

CY 2022

Methamphetamine Profiling Program Report



OFFICE OF FORENSIC SCIENCES

Special Testing and Research Laboratory

UNCLASSIFIED
PRB# 2024-02

FINAL REPORTING FOR CY 2022 U.S. SUBMISSIONS
3RD AND 4TH QUARTER CY 2022 U.S. SUBMISSIONS
1ST HALF CY 2023 FOREIGN DIVISION SUBMISSIONS



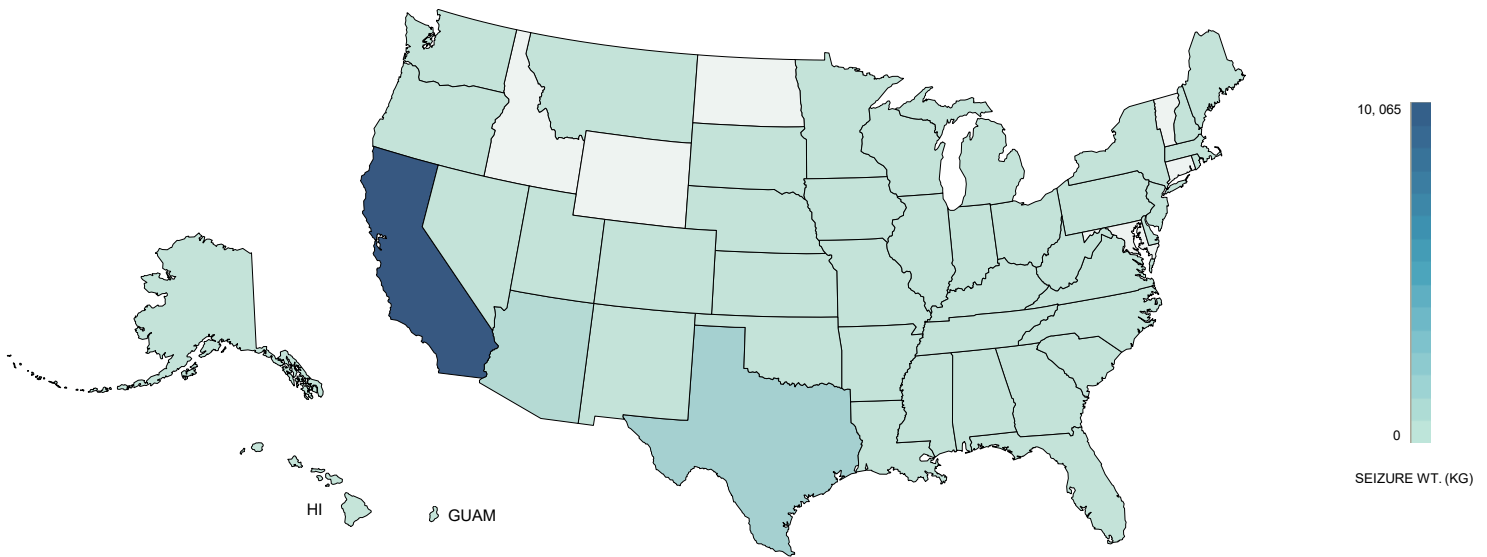
SUMMARY

The United States Drug Enforcement Administration Special Testing and Research Laboratory’s Methamphetamine Profiling Program (MPP) provides scientific data and intelligence information on illicit methamphetamine. Submissions to the MPP are analyzed for purity, cutting agents, precursors utilized, and synthetic route. MPP findings provide a snapshot of current methamphetamine quality and trafficking trends; it may not reflect the domestic or global illicit methamphetamine supply in its entirety, nor is it representative of total federal methamphetamine seizures.

This report summarizes the collective results of methamphetamine profiling analyses performed on samples seized primarily during the third and fourth quarters of CY 2022. This will conclude reporting on CY 2022 methamphetamine seizures. A final year-end summary of methamphetamine trends observed by the MPP is also provided in this report, to include comparison to methamphetamine seizures submitted to the laboratory system as a whole during CY 2022.

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FINDINGS

- The 1016 domestically seized CY 2022 samples analyzed in MPP represent approximately 21,865 kilograms of seized methamphetamine throughout the United States.
- The average purity of domestically seized samples was 96.6% (range: 22% - 100%) Potency continues to match purity indicating operators are isolating the desired d-isomer.
- Manufacturing Specific Observations:
 - **Primary Synthetic Route:** Reductive Amination
 - **Primary Precursor:** Phenyl-2-Propanone (P2P)
 - **Primary Precursor P2P:** Phenylacetic Acid (PAA)



DOMESTIC SUBMISSIONS

The MPP conducts an in-depth chemical analysis of selected methamphetamine samples seized throughout the United States in an effort to establish trends associated with its manufacture. A selected domestic methamphetamine sample will be powdered or crystalline material with a purity of at least 10% as determined by the DEA Regional Laboratory analysis. The established sampling plan seeks to obtain portions of seizures representing varying seizure sizes from each of the regions depicted in Figure 1. As areas of responsibility of DEA Division Offices and Regional Laboratories routinely shift, for consistency in reporting, the MPP has used these regional designations depicted since the inception of the program.

Figure 1: MPP Regional Map

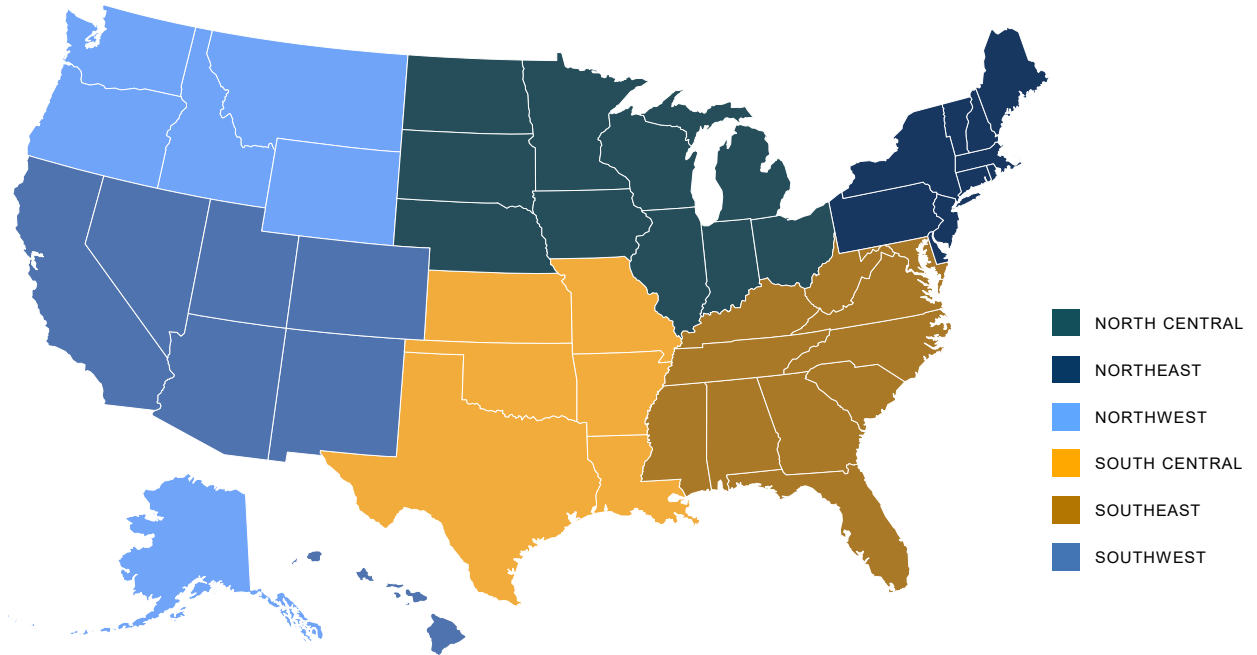
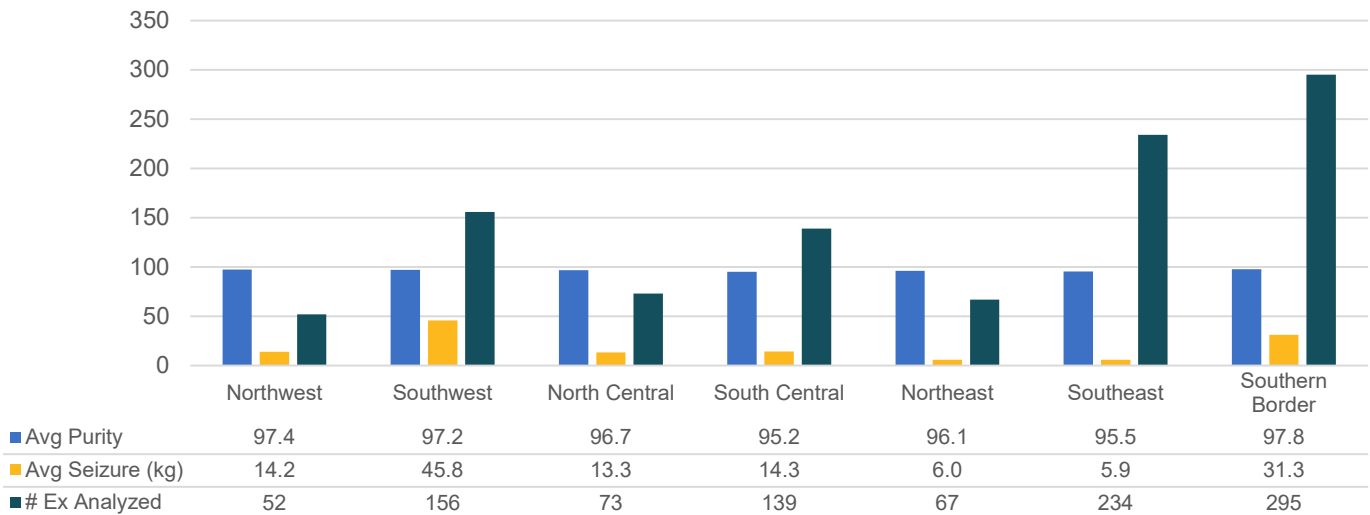


Figure 2: Regional Overview for CY2022 MPP Exhibits Analyzed





DOMESTIC SUBMISSIONS

DOMESTIC RESULTS AND TRENDS

3rd and 4th Quarter CY 2022 Chemical Analysis Trends

Overall average methamphetamine purity continues to be at high levels with the average being 96.7%. This is a slight decrease from the 97.1% reported at the same time last year. Overall methamphetamine purity results ranged from 44%-100% with approximately 88% of the samples analyzed having a purity >95%. In addition, the potency of methamphetamine continues to match purity results. Potency calculations monitor the amount of the unwanted l-methamphetamine isomer present in analyzed samples. Purity and potency levels being calculated as the same value suggests that virtually all the unwanted l-isomer has been eliminated from the final product during clandestine production.

During this reporting period, approximately 18% (n=84) of samples received were cut with dimethylsulfone (DMS). The DMS purities for these samples ranged from trace amounts to 53%. The average purity of DMS for exhibits containing more than trace amounts was approximately 9%.

Reductive amination remains the preferred synthetic manufacturing route for methamphetamine with 99.6% of the MPP samples analyzed profiled as originating from a P2P precursor. Approximately 3% (n=14) of these P2P-based samples showed evidence of being synthesized to methamphetamine under Leuckart conditions. This process uses methylamine and formic acid or N-methylformamide as supporting chemicals. This percentage continues to trend downward. For all CY 2022 samples analyzed, approximately 6% of samples were determined to be sub-classification Leuckart, which is a significant decrease compared to CY 2021 seizures (~17%). In addition, the MPP has been monitoring the Mercury Amalgam sub-classification with approximately 2% of seizures (n=22) observed to have been synthesized under these conditions and an additional 1% (n=12) sample profiles showing markers for both Leuckart and Mercury Amalgam reactions, indicating the mixing of finished products at some point during the postproduction process.

SUMMARY OF 3RD AND 4TH QUARTER CY 2022 MPP SAMPLES

REGION	TOTAL #	# SMALL (<499 G)	# MEDIUM (500G – 9.9KG)	# LARGE (>10 KG)	AVERAGE PURITY
NORTHWEST	33	14	4	15	97.3%
SOUTHWEST	67	25	14	28	96.9%
NORTH CENTRAL	44	15	7	22	97.1%
SOUTH CENTRAL	53	20	22	11	95.1%
NORTHEAST	34	17	14	3	94.2%
SOUTHEAST	116	71	28	17	96.4%
SOUTHERN BORDER POE	130	1	27	102	97.8%
TOTALS	477	162	116	199	96.7%



DOMESTIC SUBMISSIONS

CHEMICAL ANALYSIS TRENDS* (CONTINUED)

Figure 6: Average Seizure Size Submitted to MPP (kg)

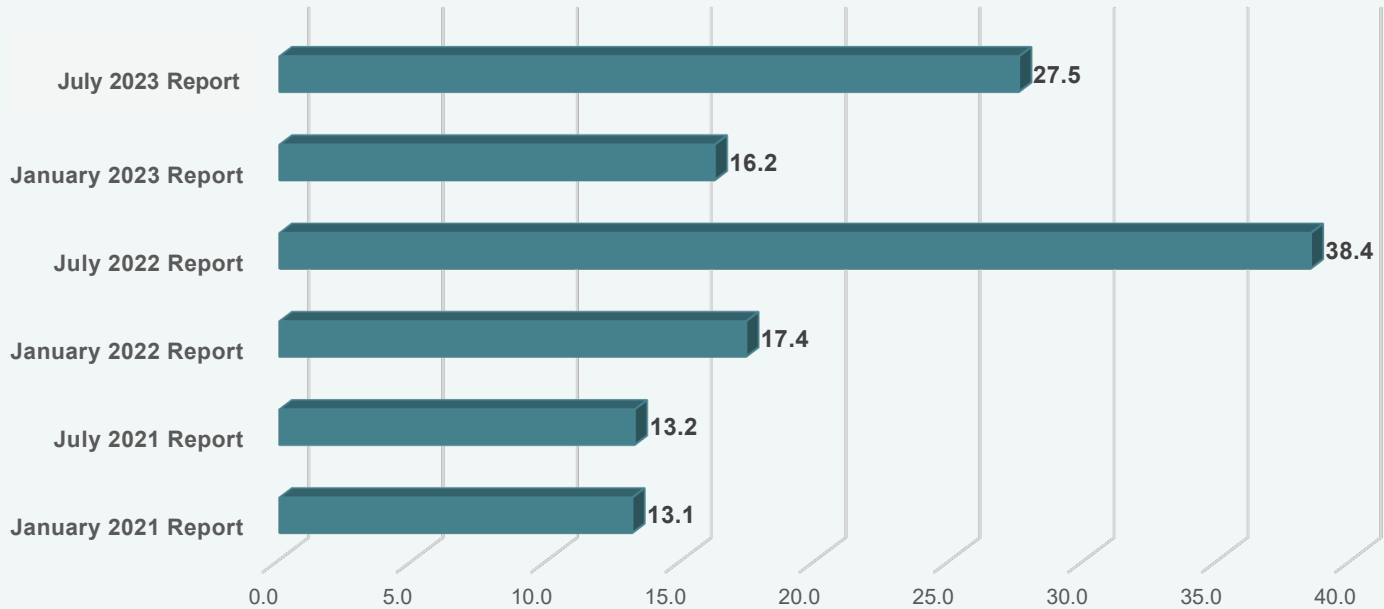
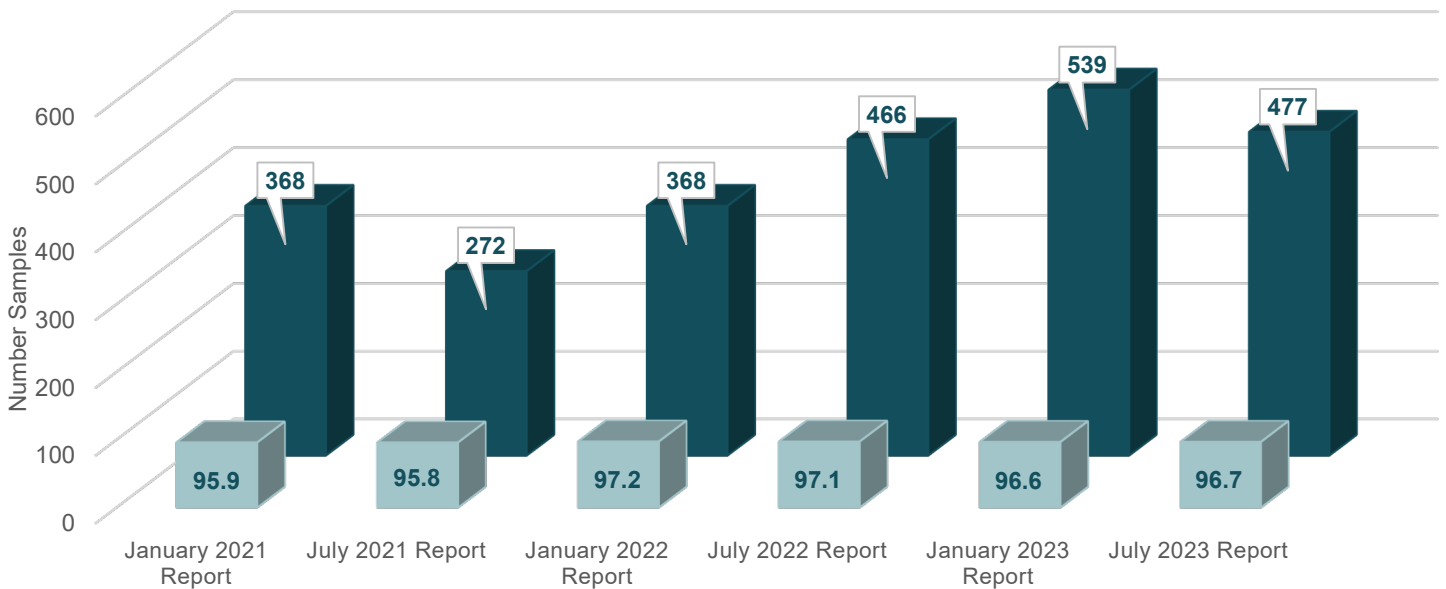


Figure 7: Overall Purity Trends

*Note: Prior to 2022, trends were reported by analysis date rather than seizure dates





DOMESTIC SUBMISSIONS

CHEMICAL ANALYSIS TRENDS* (CONTINUED)

Figure 8: Primary Precursor to P2P Trends

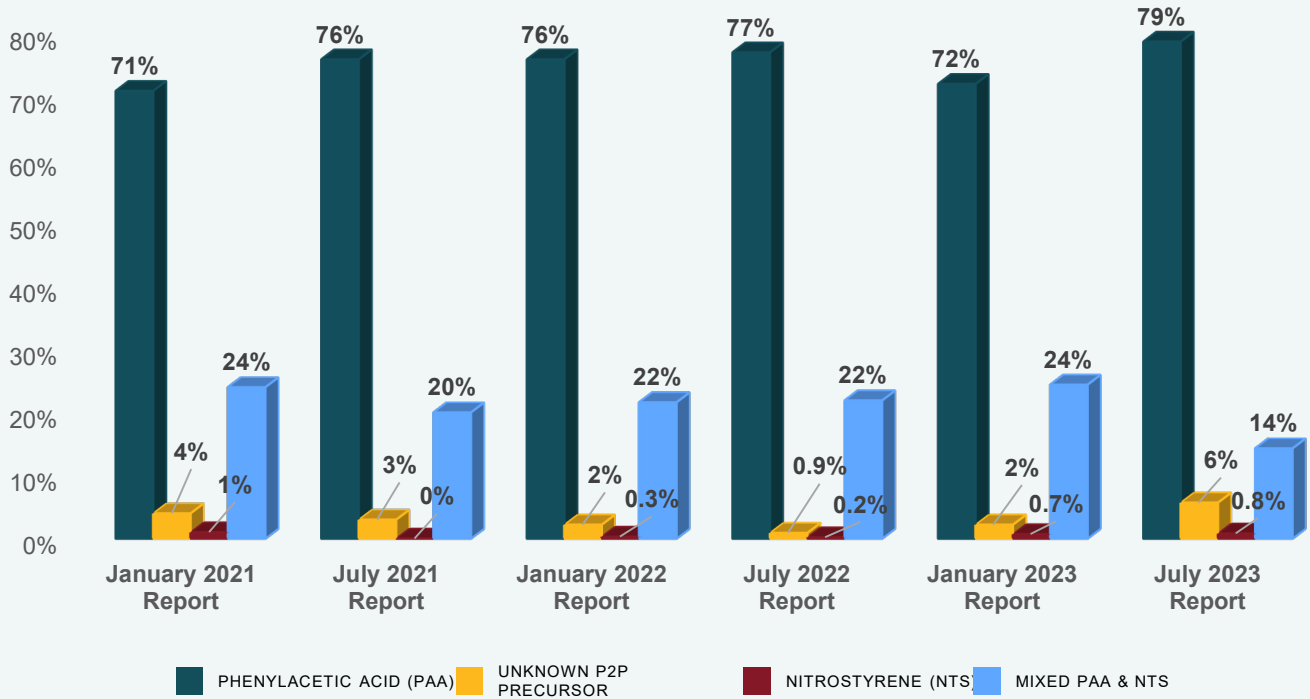
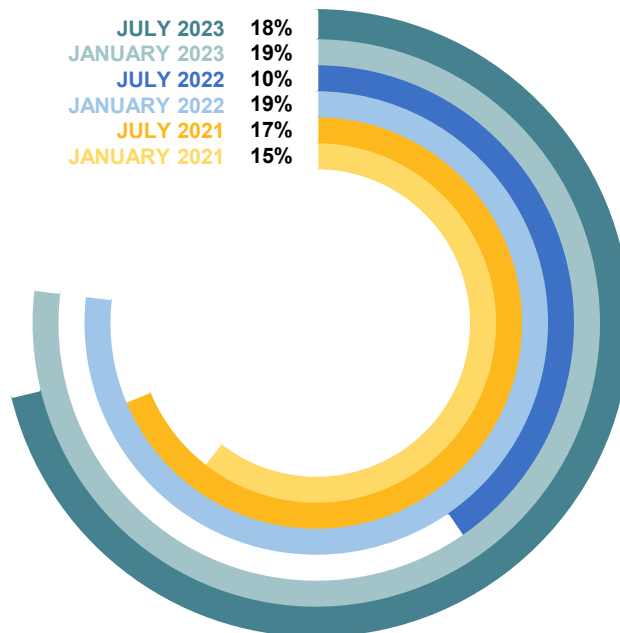


Figure 9: Percentage of MPP Submissions Cut with DMS





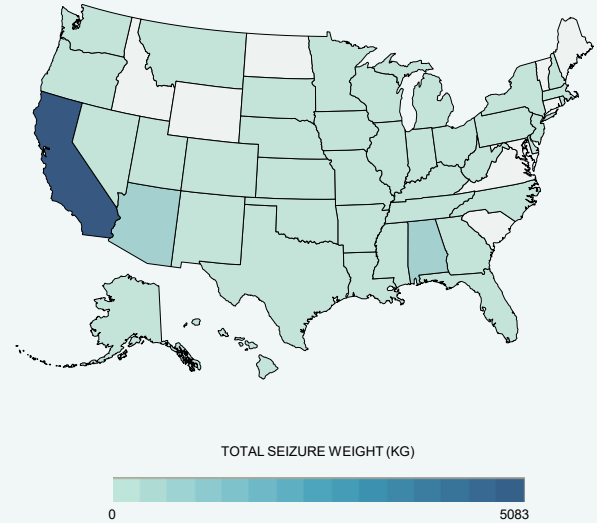
DOMESTIC SUBMISSIONS

DOMESTIC RESULTS AND TRENDS

3rd and 4th Quarter CY 2022 Chemical Analysis Results

The table and maps depicted in the following pages summarize the MPP findings of the 3rd and 4th quarter CY 2022 seizures by region to complement the previously reported 1st and 2nd quarter CY 2022 seizures published in January 2023. Beginning with CY 2023 seizures, MPP will switch to a cumulative annual reporting of MPP chemical analysis results.

- The 477 domestically seized samples analyzed in MPP represent approximately **13,128 kilograms** of seized methamphetamine throughout the United States.
- The average purity of domestically seized samples was **96.7%**.
- Manufacturing Specific Observations:
 - **Primary Synthetic Route:** Reductive Amination
 - **Primary Precursor:** Phenyl-2-Propanone (P2P)
 - **Primary Precursor P2P:** Phenylacetic Acid (PAA)



STATE	TOTAL MPP SEIZURE WT. REPRESENTED (KG)	MIN. PURITY (%)	MAX. PURITY (%)
AK	0.9	95.7	98.4
AL	341	94.2	99.6
AR	29	44.0	99.3
AZ	738	92.4	99.6
CA	5083	55.3	100
CO	61	89.5	99.4
DC	0.056	---	97.5
DE	0.055	---	99.1
FL	133	79.1	100
GA	251	52.8	99.2
HI	0.948	94.3	99.2
IA	115	79.2	99.8
IL	297	95.0	99.2
IN	49	81.4	98.1
KS	51	96.7	98.8
KY	13	95.0	97.9
LA	31	71.3	99.2
MA	9	97.7	97.9
MI	63	98.7	99.1
MN	124	95.2	98.2

STATE	TOTAL MPP SEIZURE WT. REPRESENTED (KG)	MIN. PURITY (%)	MAX. PURITY (%)
MO	268	91.8	98.4
MS	9	75.7	99.6
MT	12	94.6	98.9
NC	33	94.1	100
NE	76	95.4	98.7
NH	5	92.9	95.8
NJ	15	56.7	99.0
NM	19	96.2	98.8
NV	0.409	---	95.4
NY	39	81.7	99.5
OH	6	96.3	99.3
OK	0.781	93.6	100
OR	88	92.8	99.2
PA	31	83.6	99.3
RI	0.446	---	99.0
SD	30	96.1	98.8
TN	11	97.3	97.8
TX	114	86	99.9
UT	52	96.8	98.3
WA	555	82.4	99.9
WI	1	97.5	99.4
WV	3	95.2	98.5



DOMESTIC SUBMISSIONS

REGIONAL CHEMICAL ANALYSIS RESULTS

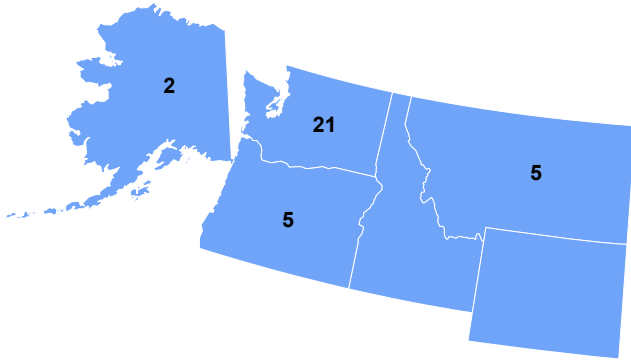


Figure 10: # samples per state

NORTHWEST REGION

The MPP analyzed 33 samples from the Northwest Region with seizure sizes ranging from 10 g to 199 kg. All samples were manufactured via reductive amination with P2P as the primary precursor. PAA was identified as the primary precursor to P2P in 67% of the samples, with an additional 21% showing the precursor to P2P was a mixed source of PAA and nitrostyrene, and 12% of an unknown source. Dimethylsulfone was identified as an adulterant in 15% of the samples analyzed.

AVG PURITY

96.3%
SMALL SEIZURES

98.3%
MEDIUM SEIZURES

98.0%
LARGE SEIZURES

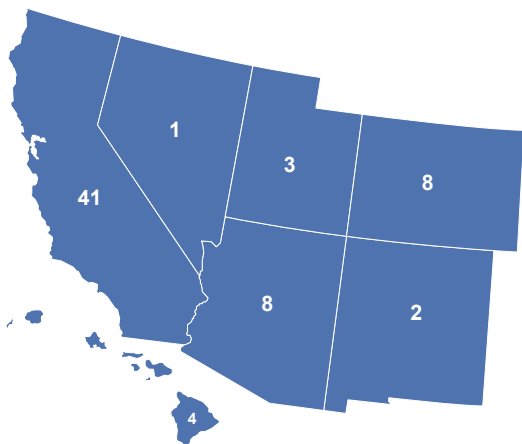


Figure 11: # samples per state

SOUTHWEST REGION

The MPP analyzed 67 samples from the Southwest Region with seizure sizes ranging from 10 g to 4372 kg. All samples were manufactured via reductive amination with P2P as the primary precursor. PAA was identified as the primary precursor to P2P in 78% of the samples, with an additional 18% showing the precursor to P2P was a mixed source of PAA and nitrostyrene, and 4% of an unknown source. Dimethylsulfone was identified as an adulterant in 19% of the samples analyzed. A Leuckart sub-classification was identified in 3% of samples.

AVG PURITY

95.5%
SMALL SEIZURES

97.9%
MEDIUM SEIZURES

97.6%
LARGE SEIZURES

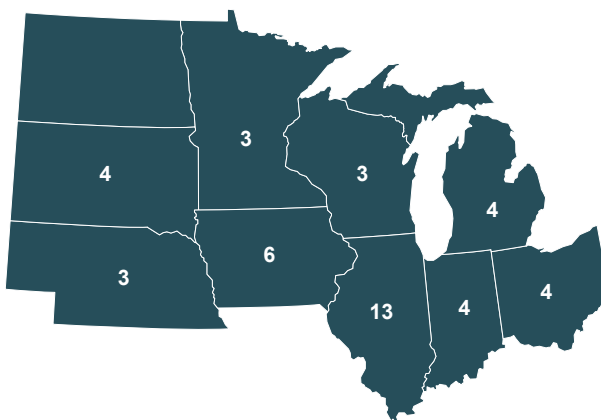


Figure 12: # samples per state

NORTH CENTRAL REGION

The MPP analyzed 44 samples from the North Central Region with seizure sizes ranging from 10 g to 150 kg. All samples were manufactured via reductive amination with P2P as the primary precursor. PAA was identified as the primary precursor to P2P in 84% of the samples, with an additional 16% showing the precursor to P2P was a mixed source of PAA and nitrostyrene. Dimethylsulfone was identified as an adulterant in 11% of the samples analyzed. A Leuckart sub-classification was identified in 5% of samples.

AVG PURITY

98.0%
SMALL SEIZURES

98.6%
MEDIUM SEIZURES

96.1%
LARGE SEIZURES



DOMESTIC SUBMISSIONS

REGIONAL CHEMICAL ANALYSIS RESULTS (CONTINUED)

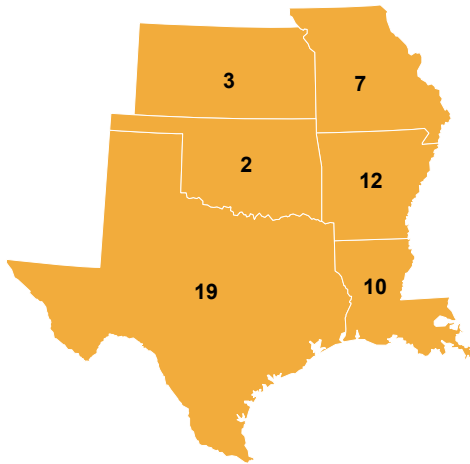


Figure 13: # samples per state

SOUTH CENTRAL REGION

The MPP analyzed 53 samples from the South Central Region with seizure sizes ranging from 10 g to 145 kg. All but one sample were manufactured via reductive amination with P2P as the primary precursor. The remaining sample could not be conclusively profiled and was classified as “unknown.” PAA was identified as the primary precursor to P2P in 83% of the samples, with an additional 11% showing the precursor to P2P was a mixed source of PAA and nitrostyrene, and 6% of an unknown source. Dimethylsulfone was identified as an adulterant in 15% of the samples analyzed. A Leuckart sub-classification was identified in 4% of samples.

AVG PURITY

95.4%
SMALL SEIZURES

93.6%
MEDIUM SEIZURES

97.5%
LARGE SEIZURES

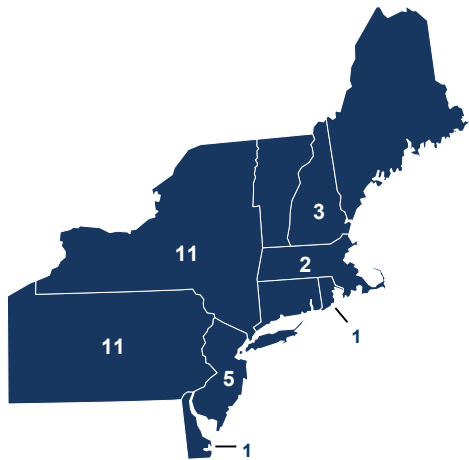


Figure 14: # samples per state

NORTHEAST REGION

The MPP analyzed 34 samples from the Northeast Region with seizure sizes ranging from 30 g to 22 kg. All samples were manufactured via reductive amination with P2P as the primary precursor. PAA was identified as the primary precursor to P2P in 79% of the samples, with an additional 15% showing the precursor to P2P was a mixed source of PAA and nitrostyrene, and 6% of an unknown source. Dimethylsulfone was identified as an adulterant in 21% of the samples analyzed. A Leuckart sub-classification was identified in 3% of samples.

AVG PURITY

91.6%
SMALL SEIZURES

97.0%
MEDIUM SEIZURES

95.3%
LARGE SEIZURES

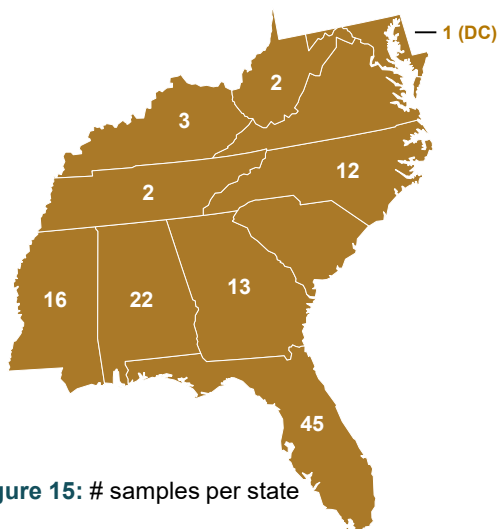


Figure 15: # samples per state

SOUTHEAST REGION

The MPP analyzed 116 samples from the Southeast Region with seizure sizes ranging from 10 g to 294 kg. All samples were manufactured via reductive amination with P2P as the primary precursor. PAA was identified as the primary precursor to P2P in 78% of the samples, with an additional 13% showing the precursor to P2P was a mixed source of PAA and nitrostyrene, and 9% of an unknown source. Dimethylsulfone was identified as an adulterant in 26% of the samples analyzed. A Leuckart sub-classification was identified in 3% of samples.

AVG PURITY

96.9%
SMALL SEIZURES

94.6%
MEDIUM SEIZURES

97.5%
LARGE SEIZURES



DOMESTIC SUBMISSIONS

REGIONAL CHEMICAL ANALYSIS RESULTS (CONTINUED)

3rd and 4th Quarter CY 2022 Chemical Analysis Results

SOUTHERN BORDER PORTS OF ENTRY

One hundred thirty samples seized at Ports of Entry (POE) along the United States/Mexico border were analyzed during this reporting period, representing approximately 28% of all samples analyzed. A drug quality breakdown by POE state and further individual locations are summarized as follows:

All samples analyzed from POEs were determined to be manufactured via reductive amination with phenyl-2-propanone as the precursor. Additionally, it was determined that the primary precursor to P2P in approximately 80% of the samples was PAA, with an additional 12% showing the precursor to P2P was a mixed source of PAA and nitrostyrene, and 7% were found to be of an unknown source. Approximately 2% (n=3) of these P2P-based samples showed evidence of a Leuckart route being employed.

The majority of samples (~90%) analyzed by MPP that were seized at the U.S./Mexico border were found to be uncut. Of those samples that were adulterated, dimethylsulfone was the primary cutting agent identified (n=16). Purities of DMS ranged from trace amounts to 13% with an average of approximately 4%.

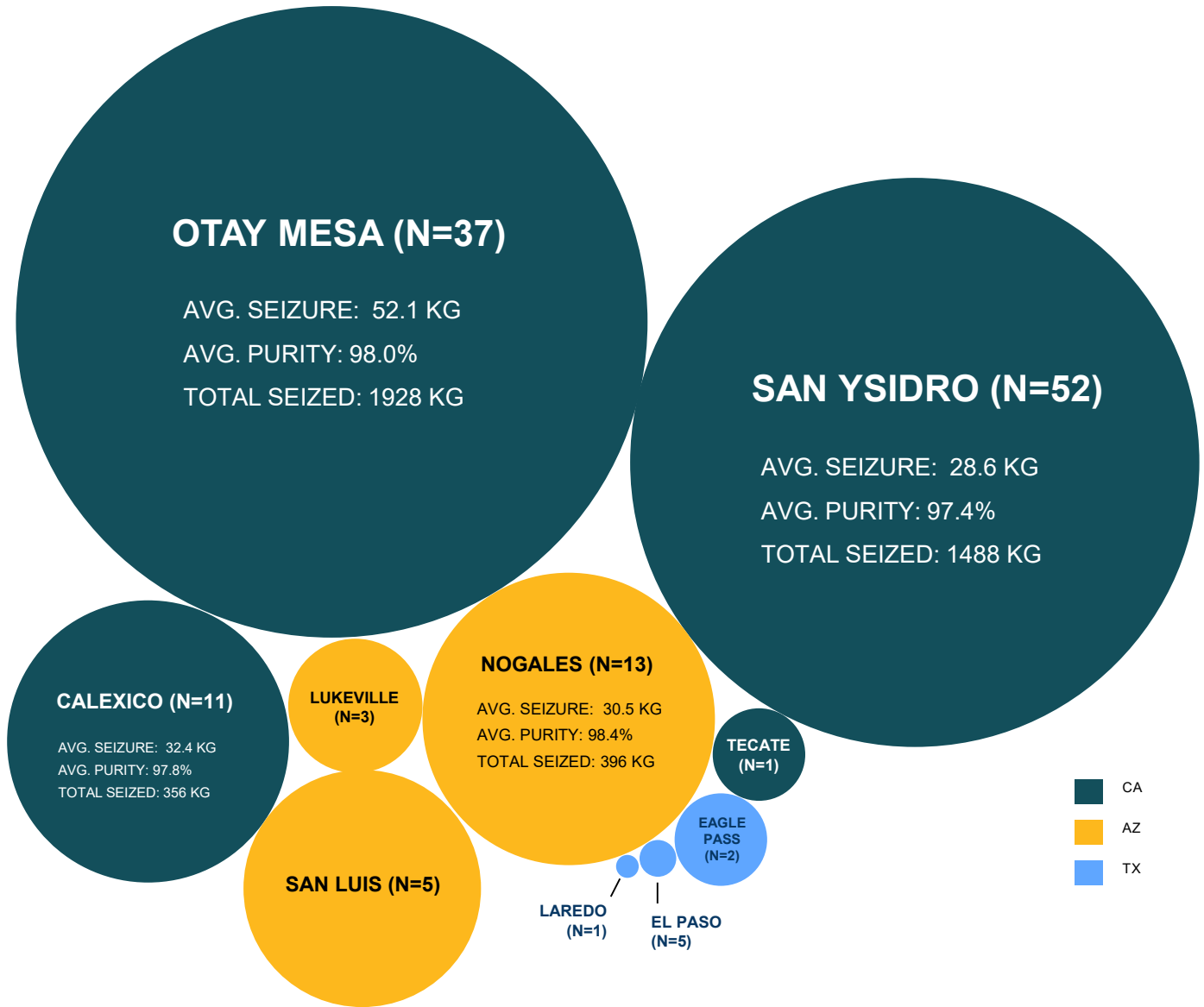
Of special note, a large seizure was made by Customs and Border Protection on December 11, 2022 at the San Ysidro Port of Entry. Approximately 24 kilograms of methamphetamine were seized and a sample submitted to MPP for analysis. The MPP determined the sample received to be 98.3% l-methamphetamine HCl manufactured via reductive amination with phenyl-2-propanone as the precursor. As the sample received did not contain any of the desired d-isomer, the potency of the sample is zero despite the high purity reported.

POE	# SAMPLES ANALYZED	AVERAGE PURITY (JULY 2023)	AVERAGE PURITY (JAN 2023)	AVERAGE SEIZURE WT. IN KG (JULY 2023)	AVERAGE SEIZURE WT. IN KG (JAN 2023)
AZ	21	98.6%	98.9%	32.3	21.7
CA	101	97.7%	97.7%	37.8	32.5
TX	8	97.6%	97.0%	6.2	14.2
TOTALS	130	97.8%	97.8%	34.9	28.5



DOMESTIC SUBMISSIONS

SOUTHERN BORDER PORTS OF ENTRY (CONTINUED)

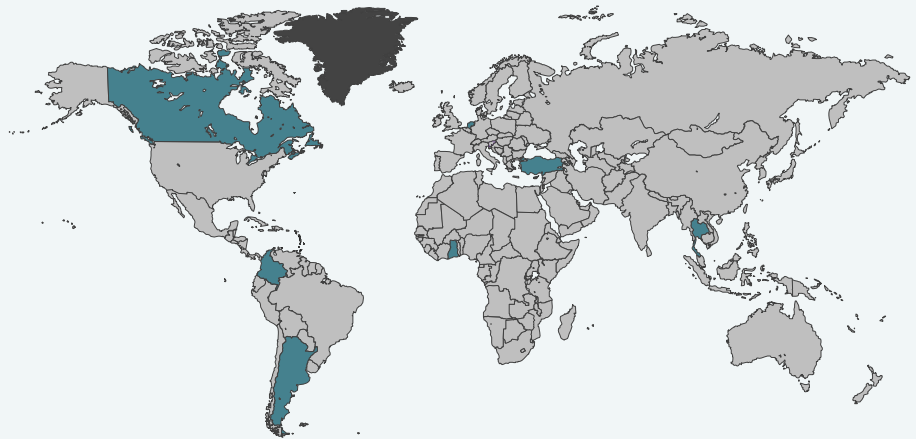


PORT OF ENTRY	AVERAGE SEIZURE (KG)	AVERAGE PURITY (%)	TOTAL SEIZED (KG)
LUKEVILLE	19.8	98.8	59
SAN LUIS	44.5	99.0	222
TECATE	42.4	97.0	42
EAGLE PASS	21.4	98.0	43
EL PASO	1.2	97.9	6
LAREDO	1.1	95.3	1



FOREIGN SUBMISSIONS

During this reporting period, the MPP analyzed 18 samples seized outside the United States and submitted by various foreign offices. A summary of the results are detailed by submitting office below.



CANADA

Five d-methamphetamine HCl samples from multiple seizures were analyzed. The submissions obtained by the Ottawa Country Office had seizure dates listed as occurring between October 2022 and March 2023. The average purity of the samples was calculated to be 98.7%. No adulterants or diluents were identified in the samples. All samples received were determined to be manufactured via reductive amination with phenyl-2-propanone as the precursor. In three of the samples, the primary precursor to phenyl-2-propanone was determined to be phenylacetic acid (PAA). The remaining samples showed the primary precursor to phenyl-2-propanone to have originated from a mixed source of PAA and nitrostyrene.

NETHERLANDS

One sample consisting of tablets was submitted by The Hague Country Office. The submission had a seizure date of February 2023. The tablets were determined to contain 9.7% non-racemic d with l-methamphetamine hydrochloride (20 mg per tablet). Unfortunately, due to insufficient sample, further profiling of the methamphetamine was not possible.

THAILAND

Three samples seized in December 2022 were submitted by the Bangkok Country Office. All three samples consisted of d-methamphetamine hydrochloride with the average purity calculated to be 99%. Two of the samples lacked characteristic impurities needed for profiling and were therefore characterized as an “unknown” synthetic manufacturing route. While unable to be conclusively determined within the program’s accepted criteria, the third sample showed several indicators a metal hydrogenation synthetic route was used which employs ephedrine or pseudoephedrine as a precursor.

ARGENTINA

Three samples of suspected MDMA tablets were submitted to the program by the Buenos Aires Country Office with a seizure date listed as January 2023. Two of the samples were found to contain a mixture of caffeine and trace diazepam. The remaining sample was found to contain to contain approximately 4% diazepam.

COLOMBIA

One sample of suspected methamphetamine was submitted to the program by the Bogota Country Office with a seizure date of March 2023. The sample was instead determined to contain 98% 3,4-methylenedioxymphetamine hydrochloride.



FOREIGN SUBMISSIONS

FOREIGN SUBMISSIONS (CONTINUED)

GHANA

One sample containing suspected captagon tablets, originally seized in December 2022, was received for analysis from the Accra Country Office. The sample was found to contain 26% amphetamine (calculated as hydrochloride), caffeine, theophylline, diphenhydramine, and lidocaine.

TURKEY

The Ankara Country Office provided four samples to the MPP with unknown seizure dates. Two samples containing crystalline material were found to contain d-methamphetamine hydrochloride with an average purity of 98.4%. Both samples were determined to be manufactured via a phosphorous-iodine synthetic route with ephedrine/pseudoephedrine as the precursor. The lack of over-the-counter impurities traditionally found in pharmaceutical grade ephedrine/pseudoephedrine along with additional supporting analytical data indicates the ephedrine was likely derived from a natural ephedrine plant. One sample was submitted as suspected methamphetamine crystals but was determined to contain 97% N,N-dimethylamphetamine hydrochloride. The remaining sample was submitted as suspected captagon tablets. The tablets were found to contain 25% amphetamine (calculated as hydrochloride), caffeine, and theophylline.

FOREIGN SUBMISSION SUMMARY

Samples Eligible for Methamphetamine Profiling

COUNTRY	# OF SAMPLES	AVERAGE PURITY (%)	PURITY RANGE (%)	MANUFACTURING ROUTE/PRECURSOR
CANADA	5	98.7	98.4 to 99.0	Reductive Amination/P2P (n=5)
NETHERLANDS	1 (tablets)	9.7	----	Insufficient Sample
THAILAND	3	99.0	98.6-99.2	Unknown (n=2) Possible Metal Hydrogenation/Ephedrine (n=1)
TURKEY	2	98.4	98.3 to 98.5	Phosphorous-Iodine/ephedra (n=2)



BACKGROUND INFORMATION

SAMPLING PLAN

To limit sample submissions while still providing a comprehensive picture for the entire United States, the MPP established guidelines for sample submissions from the DEA regional laboratories. All port-of-entry (POE) exhibits are MPP eligible; however, submissions are limited to a specified number of exhibits based on POE seizure location. For non-POE exhibits, regional laboratories will limit MPP submissions to the first “n” seizures received each month (the number “n” varies by laboratory) that meet the established criteria for MPP analysis. The exhibit must contain methamphetamine in solid form as the primary drug (tablets are excluded), with a purity greater than or equal to 10%. For exhibits meeting the criteria, a 3 gram exemplar of non-composite material is removed for MPP analysis. In addition, all laboratories submit one exemplar of finished product from each domestic clandestine laboratory seizure.

METHAMPHETAMINE SYNTHETIC ROUTE CLASSIFICATIONS

Based on the data collected from various analytical techniques, samples are classified by route of synthesis as follows:

REDUCTIVE AMINATION (RA): samples containing impurities and markers related to the use of P2P as a precursor in a reductive amination reaction

PHOSPHORUS-IODINE: samples indicating pseudoephedrine or ephedrine as the precursor, containing organic and inorganic impurities related to a reaction utilizing various forms of iodine and phosphorus (elemental iodine and phosphorus, hydroiodic acid, hypophosphorus acid)

METAL HYDROGENATION: samples indicating pseudoephedrine or ephedrine as the precursor, containing organic and inorganic impurities related to a reaction utilizing a chlorinating agent such as thionyl chloride, hydrogen gas, and a catalyzing agent such as platinum or palladium.

MIXED ROUTE: samples containing synthetic markers from two or more different manufacturing routes are determined to have a mixed route

UNKNOWN: samples void of the impurity information needed to establish a manufacturing route, usually high-purity methamphetamine samples



BACKGROUND INFORMATION

ESSENTIAL CHEMICALS FOR METHAMPHETAMINE PRODUCTION VIA REDUCTIVE AMINATION

Synthesis of methamphetamine via a reductive amination synthetic route remains the dominant observation of domestically seized exemplars undergoing analysis in the Methamphetamine Profiling Program. As such, the Special Testing and Research Laboratory has compiled a listing of what are considered essential chemicals needed to manufacture methamphetamine in this manner. While not all-inclusive of every chemical needed in the manufacturing process, the following list offers guidance as to which essential chemicals are likely to be found at a clandestine site.

Phenyl Acetone (P2P, BMK)	Methylamine	Phenylacetic Acid
Formic Acid	Tartaric Acid	N-methyl formamide
Sodium (or Potassium) Cyanide	Benzyl Chloride (or Bromide)	Benzyl Alcohol
Lead Acetate	Ammonium Chloride	Benzyl Cyanide
Formaldehyde (formylin 37% solution)	Methyl Thioglycolate (MTG)	Azobisisobutyronitrile (AIBN)

REQUEST FOR FEEDBACK

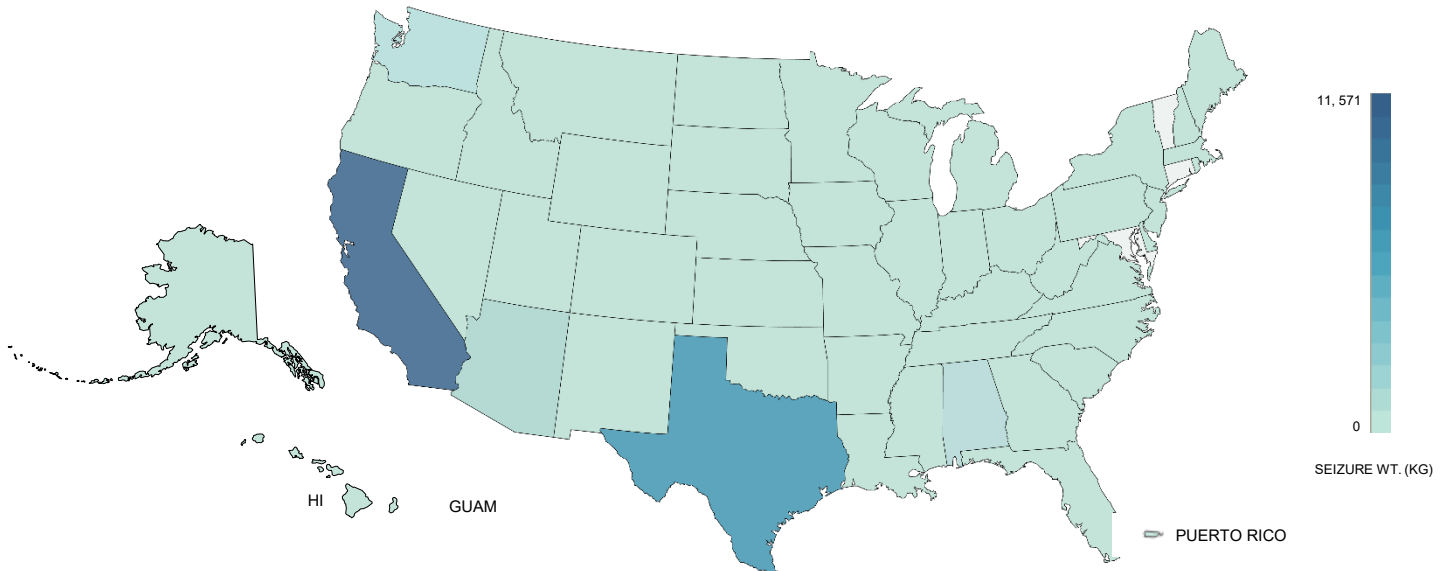
The MPP continuously strives to improve the information provided in our reports. Feedback and suggestions for improvement are always welcomed and can be sent to Supervisory Chemist Danielle Boudreau at Danielle.K.Boudreau@dea.gov or Senior Forensic Chemist Erin Miller at Erin.E.Miller@dea.gov.



SUMMARY

The United States Drug Enforcement Administration Office of Forensic Sciences laboratory system is comprised of ten regional laboratories distributed across the United States. While only a select number of domestic submissions are sent to MPP for manufacturing route and precursor determination, nationwide methamphetamine seizures are identified and quantitated in the laboratory system’s regional laboratories. The information provided on the following pages summarizes the collective results of methamphetamine samples analyzed in field laboratories for CY 2022.

Figure 1: DEA Laboratory System Reporting Regional Map



FINDINGS

- In CY 2022, **17,878 methamphetamine exhibits** were submitted to regional laboratories and **16,207 were analyzed** as of this reporting period.
- The average purity of methamphetamine samples analyzed by regional laboratories was **90.3%**.
- Methamphetamine presented in crystalline, powder and/or rock-like form **accounted 90%** of all exhibits analyzed by the laboratory system.



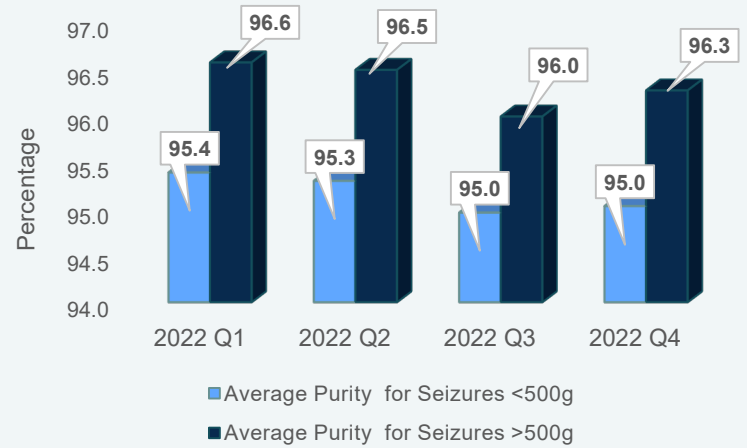
DOMESTIC SUBMISSIONS

In CY 2022, 31,137 kilograms of methamphetamine were analyzed by regional laboratories. The table below summarizes methamphetamine exhibits analyzed by state. This data was compiled from AIDD.

31,137 kg

NET WEIGHT (KG) ANALYZED BY DEA REGIONAL LABORATORIES IN CY 2022

Figure 2: Regional Laboratory Purity



STATE	NUMBER OF EXHIBITS	NET WEIGHT (KG)	AVG PURITY (%)
AK	58	27	95.4
AL	406	506	95.6
Amer Samoa	31	0.22	97.5
AR	349	341	94.8
AZ	344	1193	97.6
CA	2474	11571	96.4
CO	186	256	96.5
CT	33	4	97.2
DC	5	1	97.0
DE	26	6	97.5
FL	769	500	95.7
GA	576	1456	93.0
Guam	31	4	95.2
HI	128	104	96.5
IA	68	135	97.5
ID	51	21	97.6
IL	528	620	95.9
IN	348	380	96.2
KS	92	118	97.0
KY	387	178	92.2
LA	268	225	93.6
MA	26	61	95.2
MD	27	5	96.6
ME	49	66	96.7
MI	213	256	95.9
MO	374	475	95.7
MN	62	280	97.3

STATE	NUMBER OF EXHIBITS	NET WEIGHT (KG)	AVG PURITY (%)
MS	241	138	95.5
MT	394	91	97.3
NC	696	447	94.2
ND	46	16	96.2
NE	44	155	96.8
NH	110	28	97.0
NJ	71	42	96.2
NM	198	378	96.9
NV	142	125	96.8
NY	202	281	95.4
OH	241	216	95.2
OK	310	803	95.9
OR	91	253	95.5
PA	279	196	96.2
PR	16	1	99.1
RI	47	273	95.8
SC	89	86	94.9
SD	59	38	97.7
TN	494	270	94.5
TX	2452	7261	95.7
UT	48	121	96.0
VA	205	40	95.7
VT	12	2	98.8
WA	361	876	96.8
WI	131	51	97.2
WV	487	73	95.1
WY	2	5	98.0



DOMESTIC SUBMISSIONS

Crystalline, powder and rock-like exhibits accounted for 90% of all exhibits analyzed in 2022. The average purity for these forms was 94.7%. Tablet exhibits were 4% of all analyzed exhibits with an average purity of 4.6%. Less than 1% of exhibits were liquid samples with an average purity of 42.5%.

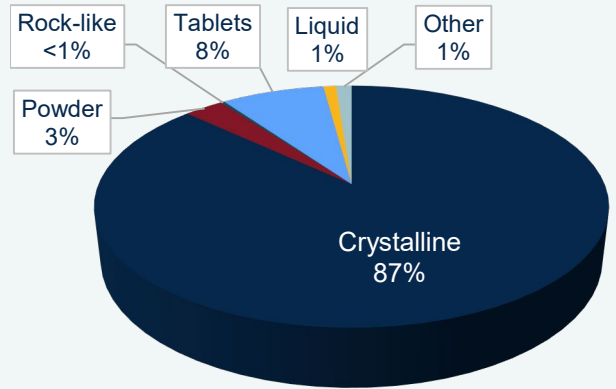


Figure 3: Substances Commonly Reported in Crystalline Exhibits

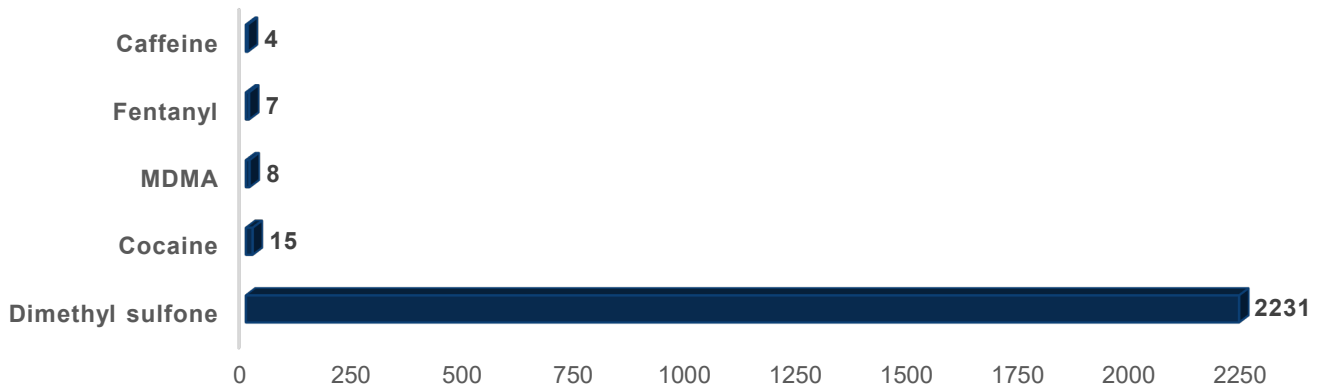
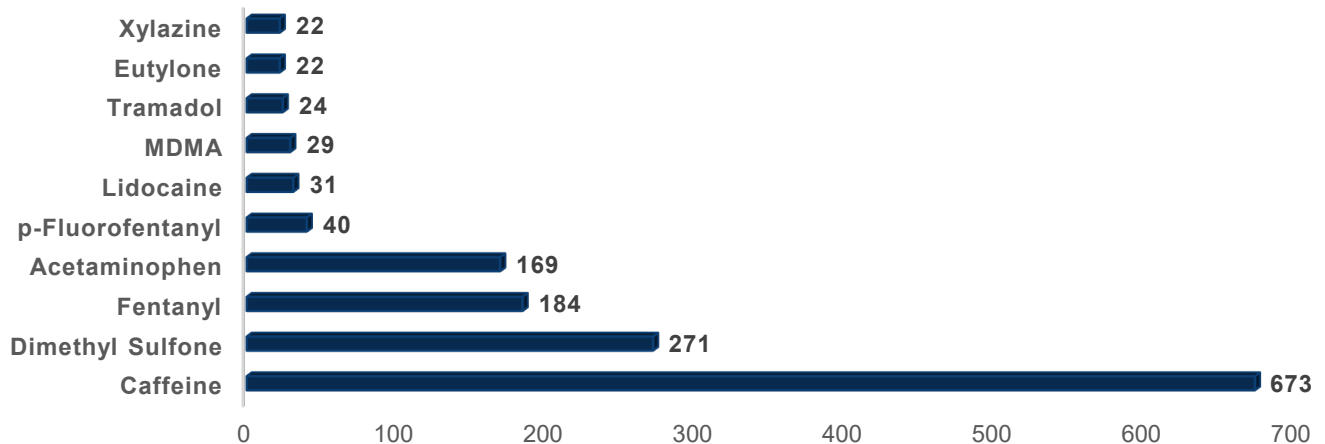


Figure 4: Substances Commonly Reported in Tablet Exhibits





CHEMICAL ANALYSIS TRENDS

Figure 5: Regional Lab Purity and Seizure Trends (Solid forms)

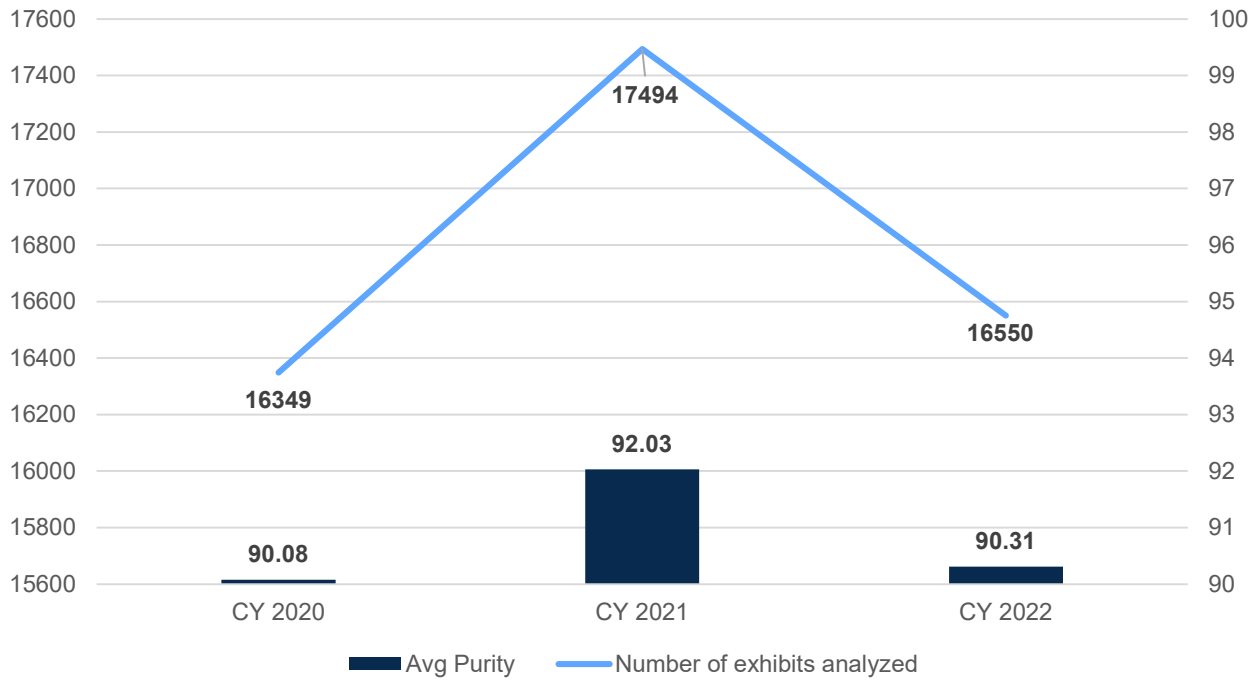


Figure 6: Regional Lab Purity and Seizure Trends (Tablet forms)

