UNODC
United Nations Office on Drugs and Crime

# The UNODC Early Warning Advisory On NPS

## 2nd Annual Meeting Copolad II

**Martin Raithelhuber**
**Global SMART Programme**
**Laboratory and Scientific Section**
**November 2017**

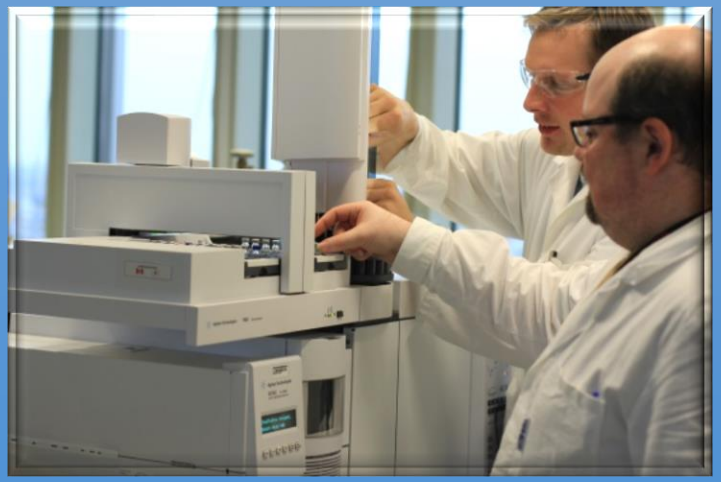
# Laboratory and Scientific Section

- Established in 1954 by **GA Resolution 834 (IX)** as the United Nations Narcotics Laboratory

- Several GA, ECOSOC, CND and CCPCJ Resolutions have mandated areas of work such as:
  - Strengthening **national drug testing laboratories**
  - Developing reliable **field and laboratory testing methods**
  - Establishment a central source of **reference standards** of major drugs
  - Developing **internationally acceptable guidelines** for forensic science practice

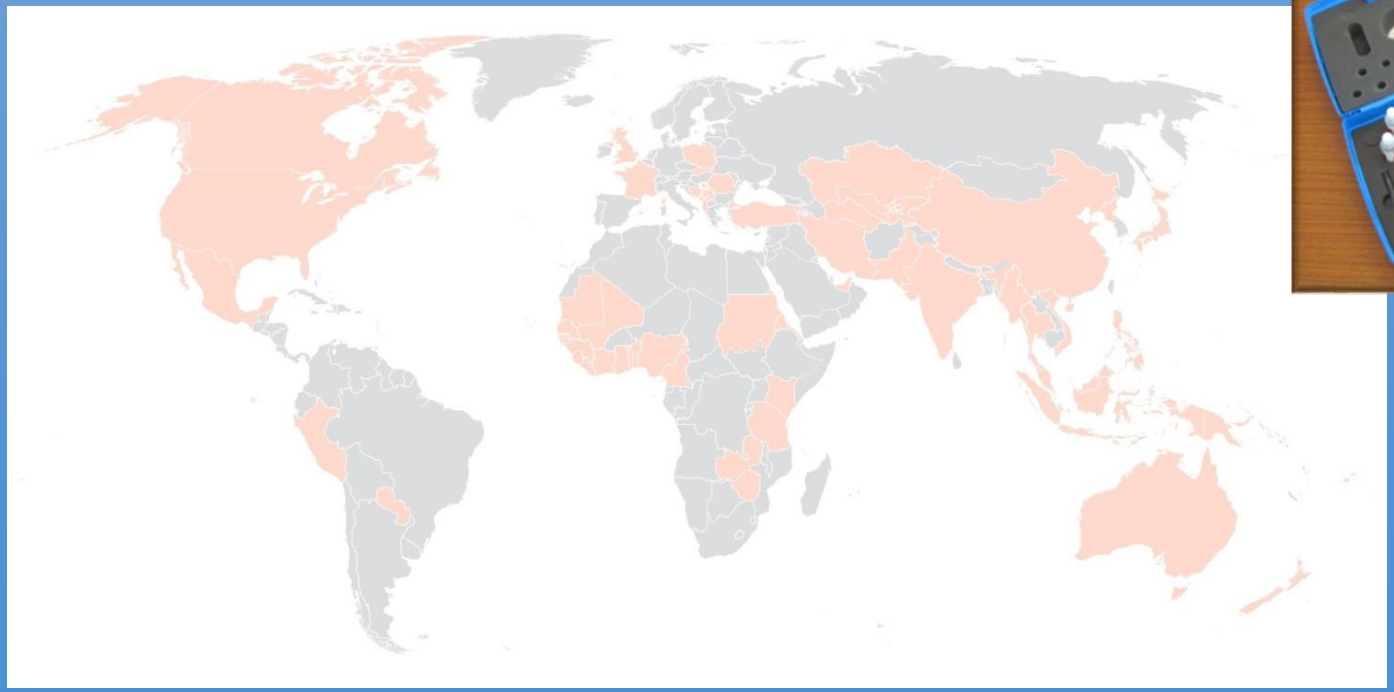
# Support to national laboratories

- Onsite training of national drug testing experts in Vienna as part of UNODC regional programmes



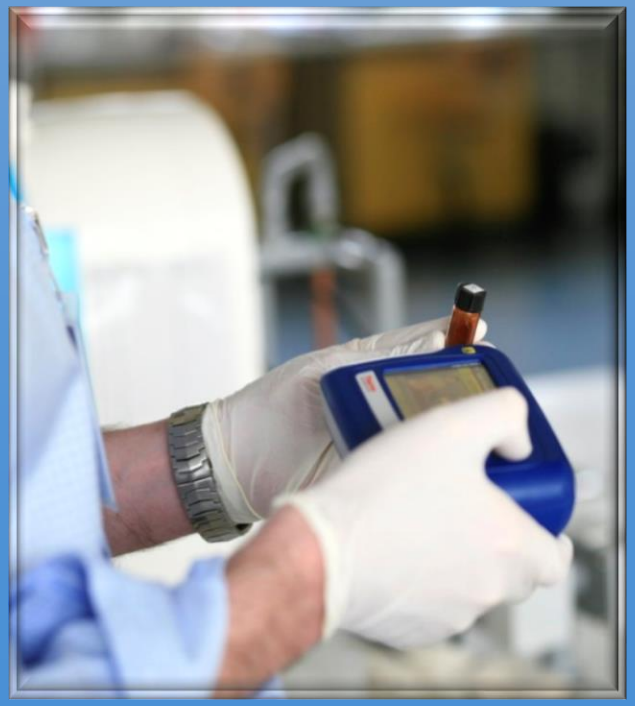
# Strengthening law enforcement capacity

- Provision of over 3800 drugs and precursors field testing kits to 77 Member States

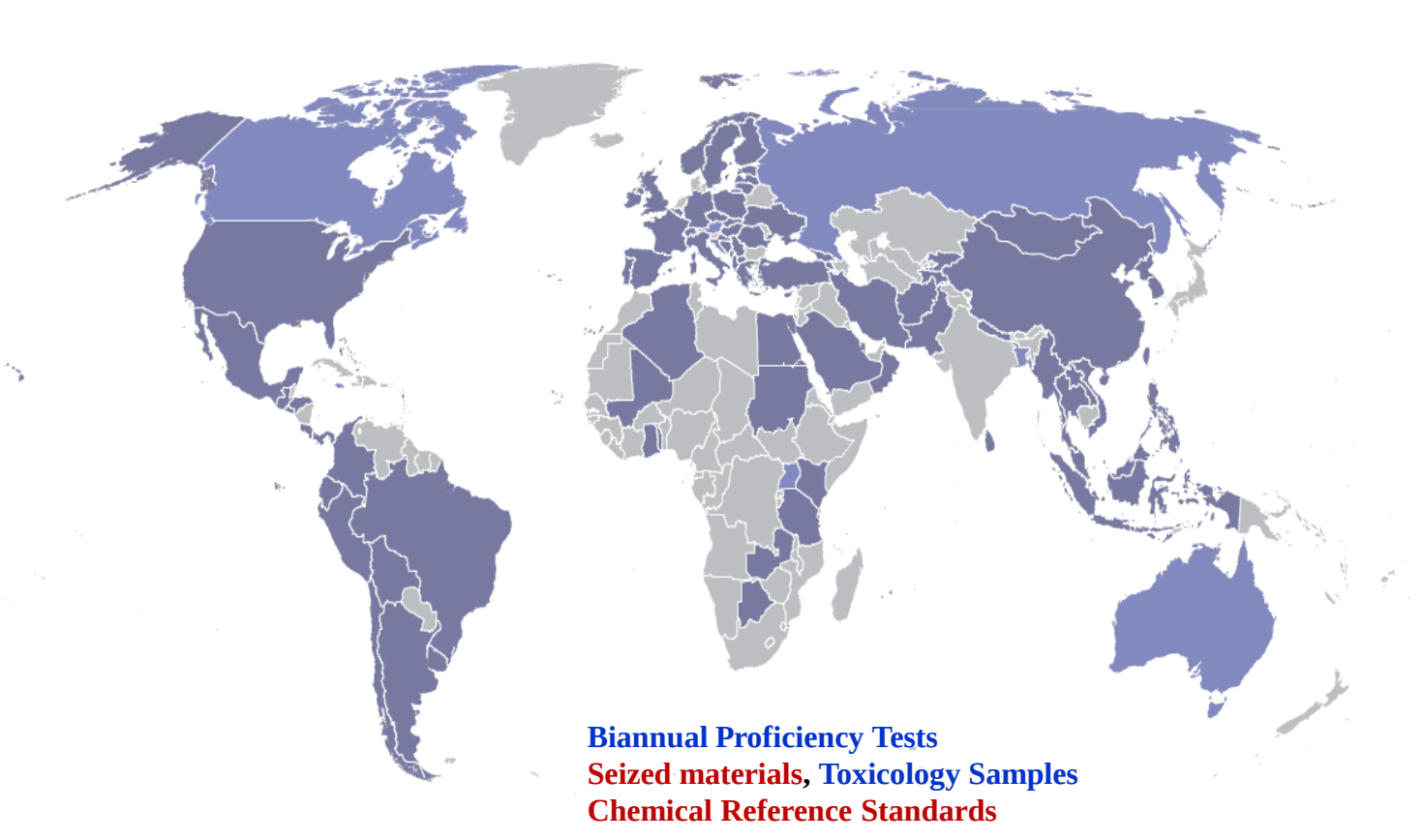


# Strengthening law enforcement capacity

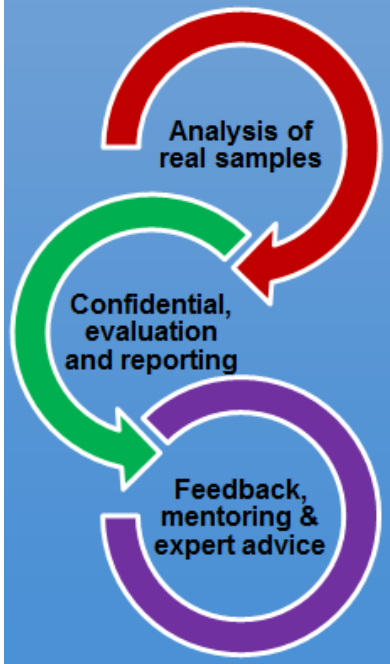
- Introducing modern hand-held technologies in field drug and precursor testing trainings
- Field-based trainings and CBTs on field drug testing



# Enhancing National Forensic Laboratory Capacity: The UNODC International Collaborative Exercises



**Biannual Proficiency Tests**
**Seized materials, Toxicology Samples**
**Chemical Reference Standards**



# The Global Synthetics Monitoring: Analysis, Reporting, Trends (SMART) Programme


- As a response to the synthetic drug problem, the UNODC launched the Global SMART Programme in 2008
- The Programme seeks to enhance the capacity of Member States and authorities in priority regions:
  - to generate, manage, analyse and report synthetic drug information
  - and to apply this scientific evidence-based knowledge to design the policies and programmes

# "Early warning" at the global level: Understanding a new phenomenon

- 2012, NPS came to the attention of the Commission on Narcotic Drugs as an emerging problem
- In March 2013, the Commission tasked UNODC with the development of an early warning mechanism on NPS
- In June 2013, the UNODC Early Warning Advisory on NPS (EWA) was launched, starting with information from the network of national forensic laboratories
- Task: provide information on NPS trends (which substances where and when) for the Commission to take action
- Product: password protected web platform with information on substance, country, year

# "Early Warning" at the global level: Review of NPS for international control

- Challenge: huge data gaps in some regions, sometimes no methodologies available, chemical reference standards not available or too costly, …
- Enhancement of EWA to include analytical information, molecular structures, development of technical guidelines for analysis of synthetic cannabinoids, piperazines, synthetic cathinones, …
- Support prioritization of NPS for international review (since 2015): most prevalent, persistent and harmful NPS
- Development of a toxicology module for the EWA to capture information on fatalities and hospitalizations associated with the use of NPS

# UNODC Early Warning Advisory on New Psychoactive Substances



## UNODC Early Warning Advisory (EWA) on New Psychoactive Substances (NPS)

The EWA provides access to basic information on new psychoactive substances. Specific information on NPS including trend data, chemical details on individual substances, supporting documentation on laboratory analysis and legislative responses can be accessed by registered users only.

### What are NPS?

New psychoactive substances have been known in the market by terms such as 'legal highs', 'herbal highs', 'bath salts', 'research chemicals'

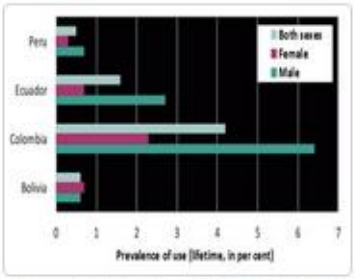
### NPS Substance Groups

NPS differ greatly in terms of their adverse effects, the ways in which they are abused and their historical background

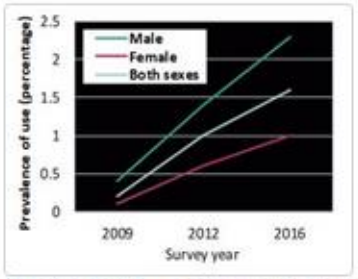
### Legal Responses

Countries have adopted various legislative measures to tackle the NPS problem

## Latest News on NPS (view all)



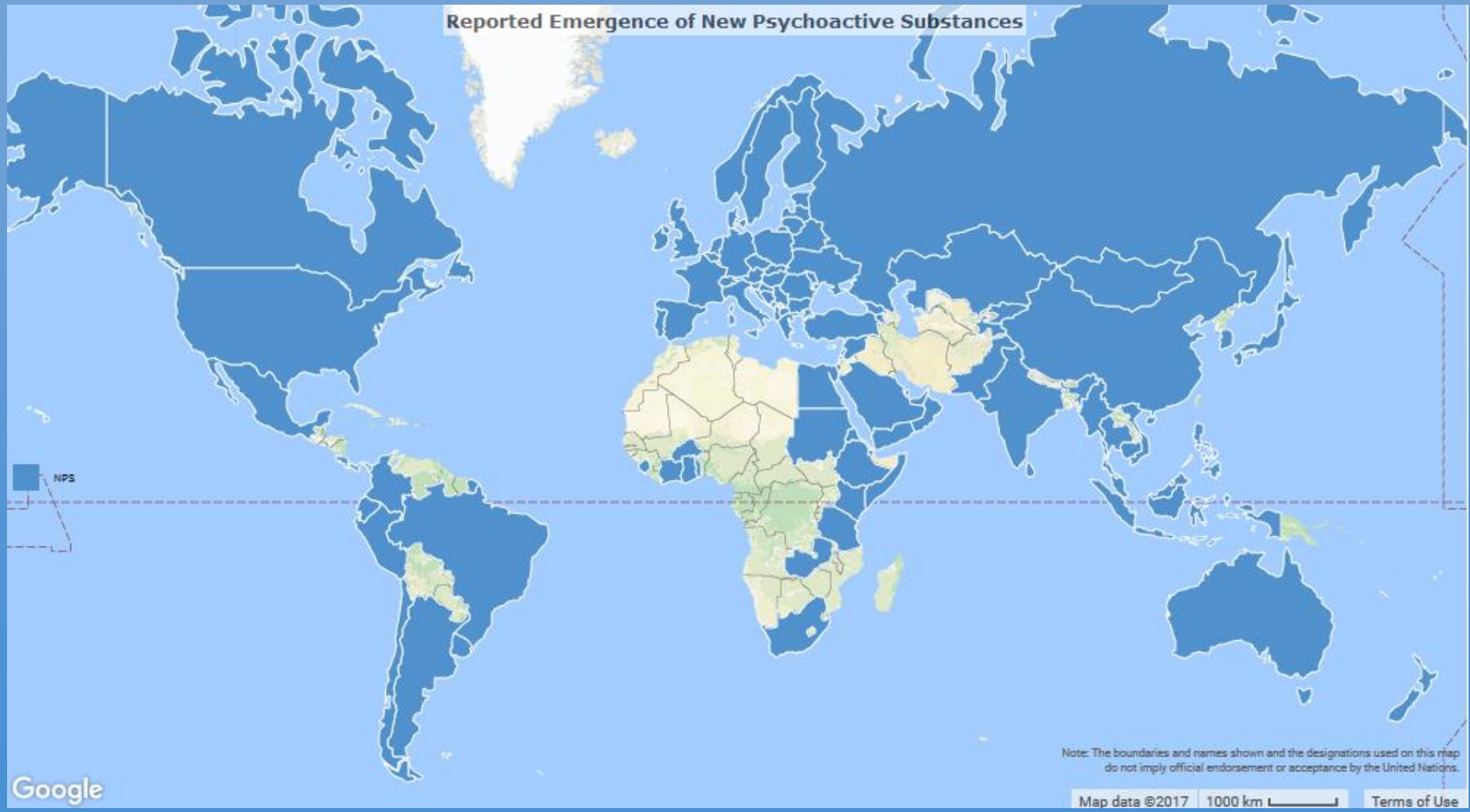

November 2017 – Peru: University




October 2017 – Peru: Rise in LSD


October 2017 – UNODC-SMART:

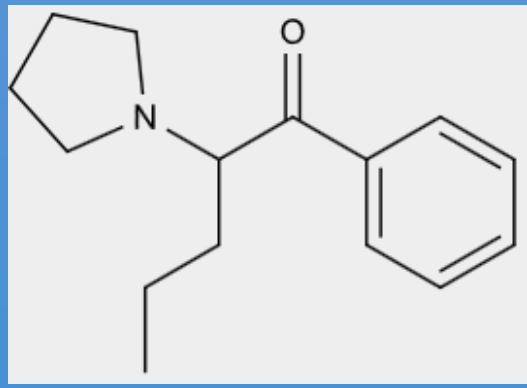
# Prioritization of NPS: monitoring emergence, prevalence and persistence



# Early Warning Advisory: Clients and needs

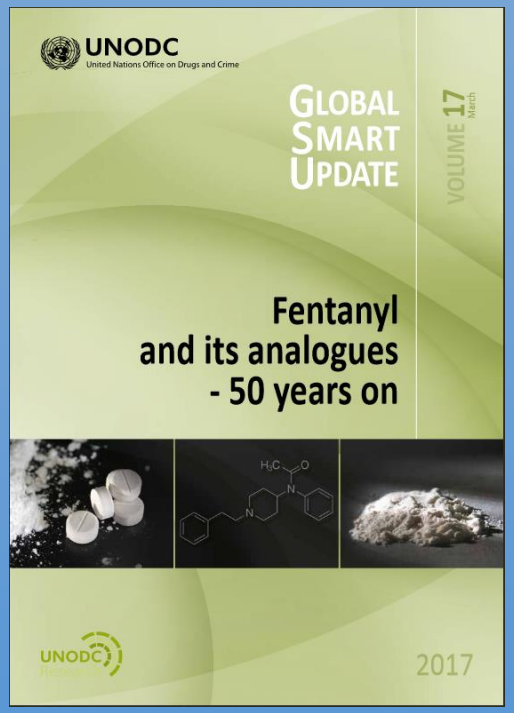
- International bodies and organisations (CND, WHO Expert Committee on Drug Dependence, INCB, …):
  - Global reference point as a basis for discussion and decisions, NPS trends, maps, terminology, effects, and harms
- National experts, policy and decision-makers:
  - Trend-analysis data and legal approaches
- Laboratories:
  - Spectra for NPS identification, methodologies for analysis, chemical reference standards
- Law enforcement:
  - Tools to detect NPS





# Highlighting risks and adverse effects

- For example injecting use of synthetic cathinones (see Global SMART Update volume 16, March 2017)
- EWA newsclips: intoxications, NPS treatment, NPS use trends seizures, national and international legislation




**March 2017 - Austria: Fifth International Conference on NPS to be held 23-24 October 2017**

**Vienna, AUSTRIA – March 2017:** We are pleased to announce the Fifth International Conference on NPS to be held from 23 to 24 October 2017 at the United Nations in Vienna, Austria. The conference is jointly organised by the United Nations Office on Drugs and Crime (UNODC), the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), the World Anti-Doping Agency (WADA), University of Hertfordshire and Sapienza University of Rome.

The first four International Conferences on NPS, held in Budapest (2012; 2015) Swansea (2013) and Rome (2014), were extremely successful events to share knowledge and strengthen collaboration on NPS among multidisciplinary professionals at the international level.

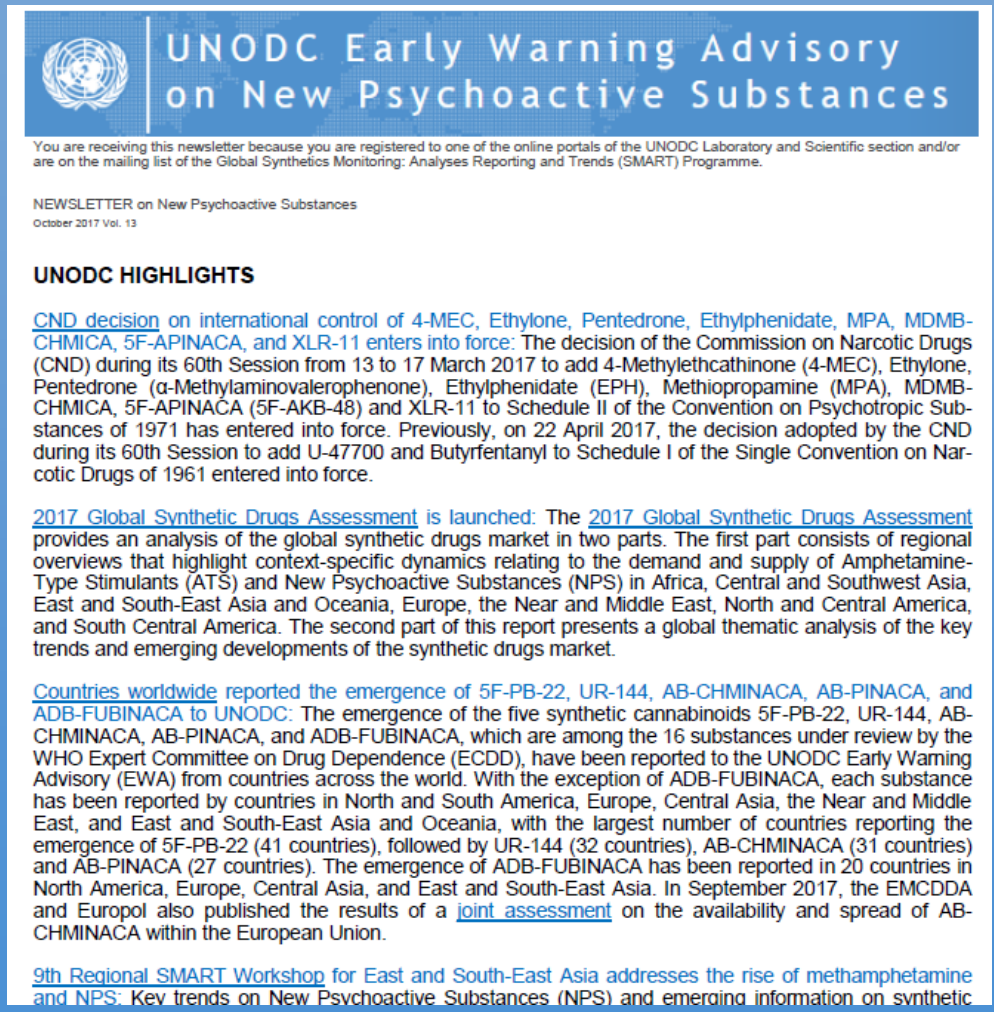
The main objectives of this fifth event are to share evidence-based information on NPS and latest trends of misuse; improve the understanding of clinical treatment and management of NPS use; explore policy and legislative responses to NPS; develop innovative prevention measures for vulnerable individuals; identify public health implications of NPS and explore motivations and socio-cultural factors underlying NPS use. To attend this conference please register on the conference webpage. Abstract submissions will open on Wednesday, 1st March 2017 and close on Sunday, 30th April 2017.


**June 2016 - Kyrgyz Republic: the synthetic cathinone pentedrone identified and seized based on new NPS legislation in the Kyrgyz Republic**

**BISHKEK, Kyrgyz Republic - June 2016.** On 7 June 2016, during a search operation carried out by employees of State Service on Drug Control (ГСКН) and State Customs Service (ГТС) in Bishkek, Kyrgyz Republic, two persons were detained on suspicion of involvement in the illicit trafficking of psychotropic substances. During the personal search a plastic bag containing white powder was seized. The State Service on Drug Control experts identified the seized substance as pentedrone, a synthetic cathinone with stimulant effect. The net weight of the seized powder was 29 grams with an estimated value on the illicit market of 100 thousand Kyrgyzstani soms (about USD 1,476).

The Kyrgyz Republic legislation prohibits NPS trafficking and use. On December 4, 2015, through the Decree No 831, the Government of the Kyrgyz Republic amended the list of controlled substances contained in the Decree "On narcotic drugs, psychotropic substances and precursors subject to control in the Kyrgyz Republic", dated November 9, 2007, № 543, to include a number of new psychoactive substances. Over 100 NPS, including pentedrone, were placed under control.

# EWA Newsletter – Volume 12 (October 2017)



UNODC Early Warning Advisory on New Psychoactive Substances

You are receiving this newsletter because you are registered to one of the online portals of the UNODC Laboratory and Scientific section and/or are on the mailing list of the Global Synthetics Monitoring: Analyses Reporting and Trends (SMART) Programme.

NEWSLETTER on New Psychoactive Substances

October 2017 Vol. 13

**UNODC HIGHLIGHTS**

CND decision on international control of 4-MEC, Ethylone, Pentedrone, Ethylphenidate, MPA, MDMB-CHMICA, 5F-APINACA, and XLR-11 enters into force: The decision of the Commission on Narcotic Drugs (CND) during its 60th Session from 13 to 17 March 2017 to add 4-Methylethcathinone (4-MEC), Ethylone, Pentedrone (α-Methylaminovalerophenone), Ethylphenidate (EPH), Methiopropamine (MPA), MDMB-CHMICA, 5F-APINACA (5F-AKB-48) and XLR-11 to Schedule II of the Convention on Psychotropic Substances of 1971 has entered into force. Previously, on 22 April 2017, the decision adopted by the CND during its 60th Session to add U-47700 and Butyrfentanyl to Schedule I of the Single Convention on Narcotic Drugs of 1961 entered into force.

2017 Global Synthetic Drugs Assessment is launched: The 2017 Global Synthetic Drugs Assessment provides an analysis of the global synthetic drugs market in two parts. The first part consists of regional overviews that highlight context-specific dynamics relating to the demand and supply of Amphetamine-Type Stimulants (ATS) and New Psychoactive Substances (NPS) in Africa, Central and Southwest Asia, East and South-East Asia and Oceania, Europe, the Near and Middle East, North and Central America, and South Central America. The second part of this report presents a global thematic analysis of the key trends and emerging developments of the synthetic drugs market.

Countries worldwide reported the emergence of 5F-PB-22, UR-144, AB-CHMINACA, AB-PINACA, and ADB-FUBINACA to UNODC: The emergence of the five synthetic cannabinoids 5F-PB-22, UR-144, AB-CHMINACA, AB-PINACA, and ADB-FUBINACA, which are among the 16 substances under review by the WHO Expert Committee on Drug Dependence (ECDD), have been reported to the UNODC Early Warning Advisory (EWA) from countries across the world. With the exception of ADB-FUBINACA, each substance has been reported by countries in North and South America, Europe, Central Asia, the Near and Middle East, and East and South-East Asia and Oceania, with the largest number of countries reporting the emergence of 5F-PB-22 (41 countries), followed by UR-144 (32 countries), AB-CHMINACA (31 countries) and AB-PINACA (27 countries). The emergence of ADB-FUBINACA has been reported in 20 countries in North America, Europe, Central Asia, and East and South-East Asia. In September 2017, the EMCDDA and Europol also published the results of a joint assessment on the availability and spread of AB-CHMINACA within the European Union.

9th Regional SMART Workshop for East and South-East Asia addresses the rise of methamphetamine and NPS: Key trends on New Psychoactive Substances (NPS) and emerging information on synthetic

UNODC
United Nations Office on Drugs and Crime

Global SMART Programme

# What does the Early Warning Advisory Offer?

# UNODC Early Warning Advisory on New Psychoactive Substances

Search NPS Data

Home | Dashboard | Search NPS Data

## Search NPS Data

**Filter:**

**Year:**
<all>
2015
2014
2013
(Ctrl+Click to multi-select)

**Show Own/All:** Show All

**Substance Group:** Synthetic cathinones

**Substance:** type to select substance

**Regions:**
-- no region filter --
Africa
Americas
Asia
(Ctrl+Click to multi-select)

**Countries:**
-- all --
AFGHANISTAN (Asia)
ÅLAND ISLANDS (Europe)
ALBANIA (Europe)
(Ctrl+Click to multi-select)

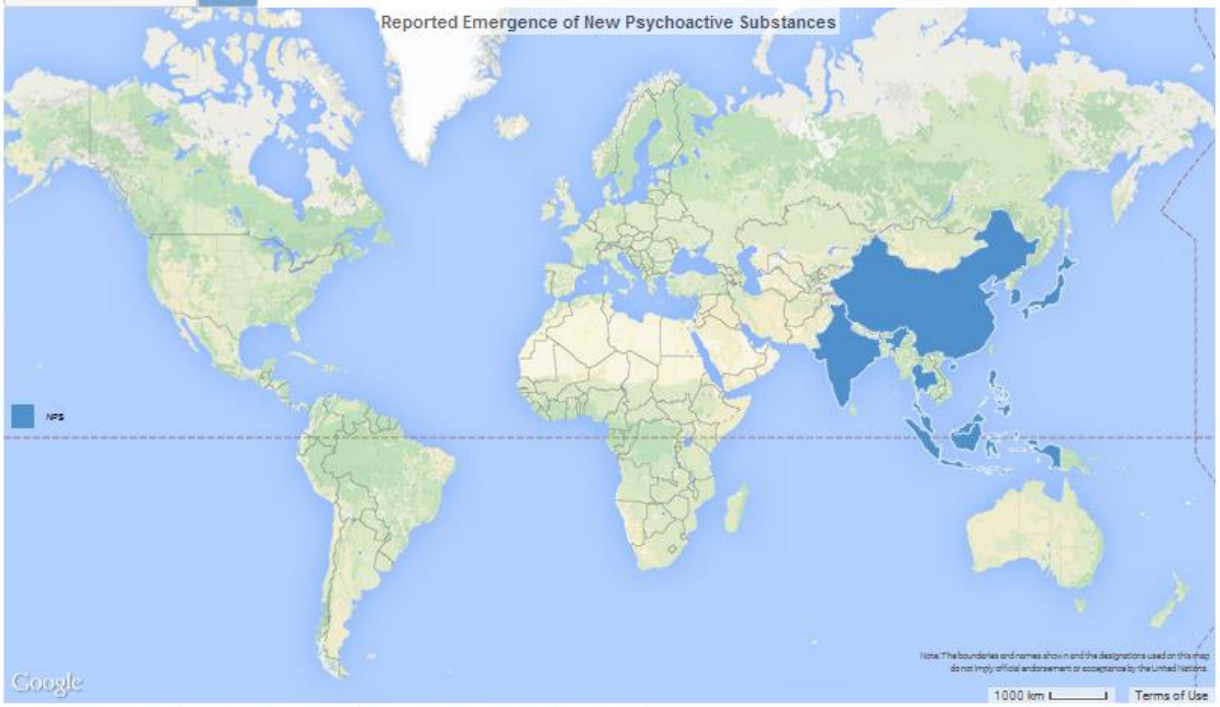
**Selected Countries (ISO-codes):**
AF, AM, AZ, BH, BD, BT, BN, KH, CN, CD, KP, GE, HK, IN, ID, IQ, IR, IL, JP, J
OM, PK, PH, QA, KR, SA, SG, LK, SY, TW, TJ, TH, TL, TM, AE, UZ, VN, YE

**Page Size:** 30

**Access filtered data:**
Summary Report (charts/tables) | Detailed Substance Finding List

Filter | Clear Filter

Substance Finding List | Map




Use filters to check which NPS emerged where and when!

PDF summary report, excel list

Create an online map of NPS emergence based on your search criteria!

# UNODC Early Warning Advisory on New Psychoactive Substances


**NPS Substance Finding**

Substance (open comprehensive list)

type to select substance

Quantity

0 g or ml

Finding Date

23/07/2014

Means Of Identification (Ctrl-click to multiselect)

- Analytical technique(s)
- Labelling
- Online database
- Packaging

Description

select an appearance

ATC Identification / Comment

ATC Confirmation / Comment

Comment

Attachment

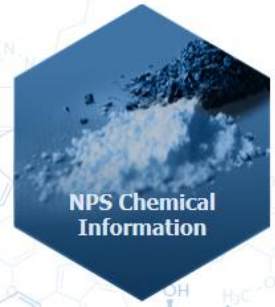
add attachment

Please ...
select substance
select means of identification

Delete Cancel

**Submit a NPS finding in your country with analytical information using the online form!**

# UNODC Early Warning Advisory on New Psychoactive Substances






Find more information on individual NPS

## NPS Chemical Information

MDPV

| Name | Substances |
|---|---|
| Aminoindanes | 2,3-Dihydro-1H-Inden-1-amine, 1-Aminoindan<br>2-Aminoindane, 2,3-Dihydro-1H-inden-2-amine (2-AI) [2975-41-9]<br>5,6-Methylenedioxy-2-aminoindane , 6,7-Dihydro-5H-cyclopenta[f][1,3]benzodioxol-6-amine (MDAI) [132741-81-2]<br>5,6-Methylenedioxy-N-methyl-2-aminoindane, N-methyl-6,7-dihydro-5H-cyclopenta[f][1,3]benzodioxol-6-amine (MDMAI)<br>5-Iodo-2-aminoindane, 5-Iodo-2,3-dihydro-1H-inden-2-amine (5-IAI) [132367-76-1]<br>5-Methoxy-6-methyl-2-aminoindane, 5-Methoxy-6-methyl-2,3-dihydro-1H-inden-2-amine (MMAI)<br>N-Ethyl-5-trifluoromethyl-2-aminoindane, N-Ethyl-5-(trifluoromethyl)-2,3-dihydro-1H-inden-2-amine (ETAI)<br>N-Methyl-2-Aminoindane, 2,3-dihydro-N-methyl-1H-inden-2-amine (NM-2AI) [10408-85-2] |
| | ((E)-1-(1-(2-Morpholino-1-yl)ethyl)indol-3-yl)-3,4,4-trimethylpent-2-en-1-one) (A-796,260 isomer)<br>(1-(5-fluoropentyl)-3-(2-ethylbenzoyl)indole)<br>(1-(5-fluoropentyl)-3-(2-methylbenzoyl)indole<br>(1-Butyl-1H-indol-3-yl)(naphthalen-1-yl)methanone (JWH-073) [208987-48-8]<br>(1-ethyl-1H-indol-3-yl)naphthalen-1-yl-methanone (JWH-071)<br>(1-Pentyl-1H-indazol-3-yl)(2,2,3,3-tetramethylcyclopropyl)methanone<br>(1-pentyl-1H-indazol-3-yl)piperazin-1-yl)methanone<br>(1-Pentyl-1H-indol-3-yl)(pyridin-3-yl)methanone<br>(1-pentyl-1H-indol-3-yl)piperazin-1-yl)methanone<br>(2,2,3,3-tetramethylcyclopropyl)[1-(4,4,4-trifluorobutyl)-1H-indol-3-yl]-methanone (XLR-12)<br>[1-(3-chloropentyl)-1H-indol-3-yl](2,2,3,3-tetramethylcyclopropyl)methanone (UR-144 N-(3-chloropentyl)analog)<br>[1-(4-fluorobenzyl)-1H-indol-3-yl](2,2,3,3-tetramethylcyclopropyl)methanone (FUB-144, FUB-UR-144)<br>[1-(5-fluoropentyl)-1H-indol-3-yl]tricyclo[3.3.1.13,7]dec-1-yl-methanone (5F-AB-001)<br>1-(5-fluoropentyl)-N-(quinolin-8-yl)-1H-indazole-3-carboxamide, 5-fluoro-THJ (5F-THJ, 5F-THJ-018)<br>1-Naphthalenyl(1-pentyl-1H-indazol-3-yl)-methanone, JWH-018 indazole analogue (THJ-018)<br>1-(2-Morpholin-4-ylethyl)-1H-indol-3-yl]-(2,2,3,3-tetramethylcyclopropyl)methanone (A-796,260)<br>1-(5-fluoropentyl)-N-(2-phenylpropan-2-yl)-1H-indazole-3-carboxamide, N-cumyl-1-(5-fluoropentyl)-1H-indazole-3-carboxamide (CUMYL-5FPINACA)<br>1-(5-fluoropentyl)-N-(2-phenylpropan-2-yl)-1H-indole-3-carboxamide (CUMYL-5FPICA)<br>1-(Cyclohexylmethyl)-2-[(4-ethoxyphenyl)methyl]-N,N-diethyl-1H-benzimidazol-5-carboxamide<br>1-(Phenylmethyl)-1H-indole-3-carboxylic acid 8-quinolinyl ester, Quinolin-8-yl-1-(phenylmethyl)-1H-indole-3-carboxylate<br>1-(Tetrahydropyran-4-ylmethyl)-1H-indol-3-yl]-(2,2,3,3-tetramethylcyclopropyl)methanone (A-834,735)<br>1-Benzyl-N-(quinolin-8-yl)-1H-indazole-3-carboxamide<br>1-Benzyl-N-(quinolin-8-yl)-1H-indole-3-carboxamide<br>1-butyl-N-(2-phenylpropan-2-yl)-1H-indole-3-carboxamide (CUMYL-BICA) |

NPS Chemical Information

## Methylone | 3,4-Methylenedioxy-N-meth

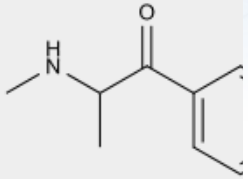
Details | Analytical Information | Trend Data

**Names:** Methylone | 3,4-Met
2-Methylamino-1-(3,
bk-MDMA | MDMC

**IUPAC name:** 1-(1,3-benzodioxol-5

**Substance group:** Synthetic cathinones

**Structure:**



**CAS Number:** 196028-79-5

**InChI:** InChI=1S/C11H13NO
13)8-3-4-9-10(5-8)1
7,12H,6H2,1-2H3

**InChI Key:** VKEQBMCRQDSRET-U

**SMILES:** CC(NC)C(=O)c1ccc2

**Molecular Formula:** $C_{11}H_{13}NO_3$

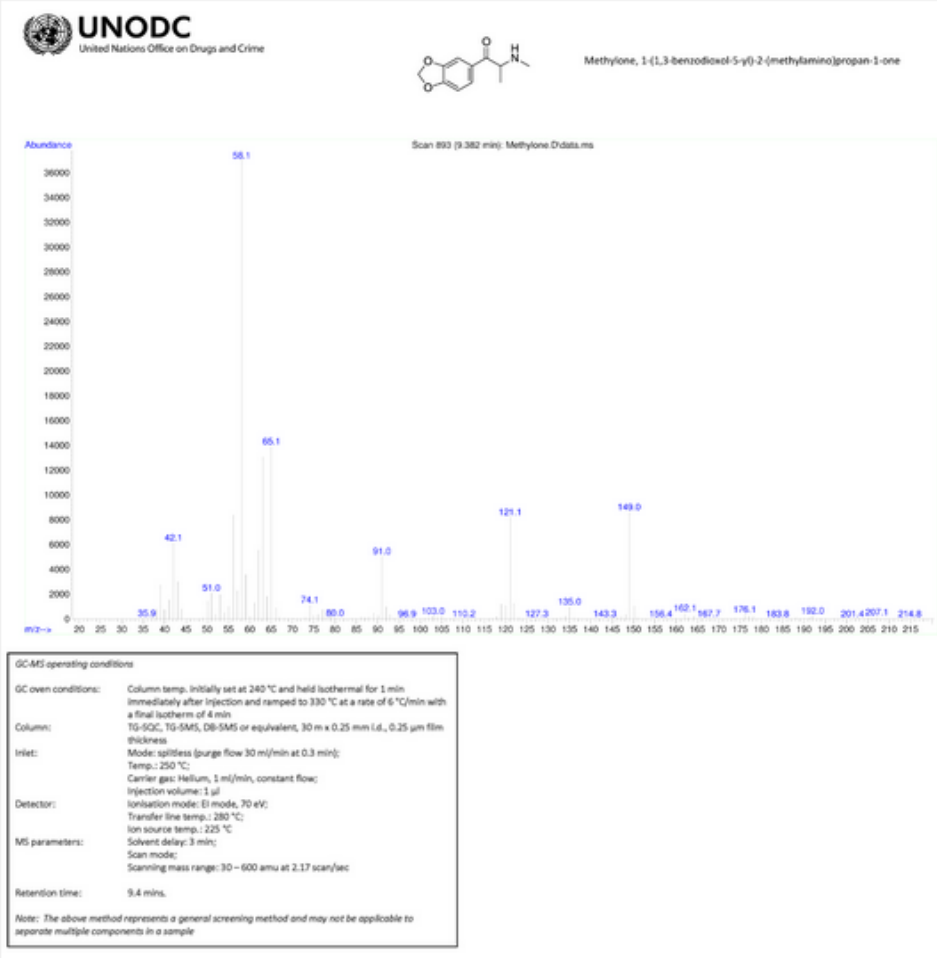
**Molecular Weight:** 207.2258 g/mol

## Methylone | 3,4-Methylenedioxy-N-methcathinone

Details | Analytical Information | Trend Data

**Spectra:**

Note: All analytical spectra can only be used for reference purposes.




GC-MS operating conditions

| | |
|---|---|
| GC oven conditions: | Column temp. initially set at 240 °C and held isothermal for 1 min. Immediately after injection and ramped to 330 °C at a rate of 6 °C/min with a final isotherm of 4 min |
| Column: | TG-5QC, TG-5MS, DB-5MS or equivalent, 30 m x 0.25 mm i.d., 0.25 µm film thickness |
| Inlet: | Mode: splitless (purge flow 30 ml/min at 0.3 min); Temp.: 250 °C; Carrier gas: Helium, 1 ml/min, constant flow; Injection volume: 1 µl |
| Detector: | Ionisation mode: EI mode, 70 eV; Transfer line temp.: 280 °C; Ion source temp.: 225 °C |
| MS parameters: | Solvent delay: 3 min; Scan mode; Scanning mass range: 30 – 600 amu at 2.17 scan/sec |
| Retention time: | 9.4 mins. |

*Note: The above method represents a general screening method and may not be applicable to separate multiple components in a sample*

SWGDRUG monograph for Methylone

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United Nations Office on Drugs and Crime

UNITED NATIONS NARCOTICS LABORATORY 2014 1954


Home About Dashboard Search NPS Data

## Search Legal Responses

Legal Responses

To find more information on the various legal responses in place around the world, click here.

**Known year of first control:**
-- all --
1978
1985
1986
(Ctrl+Click to multi-select)

**Regions:**
-- no region filter --
Africa
Americas
Asia
(Ctrl+Click to multi-select)

**Countries:**
ÅLAND ISLANDS
ALBANIA
ALGERIA
AMERICAN SAMOA
(Ctrl+Click to multi-select)

**Selected countries:**
AS, AI, AG, AR, AW, BS, BB, BZ, BM, BO, BR, CA, KY, CL, CO, CR, CU, DM, DO, EC, SV, FK, GF, GD, GP, GT, GY, HT, HN, JM, MQ, MX, MS, AN, NI, PA, PY, PE, PR, KN, LC, VC, SR, TT, TC, US, UY, VE, VG, VI

**Type of legislation:**
-- all --
Analogue Control
Drug Laws/Individual Listing
Generic Legislation
(Ctrl+Click to multi-select)

**Page Size:**
30

Filter Clear Filter

Home About Dashboard Search NPS Data

## Drug Laws/Individual Listing for ARGENTINA

**Type of legislation:** Drug Laws/Individual Listing
**Legislation title:** Decree 299 of 2010, Update of the list of narcotics and other chemical substances to be included under the Law No. 23.737
**Known year of first control:** 2010

**Description:**
In Argentina, the possession and traffic of narcotic and psychotropic substances is regulated by Law No. 23.737 [http://www.mseg.gba.gov.ar/Investigaciones/DrogasIlicitas/ley%2023737.htm] and the Decree No. 722 of 18 April 1991 [http://infoleg.mecon.gov.ar/infolegInternet/resaltaranexos/5000-9999/6027/norma.htm] where the list of controlled substances is contained. This Decree has been amended several times to update the list of controlled substances. In 2010, a number of new psychoactive substances were added to the list of controlled substances by Decree 299 of 2010 [http://infoleg.mecon.gov.ar/infolegInternet/anexos/160000-164999/164826/norma.htm]. Among the substances that were controlled are the phenethylamines 2C-I; 2C-T-2; 2C-T-7, PMMA, TMA-2, ketamine, the synthetic cathinone MPPP.

**Links:**
Decree 299 of 2010

If you have any further information or any amendments to the information provided on this page, please send an email to Global SMART (globalsmart@unodc.org).

Return to list of legislation in ARGENTINA

ual Listing [2012]

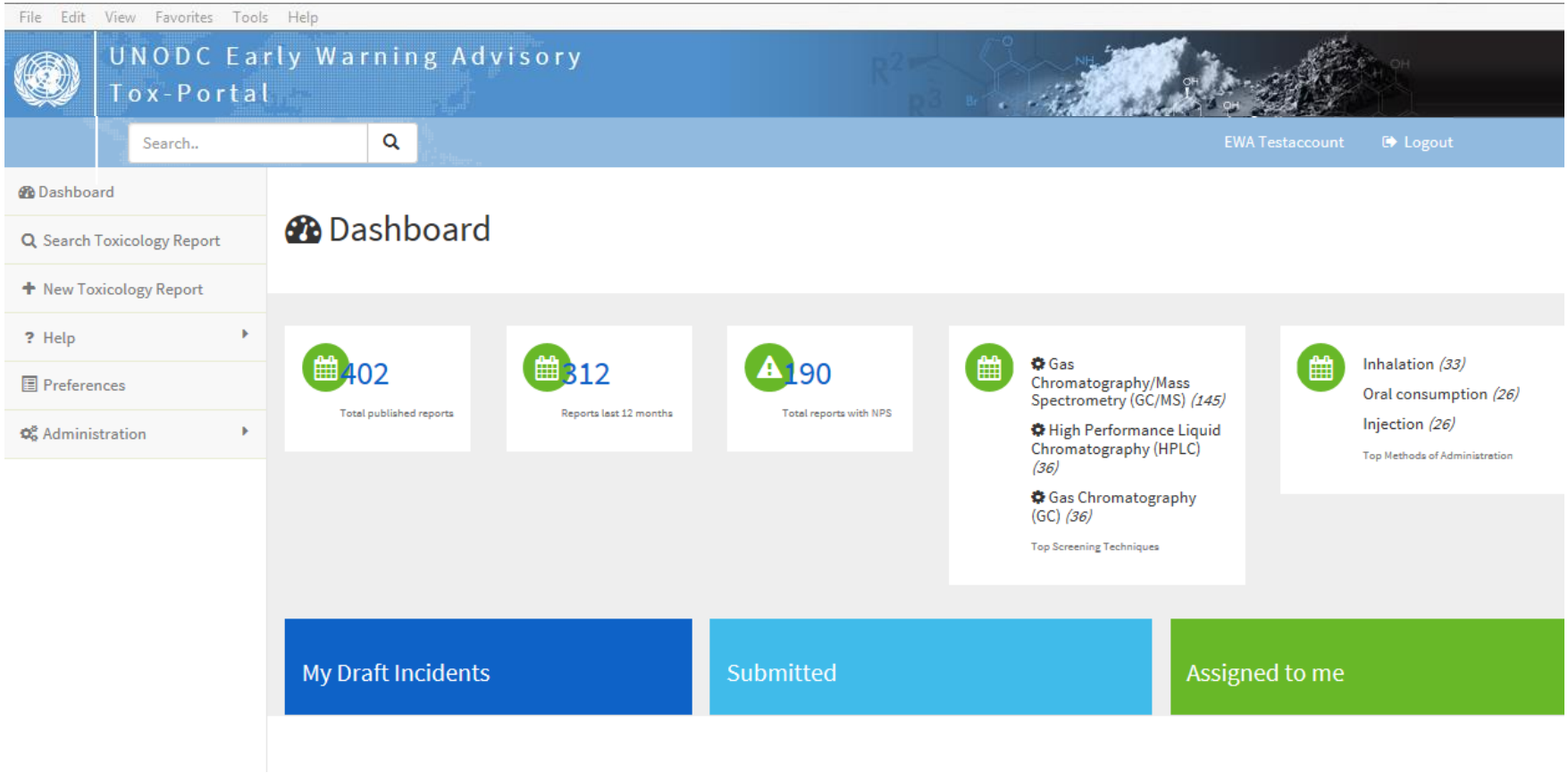
eric Legislation [2012]

In most cases the original law is hyperlinked

UNODC
United Nations Office on Drugs and Crime

TIAFT
The International Association of Forensic Toxicologists

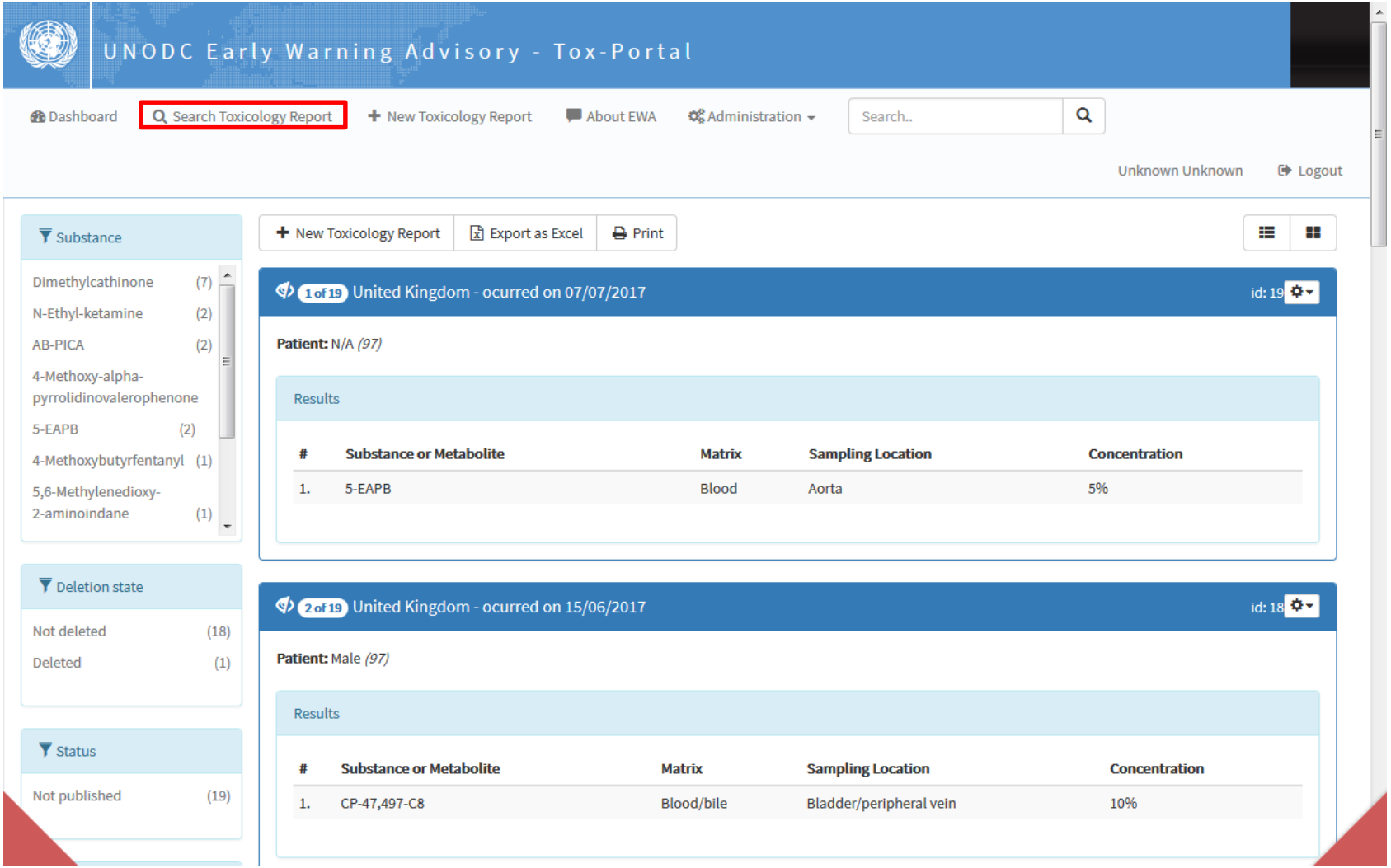
# Preview of the Tox–Portal



UNODC
United Nations Office on Drugs and Crime

TIAFT
The International Association of Forensic Toxicologists

# Preview of the Tox–Portal



# Challenge of capturing all relevant substances

“Found dead having smoked heroin the previous evening. Had access to prescription drugs and "Meow Meow".

1 of 5 United Kingdom - ocurred on 26/07/2016

**Patient:** Female *(22)*

Results

| # | Substance or Metabolite | Matrix | Sampling Location |
|---|---|---|---|
| 1. | Amfetamine | Blood | Femoral |
| 2. | 4-Methylethcathinone | Urine | N/A |
| 3. | 4-Methylmethcathinone | Urine | N/A |
| 4. | Morphine | Blood | Femoral |

# Challenge of identifying the contributory substance

# 2 Substance **4-Methylethcathinone**

**Substance Details**

**Substance or metabolite(s) identified***

**Matrix***

Urine

**Sampling location (*if post-mortem*)***

N/A

**Concentration *(e.g. mg/ml)***

N/A

**Analytical Method(s)**

**Primary Screening**

High Performance Liquid Chromatography (HPLC)

**Identification***

Select.. -

**Confirmation***

Liquid chromatography/tandem mass spectrom

**Verification Details**

**Means of Verification***

Reference Standard

**Route of Administration *(where available)***

N/A

**Relative/probable contribution of the drug to the outcome of the event**

Present but non-contributory (low)

# Contact

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