International monitoring of New Psychoactive Substances (NPS) - The UNODC Early Warning Advisory (EWA) on NPS

Vienna

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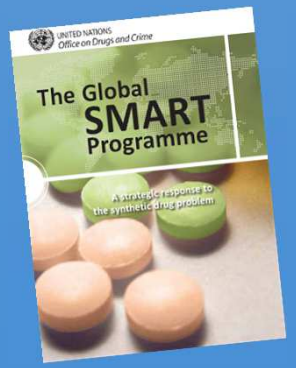
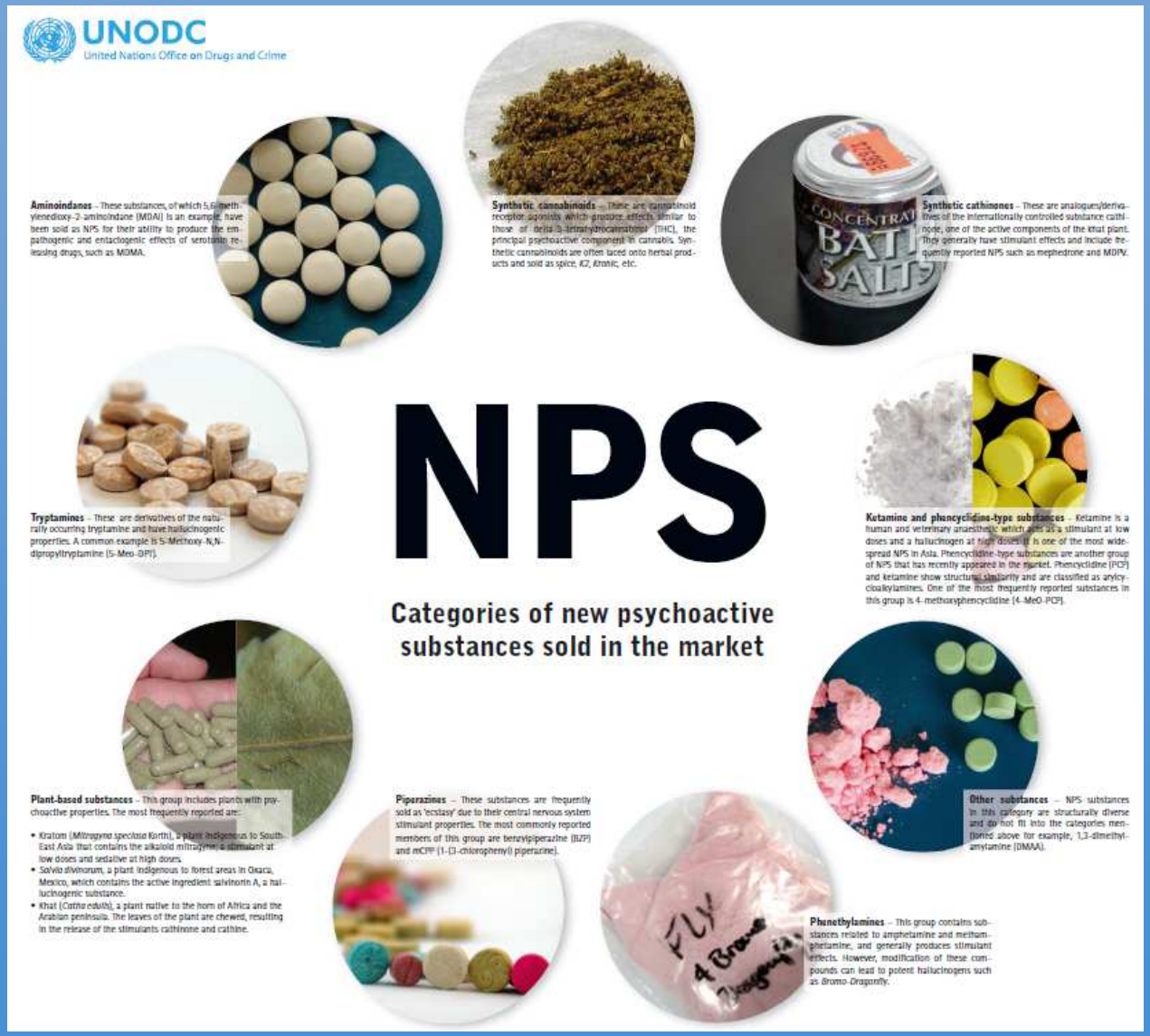
Laboratory and Scientific Section
United Nations Office on Drugs and Crime



What are New Psychoactive Substances (NPS)?

- substances of abuse,
- not controlled by the 1961 United Nations Single Convention on Narcotic Drugs or the 1971 United Nations Convention on Psychotropic Substances,
- which may pose a public health threat.

What are New Psychoactive Substances (NPS)?

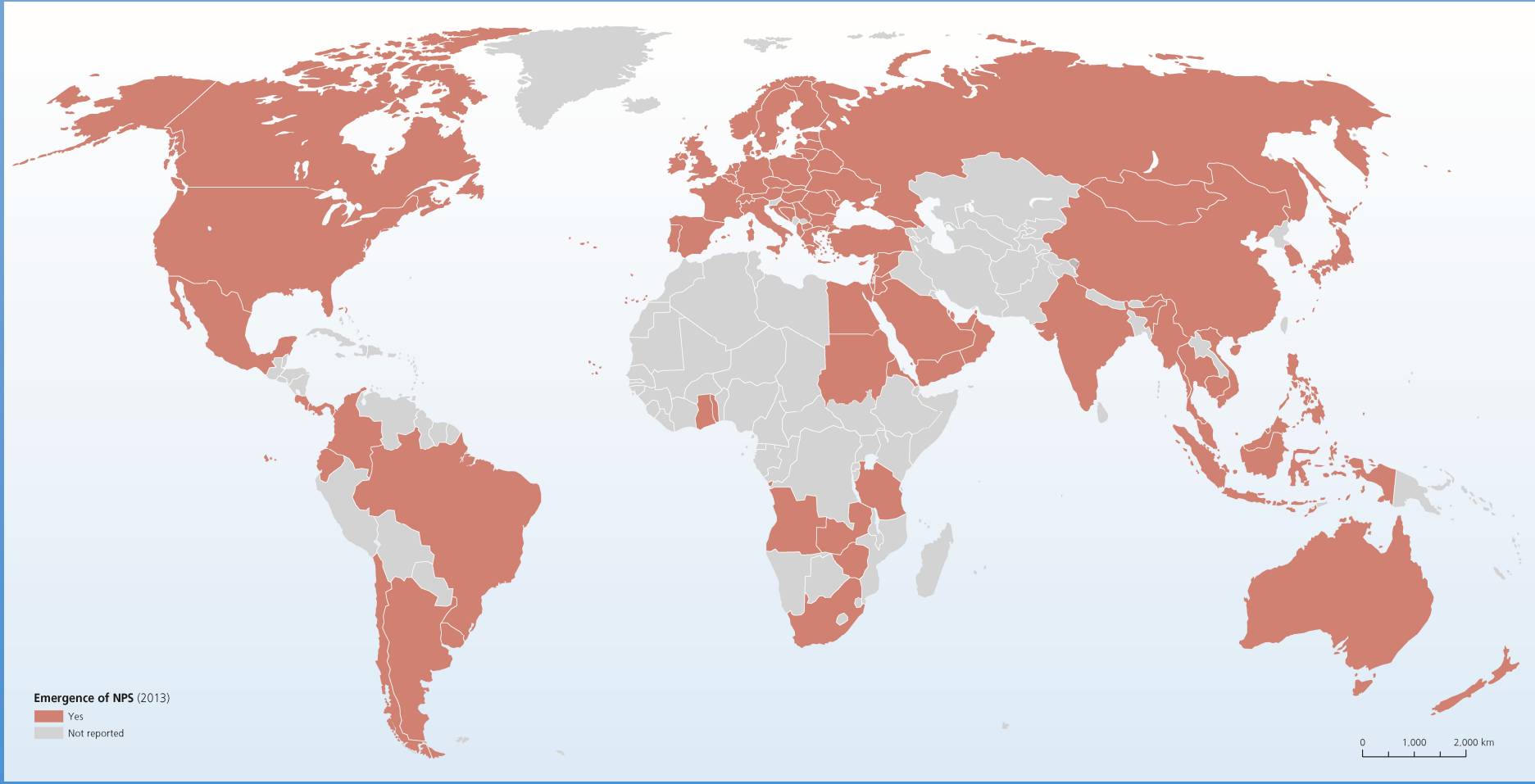


What are the health risks and challenges of NPS?

- Drug users: may not be aware that they are taking an NPS instead of a drug they know: possible overdose, severe negative health effects, effects on the body not yet fully understood
- Health services: may not be aware of range of NPS on the market, their pharmacology and toxicology, how to identify them, how to best help emergency cases
- National drug laboratories: may not be in a position to identify the range of NPS already available to users
- Law enforcement: may not have the means to detect NPS with current methods
- Legislative systems: may not offer sufficient tools for interventions

UNODC Early Warning Advisory
on New Psychoactive Substances

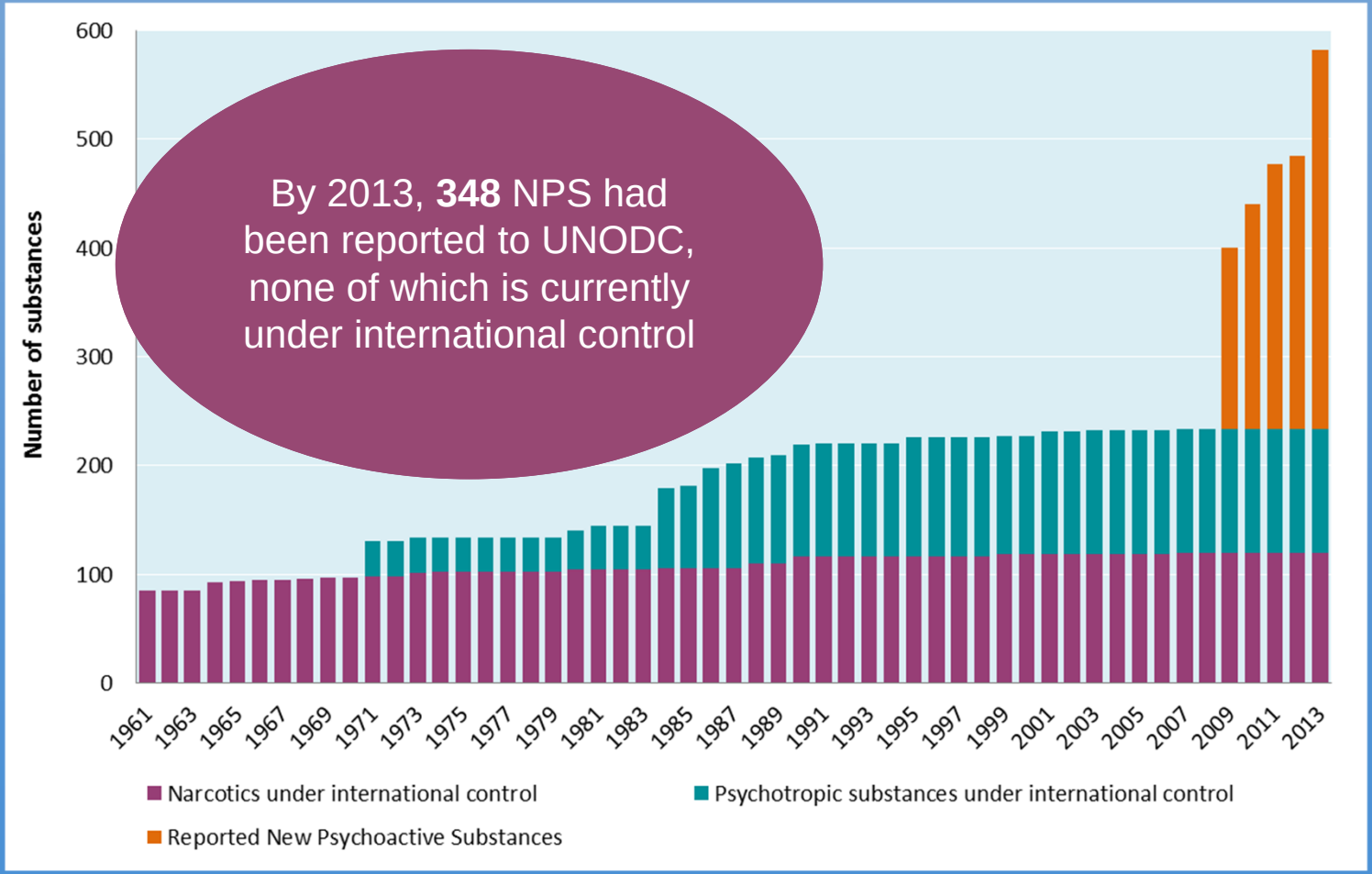
Reported Emergence of NPS in 2013



348 NPS reported worldwide (up from **251** in 2012)

90 Countries reporting the emergence of NPS (up from **82** in 2012)

Number of internationally controlled and non-controlled substances, 1961-2013



What are the United Nations doing?

UNODC established an internet-based portal, the global Early Warning Advisory on NPS in 2013

(see www.unodc.org/nps)

In response to …

CND Resolutions **55/1** (2012), **56/4** (2013) and **57/9** (2014), which request/urge

- Member States to monitor emerging trends on NPS and to share information with UNODC
- UNODC to enhance collection of NPS-related information
- Enhance international cooperation in the identification and reporting of NPS

UNODC Early Warning Advisory
on New Psychoactive Substances

What does the Early Warning Advisory Offer?

UNODC Early Warning Advisory
on New Psychoactive Substances

Search NPS trend data

Home | Dashboard | Search NPS Data

Search NPS Data

Filter:

Year:
<all>
2014
2013
2012
(Ctrl+Click to multi-select)

Show Own/All:
Show All

Substance Group:
<all>

Substance:
type to select substance

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

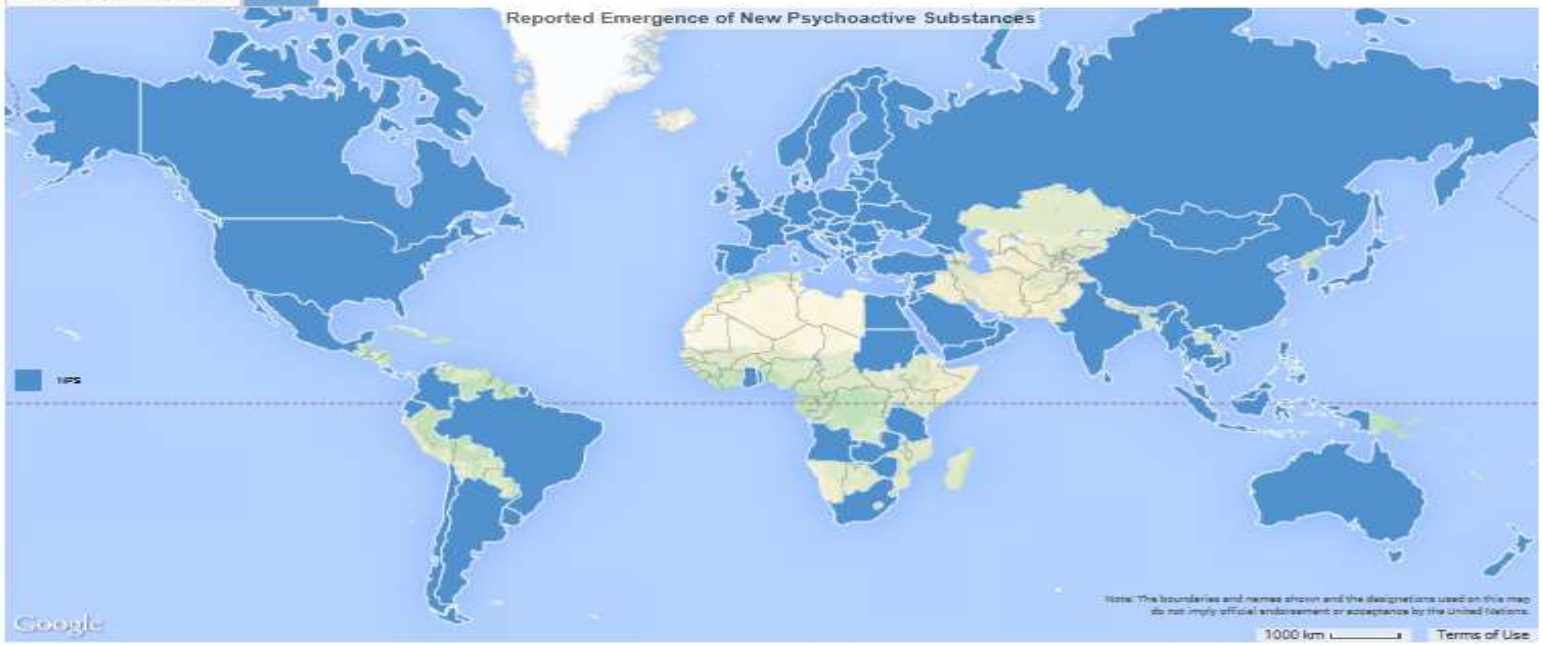
Countries:
-- all --
AFGHANISTAN (Asia)
ÅLAND ISLANDS (Europe)
ALBANIA (Europe)
(Ctrl+Click to multi-select)

Selected Countries (ISO

Filter | Clear Filter

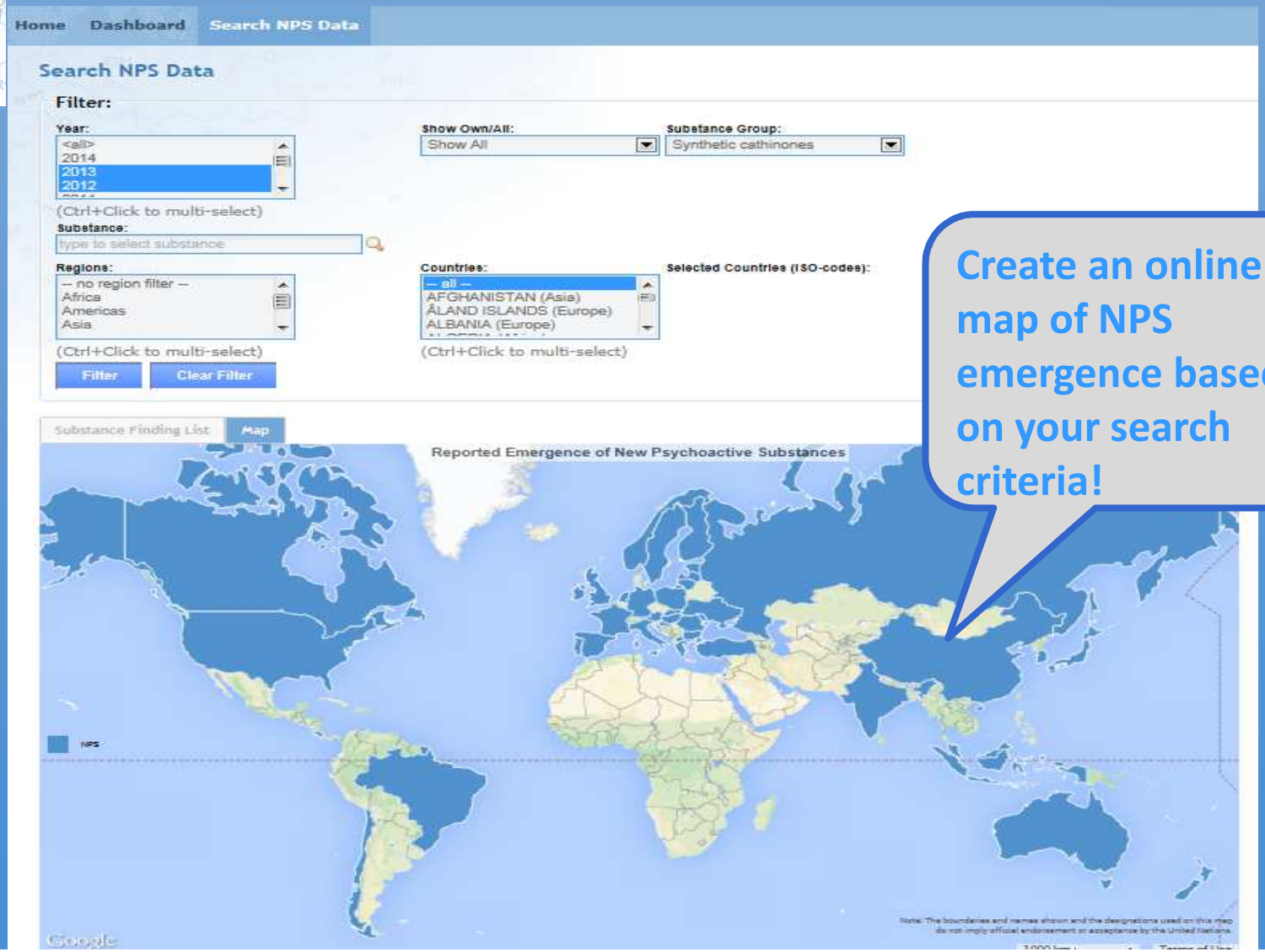
Use filters to check which NPS emerged where and when!

Substance Finding List | Map



Search NPS Data

Example: Synthetic cathinones in 2012 and 2013 (map view)



Example: Synthetic cathinones in 2012 and 2013 (table view)

Search NPS Data

Home | Dashboard | Search NPS Data

Search NPS Data

Filter:

Year: <all>, 2014, 2013, 2012 (Ctrl+Click to multi-select)

Show Own/All: Show All

Substance Group: Synthetic cathinones

Page Size:

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):

Filter | Clear Filter

List all the hits of your search with hyperlinks to more information!

Report

Substance Finding List | Map

Reports	Year	Country	Substance Group	Substance Name	Submission Date
Details	2012	AUSTRALIA	Synthetic cathinones	3,4-Dimethylmeth	13/03/2014
Details	2012	AUSTRALIA	Synthetic cathinones	3,4-Methylenedi erone	13/03/2014
Details	2012	AUSTRALIA	Synthetic cathinones	3,4-Methylenedioxy- dinobutyrophenone	13/03/2014
Details	2012	AUSTRALIA	Synthetic cathinones	4- thcathinone	13/03/2014
Details	2012	AUSTRALIA	Synthetic cathinones	4-Meth yrrolidinopropiophenone	13/03/2014
Details	2012	AUSTRALIA	Synthetic cathinones	Bre drone | 4-Bromomethcathinone	13/03/2014
Details	2012	AUSTRALIA	Synthetic cathinones	Butylone | β-Keto-N-methylbenzodioxolylbutanamine	13/03/2014
Details	2012	AUSTRALIA	Synthetic cathinones	Dimethoxymethcathinone	13/03/2014
Details	2012	AUSTRALIA	Synthetic cathinones	Ethcathinone | Ethylpropion	13/03/2014
Details	2012	AUSTRALIA	Synthetic cathinones	Ethylone | 3,4-Methylenedioxy-N-ethylcathinone	13/03/2014
Details	2012	AUSTRALIA	Synthetic cathinones	Mephedrone | 4-Methylmethcathinone	13/03/2014
Details	2012	AUSTRALIA	Synthetic cathinones	Methylone | 3,4-Methylenedioxy-N-methcathinone	13/03/2014
Details	2012	AUSTRALIA	Synthetic cathinones	Pentylone | β-Keto-N-ethylbenzodioxolylpentanamine	13/03/2014
Details	2012	AUSTRIA	Synthetic cathinones	3,4-Methylenedioxypyrovalerone	17/12/2013
Details	2012	AUSTRIA	Synthetic cathinones	4-Methylethcathinone	17/12/2013
Details	2012	AUSTRIA	Synthetic cathinones	Mephedrone | 4-Methylmethcathinone	17/12/2013
Details	2012	AUSTRIA	Synthetic cathinones	Methylone | 3,4-Methylenedioxy-N-methcathinone	17/12/2013
Details	2012	BRAZIL	Synthetic cathinones	Mephedrone | 4-Methylmethcathinone	02/10/2013
Details	2013	CANADA	Synthetic cathinones	2-Methylethcathinone	22/01/2014
Details	2012	CANADA	Synthetic cathinones	3,4-Dimethylmethcathinone	14/03/2014
Details	2012	CANADA	Synthetic cathinones	3,4-Methylenedioxypyrovalerone	14/03/2014
Details	2012	CANADA	Synthetic cathinones	3,4-Methylenedioxy-α-pyrrolidinobutyrophenone	14/03/2014
Details	2012	CANADA	Synthetic cathinones	3-Methylethcathinone	14/03/2014
Details	2012	CANADA	Synthetic cathinones	4-Ethylmethcathinone	14/03/2014

UNODC Early Warning Advisory
on New Psychoactive Substances

Submit new NPS findings of the respective country

NPS Substance Finding

Substance (open comprehensive list)
type to select substance

Quantity
0 g or ml

Finding Date
10/07/2014

Means Of Identification (Ctrl-click to multiselect)
2012 UNODC survey on NPS
2013 UNODC NPS consultation
2014 UNODC survey on NPS
Analytical technique(s)

Description
select an appearance

ATC Identification / Comment

ATC Confirmation / Comment

Comment

Attachment
add attachment

Please ...
select substance
select means of identification

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

Delete
Cancel

UNODC Early Warning Advisory on New Psychoactive Substances

… and find more information on individual NPS

NPS Chemical Information

Home Dashboard Search NPS Data

NPS Chemical Information type to search for substance

Name	Substances
Aminoindanes	2,3-Dihydro-1H-Inden-1-amine, 1-Aminoindan 2-Aminoindane, 2,3-Dihydro-1H-inden-2-amine (2-AI) [2975-41-9] 5,6-Methylenedioxy-2-aminoindane , 6,7-Dihydro-5H-cyclopenta[f][1,3]benzodioxol-6-amine (MDAI) [132741-81-2] 5,6-Methylenedioxy-N-methyl-2-aminoindane, N-methyl-6,7-dihydro-5H-cyclopenta[f][1,3]benzodioxol-6-amine (MDMAI) 5-Iodo-2-aminoindane, 5-Iodo-2,3-dihydro-1H-inden-2-amine (5-IAI) [132367-76-1] Indanylaminopropane, 5-(2-Aminopropyl)-2,3-dihydro-1H-indene (5-APDI) [152624-02-7] N-Ethyl-5-trifluoromethyl-2-aminoindane , N-Ethyl-5-(trifluoromethyl)-2,3-dihydro-1H-inden-2-amine (ETAI)

Home Dashboard Search NPS Data

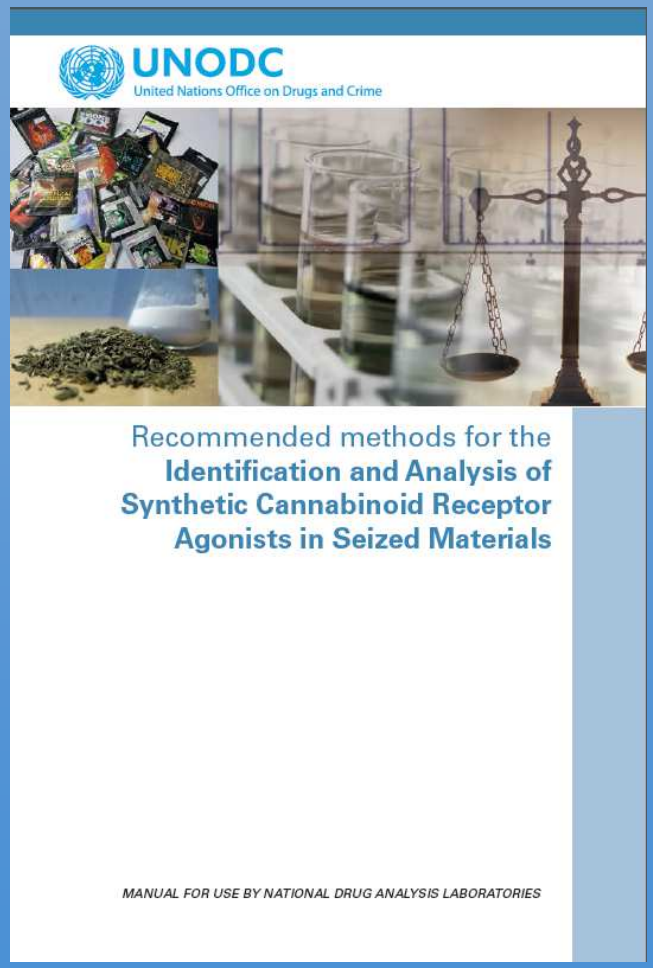
Details 5-Iodo-2-aminoindane

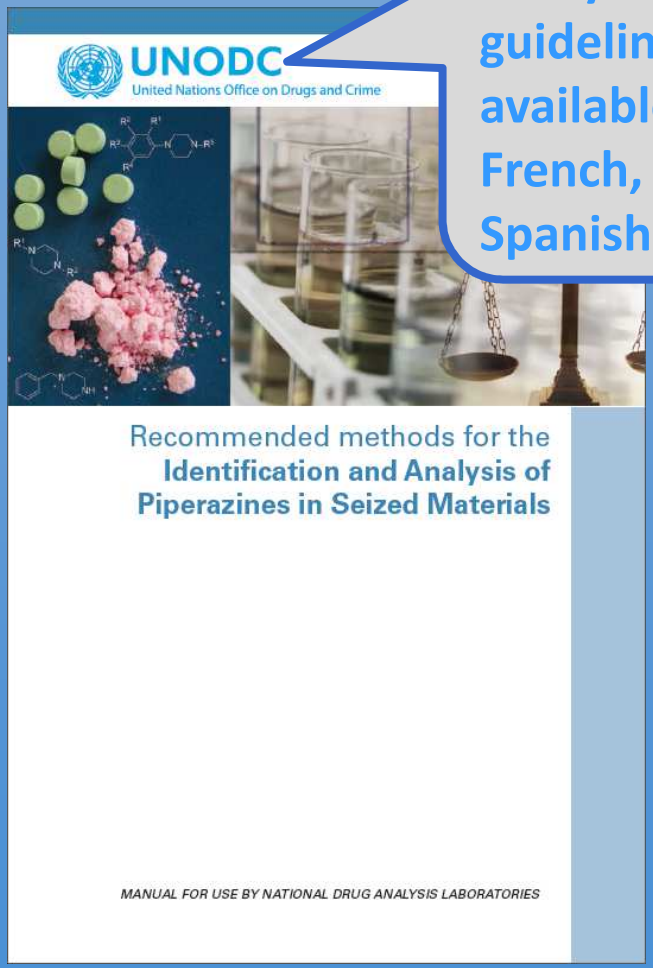
Name:	5-Iodo-2-aminoindane
Alternative Name:	5-Iodo-2,3-dihydro-1H-inden-2-amine
Abbreviation:	5-IAI
CAS-Number:	132367-76-1
Substance Group Name:	Aminoindanes
Description:	

Back to List

Search and display scientific information on NPS such as the CAS number!

Look at guidelines for NPS identification in forensic laboratories



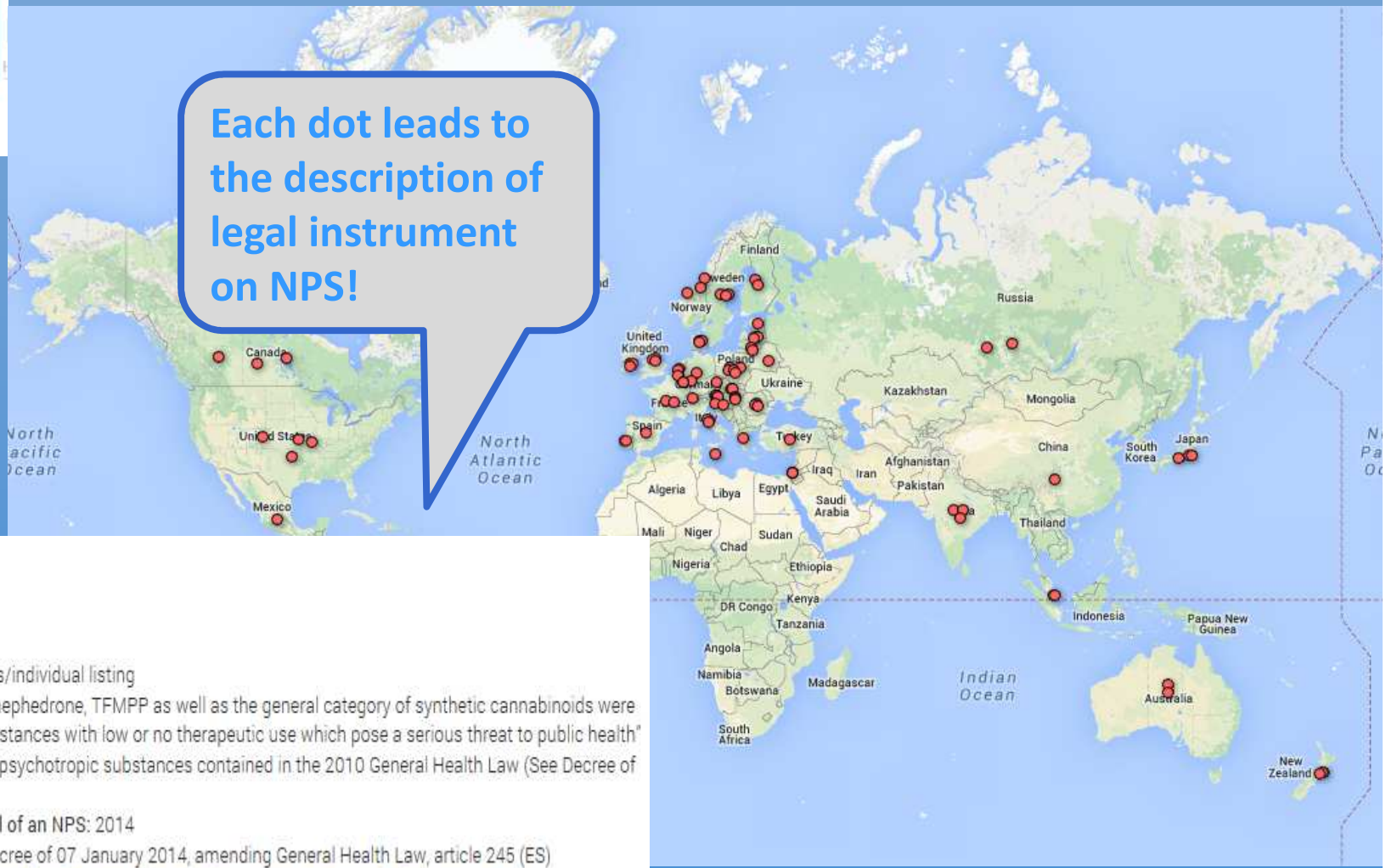


Many forensic guidelines are available in English, French, Russian and Spanish!

(available in English, French, Russian and Spanish)

Example: Mexico

Each dot leads to the description of legal instrument on NPS!

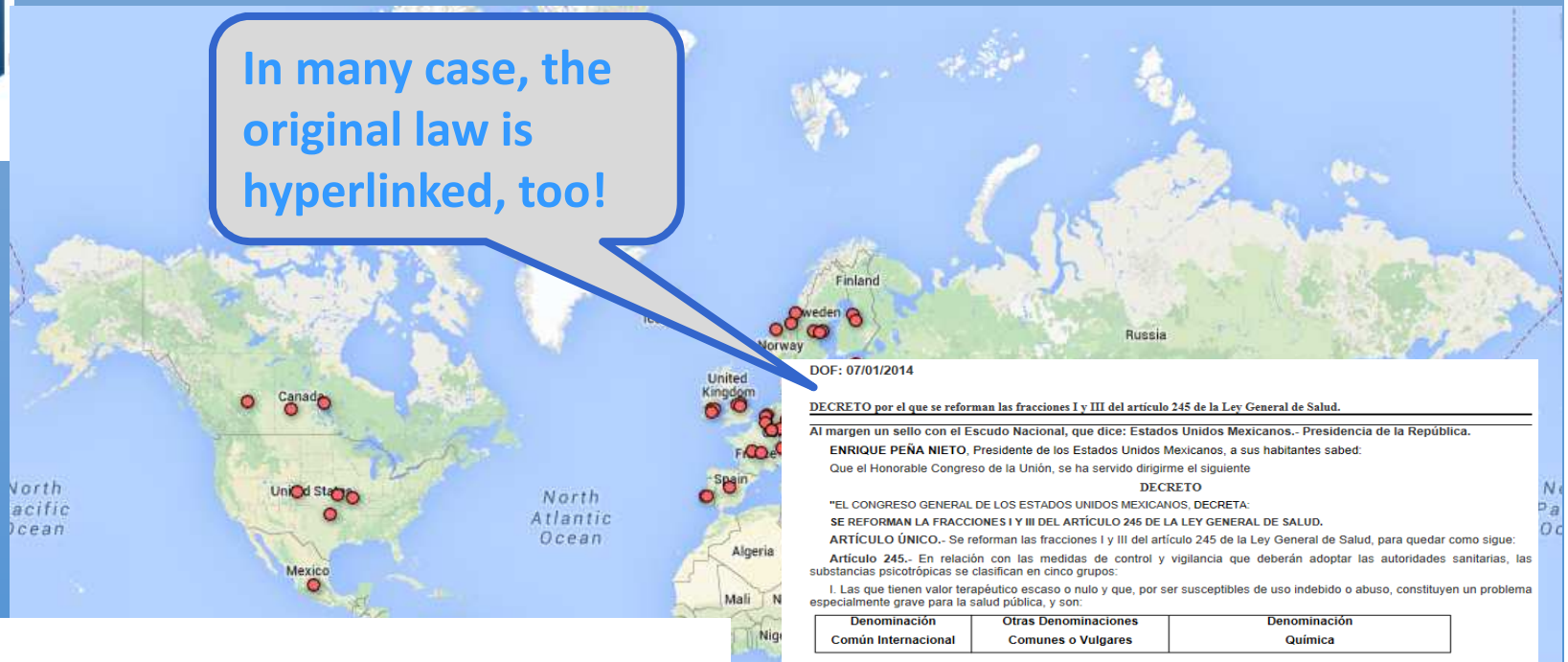


Country: Mexico

Region: Americas
Subregion: North America
System in place: Drug laws/individual listing
Description: Since 2014, mephedrone, TFMPP as well as the general category of synthetic cannabinoids were included in Schedule I "substances with low or no therapeutic use which pose a serious threat to public health" of the list of narcotics and psychotropic substances contained in the 2010 General Health Law (See Decree of 07 January 2014).
Known year of first control of an NPS: 2014
Legislation/Bills name: Decree of 07 January 2014, amending General Health Law, article 245 (ES)
Legislation/Bills link: http://dof.gob.mx/nota_detalle.php?codigo=5329099&fecha=07/01/2014

Example: Mexico - Decree of 07 January 2014, amending General Health Law, article 245 (ES)

In many case, the original law is hyperlinked, too!



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DOF: 07/01/2014

DECRETO por el que se reforman las fracciones I y III del artículo 245 de la Ley General de Salud.

Al margen un sello con el Escudo Nacional, que dice: Estados Unidos Mexicanos.- Presidencia de la República.

ENRIQUE PEÑA NIETO, Presidente de los Estados Unidos Mexicanos, a sus habitantes sabed:

Que el Honorable Congreso de la Unión, se ha servido dirigirme el siguiente

DECRETO

"EL CONGRESO GENERAL DE LOS ESTADOS UNIDOS MEXICANOS, DECRETA:

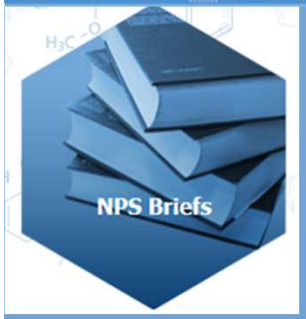
SE REFORMAN LA FRACCIONES I Y III DEL ARTÍCULO 245 DE LA LEY GENERAL DE SALUD.

ARTÍCULO ÚNICO.- Se reforman las fracciones I y III del artículo 245 de la Ley General de Salud, para quedar como sigue:

Artículo 245.- En relación con las medidas de control y vigilancia que deberán adoptar las autoridades sanitarias, las substancias psicotrópicas se clasifican en cinco grupos:

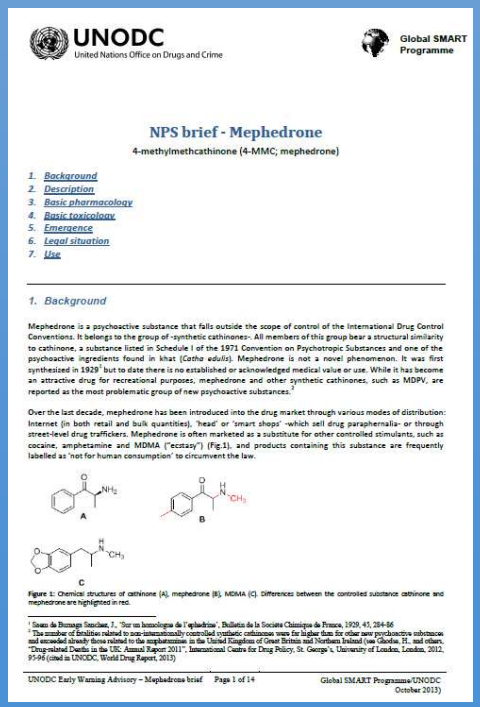
I. Las que tienen valor terapéutico escaso o nulo y que, por ser susceptibles de uso indebido o abuso, constituyen un problema especialmente grave para la salud pública, y son:

Denominación Común Internacional	Otras Denominaciones Comunes o Vulgares	Denominación Química
CATINONA **MEFEDRONA**	NO TIENE **4- METILMETCATITONA**	(-)-α-aminopropiofenona. **2-methylamino-1ptolylpropan-1-one**
NO TIENE	DET	n,n-dietiltriptamina
NO TIENE	DMA	dl-2,5-dimetoxi-α-metilfeniletilamina.
NO TIENE	DMHP	3-(1,2-dimetilheptil)-1-hidroxi-7,8,9,10-tetrahidro-6,6,9-trimetil-6H dibenzo (b,d) pirano.
NO TIENE	DMT	n,n-dimetiltriptamina.
BROLAMFETAMINA	DOB	2,5-dimetoxi-4-bromoanfetamina.
NO TIENE	DOET	d1-2,5-dimetoxi-4-etil-α-metilfeniletilamina.
(+)-LISERGIDA	LSD, LSD-25	(+)-n,n-dietilisergamida-(dietilamida del ácido d-lisérgico).
NO TIENE	MDA	3,4-metilenodioxianfetamina.
TENANFETAMINA	MDMA	dl-3,4-metilendioxi-n,-dimetilfeniletilamina.
NO TIENE	MESCALINA (PEYOTE: LOPHOPHORA WILLIAMS II ANHALONIUM WILLIAMS II; ANHALONIUM LEWIN II.	3,4,5-trimetoxifenetilamina.



NPS Briefs – find information on specific substances or topics

1. Mephedrone



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United Nations Office on Drugs and Crime

Global SMART Programme

NPS brief - Mephedrone

4-methylmethcathinone (4-MMC; mephedrone)

1. Background
2. Description
3. Basic pharmacology
4. Basic toxicology
5. Emergence
6. Legal situation
7. Use

1. Background

Mephedrone is a psychoactive substance that falls outside the scope of control of the International Drug Control Conventions. It belongs to the group of -synthetic cathinones-. All members of this group bear a structural similarity to cathinone, a substance listed in Schedule I of the 1971 Convention on Psychotropic Substances and one of the psychoactive ingredients found in khat (*Catha edulis*). Mephedrone is not a novel phenomenon. It was first synthesized in 1929[1] but to date there is no established or acknowledged medical value or use. While it has become an attractive drug for recreational purposes, mephedrone and other synthetic cathinones, such as MDPV, are reported as the most problematic group of new psychoactive substances.[2]

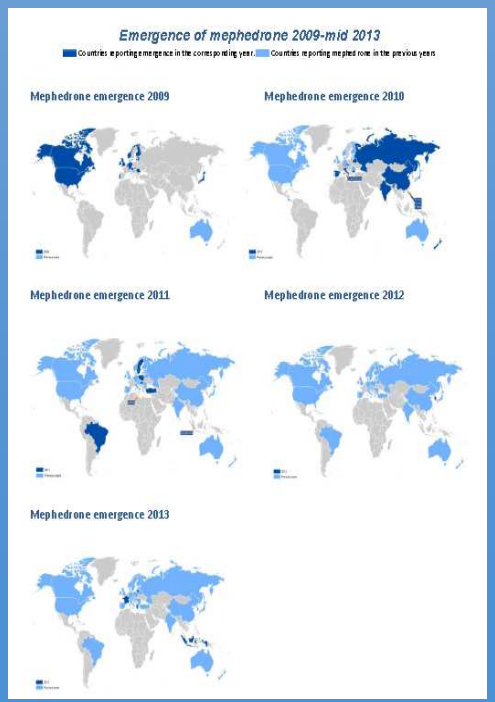
Over the last decade, mephedrone has been introduced into the drug market through various modes of distribution: Internet (in both retail and bulk quantities), 'head' or 'smart shops' -which sell drug paraphernalia- or through street-level drug traffickers. Mephedrone is often marketed as a substitute for other controlled stimulants, such as cocaine, amphetamine and MDMA ("ecstasy") (Fig.1), and products containing this substance are frequently labelled as 'not for human consumption' to circumvent the law.

A B C

Figure 1: Chemical structures of cathinone (A), mephedrone (B), MDMA (C). Differences between the controlled substance cathinone and mephedrone are highlighted in red.

[1] Saura de Buruaga Sanchez, J., 'Sur un homologue de l'ephedrine', Bulletin de la Societe Chimique de France, 1929, 45, 284-86

[2] The number of fatalities related to non-internationally controlled synthetic cathinones rose far higher than for other new psychoactive substances and exceeded already those related to the amphetamines in the United Kingdom of Great Britain and Northern Ireland (see Ghodse, H., and others, "Drug-related Deaths in the UK: Annual Report 2011", International Centre for Drug Policy, St. George's, University of London, London, 2012, 95-96 (cited in UNODC, World Drug Report, 2013)



Emergence of mephedrone 2009-mid 2013

Countries reporting emergence in the corresponding year. Countries reporting mephedrone in the previous years

Mephedrone emergence 2009

Mephedrone emergence 2010

Mephedrone emergence 2011

Mephedrone emergence 2012

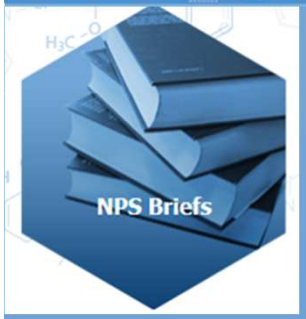
Mephedrone emergence 2013

6. Legal situation

Mephedrone falls outside the scope of control of the International Drug Control System and is therefore neither included in the schedules of the 1961 Single Convention on Narcotic Drugs nor in the 1971 Convention on Psychotropic Substances. However, some countries, in accordance with article 39 of the 1961 Single Convention and article 23 of the 1971 Convention on Psychotropic Substances, have adopted national or regional legal responses to address its emergence in response to increasing concerns on the risks to public health. Some countries, such as Singapore and Spain, placed mephedrone under control as a pre-emptive measure against its abuse. A number of countries have added mephedrone to the list of controlled substances by drug legislation. Others have adopted different approaches to control this and other related NPS more effectively, for instance, by using analogue and generic legislation, issuing temporary bans or have appealed to medicine legislation. More recently, specific NPS legislation has been passed by some countries (See Annex 1).

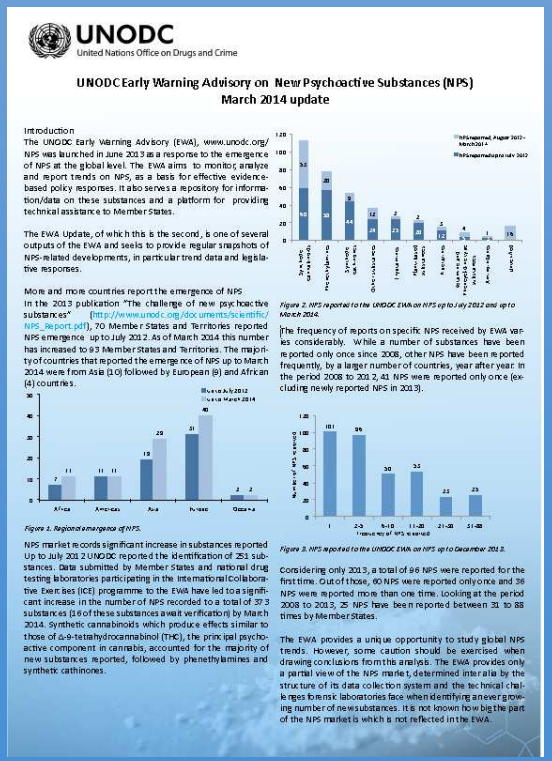
Up to August 2013, mephedrone has been controlled in 40 countries[13] world wide (see graph below), most of them located in Europe (26 EU countries plus Belarus, Norway, Russia Federation, Turkey and Switzerland), followed by Asia (4 countries), the Americas (3 countries) and Oceania (2 countries) (See Annex 1). No data is available from Africa. Legislative inconsistencies on the status of mephedrone across jurisdictions often hamper efforts by law enforcement authorities to prosecute international organized crime groups participating in the manufacturing, trafficking and distribution of this substance.

Legislative responses to mephedrone up to mid-2013



EWA Updates – find updates on the latest trends on NPS

1. EWA Update October 2013
2. EWA Update March 2014



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**UNODC Early Warning Advisory on New Psychoactive Substances (NPS)
March 2014 update**

Introduction
The UNODC Early Warning Advisory (EWA), www.unodc.org/NPS was launched in June 2013 as a response to the emergence of NPS at the global level. The EWA aims to monitor, analyze and report trends on NPS, as a basis for effective evidence-based policy responses. It also serves a repository for information/data on these substances and a platform for providing technical assistance to Member States.

The EWA Update, of which this is the second, is one of several outputs of the EWA and seeks to provide regular snapshots of NPS-related developments, in particular trend data and legislative responses.

More and more countries report the emergence of NPS
In the 2013 publication "The challenge of new psychoactive substances" (http://www.unodc.org/documents/scientific/NPS_Report.pdf), 70 Member States and Territories reported NPS emergence up to July 2012. As of March 2014 this number has increased to 93 Member States and Territories. The majority of countries that reported the emergence of NPS up to March 2014 were from Asia (10) followed by European (9) and African (4) countries.

Figure 1. Regional emergence of NPS.

NPS market records significant increase in substances reported
Up to July 2012 UNODC reported the identification of 251 substances. Data submitted by Member States and national drug testing laboratories participating in the International Collaborative Exercises (ICE) programme to the EWA have led to a significant increase in the number of NPS recorded to a total of 373 substances (166 of these substances await verification) by March 2014. Synthetic cannabinoids which produce effects similar to those of Δ-9-tetrahydrocannabinol (THC), the principal psychoactive component in cannabis, accounted for the majority of new substances reported, followed by phenethylamines and synthetic cathinones.

Figure 2. NPS reported to the UNODC EWA on NPS up to July 2012 and up to March 2014.

The frequency of reports on specific NPS received by EWA varies considerably. While a number of substances have been reported only once since 2008, other NPS have been reported frequently, by a larger number of countries, year after year. In the period 2008 to 2012, 41 NPS were reported only once (excluding newly reported NPS in 2013).

Figure 3. NPS reported to the UNODC EWA on NPS up to December 2013.

Considering only 2013, a total of 96 NPS were reported for the first time. Out of those, 60 NPS were reported only once and 36 NPS were reported more than one time. Looking at the period 2008 to 2013, 25 NPS have been reported between 31 to 88 times by Member States.

The EWA provides a unique opportunity to study global NPS trends. However, some caution should be exercised when drawing conclusions from this analysis. The EWA provides only a partial view of the NPS market, determined inter alia by the structure of its data collection system and the technical challenges forensic laboratories face when identifying a never growing number of new substances. It is not known how big the part of the NPS market is which is not reflected in the EWA.

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**UNODC Early Warning Advisory on New Psychoactive Substances (NPS)
March 2014 update**

The most frequently reported NPS
The five substances most frequently reported over the period 2008 to March 2014 include ketamine, followed by mephedrone and JWH-018 (Table 1).

Substances	Substance Group
ketamine	ketamine & Phencyclidine-type substance
Mephedrone	Synthetic cathinone
JWH-018	Synthetic cannabinoid
1-(4-Chlorophenyl)piperazine, pCPP	Piperazine
3,4-Methylenedioxypyrovalerone, MDPV	Synthetic cathinone

Table 1. Most frequently reported NPS, 2008-March 2014.

The five substances most frequently reported over the period July 2012 to October 2013 were all synthetic cannabinoids. Looking at the ten most frequently reported substances in 2013 (Table 2) the presence of synthetic cannabinoids is predominant with seven out of ten substances belonging to this group. The top five substances are still synthetic cannabinoids but the ranking has changed. The second most reported substance group in 2013 was phenethylamines, with 25C-NBOMe and 25I-NBOMe having been identified by Member States. The NBOMe type substances first emerged in 2010 with the number of reports increasing in 2012 and significantly in 2013.

Substances	Substance Group
AB48, APINACA	Synthetic cannabinoid
5F-AB48	Synthetic cannabinoid
XLR-11	Synthetic cannabinoid
STS-135	Synthetic cannabinoid
PB-22	Synthetic cannabinoid
25C-NBOMe	Phenethylamine
JWH-018	Synthetic cannabinoid
25I-NBOMe	Phenethylamine
5F-PB22	Synthetic cannabinoid
Methoxetamine	ketamine & Phencyclidine-type substance

Table 2. Most frequently reported NPS in 2013.

Member States continue to pursue appropriate legislative responses
Links to the most recent legislative measures by Member States are provided below:
February 2014, United States: four synthetic cannabinoids placed under temporary control
January 2014, China: several new psychoactive substances placed under control
January 2014, Mexico: mephedrone, TFMPP and synthetic cannabinoids added to the list of controlled substances
January 2014, Turkey: new psychoactive substances, including JWH compounds, CP- compounds, PMMA and aminoindanes such as 1-AI were placed under control
November 2013, India: Government strengthens controls over ketamine
November 2013, Switzerland: several NBOMe compounds, synthetic cathinones such as MDPV and other NPS such as AB-PINACA placed under control

Forthcoming: Synthetic Drug Assessment 2014
The UNODC Global SMART report "Synthetic Drug Assessment 2014" due to be launched in the second quarter of 2014 will provide an analysis of the global synthetic drug market which includes both Amphetamine-Type Stimulants (ATS) and New Psychoactive Substances (NPS). Previous reports focused on ATS, but given the growing presence of NPS particularly on illicit synthetic drug markets, this report takes a more comprehensive view of the situation. Plant-based psychoactive substances, such as khat, have also been included in discussions on emerging NPS, as these have become of increasing concern in certain regions.

For further information on the UNODC Early Warning Advisory on New Psychoactive Substances, please contact: jelmes.marit@unodc.org

Contact details

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If you would like to register please send an email to:
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