Ucayali Valley |
| BOLIVIA | Chapare |
| COLOMBIA-PERU | Characteristics of Colombia and Peru cocaine signatures |
| PERU-BOLIVIA | Characteristics of Peru and Bolivia cocaine signatures |
| UNKNOWN (UNK) | Cocaine signatures that do not fit a specific region of origin |
| NOT DETERMINED (ND) | Cocaine signature analysis not completed |

## BACKGROUND INFORMATION

### COCAINE PROCESSING ARTIFACTS

Naturally occurring cocaine-related alkaloids called cinnamoylcocaines are co-extracted with cocaine from coca leaf and will be present in the finished product unless removed by a process called oxidation. Potassium permanganate is the most common oxidizing agent in cocaine production. While CSP chemical analysis cannot determine the amount of oxidizing agent used per kilogram of cocaine, evidence of the extent of oxidation is tracked by monitoring the amount of cinnamoylcocaines in the finished product.

### COCAINE HCL PROCESSING SOLVENTS ASSOCIATED WITH SOURCE COUNTRY

The conversion of cocaine base to cocaine HCl generally involves dissolving cocaine base in a water immiscible solvent or solvent mixture ("solvent A"), heating the solution, then adding hydrochloric acid to produce cocaine HCl. Concentrated hydrochloric acid (HCl) or an alcoholic solution of HCl is often combined with a water miscible solvent or solvent mixture ("solvent B") prior to reacting with the boiling cocaine base solution. Colombian labs typically use petroleum ether distillates, aliphatic hydrocarbon mixtures, or commercial thinners with various acetates such as ethyl acetate, n-propyl acetate, methyl acetate, n-butyl acetate, and methyl ethyl ketone (MEK). Bolivian labs historically used a combination of ethyl ether and acetone, but ethyl acetate is most frequently used today. Acetone is the traditional solvent used in Peru; however, ethyl acetate is often identified in cocaine with signature profiles consistent with Peruvian coca seized outside Peru, indicating conversion of Peruvian cocaine base with ethyl acetate in Bolivia or other regions within South America.

**Figure 30:** **Primary Cocaine HCl Processing Solvents by Source Country**

#### COLOMBIA

- **Acetates or Acetate Mixtures**
  - Ethyl Acetate
  - Methyl Acetate
  - N-Propyl Acetate
  - N-Butyl Acetate
- **Methyl Ethyl Ketone (MEK)**
- Commercial aliphatic hydrocarbon mixtures ("10-20")

#### PERU

- **Acetone (Traditional)**
- **Ethyl Acetate**

#### BOLIVIA

- **Ethyl Ether-Acetone (Traditional)**
- **Ethyl Acetate**