



# A 2024 UPDATE FROM THE SCIENTIFIC WORKING GROUP FOR THE ANALYSIS OF SEIZED DRUGS (SWGDRUG)

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SWGDRUG Secretariat

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# SWGDRUG



## ***Mission:***

*To **improve the quality** of the forensic examination of seized drugs and to **respond to the needs** of the forensic community by supporting the development of internationally accepted **minimum standards**, identifying **best practices** within the international community, and **providing resources** to help laboratories meet these standards.*

# SWGDRUG - History

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## 1997

- DEA and the Office of National Drug Control Policy (ONDCP) co-sponsored the formation of the Technical Working Group for the Analysis of Seized Drugs (TWGDRUG)

## 1999

- Forensic scientists from the United States, England, Canada, Australia, Japan, Germany, the Netherlands, United Nations, international forensic organizations and academia were invited to meet in Washington, DC

## 1999

- Scientific Working Group for the Analysis of Seized Drugs (SWGDRUG) name adopted

## 2001

- 1st edition of SWGDRUG Recommendations

## 2024

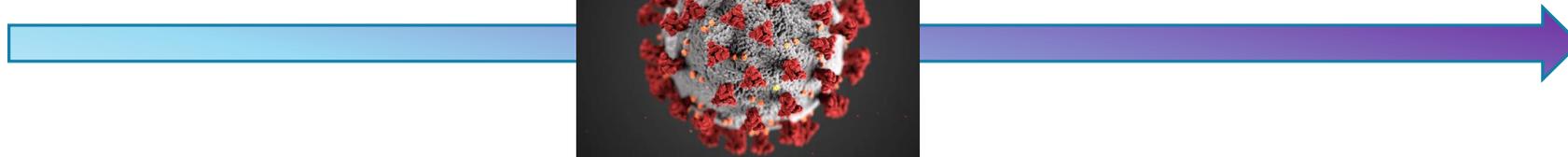
- Continue to provide recommendations (v. 8.2) and resources to the forensic community

**SCIENTIFIC WORKING GROUP FOR THE  
ANALYSIS OF SEIZED DRUGS (SWGDRUG)  
RECOMMENDATIONS**



Version 8.0  
2019-June-13

Version 8.1  
2022-August-19



# SWGDRUG Recommendations

Version 8.1 August 19, 2022

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PART I – A Code of Professional Practice for Drug Analysts

PART II – Education and Training

PART III – Methods of Analysis:

- A – Sampling Seized Drugs for Qualitative Analysis
- B – Analytical Scheme for Identification of Drugs or Chemicals
- C – Clandestine Laboratory Evidence
- D – Analogue and Structural Class Determinations

PART IV – Quality Assurance:

- A – General Practices (*Revised*)
- B – Validation of Analytical Methods
- C – Uncertainty

Annex A – SWGDRUG Glossary of Terms and Definitions

# Supplemental Documents

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**SD-1** A Code of Professional Practice for Drug Analysts

**SD-2** **\*\*Under Revision\*\***

**SD-3** Examples of Measurement Uncertainty for Weight Determinations

**SD-4** Examples of Measurement Uncertainty for Purity Determinations

**SD-5** Reporting Examples (*Revised*)

**SD-6** Example of Measurement Uncertainty for Extrapolations of Net Weight and Unit Count

**SD-7** Methods of Analysis/Analytical Scheme for Identification of Drugs or Chemicals – Construction of an Analytical Scheme

# Part IVA – Quality Practices

Harmonizes content

- Analytical procedures
- Reference materials
- Instrument performance
- Reporting

SD-5 Reporting Examples

- Revisions align with

<Laboratory Name>  
<Location>

Report of Laboratory Examination  
Laboratory Case Number <Lab#-XXX>

Submitting Agency:     <Name>  
                                  <Address>

Date of Evidence Receipt: 03JUL2019

Items Submitted:

**Item 1: One (1) evidence bag containing:**  
Item 1.1: One (1) brick-shaped package of compressed white powder

**Item 2: One (1) evidence bag containing:**  
Item 2.001 – 2.978: Nine hundred seventy-eight (978) paper packets containing a brown powder

**Item 3: One (1) evidence bag containing:**  
Item 3.1: Fifty-three (53) round, red tablets marked "44 112"

**Item 4: One (1) evidence bag containing:**  
Item 4.1: One (1) three-neck round-bottom flask containing residue

**Item 5: One (1) evidence bag containing:**  
Item 5.1: One (1) plastic bag containing compressed plant material

Results and Conclusions:

Item 1.1: Powder was analyzed and found to contain cocaine HCl.  
*Net Weight:* 1024.6 g ± 1.2 g (95% level of confidence).  
*Tests/Techniques:* weight determination on 08JUL2019, Gas Chromatography/Mass Spectrometry (GC/MS) on 09JUL2019, Fourier Transform Infrared Spectroscopy (FTIR) on 17JUL2019.

Item 2.001 – 2.978: By statistically sampling 28 packets, it is concluded at a 95% level of confidence, that at least 90% of the population contained heroin (salt form undetermined).

Page 1 of 2

Reporting Examples – Example 1  
Supplemental Document SD-5  
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Revision 1  
Page 2 of 5

# Resources: Spectral Libraries

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## MS Library

- **Version 3.13** (June 30, 2023)
- All spectra collected using EI-MS systems (>3500)
- Several formats (NIST, Agilent Tech., JCAMP, Shimadzu, Thermo)
- Contributions from practitioners
- **Curated by NIST**

## IR Library

- **Version 2.1** (August 27, 2019)
- All spectra collected using FTIR-ATR system (> 600)
- DEA Special Testing and Research Laboratory
- Several formats (Omnic, Opus, Perkin Elmer, Shimadzu, Agilent, JCAMP)

# Resources: Monographs

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- **Over 600 monographs**

- Most produced by DEA Special Testing & Research Laboratory
- Using structurally confirmed reference materials
- Intended for the verification of acquired reference materials

## Collaborators:

- The Center for Forensic Science Research and Education (CFSRE)
- The KGI School of Pharmacy and Health Sciences
- Forensic Drug Review – no longer active

# https://swgdrug.org



## Welcome to the Scientific Working Group for the Analysis of Seized Drugs (SWGDRUG) Website

### *SWGDRUG's Mission:*

SWGDRUG works to improve the quality of the forensic examination of seized drugs and to respond to the needs of the forensic community by supporting the development of internationally accepted minimum standards, identifying best practices within the international community, and providing resources to help laboratories meet these standards.

### *What's New:*

- 1) A recording of our first webinar "A Virtual Tour of the SWGDRUG Portal" is available for viewing [here](#). Check it out!
- 2) Check out the latest December 2023 [SWGDRUG Bulletin](#).
- 3) [SWGDRUG Recommendations](#) Version 8.1 was approved on August 19, 2022.
- 4) [Drug Monographs](#) (being updated regularly), please note the table is sortable.
- 5) Searchable Mass Spectral Library [Version 3.13](#) (dated June 30, 2023).
- 6) Searchable Infrared Spectral Library [Version 2.1](#) (dated August 27, 2019).
- 7) [Supplementary documents](#) which are intended to be a resource for those responsible for implementing SWGDRUG recommendations.
- 8) To keep up with the latest updates (including new monographs, libraries, etc.) from SWGDRUG, follow us on X, formerly known as Twitter. [Follow @swgdrug](#)



# On-going Developments

# SWGDRUG Core Committee

**DEA & AAFS** – Sandra E. Rodriguez-Cruz (Chair)

**CLIC** – Christian C. Matchett (Vice-Chair)

**DEA** – Jaclyn Iera (Secretariat and website)

**MAFS** – Elizabeth Griffin

**MAAFS** – Jennifer Bonetti

**NEAFS** – Tiffany A. Ribadeneyra

**NWAFS** – Kerry Hogan

**SAFS** – Melissa Hehir

**SWAFS** – David Huang

**Educator** – Eric Person (California State University)

**Educator** – Ruth W. Smith (Michigan State University)



# SWGDRUG Core Committee

**ASCLD** – Amanda Shanbaum

**ASTM and OSAC** – Anne Slaymaker

**CAC** – Sandra B. Sachs

**FBI** – Jason D. Brewer

**NIST** – Benjamin Place

**AFSN** – Tiong Whei Angeline Yap

**AICEF** – Adriano Maldaner

**ANZFSS** – Benjamin Painter

**Health Canada** – Richard Laing (Retired 2023!)

**ENFSI** – Michael Bovens

**UNODC** – Yen Ling Wong



# Public Comment Period

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- 60 Days
- December 2023 – February 2024
  - Closed February 7, 2024
- Revisions to:
  - SWGDRUG Core Recommendations Version 8.2
  - SD-7 – Construction of an Analytical Scheme
- Comments review – **2024 meeting**

# SWGDRUG Recommendations

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PART I – A Code of Professional Practice for Drug Analysts

PART II – Education and Training (revision)

PART III – Methods of Analysis

- A – Sampling Seized Drugs for Qualitative Analysis (revision)
- B – Analytical Scheme for Identification of Drugs or Chemicals (revision)
- C – Clandestine Laboratory Evidence
- D – Analogue and Structural Class Determinations

PART IV – Quality Assurance

- A – General Practices
- B – Validation of Analytical Methods (revision)
- C – Uncertainty

Annex A – SWGDRUG Glossary of Terms and Definitions (revision)

SD-7 – Construction of an Analytical Scheme (revision)

# SWGDRUG - Future Work

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SD-2 – Validation of Analytical Methods

*\*\*Removed and archived due to draft changes in Part IVB\*\**

SD-8 (Proposed) – Structural Elucidation

# SWGDRUG – Future Work

## Webinars



**Speaker**  
Dr. Sandra E. Rodriguez-Cruz  
Drug Enforcement Administration  
Special Testing and Research Laboratory  
United States of America

**Facilitator (Session 1)**  
Dr. Angeline Yap  
Health Sciences Authority  
Singapore

**Facilitator (Session 2)**  
Dr. Adriano Otavio Maldaner  
Brazilian Federal Police  
Brazil

**Webinar Details:**  
Session 1 (via **Zoom**): 16 Jan 2024 (Tuesday)  
Time: 11.00am - 12.00pm (UTC+8)  
  
Session 2 (via **Microsoft Teams**): 25 Jan 2024 (Thursday)  
Time: 12.00pm - 1.00pm (UTC-3)

 **SWGDRUG WEBINAR SERIES #1**  
*A Virtual Tour of the SWGDRUG Portal*

Dr. Rodriguez-Cruz currently serves as the chair of SWGDRUG and is a Senior Research Chemist with the Drug Enforcement Administration Special Testing and Research Laboratory. Her areas of expertise include mass spectrometry, measurement uncertainty, method validation, and statistical sampling methods, among others. She has published numerous manuscripts in peer-reviewed journals and internal DEA publications. She is an ABC-certified drug analyst, a fellow of the AAFS, and member of CLIC and ASTM International. Dr. Rodriguez-Cruz has a B.S. in Chemistry from the University of Puerto Rico and a Ph.D. in Chemistry from the University of California at Berkeley.

**Synopsis of Presentation:**  
During this presentation, attendees will be guided through a comprehensive tour of the SWGDRUG website ([www.swgdrug.org](http://www.swgdrug.org)). This will include a general overview of the SWGDRUG Recommendations (recently revised and now open for public comments) and the multiple Supplemental Documents accessible to seized-drug practitioners. The tour will also provide an overview of the many tools and resources available via the website, including drug monographs, spectral libraries, sampling calculators, and others.

**REGISTRATION:**  
1) **SCAN THE QR CODE**  
OR  
2) **GO TO:** <https://go.gov.sg/swgdrug2024>

**Deadline: 10 Jan 2024 (Wednesday)**



SWGDRUG - SCIENTIFIC WORKING GROUP FOR THE ANALYSIS OF SEIZED DRUGS

# SWGDRUG Bulletin – Portable Instrumentation



## **SWGDRUG Bulletin**

**December 2023**

### **SWGDRUG Position Regarding**

#### **Field-Portable and Miniaturized Instrumentation**

With the rapid development of new field-portable and miniaturized instrumentation, SWGDRUG is working to address the incorporation of these instruments in analytical schemes. It is the position of SWGDRUG that, as with any analytical method, the use of field-portable and miniaturized instruments in analytical schemes must meet the SWGDRUG recommendations for training, quality control, method validation, documentation, and reporting. In addition, the data (e.g., chromatogram or spectrum) from the field-portable or miniaturized instrumentation must be included in the case file in a format that is reviewable to allow independent interpretation of the results by an expert without access to the instrument software. To this point, if the field-portable or miniaturized instrument does not provide the requisite selectivity as an analogous laboratory instrument that would otherwise be fit-for-purpose, it cannot be included in the same category within the analytical scheme as an analogous laboratory instrument, but may be included in the analytical scheme as a lesser category.

# Who Does What?

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## SWGDRUG

- Develops **internationally accepted minimum standards**
- Identifies best practices within the **international** community
- Provides **resources** to help laboratories meet these standards

## OSAC

- Develops consensus-based standards
- OSAC Registry
- Encourages **the United States forensic science community** to implement published and proposed standards.

## ASTM

- Standards developing organization (SDO)
- **Publishes standards** (usually that have been developed elsewhere)

# SWGDRUG Future Directions

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## **SWGDRUG meetings:**

- Core committee (national & international)
- DEA – financial support

## **Provide resources:**

- Recommendations and supplemental documents
- Libraries and monographs
- [Links to other free resources](#)

## **Dissemination:**

- <https://swgdrug.org>

*Will continue to support the development of internationally accepted minimum standards for the analysis of seized drugs*

# Thank You!

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<https://swgdrug.org>

[swgdrug@dea.gov](mailto:swgdrug@dea.gov)