INTERNATIONAL NARCOTICS CONTROL BOARD

Precursors

and chemicals frequently used in the illicit manufacture of narcotic drugs and psychotropic substances

2021

UNITED NATIONS

EMBARGO

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Thursday, 10 March 2022, at 1100 hours (CET)

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The *Report of the International Narcotics Control Board for 2021* (E/INCB/2021/1) is supplemented by the following reports:

Narcotic Drugs: Estimated World Requirements for 2022—Statistics for 2020 (E/INCB/2021/2)

Psychotropic Substances: Statistics for 2020—Assessments of Annual Medical and Scientific Requirements for Substances in Schedules II, III and IV of the Convention on Psychotropic Substances of 1971 (E/INCB/2021/3)

Precursors and Chemicals Frequently Used in the Illicit Manufacture of Narcotic Drugs and Psychotropic Substances: Report of the International Narcotics Control Board for 2021 on the Implementation of Article 12 of the United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances of 1988 (E/INCB/2021/4)

The updated lists of substances under international control, comprising narcotic drugs, psychotropic substances and substances frequently used in the illicit manufacture of narcotic drugs and psychotropic substances, are contained in the latest editions of the annexes to the statistical forms ("Yellow List", "Green List" and "Red List"), which are also issued by the Board.

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INTERNATIONAL NARCOTICS CONTROL BOARD

Precursors

and chemicals frequently used in the illicit manufacture of narcotic drugs and psychotropic substances

Report of the International Narcotics Control Board for 2021 on the implementation of article 12 of the United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances of 1988

UNITED NATIONS
Vienna, 2022

E/INCB/2021/4*

UNITED NATIONS PUBLICATION
Sales No. E.22.XI.7
ISBN: 978-92-1-148372-7
eISBN: 978-92-1-001393-2
ISSN 2411-8664
eISSN 2411-8672

Publishing production: English, Publishing and Library Section, United Nations Office at Vienna.

*Reissued for technical reasons.

Foreword

Precursor chemicals play a critical role in the illicit manufacture of narcotic drugs and psychotropic substances. At the same time, the majority of these substances also play an important role in our daily lives, as they are used to produce commodities that are consumed licitly worldwide. Striking a balance between free trade and circulation for licit purposes and the need to prevent diversion for illicit purposes is at the core of the international control system established in accordance with articles 12 and 13 of the United Nations Convention against Illicit Trafficking in Narcotic Drugs and Psychotropic Substances of 1988. The transition of illicit drug markets towards synthetic drugs, including new psychoactive substances, and its impact on the dynamics of markets for precursor chemicals challenge the achievements of the precursor control system and necessitate renewed joint efforts by the international community.

The control system established under the 1988 Convention has been very effective in limiting international diversion of controlled precursors while ensuring their uninterrupted licit international trade. An international network built on shared responsibilities and mutual respect reduces the space for traffickers, thus increasing the chances for law enforcement authorities to seize consignments and prosecute those responsible for the diversion. The current transition of illicit markets towards synthetic drugs is, however, characterized by a rising level of sophistication and innovation in illicit manufacture, as seen in the increasing use of non-scheduled chemicals, including designer precursors. Novel ways to market, acquire and deliver the required chemicals are increasingly being uncovered, with licit Internet-based (surface web) marketplaces emerging as unsuspecting allies of traffickers.

In this context, the worldwide demand for and supply of illicitly manufactured methamphetamine, new psychoactive substances and synthetic opioids shows the urgent need to further strengthen control measures. The scheduling of individual substances is often reactive in nature and does not always keep pace with the innovations seen in illicit manufacture, owing to the ability of illicit drug manufacturers to easily replace chemical precursors with analogues. The scheduling of individual substances as they are detected in illicit manufacture comes with the risk of producing long lists of controlled substances that have little or no use in licit sectors of the chemical industry. The most unfortunate aspect of this situation is the increase in overdose-related deaths and addiction rates all over the world.

To assist in our understanding of this challenge, I am pleased to present the report of the International Narcotics Control Board (INCB) for 2021 on the implementation of article 12 of the 1988 Convention, or the "annual report on precursors". The report sets out the most recent developments that have occurred in the area of precursor control. It also contains information on many of the initiatives that Member States, INCB and other stakeholders, including the private sector, have been taking.

If illicit drug manufacture is evolving, so should the institutional response. International efforts must leverage and channel the expertise and knowledge of different countries concerning the control of chemicals, relying on the provisions of the 1988 Convention beyond those contained in article 12. National voluntary measures and stronger cooperation by industry would support the growth of national responses and lead to shared international solutions.

As the guardian of the international treaty-based precursor control system, INCB will continue to support the international community through its specialized advice and services. I thank all the Governments that have supported the Board in its endeavours throughout the year, by meeting reporting obligations and participating in and supporting INCB activities, and cherish hopes of forging even stronger bonds of cooperation in the future.

Jagjit Pavadia
President of the International
Narcotics Control Board

Preface

The United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances of 1988 requires the International Narcotics Control Board to report annually to the Commission on Narcotic Drugs on the implementation of article 12 of the Convention and requires the Commission to periodically review the adequacy and propriety of Tables I and II of the Convention.

In addition to its annual report and other technical publications on narcotic drugs and psychotropic substances, the Board has prepared its report on the implementation of article 12 of the 1988 Convention in accordance with the following provisions, contained in article 23 of the Convention:

1. The Board shall prepare an annual report on its work containing an analysis of the information at its disposal and, in appropriate cases, an account of the explanations, if any, given by or required of parties, together with any observations and recommendations which the Board desires to make. The Board may make such additional reports as it considers necessary. The reports shall be submitted to the Economic and Social Council through the Commission, which may make such comments as it sees fit.

2. The reports of the Board shall be communicated to the parties and subsequently published by the Secretary-General. The parties shall permit their unrestricted distribution.

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*The annexes are not included in the printed version of the present report but are available on the website of the International Narcotics Control Board (www.incb.org).

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The boundaries and names shown and the designations used on the maps in the present publication do not imply official endorsement or acceptance by the United Nations.

The designations employed and the presentation of the material in the present publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Countries and areas are referred to by the names that were in official use at the time the relevant data were collected.

Multiple government sources of data were used to generate the present report, including form D ("Annual information on substances frequently used in the illicit manufacture of narcotic drugs and psychotropic substances"); the Pre-Export Notification Online (PEN Online) system; the Precursors Incident Communication System (PICS); results achieved under Project Prism and Project Cohesion, which are the international operational initiatives regarding chemicals used in the illicit manufacture of, respectively, synthetic drugs, and cocaine and heroin; and official communications with competent national authorities and official national reports on the drug and precursor control situation.

Unless otherwise specified, data provided on form D are referred to by the calendar year to which they apply. The reporting period for data from the PEN Online system and PICS is from 1 November 2020 to 1 November 2021, unless otherwise specified. Where PEN Online system data are used for multiple years, calendar years are used. Additional information was provided through regional and international partner organizations, as indicated in the report.

With regard to data on seizures, readers should bear in mind that reported seizures generally reflect the corresponding level of regulatory and law enforcement activity at that specific time. In addition, as seizures are often the result of law enforcement cooperation among several countries (e.g., through controlled deliveries), the occurrence of seizures and the volumes seized in a given country should not be misinterpreted or used as an overestimation in assessing that country's role in the overall situation of trafficking in precursors.

Reference to "tons" is to metric tons, unless otherwise stated.

The following abbreviations have been used in the present report:

ANPP	4-anilino-*N*-phenethylpiperidine
4-AP	4-anilinopiperidine (*N*-phenylpiperidin-4-amine)
APAA	*alpha*-phenylacetoacetamide (2-phenylacetoacetamide)
APAAN	*alpha*-phenylacetoacetonitrile
boc-4-AP	1-boc-4-anilinopiperidine (*tert*-butyl 4-(phenylamino) piperidine-1-carboxylate)
CEPOL	European Union Agency for Law Enforcement Training
CICAD	Inter-American Drug Abuse Control Commission of the Organization of American States
COVID-19	coronavirus disease
EAPA	ethyl *alpha*-phenylacetoacetate (ethyl 3-oxo-2-phenylbutanoate)
EMCDDA	European Monitoring Centre for Drugs and Drug Addiction
Eurojust	European Union Agency for Criminal Justice Cooperation
Europol	European Union Agency for Law Enforcement Cooperation
GBL	*gamma*-butyrolactone

GHB	*gamma*-hydroxybutyric acid
INCB	International Narcotics Control Board
INTERPOL	International Criminal Police Organization
LSD	lysergic acid diethylamide
MAMDPA	methyl 3-oxo-2-(3,4-methylenedioxyphenyl)butanoate
MAPA	methyl *alpha*-phenylacetoacetate (methyl 3-oxo-2-phenylbutanoate)
MDMA	3,4-methylenedioxymethamphetamine
3,4-MDP-2-P	3,4-methylenedioxyphenyl-2-propanone
3,4-MDP-2-P methyl glycidate	methyl ester of 3,4-MDP-2-P methyl glycidic acid
NPP	*N*-phenethyl-4-piperidone
P-2-P	1-phenyl-2-propanone
P-2-P methyl glycidate	methyl ester of P-2-P methyl glycidic acid
PEN Online system	Pre-Export Notification Online system
PICS	Precursors Incident Communication System
UNODC	United Nations Office on Drugs and Crime
WCO	World Customs Organization

Summary

The United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances of 1988 provides the basis for the international control of precursors. With 190 States parties as at 1 November 2021, the same number as in the previous year, the 1988 Convention covers almost the entire world. Of these, 116 – one more than in the previous year (Iceland) – have requested to be pre-notified about shipments to their territories of substances listed in Table I or Table II of the 1988 Convention. The system of monitoring of international trade, which includes the process of advance notifications of intended exports, as provided for in article 12, paragraph 10, of the 1988 Convention, forms the foundation of the international control of precursors. The PEN Online system, the INCB tool that provides an electronic platform for such notifications, is used by 166 countries and territories.

In the reporting period, from 1 November 2020 to 1 November 2021, the level of reporting using form D ("Annual information on substances frequently used in the illicit manufacture of narcotic drugs and psychotropic substances") of information on seizures of precursors, including non-scheduled chemicals, their origin, when known, and methods of diversion and illicit manufacture, as mandated by the 1988 Convention, remained about the same as in previous years, with 123 countries and territories submitting form D for 2020. The timeliness and quality of the information provided, especially with regard to the methods of diversion and the origin of seized substances, have generally not yet met the required standards.

The International Narcotics Control Board undertook several initiatives and activities relating to four themes that have been emphasized in recent years and that are critical to current international precursor control efforts: *(a)* the emergence of non-scheduled chemicals and designer precursors; *(b)* control over the domestic manufacture, trade and distribution of controlled precursors; *(c)* the use of the Internet, specifically the surface web, for trafficking in precursors; and *(d)* industry cooperation as a means to prevent diversion. Cooperation with regional and international organizations, in addition to Governments, was key to those efforts.

Four expert and consultative meetings were held on the subject of non-scheduled chemicals and designer precursors, resulting in recommendations for action at the global level to address that vexing issue.

As the diversion of precursor chemicals has been largely a domestic phenomenon, the Board conducted a survey on the nature and extent of controls that countries have in place for precursors. Sixty-two Governments and the European Commission responded to the survey. The fact that about a third of the respondents still did not control all of the substances in Table I and Table II of the 1988 Convention and a quarter of them did not have controls over domestic trade in and distribution of those substances reflects potential gaps in the control regime that could be exploited by traffickers.

A targeted, time-bound operation, code-named Operation Acronym, focusing on the trafficking of certain synthetic drug precursors over the Internet, was conducted in February 2021 and brought to the fore the present challenges in investigating such cases. The Board, in cooperation with Governments, will further support initiatives in this area to address the gaps.

Relevant chemical and pharmaceutical industries are critical stakeholders in precursor control efforts, in particular in relation to the use of non-scheduled chemicals and designer precursors for illicit drug manufacture. The Board supported activities in this regard, including the twinning arrangement between the Governments of France and Switzerland and the Government of the United Republic of Tanzania. The Board also conducted a survey with a view to preparing a compilation of global good practices and case scenarios related to industry cooperation on precursors, the results of which will shape the Board's future activities in this area.

While no new substances were added to Table I or Table II of the 1988 Convention, in October 2021, the Government of the United States of America proposed three fentanyl precursors for international scheduling.

Regarding the substances used in the illicit manufacture of amphetamine-type stimulants, global reported seizures of ephedrines totalled about 10 tons in 2020, confirming the declining trend observed in recent years. Seizures of ephedrines were reported by only 28 countries and territories, representing one of the lowest levels of reporting of such seizures in the last decade. By contrast, reported seizures of MAPA, the latest substance to have been included in Table I of the 1988 Convention, amounted to more than 30 tons in 2020, indicating a shift towards the use of designer precursors. While the bulk of seizures of MAPA remained concentrated in Europe, notable seizures were reported for the first time in Australia, representing the first reported seizures of the substance outside Europe.

Seizures of potassium permanganate, traditionally the principal precursor used for the illicit manufacture of cocaine, amounted to about 84 tons in total and were localized to countries in South America. It is believed that a significant proportion of the global quantity of the substance seized had been illicitly manufactured, or had been diverted from domestic distribution channels and not from international trade.

Seizures of acetic anhydride, the key heroin precursor, exceeded 100 tons in total in 2020, evidently remaining unaffected by the restrictions on movement resulting from the COVID-19 pandemic. Ironically, the total quantity of the substance seized in Afghanistan, the main heroin-manufacturing country worldwide, amounted to only about 650 litres, representing a further decline since 2019. Although no seizures of the substance were reported in the Central Asian countries neighbouring Afghanistan, seizures continued to be made in other neighbouring countries, such as Iran (Islamic Republic of) and Pakistan, and in the United Arab Emirates. The use of acetyl chloride, an alternative acetylating agent, also remained a distinct possibility in that region. Myanmar, the other major heroin-manufacturing country, seized more than 12,000 litres of acetic anhydride.

The use of non-scheduled chemicals, such as P-2-P methyl glycidic acid derivatives and EAPA (the ethyl ester of MAPA) for the manufacture of amphetamine and methamphetamine, and a newly emerging substance, MAMDPA, for the manufacture of MDMA, was reported. As in the recent past, the use of non-scheduled chemicals for the manufacture of synthetic drugs such as fentanyl and methaqualone continued in the countries concerned. Seizures of 4-AP and its masked derivative, boc-4-AP, were reported in Canada, Mexico and the United States. A seizure of a large quantity of acetanthranil, an internationally non-scheduled methaqualone precursor with no known legitimate uses, was reported in South Africa in 2021, the fourth such incident in the country since 2018. Moreover, sporadic seizures of notable amounts of precursors of new psychoactive substances and substances recently scheduled under the Single Convention on Narcotic Drugs of 1961 as amended by the 1972 Protocol, and the Convention on Psychotropic Substances of 1971, in particular precursors of synthetic cathinones, indicate that illicit manufacture of those end-products may be moving closer to the retail market.

The analysis of the major trends presented in this report highlights the following: *(a)* the urgent need to accelerate the global momentum in addressing the proliferation of non-scheduled chemicals and designer precursors; *(b)* comprehensive and timely data and information underpin the capacity to address emerging trends effectively and proactively; *(c)* the focus on domestic manufacture and distribution channels remains critical to tackling diversion carried out through domestic distribution channels; *(d)* the need for continued vigilance after diversion attempts through legitimate international trade, and more systematic use of the PEN Online system; and *(e)* the need to mainstream cooperation with industry, as a key component of the strategy to prevent the diversion of precursors.

I. Introduction

1. The present report has been prepared by INCB pursuant to article 23 of the United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances of 1988. It provides an overview of action taken by Governments and by INCB since the publication of the Board's report on precursors for 2020[1] to prevent chemical diversion and implement the provisions of the 1988 Convention.

2. Chapter II of the report contains updates on the treaty-mandated furnishing of data to the Board, major changes to national legislation and control measures, a review of the functioning of the pre-export notification system and a summary of the operational activities under Project Cohesion and Project Prism. The chapter also contains an overview of international cooperation and other initiatives related to precursor control.

3. Chapter III provides an overview of the licit trade in precursor chemicals and major trends in their trafficking and illicit use. The chapter also contains an overview of the most important cases of suspicious and stopped shipments, diversion and attempted diversion, as well as activities associated with illicit drug manufacture.

4. Chapter IV provides a thematic examination of the scope and extent of domestic controls, summarizing the responses to a global survey conducted between June and September 2021. Throughout this report, specific recommendations and conclusions are highlighted as a basis for Governments to take the necessary action to prevent the diversion of, and trafficking in, precursor chemicals and their use in illicit manufacture.[2] Chapter V provides recommendations to Governments on the way forward for effective international and domestic precursor control.

5. Annexes I to XI contain updated statistics and practical information intended to assist competent national authorities in carrying out their functions. The annexes are not included in the printed copies of the present report but are available on the INCB website.

II. Action taken by Governments and the International Narcotics Control Board

A. Scope of control

6. The responsibilities of the Board under article 12 of the 1988 Convention include the assessment of substances for possible inclusion in Table I or Table II, or for rescheduling from one table to another, of the Convention.

7. In October 2021, the Government of the United States of America proposed that three precursors of fentanyl and of a few related substances be included in the tables of the 1988 Convention. The substances were 4-AP, boc-4-AP and norfentanyl. In accordance with the procedure set out in article 12, paragraph 3, of the 1988 Convention, the Secretary-General then invited Governments to submit their comments and supplementary information on each of the substances in order to assist the Board in carrying out assessments and making scheduling recommendations to the Commission on Narcotic Drugs.

8. None of the substances concerned has, to date, been assigned a unique Harmonized System code.[3] Considering the length of the cycle of updating the Harmonized System nomenclature, **INCB encourages Governments to adopt, on a voluntary basis, until such time as each substance is assigned a unique Harmonized System code, an interim, discrete code based on the applicable Harmonized System group code.**[4]

[1] *Precursors and Chemicals Frequently Used in the Illicit Manufacture of Narcotic Drugs and Psychotropic Substances: Report of the International Narcotics Control Board for 2020 on the Implementation of Article 12 of the United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances of 1988* (E/INCB/2020/4).

[2] A compilation of the recommendations relating to international precursor control made by INCB in previous years is available on the Board's website (www.incb.org).

[3] See WCO, *Harmonized Commodity Description and Coding System*, 6th ed. (Brussels, 2017).

[4] Harmonized System classifications of non-scheduled chemicals used in the illicit manufacture of drugs are available to competent national authorities on a secure page of the INCB website.

9. With regard to NPP and ANPP, two fentanyl precursors that have been under international control since October 2017, INCB is pleased to note that cooperation with WCO pursuant to Economic and Social Council resolution 1992/29 has resulted in the establishment of unique Harmonized System codes for the two chemicals in the new Harmonized System nomenclature, applicable from January 2022.

B. Adherence to the 1988 Convention

10. As at 1 November 2021, the 1988 Convention had been ratified, acceded to or approved by 190 States and formally confirmed by the European Union (extent of competence: art. 12). There have been no changes in that regard since the publication of the INCB report on precursors for 2020. Details on the status of accession are provided in annex I to the present report. The following seven States (by region) are not yet parties to the 1988 Convention:

Africa (three States): Equatorial Guinea, Somalia and South Sudan

Oceania (four States): Kiribati, Papua New Guinea, Solomon Islands and Tuvalu

C. Reporting to the Board pursuant to article 12 of the 1988 Convention

11. Under article 12, paragraph 12, of the 1988 Convention, parties are required to submit annually to INCB information on: *(a)* the amounts seized of substances included in Tables I and II of that Convention and, when known, their origin; *(b)* any substance not included in Table I or Table II that is identified as having been used in the illicit manufacture of narcotic drugs or psychotropic substances; and *(c)* methods of diversion and illicit manufacture.

12. In order to assist Governments in providing such data, INCB transmits to all Governments an annual questionnaire, known as form D.[5] The deadline for submission of the 2020 data was 30 June 2021, although INCB continued to encourage earlier submission (by 30 April) to allow sufficient time for any necessary clarification of the information received.

13. As at 1 November 2021, a total of 122 States parties had submitted form D for 2020, up from 83 as at 30 June 2021. Micronesia (Federated States of) resumed submission after 6 years, and the Niger after more than 10 years. Nevertheless, 68 States parties failed to submit form D for 2020.[6] Of those, 16 have not done so for the past five years, and 16 have not done so for the past 10 years (see table 1). In addition, 13 countries and territories (Algeria, Andorra, Bolivia (Plurinational State of), China, Curaçao, Iraq, Israel, Luxembourg, Mozambique, Paraguay, Serbia, Singapore and Suriname) have submitted form D for the previous reporting cycle (form D for 2019). Comprehensive information about the status of submission of form D by all Governments is included in annex II.

Table 1. States parties failing to report as required under article 12, paragraph 12, of the 1988 Convention, 2020

Africa		
Algeria	Côte d'Ivoire	Libya[b]
Angola	Djibouti[b]	Malawi[b]
Benin	Eritrea[a]	Mali
Burkina Faso[a]	Eswatini[b]	Mauritania
Burundi	Ethiopia[a]	Namibia
Cabo Verde	Gambia	Sao Tome and Principe[a]
Cameroon	Guinea[b]	Senegal
Central African Republic[b]	Guinea-Bissau[a]	Seychelles
Chad	Kenya	Togo[a]
Comoros[b]	Lesotho[b]	Zambia[a]
Congo[b]	Liberia[b]	
Americas		
Antigua and Barbuda[b]	Belize	Guyana
Bahamas[b]	Cuba[a]	Jamaica
Barbados[a]	Grenada[b]	Saint Kitts and Nevis[b]
Asia		
Bangladesh	Oman	Timor-Leste
Cambodia[a]	Pakistan	Turkmenistan
Kuwait[a]	Republic of Korea	Viet Nam
Mongolia	Sri Lanka	

[5] The latest version of form D is available on the INCB website in the six official languages of the United Nations. Since its introduction in the 2018 reporting cycle, INCB has promoted the utilization of a spreadsheet form in an effort to streamline and expedite the reporting process and to minimize the potential for data entry errors. Forty-three Governments have used that form D for 2020.

[6] The Holy See, San Marino and Liechtenstein did not furnish form D separately, as their data are included in the reports of Italy and Switzerland.

Europe		
Albania	Greece	Italy[c]
Belarus		
Oceania		
Cook Islands[a]	Nauru[a]	Samoa[a]
Fiji	Niue[a]	Tonga[b]
Marshall Islands[b]	Palau	Vanuatu[a]

Note: See also annex II.

[a] Government that failed to submit form D for any year during the past five years (2016–2020).

[b] Government that failed to submit form D for any year during the past 10 years (2011–2020).

[c] Including with regard to data for the Holy See and San Marino.

14. Eighty-eight Governments reported seizures of substances listed in Tables I and II of the 1988 Convention on form D for 2020. Despite repeated calls by INCB to provide information on the origin of seized chemicals, which is critical for identifying weaknesses in control mechanisms and emerging trends, most Governments only provided information on the quantities seized. In addition, a limited number of Governments provided mandatory information on seizures of chemicals not under international control (see map 1) and very few of them supplied information concerning methods of diversion and illicit manufacture. **INCB reiterates its call to Governments to make every effort to collect and report complete information as mandated in article 12, paragraph 12, of the 1988 Convention, to submit form D on time, and to confirm and provide details of seizures in a timely manner, when so requested by the Board.**

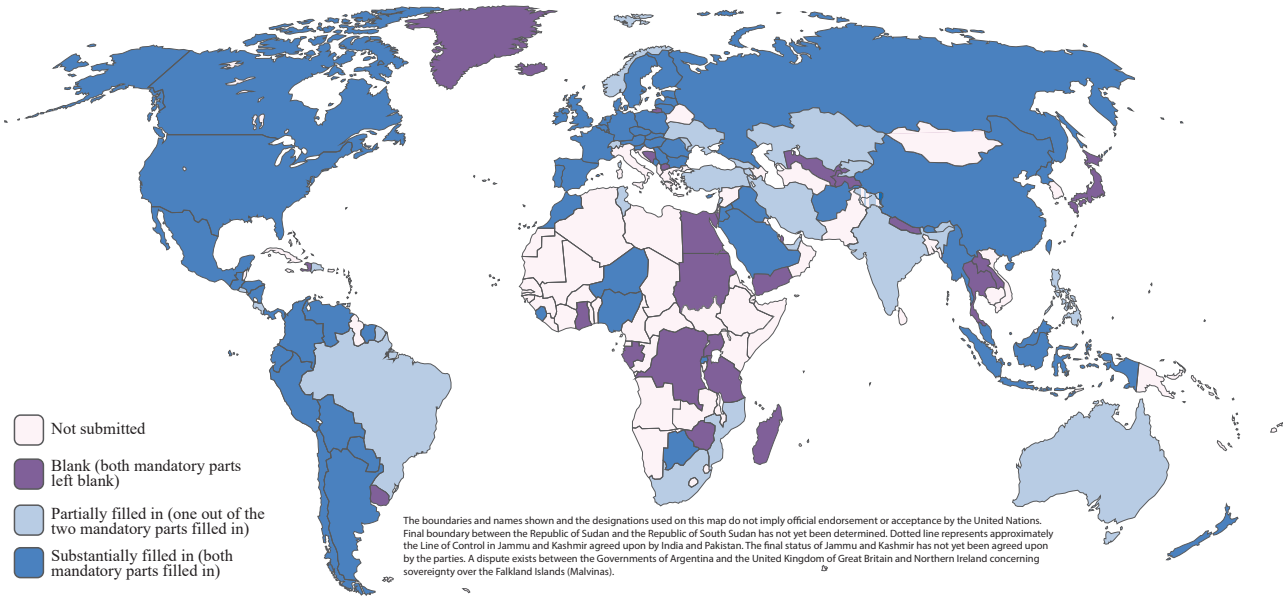
15. As in the past, data on licit trade in, uses of and requirements for precursors (see sect. E below), although submitted on a voluntary basis, were typically submitted by more Governments, and were more comprehensive, than the mandatory data on seizures of precursors.

D. Legislation and control measures

16. Establishing and strengthening appropriate national control measures constitutes the basis for effective monitoring of the movement of precursors both in international trade and domestic distribution. Although there is no requirement to report to the Board in this regard, since 1 November 2020, the changes in control measures set out below have come to the attention of INCB.

17. In 2020, in the Islamic Republic of Iran, a national committee for precursor oversight was created at the Drug Control Headquarters. The committee is composed of representatives from a wide range of ministries and executive bodies and is focused on improving chemical precursor control and oversight over the implementation of national

Map 1. Status of submissions by Governments of form D for 2020 containing information concerning seizures of substances listed in Table I and Table II of the 1988 Convention and seizures of substances not listed in Table I and Table II, as at 1 November 2021



rules and regulations pertaining to precursors, including domestic controls.

18. The European Commission finalized a comprehensive evaluation of the European Union drug precursor policy in November 2020. The key findings underscored the threat that the prevalence of designer precursors in illicit synthetic drug manufacture poses for the region. On the basis of its assessment of the threat, the European Commission has established an ad-hoc expert working group on designer precursors, comprising representatives of licensing, customs and police authorities, forensic laboratories, judicial authorities and chemical and pharmaceutical industries.

19. The evaluation also found that, despite the stricter legislation on precursors of December 2013, which had introduced a requirement for the registration of end users of acetic anhydride, diversion of the substance was still occurring in the European Union. On the basis of the evaluation, it was concluded that there was an opportunity to consider strengthening a number of aspects of the existing regulations, such as those concerning the diversion of auxiliary drug precursors and acetic anhydride from intra-European Union trade, and introducing stricter controls over online trade in precursors.

20. In December 2020, the European Council approved the European Union Drugs Strategy 2021–2025. The Strategy defines the key priorities for drug policy in the European Union. Increased monitoring of border crossings and heightened efforts to prevent the exploitation of legitimate trade channels for trafficking are listed among the priorities of the new strategy.

21. By Decree No. 2007 of 3 December 2020, effective 8 April 2021, the Russian Federation added 10 chemicals to its list of precursors under national control. The chemicals included MAPA, as well as nine precursors of synthetic cathinone-type new psychoactive substances. In December 2020, the parliament of the Russian Federation also approved the strategy of the Russian Federation National Anti-Drug Policy until 2030. Recognizing an increase in the domestic manufacture of synthetic drugs, the strategy provides for addressing illicit drug manufacture, including the supply of chemical raw materials. The strategic priorities are to be achieved by, inter alia, increasing cooperation with industries that manufacture and sell precursors.

22. On 14 May 2021, the Government of Paraguay updated its list of chemical precursors under national control and amended article 84 of Decree No. 5213 of 6 May 2005 pursuant to article 1 of Law No. 1340 of 22 November 1988. As a consequence, all substances in Table I and Table II of the 1988 Convention are now under national control in the country, in addition to 22 other chemicals known to be used in illicit drug manufacture.

23. Effective 14 May 2021, the Government of Mexico has added the fentanyl precursors 4-AP and its dihydrochloride salt, propionic anhydride and propionyl chloride to the list of controlled substances referred to in section I, article 4, of the Federal Act on the Control of Chemical Precursors, Essential Chemicals and Tablet- and Capsule-Making Machines. In addition, in accordance with articles 234 and 235 of the General Health Law of Mexico, those substances are considered narcotic drugs.

24. In addition, effective 26 May 2021, by Agreement CSG CCC 4/15.04.2021, the Government of Mexico has established a surveillance list of dual-use substances as a flexible mechanism for monitoring unregulated substances that could be used for the illicit manufacture of synthetic drugs, with a view to better monitoring trade in the listed substances while preventing any adverse effects on their use for legitimate industrial purposes. The initial list includes 15 chemicals.

Box 1. Tip: where and how to access information on precursor-related legislation and control measures

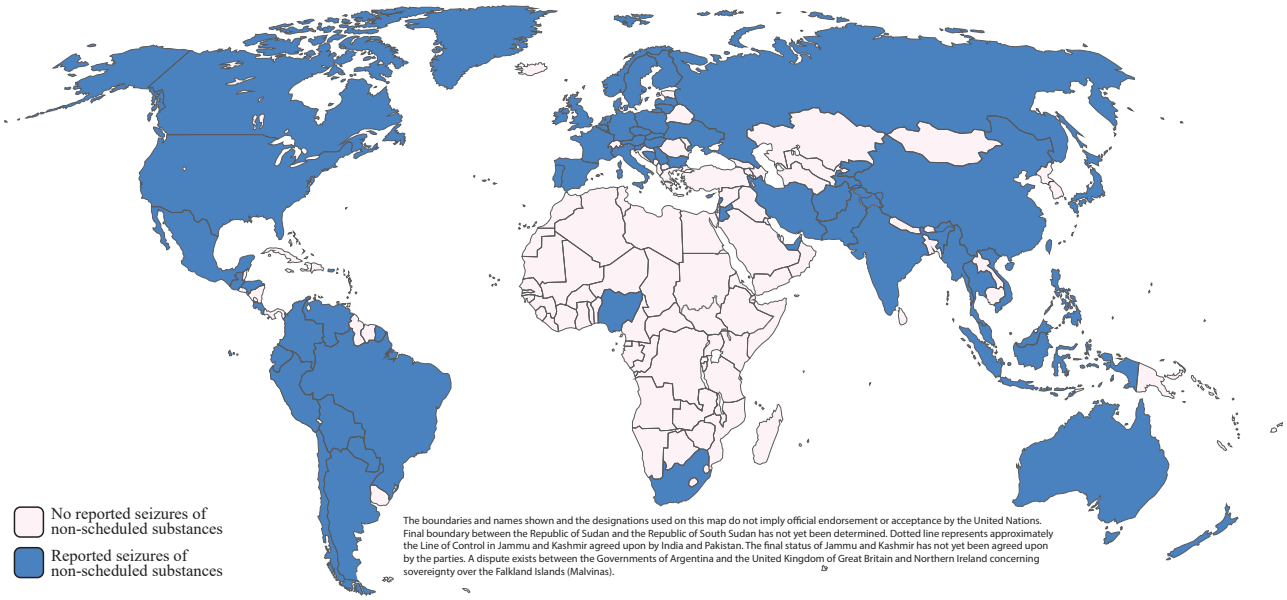
An analysis of the extent to which Governments have established monitoring and control measures at the domestic level, pursuant to article 12, paragraph 8, of the 1988 Convention, is included in chapter IV of the present report.

The Board maintains an information package on the control of precursors that can be accessed by competent national authorities on the Board's secure website. The package contains information on the systems of authorization that Governments apply to the import and export of the substances listed in Tables I and II of the 1988 Convention,[a] as well as on control measures applied to additional chemicals under national control.[b]

[a] Contained in part A, tables 1a, 1b, 2a and 2b, of the information package.

[b] Contained in part A, table 4, of the information package.

Map 2. Governments reporting seizures of substances not listed in Table I or Table II of the 1988 Convention on form D and through PICS, 2018–2021



25. On 19 May 2021, the Narcotics, Drugs and Psychotropic Substances (Control) (Amendment) Act, 2020, was enacted by the National Assembly of Kenya and is now awaiting the assent of the President of Kenya. The Act defines precursors and chemical substances that could be used in the manufacture of narcotic drugs and the penalties applicable to persons who manufacture, possess or transport precursor chemicals for the unlawful manufacture of a narcotic drug. The Act also designates the Cabinet Secretary responsible for internal security as the official charged with establishing the necessary regulations related to precursor chemicals, including changes to the scope of controls.

26. In May 2021, the Government of Myanmar added APAAN to its list of chemicals under national control. APAAN can be used for the illicit manufacture of amphetamine and methamphetamine and has been under international control since October 2014. Myanmar also applies a system of individual authorizations to the import and export of MAPA, the designer precursor of amphetamine and methamphetamine most recently placed under international control. However, MAPA has not yet been formally listed as a controlled precursor chemical in the country.

27. Effective 9 June 2021, the Government of the United States included three amphetamine-type stimulant precursors, namely, 3,4-MDP-2-P methyl glycidic acid, its methyl ester and APAA, all of which have been under international control since November 2019, as list I regulated chemicals under the Controlled Substances Act.

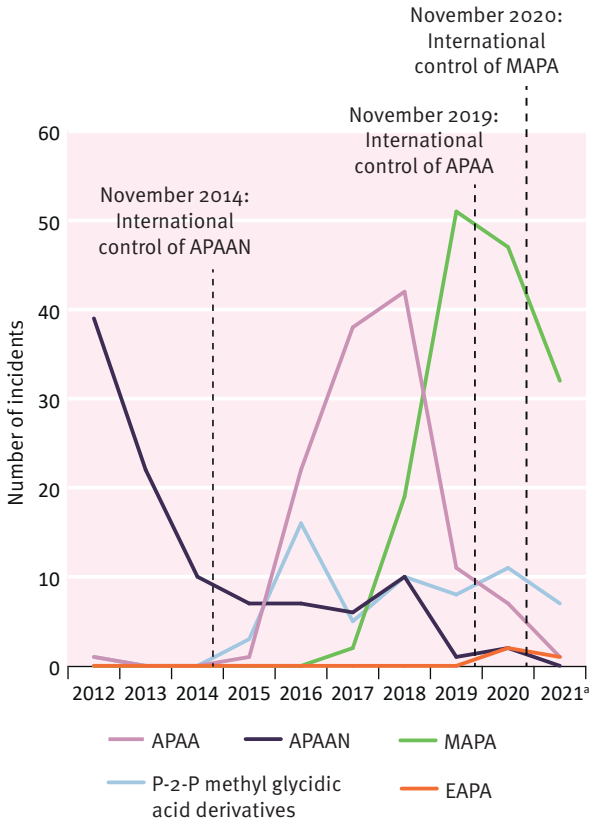
28. In China, those same three substances and MAPA were added to category II of the list of precursors under national control, effective 20 September 2021; benzyl cyanide and GBL were added to category III of the list on the same date. Effective 13 August 2021, Hong Kong, China, amended schedule 2 of the Control of Chemicals Ordinance (Cap. 145) in order to impose control over MAPA and its salts (whenever the existence of such salts is possible).

Measures to address the proliferation of non-scheduled chemicals, including designer precursors

29. Non-scheduled chemicals, that is, substances not listed in Table I or Table II of the 1988 Convention that can be used to illicitly manufacture, or substitute for, controlled precursors, have been encountered in all regions of the world (see map 2).

30. The challenges that non-scheduled chemicals, including designer precursors, pose to international drug control efforts are now widely recognized. Adding priority chemicals to the tables of the 1988 Convention remains the most effective measure to achieve global action in this regard. However, with regard to designer precursors, an analysis of seizure data communicated through PICS relating to recently scheduled designer precursors of P-2-P, and subsequently amphetamine and methamphetamine, showed that, after their international scheduling (sometimes even soon after the initiation of the scheduling process), the number of incidents involving those chemicals decreased significantly and instead alternative non-scheduled precursors emerged (see figure I).

Figure I. Incidents involving selected designer precursors of P-2-P communicated through PICS, 2012–2021



[a] Data only cover the first 10 months of 2021.

31. During the reporting period, INCB undertook several activities aimed at raising awareness, advancing international policy dialogue, and facilitating consensus and building momentum for global action in relation to non-scheduled chemicals and designer precursors. Specifically, the Board conducted four high-level policy dialogues with Member States and technical experts, and also carried out a global survey on the topic.

32. The activities described below are part of the Board's nearly decade-long involvement in addressing the issue of non-scheduled chemicals and designer precursors. They build upon the normative approach advanced by the Board in recent years, most notably in the conference room paper the Board submitted to the Commission on Narcotic Drugs at its sixty-third session, in March 2020, entitled Options to address the proliferation of non-scheduled chemicals, including designer precursors — contribution to a wider policy dialogue, as well as in specific thematic chapters of its reports on precursors for 2014 and 2018.

33. In November 2020, a consultation with Member States was held on the margins of the 129th session of the Board to commemorate the thirtieth anniversary of the entry into force of the 1988 Convention. Participants in the consultation reviewed the functioning of the international precursor control system since its inception and agreed that the need to address the proliferation of non-scheduled chemicals and designer precursors was the most critical challenge facing the international precursor control framework.

34. At the sixty-fourth session of the Commission on Narcotics Drugs, held in April 2021, INCB issued a statement as part of a policy discussion on the challenges and future work of the Commission, the World Health Organization and INCB in the review of substances for possible scheduling recommendations. During the same session of the Commission, a side event was organized by the Government of the United States, with the support of the European Union and INCB, that highlighted the need for further global dialogue to address the challenges posed by the proliferation of non-scheduled chemicals and designer precursors in a global and comprehensive manner.

35. To support the global dialogue, INCB held a series of focused international consultations. The first technical consultation was held in June 2021, with the objective of developing a list of actionable, concrete and practical solutions to those challenges. Approximately 60 participants from 20 countries and several international organizations shared relevant national legislative and policy experiences and deliberated on possible global measures and approaches. Experts assessed the viability and applicability of a set of practical solutions presented during the discussions and acknowledged the need for continued multi-stakeholder engagement on this topic as a priority for the international precursor control system.

36. The first technical consultation was followed by a broader consultation held in October 2021 involving the participation of 70 Governments and five international and regional organizations, as well as representatives of the chemical industry. Their input, together with a review of the technical solutions discussed at the consultation held in June, contributed to further developing a list of global measures and approaches that Governments could consider in responding to this issue. The resulting document, entitled "Proliferation of non-scheduled chemicals and designer precursors: options for global action", enumerates such measures and approaches, and will be made available by the Board to Governments as a guidance document.

37. In June 2021, as part of a survey on national legislation on drug precursors, INCB examined the timeliness and extent of the implementation by Governments of the scheduling decisions of the Commission on Narcotic Drugs. The survey also explored whether and under which

circumstances Governments may be able to cooperate on and investigate cases involving chemicals that are not under national control but that have been identified on illicit drug markets.

38. INCB commends the 62 Governments, and the European Commission, that replied to the survey for their valuable and detailed information. Of those Governments, 14 (23 per cent) indicated that one or more of the substances scheduled in Table I of the 1988 Convention since 2017 were not yet under national control. Regarding the process that follows the communication to countries of the scheduling of new substances by the Commission on Narcotic Drugs, the survey indicates that while a few countries initiate the national scheduling process early on, the majority implement the scheduling decisions of the Commission between roughly 6 and 15 months after they have been formally notified. Several Governments also provided information about voluntary action they may be able to take on chemicals not under national control. Chapter IV of the present report provides an account of the domestic control measures applied by Governments.

39. To complement the policy dialogues and other activities on this matter, INCB has developed technical tools to assist competent national authorities in increasing their capacity to identify and respond to the ever-increasing range of non-scheduled chemicals and assess the risk of their potential use in illicit drug manufacture. Among them is the limited international special surveillance list of non-scheduled substances, which is aimed at alerting authorities to the possible misuse of listed chemicals in illicit drug manufacture. The list was revised in 2021 to include another group of chemical derivatives now frequently used to mask precursors and circumvent controls. Another tool released in 2021 is the publication entitled "Precursor Chemical Monographs 2020", which includes technical information on nearly 100 chemicals, including designer precursors. The UNODC Regional Office for South-East Asia and Pacific in Bangkok provided financial support for the production of the publication and its translation into Chinese.

E. Submission of data on licit trade in, uses of and requirements for precursors

40. In accordance with Economic and Social Council resolution 1995/20, INCB requests Governments to provide data, voluntarily and confidentially, on licit trade in, uses of and requirements for substances listed in Tables I and II of the 1988 Convention. Those data enable INCB and Governments to validate the information about proposed shipments notified through the PEN Online system, understand the underlying patterns of regular trade and prevent diversions by identifying unusual trade patterns and suspicious activity.

41. As at 1 November 2021, 112 Governments had submitted data on licit trade in substances in Table I or Table II of the 1988 Convention, and 103 Governments had furnished data on the licit uses of and/or requirements for one or more of those substances (see annex IV).

F. Annual legitimate requirements for imports of precursors of amphetamine-type stimulants

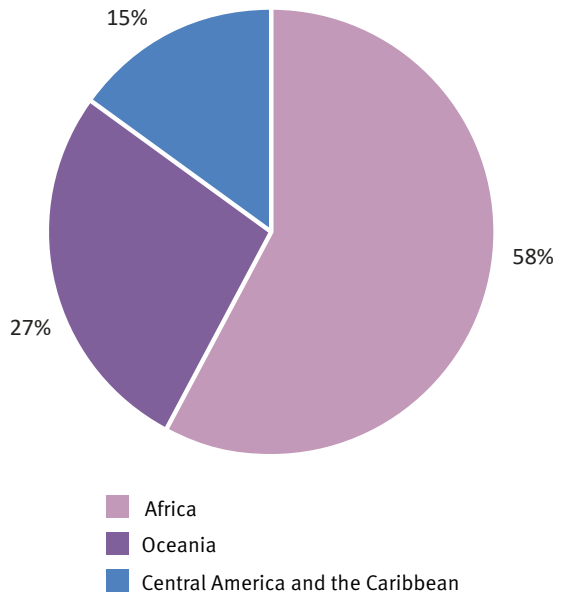
42. In its resolution 49/3, the Commission on Narcotic Drugs requested Member States to provide to INCB estimates of their annual legitimate requirements for 3,4-MDP-2-P, pseudoephedrine, ephedrine and P-2-P, and, to the extent possible, estimated requirements for preparations containing those substances that could be easily used or recovered by readily applicable means. The main objective of estimating such requirements is to provide the competent authorities of exporting countries with an indication of the amounts legitimately required by importing countries, with a view to putting individual shipments, as well as more established patterns of trade, into perspective and enabling better monitoring and control. The estimated annual legitimate requirements for imports of the above-named precursors of amphetamine-type stimulants as reported by Governments are presented in annex V to the present report. Regular updates on these requirements are available on a dedicated page of the INCB website.[7]

43. During the reporting period, Governments continued to report to INCB estimates of their annual legitimate requirements for imports of precursors of amphetamine-type stimulants and preparations containing such precursors, mostly on form D and, to a lesser extent, by means of individual communications during the year. As at 1 November 2021, 179 Governments had provided at least one such estimate. This figure includes the Governments of Dominica, Gabon, Grenada, Kuwait, Micronesia (Federated States of), the Niger and North Macedonia, which submitted annual legitimate requirements for the first time. It also includes the Governments of a number of territories, as well as States that are not yet parties to the 1988 Convention. As at the same date, a total of 25 countries, including 21 States parties to the 1988 Convention,

[7] www.incb.org/incb/en/precursors/alrs.html.

had not yet provided any estimates to the Board;[8] 58 per cent of those countries were in Africa, followed by 27 per cent in Oceania and 15 per cent in Central America and the Caribbean (see figure II).

Figure II. Proportion of countries that had not yet provided any estimated annual legitimate requirements for precursors of amphetamine-type stimulants to INCB as at 1 November 2021, by region



44. Since the publication of the Board's 2020 report on precursors, 120 countries and territories have reconfirmed or updated their estimates for at least one of the substances. However, some estimates provided to INCB more than 10 years ago have not been updated since then. Overall, more than 80 Governments have not updated their estimates; some for one year and some for several years in a row.

45. Table 2 presents the 10 countries with the largest estimated annual legitimate requirements for ephedrines and pseudoephedrines, based on the latest data available to INCB.

46. In several countries, proposed shipments of precursors of amphetamine-type stimulants pre-notified through PEN Online exceeded or were close to reaching the estimated annual requirements for the period concerned at the time of the pre-notification, prompting follow-up communication by INCB with the respective competent national authorities. Conversely, a number of countries had indicated annual legitimate requirements that exceeded by far the amounts actually imported or pre-notified to them for import, suggesting unrealistically high estimated requirements in the first place. **INCB invites Governments to conduct an assessment of the methodology used to estimate their annual legitimate requirements for individual precursors, as well as of the figures provided, as published on the Board's website, with a view to more accurately reflecting changing market conditions, and to provide updates to the Board, at any time throughout the year, on any necessary changes.**

Table 2. The countries with the largest estimated annual legitimate requirements for ephedrines and pseudoephedrines, as at 1 November 2021

Ranking	*Ephedrines*[a]	*Pseudoephedrines*[a]
1	India	India
2	Republic of Korea	United States
3	China	Switzerland
4	Indonesia	China
5	Nigeria	Egypt
6	Pakistan	Pakistan
7	Singapore	Indonesia
8	Canada	United Kingdom of Great Britain and Northern Ireland
9	Egypt, Japan	Canada
10	Ghana	Turkey

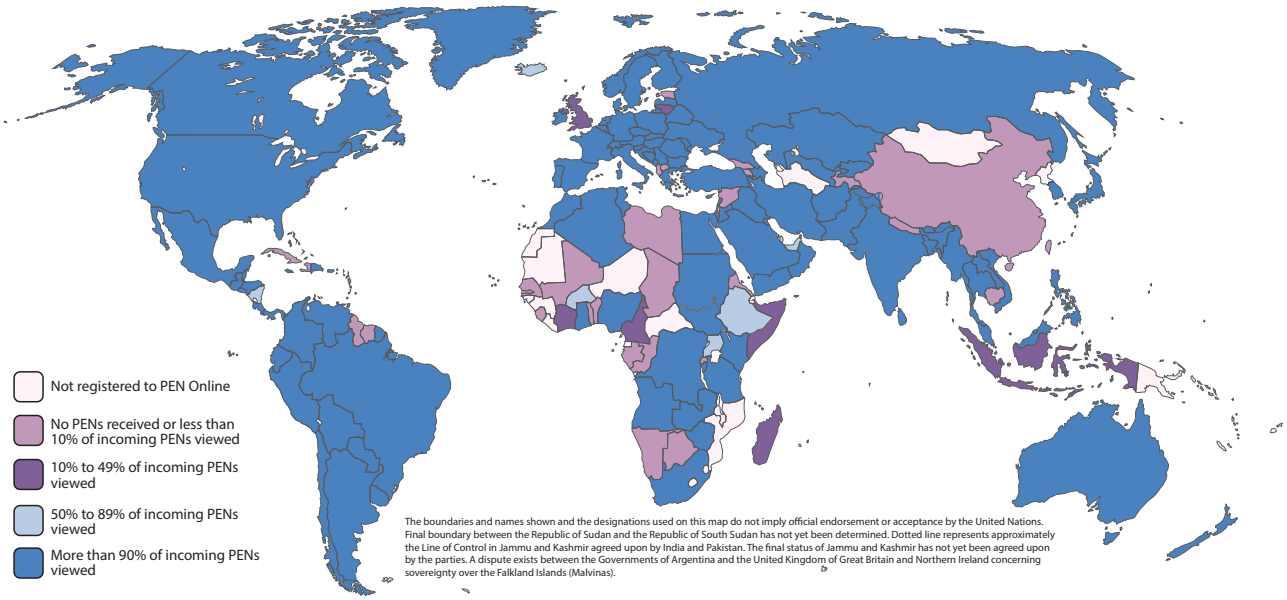
[a] Includes ephedrine and pseudoephedrine in the form of their respective pharmaceutical preparations.

G. Pre-export notifications and utilization of the Pre-Export Notification Online system

47. Pre-export notifications are at the core of the system of monitoring of international trade in substances in Table I and Table II of the 1988 Convention. For the international precursor control system to be effective, Governments must implement two complementary measures, namely, the invoking of article 12, subparagraph 10 *(a)*, of the 1988 Convention and registering with and using the INCB PEN Online system. While the former makes it mandatory for the authorities of exporting countries to send pre-export notifications, the latter ensures that such notifications are exchanged in real time, thus enabling the authorities of importing countries to verify the legitimacy of shipments destined for their territory before the shipments leave the exporting country.

[8] Those countries are: Angola, Antigua and Barbuda, Bahamas, Burkina Faso, Central African Republic, Chad, Comoros, Congo, Djibouti, Equatorial Guinea, Eswatini, Kiribati, Lesotho, Liberia, Libya, Mauritania, Nauru, Niue, Saint Kitts and Nevis, Samoa, Somalia, Togo, Tonga, Tuvalu and Vanuatu.

Map 3. Use of the PEN Online system, as a percentage of the pre-export notifications viewed, 2020



1. Pre-export notifications

48. As at 1 November 2021, 116 countries and territories had formally requested pre-export notifications (see annex VI). Since the publication by the Board of its report on precursors for 2020, one more Government, Iceland, has invoked article 12, subparagraph 10 *(a)*, of the 1988 Convention for all substances in Table I and Table II of the Convention. In addition, the Government of Malaysia has amended its initial request to now include all substances in Tables I and II (see annex VI). **The Board welcomes adjustments to the requests for pre-notifications to reflect changes in national controls and emphasizes the need for Governments to regularly review their import and export systems applicable to substances controlled under the 1988 Convention and to communicate any updates to INCB.**

49. **The Board furthermore calls on the remaining Governments, particularly those of countries in Africa and Oceania, that have not yet invoked the provisions of article 12, subparagraph 10 *(a)*, to do so without further delay.** The forms to be used for formally requesting to be notified of all shipments of substances included in Tables I and II of the 1988 Convention are available from INCB, including from its secure website.

2. Pre-Export Notification Online system

50. As at 1 November 2021, 166 countries and territories had been authorized to access PEN Online, the Board's automated online system for the exchange of pre-export notifications. This figure includes the Government of Gabon, which has been registered as a user of the PEN Online system since 1 November 2020. The number of pre-export notifications communicated through the system has remained stable, with an average of 2,800 notifications per month during the reporting year. The situation with regard to Oceania remains a concern to the Board, as only five Governments in the region (31 per cent of the Governments in the region) have registered to use the system. **The Board encourages all Governments, in particular those in Oceania, to make use of this cost-free tool in order to receive advance notification of proposed shipments of controlled precursor chemicals destined for their territories.**

51. The number of notifications made through the PEN Online system has remained constant over the past several years. Since 1 November 2020, more than 34,200 pre-export notifications have been submitted by 67 exporting countries and territories through the PEN Online system. The Board is pleased to note that the Government of Uzbekistan has begun to send pre-export notifications to importing countries.

52. One of the most effective means to prevent the diversion of controlled precursor chemicals is to promptly act upon receipt of a pre-export notification to verify the legitimacy of the shipment in question and then provide feedback to the exporting authority. A timely response makes it possible to stop an unwanted consignment before it is exported and consequently enables an investigation to be launched or a controlled delivery to be arranged. Compared with the previous reporting year, a slight improvement has been noted regarding the number of registered importing Governments viewing pre-export notifications (see map 3),

whereas the number of Governments responding to such notifications remained the same. Less than 6 per cent of pre-export notifications were objected to during the reporting year. Similar to previous years, many of those objections were raised for administrative reasons. **INCB reiterates its recommendation that the authorities of exporting countries include all available details, especially authorization numbers where available, in the relevant sections of the PEN Online pre-export notification form. Likewise, the online conversation tool available in the PEN Online system should be used to communicate with the trading partner before the importing authority conveys its final decision by means of the "objection" or "non-objection" function as to whether a shipment is authorized or not.** Both measures help to avoid unnecessary administrative objections and delays of shipments.

53. The Board has noted that some Governments seem to consider it sufficient to only register with the PEN Online system, without viewing and acting upon incoming pre-export notifications. This appears to be the case for about 20 per cent of all registered countries and territories, which are authorized to access the system but fail to use it actively (see map 3). **INCB therefore again reiterates its recommendation to importing Governments that are registered as users of the PEN Online system to regularly view all transactions and to respond to exporting authorities in a timely manner where necessary.**

H. Other activities and achievements in international precursor control

1. Project Prism and Project Cohesion

54. The two operational projects of INCB, Project Prism and Project Cohesion, continued to serve as platforms for international cooperation and the secure exchange of real-time information to address the diversion of chemicals used in the illicit manufacture of synthetic drugs (Project Prism), and heroin and cocaine (Project Cohesion).[9] The two projects currently bring together operational focal points from law and regulatory enforcement authorities of more than 140 Governments worldwide.

55. During the reporting period, the Board conducted a targeted, time-bound operation, known as Operation Acronym, aimed at addressing the diversion of precursors using the Internet (specifically, the surface web) and to obtain information about regulatory controls over seven recently scheduled precursors of amphetamine-type stimulants and of fentanyl, as well as an additional seven non-scheduled chemicals.

56. The operation involved the participation of 34 Governments[10] and four international organizations.[11] In addition, three business-to-business platforms based in India and four in the Republic of Korea shared, through the respective competent national authorities and on a voluntary basis, details of suspicious postings involving the target substances (precursors and pre-precursors of amphetamine-type stimulants and fentanyl).

57. Operation Acronym revealed a change in the pattern of Internet posts related to precursors compared with earlier Internet posts, in particular those related to acetic anhydride published during the period 2016–2018. Unlike in the past, when more requests from buyers were observed, most of the current Internet posts involved offers to sell or supply the target chemicals. Furthermore, the use of anonymizing tools, including secure virtual private network and messenger services, was also relatively more frequent, revealing the unique challenges that investigating such posts presents to law enforcement authorities. Thus, while some suspicious posts related to precursors disappeared during the operation, others continued to be observed even after the conclusion of the operation. The absence of controls over, inter alia, domestic manufacture, trade and distribution in respect of the recently scheduled precursors, some of which have no known legitimate uses, emerged as one of the key factors for the use of such substances for illicit drug manufacture.

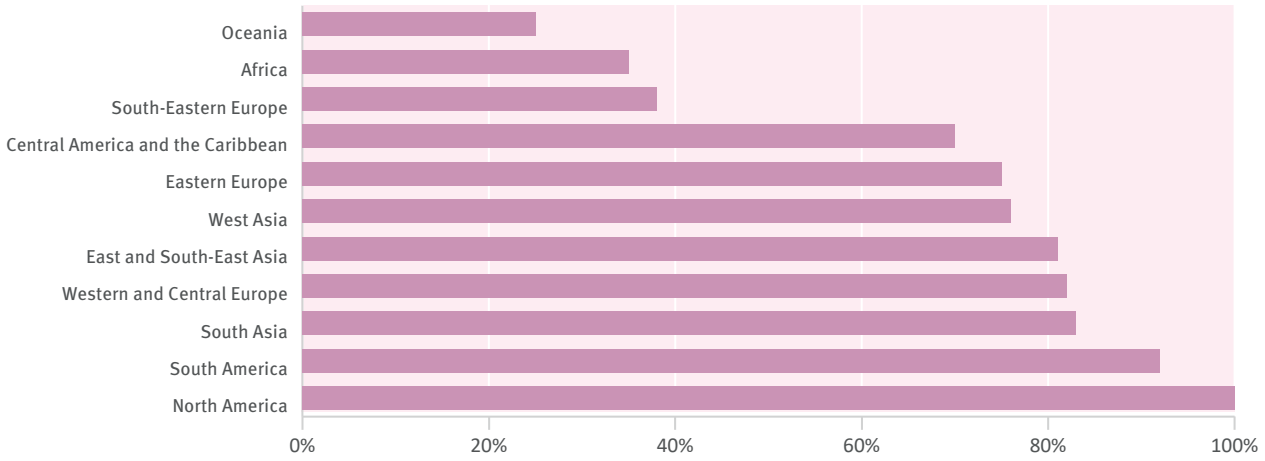
58. Operation Acronym therefore underscored the need for Governments to place increased emphasis on cybercrime investigation relating to precursors, in addition to working closely with Internet service providers, email and social media services and business-to-business Internet platforms to provide an effective deterrent to the exploitation of the surface web for precursor trafficking. The Board is developing tools and resources and other capacity-building initiatives to support Governments' efforts in this regard. **The Board encourages Governments to support each other and such initiatives of the Board by putting in place the following measures: *(a)* timely and effective domestic control measures over internationally scheduled precursor chemicals; *(b)* partnerships with the relevant Internet, social media and business-to-business companies; *(c)* dedicated units with the requisite capacity to monitor the surface web; and *(d)* investigative mechanisms to**

[9] A summary of the minimum action needed for international multilateral cooperation under Project Prism and Project Cohesion is available in the INCB report on precursors for 2015 (E/INCB/2015/4), box 2.

[10] Afghanistan, Armenia, Bosnia and Herzegovina, China, Costa Rica, Czechia, Denmark, France, Germany, Hungary, India, Iraq, Italy, Latvia, Lebanon, Lithuania, Luxembourg, Myanmar, Philippines, Poland, Republic of Korea, Russian Federation, Senegal, Sierra Leone, Slovakia, South Africa, Spain, Thailand, Ukraine, United Arab Emirates, United Republic of Tanzania, United States, Viet Nam and Yemen.

[11] CICAD, INTERPOL, the European Commission and WCO.

Figure III. Use of PICS by region, as a percentage of the countries in each region that had registered PICS users, as at 1 November 2021



probe the leads obtained through voluntary cooperation with the private Internet industry and Government-initiated monitoring.

59. During the reporting period, INCB continued to serve as a focal point for the exchange of information on suspicious transactions in legitimate trade, trafficking trends, identified modi operandi and emerging non-scheduled chemicals, including through PICS (see sect. 2 below). Six special alerts were circulated to focal points, including on EAPA and MAMDPA, two new designer precursors; the cancellation of an import licence of a company in Costa Rica; a seizure of fentanyl precursor chemicals in the Netherlands; new controls on fentanyl precursors in Mexico; and new results of Operation Missing Links related to an alternative precursor used in the illicit manufacture of amphetamine in "captagon" tablets. All past alerts are available to registered users of PICS.

2. Precursors Incident Communication System

60. PICS continued to provide registered users with a platform for the secure exchange of actionable, real-time information related to trafficking in substances in Table I and Table II of the 1988 Convention, as well as chemicals not under international control and essential drug manufacturing equipment. The system thus continued to facilitate global operational cooperation in precursor-related matters and to serve as a global early warning system for chemicals.

61. As at 1 November 2021, PICS had more than 600 registered users from 127 countries and territories, representing more than 300 agencies in all regions (see figure III).[12] More than 3,400 incidents have been communicated through PICS since its establishment in 2012. During the reporting period, almost 300 new precursor-related incidents involving almost 800 individual substance-related communications were communicated through the system. Incidents occurred in all regions of the world and involved 13 substances in Table I of the 1988 Convention, 7 substances in Table II and 32 substances included in the international special surveillance list. Incidents involving more than 40 additional non-scheduled substances that are not included in Tables I and II or in the international special surveillance list were also communicated. Some of the incidents involved multiple substances, in particular in the cases involving clandestine laboratories.

62. The Board would once again like to commend Governments for sharing incidents involving precursors and actionable information through PICS. The identified connections between several seizures of acetic anhydride labelled as "motor oil" affirm the importance of sharing details regarding seizures of precursors, including pictures of labels and packaging of seized precursors and the details of the companies involved (see para. 174 below). In addition to the initiation of joint backtracking investigations into interlinked seizures of precursors to prevent future trafficking involving the same criminal networks, the details of the seizures may also assist PICS users in analysing the latest modi operandi used by traffickers and updating risk profiles used to identify trafficking in precursors across borders.

3. Cooperation with industry

63. Cooperation with industry, including its voluntary component, as an integral part of the implementation of article 12, paragraph 9 *(a)*, of the 1988 Convention, has come to play an increasingly significant role in global precursor control efforts. Timely cooperation between national authorities and relevant sectors of industry serves

[12] Governments that have not yet registered PICS focal points for their national authorities involved in precursor control may request an account by writing to incb.pics@un.org.

to ensure effective and sustainable prevention of diversion of precursors, including non-scheduled chemicals and designer precursors used for illicit purposes.

64. It is clear that industry cooperation is an ongoing effort that requires continued attention and adjustment to changing circumstances, as illustrated by the following example. In 2020, Germany identified a diversion scheme that involved a company known as a reliable producer of chemical mixtures for use in the automotive industry. The company was found to have misused its legitimate business for illicit purposes for many years, ordering a number of chemicals in bulk amounts from several traders in Germany and other European countries, transferring them to unlabelled jerry cans on the premises of the company and then smuggling them into the Netherlands for use in illicit drug manufacture. Seizures made as a result of the investigation involved chemicals in Table II of the 1988 Convention and chemicals not under international control, including about 1,400 litres of acetone, 2,300 litres of hydrochloric acid, 1,600 litres of formamide, 950 litres of formic acid and 620 kg of tartaric acid. The German offenders were sentenced to several years' imprisonment.

65. During the reporting period, the Board continued to support Governments in their efforts to establish and implement cooperation with industry. Industry has a crucial role to play in preventing chemicals from being diverted into illicit channels. Sharing suspicious orders and transactions with national authorities enables those authorities to alert other companies in the same country, as traffickers may approach them with similar requests or orders. Sharing such information at the international level, with all competent national authorities, through INCB, amplifies the value of the information provided and thus serves to prevent traffickers from obtaining the respective chemicals elsewhere. In a number of countries, the mechanism for notifying and reporting suspicious orders and transactions is extended to substances not included in the tables of the 1988 Convention, including those of international concern that are listed on the international special surveillance list.

66. In August 2021, the Board invited all Governments to provide it with relevant information, experiences and lessons learned in relation to cooperation with industry in the area of drug precursors and non-scheduled chemicals used in illicit drug manufacture. Such information will contribute to taking stock of the nature and scope of different national cooperation mechanisms worldwide and will serve as a basis for a compilation of good practices, concrete scenarios and case studies aimed at transferring knowledge and sharing lessons learned among Governments. The compilation will complement the Board's guidance materials related to industry cooperation that are already available to competent national authorities on the Board's secure website.

67. Since 2016, the Board has encouraged and supported the concept of twinning, with a view to promoting industry cooperation in the area of precursor control more widely. The twinning is carried out by counterparts from the public and industry sectors from countries that already have well-established cooperation arrangements with industry, to assist interested Governments throughout the process of establishing and implementing such cooperation.

68. A recent example demonstrating that twinning can be a practical and useful tool is the successful cooperation between authorities in France and Switzerland with those in the United Republic of Tanzania, which resulted in the formalization of cooperation between the authorities and the relevant sectors of industry in the latter country. Specifically, on 31 August 2021, the authorities of the United Republic of Tanzania signed a memorandum of understanding with two pharmaceutical associations and a number of chemical companies. Furthermore, at the time of writing the present report, a voluntary code of practice was being finalized in the country. **The Board acknowledges the contributions of the Governments of France and Switzerland and commends the progress made by the United Republic of Tanzania. The Board welcomes initiatives taken by Governments in this area.**

69. **The Board wishes to reiterate the importance of cooperation with industry and encourages Governments to continue their efforts to establish and implement such cooperation. While the nature, extent and scope of cooperation with industry remains within the purview of individual countries, INCB wishes to highlight the importance of entering into engagements between national regulatory authorities and relevant sectors of industry, in particular with a view to addressing the proliferation of non-scheduled chemicals and designer precursors.**

4. International cooperation in, and other international initiatives focusing on, precursor control

70. The successes achieved in international precursor control efforts are a direct result of the extent of coordination and cooperation among national, regional and global counterparts and partners. INCB has long-standing partnerships with INTERPOL, UNODC and WCO, as well as with regional entities, including the European Commission and CICAD.

71. All of the above-mentioned partners are members of the INCB Precursors Task Force and cooperate on

operational aspects of international precursor control. The scope of cooperation also includes ad hoc partnerships, collaboration in meetings and training initiatives and regular exchanges of expertise and know-how in areas of common interest. The following paragraphs summarize aspects of and recent key developments relating to cooperation between INCB and some of its international and regional partners on matters concerning precursor control.

International Criminal Police Organization (INTERPOL)

72. Cooperation with INTERPOL is focused on the exchange of operational information related to precursor incidents. The Board's special alerts on precursors are disseminated to all INTERPOL member countries through the respective national central bureaus of INTERPOL. Likewise, the INTERPOL precursor-related notices on modus operandi, concealment methods and other operational information are shared through the Board's network of precursor focal points. During the reporting period, six alerts and notices were exchanged between the two organizations. INTERPOL also participated in Operation Acronym (see para. 55 above).

United Nations Office on Drugs and Crime

73. During the reporting period, INCB continued to work with UNODC on the different language versions of the United Nations Toolkit on Synthetic Drugs, specifically, the module on precursors, which at the time of writing was available in Chinese, English and Spanish. The module provides information about drug precursors and the international precursor control system, as well as the two key elements critical to preventing chemicals from reaching clandestine laboratories used for the illicit manufacture of drugs, namely: *(a)* monitoring of legitimate international trade; and *(b)* investigations into suspicious shipments, attempted diversions and seizures of precursors. The module includes links to information and materials available to all readers, as well as links with access restricted to Government officials.

74. INCB promotes and benefits from cooperation with the field office network of UNODC. Specifically, the UNODC Regional Office for South-East Asia and the Pacific has a dedicated regional precursor programme that is aimed at supporting Governments in the region, including through regional mechanisms such as the Association of Southeast Asian Nations and the Mekong Memorandum of Understanding on drug control, in efforts to prioritize precursor control and comply with the 1988 Convention. To that end, UNODC conducted reviews of the national situations and existing frameworks regarding precursor control in the region and provided relevant training to competent national authorities on various aspects of precursor control, including the required reporting to INCB, cooperation between different agencies at the national level responsible for precursor control, case investigations, public-private partnerships, the use of INCB tools and of hand-held devices for field identification, and basic concepts of safe disposal of seized chemicals. The specific activities in the region complement and reinforce the Board's global approach and help to advance precursor control at the regional level.

75. In addition to the above-mentioned activities, INCB and the Regional Office for South-East Asia and the Pacific maintained a regular channel of communication and exchange of information, including on special operations focused on the cross-border trafficking of precursor chemicals in the region, such as Operation Mekong Dragon II, carried out in collaboration with the WCO Regional Intelligence Liaison Office for Asia and the Pacific, and Golden Triangle Operation 1511.

76. INCB regularly works with other UNODC country and regional offices. During the reporting period, the Board worked with the offices in Afghanistan, Iran (Islamic Republic of), Panama and the United Arab Emirates, in particular in relation to activities aimed at raising awareness among the countries concerned regarding Internet-facilitated trade in precursors, as well as the Board's time-bound, targeted operation known as Operation Acronym.

77. INCB has also been one of the partner organizations of the Paris Pact initiative since its inception in 2003.[13] In particular, INCB has assisted in conceptualizing recommendations of the Paris Pact expert group on precursors for national regulatory and law enforcement authorities and international agencies and has also actively supported their implementation. Moreover, the Board has a long-standing history of cooperation with the UNODC Regional Working Group on Precursors, which brings together law enforcement agencies from the countries of West and Central Asia and supports the planning of operational activities related to chemicals used in the manufacture of heroin and methamphetamine in the region.

World Customs Organization

78. WCO is the custodian of the Harmonized Commodity Description and Coding System, generally referred to as the "Harmonized System" or simply "HS", an international product nomenclature. The Harmonized System contributes to the harmonization of customs and trade procedures by enabling the uniform identification of

[13] The Paris Pact Initiative, led by the Paris Pact Coordination Unit located in UNODC, provides a multilateral framework for the fight against opiates originating in Afghanistan.

goods, thus reducing costs related to international trade. Importantly, it also facilitates the control of substances of international interest and the collection of statistics on their trade.

79. INCB and WCO work together, pursuant to Economic and Social Council resolution 1992/29 and in the context of a memorandum of understanding between the two entities, to ensure that a unique Harmonized System code is established for each precursor chemical under international control. With the entry into force of the 2022 edition of the Harmonized System nomenclature, in January 2022, unique Harmonized System codes for NPP and ANPP, the two fentanyl precursors under international control (see para. 9 above), came into effect.[14] In addition, during the reporting period, the WCO secretariat assisted with the identification of the applicable Harmonized System codes for chemicals not under international control. These codes, which are available on the Board's secure website for competent national authorities, enable Governments to initiate appropriate action under law when an item is misdeclared or mislabelled, thereby providing a means to address the smuggling of such chemicals.

80. During the reporting period, INCB also contributed to the updating of WCO reference materials, specifically, the document containing correlations between the Harmonized System and the tables of the 1988 Convention. The reference materials are aimed at facilitating the monitoring and control of precursor chemicals by customs authorities.

European Union and its agencies

81. The European Union is a party to the 1988 Convention, with the extent of its competence limited to article 12 of the Convention. In that capacity, the European Commission, in coordination with the 27 States members of the European Union, represents the European Union in matters relating to INCB and has been an important partner in advancing solutions to address the proliferation of non-scheduled chemicals and designer precursors (see para. 18).

82. During the reporting period, closer cooperation was established between INCB and EMCDDA, including through the Centre's access to PICS, to reflect the increased involvement of EMCDDA in the precursor-related mandate of the European Union. Recent cooperation with Europol has focused mostly on essential drug equipment in the context of article 13 of the 1988 Convention,[15] while cooperation with CEPOL has focused on the provision of training to European law enforcement officials on issues related to precursor diversion and trafficking, and more recently, on support provided by CEPOL experts to training activities related to cybercrime investigation and the cross-border exchange of electronic evidence. INCB has also engaged with Eurojust to capitalize on experiences gained from Eurojust support to European Union member States in prosecuting cases involving non-scheduled chemicals.

Other entities

83. In July 2021, INCB, at the request of the Caribbean Customs Law Enforcement Council, delivered a virtual training session to the members of the Council. A total of 95 participants, representing customs, police and immigration authorities of 11 Caribbean countries, received training on various matters concerning precursor control, including INCB tools and resources on precursors.

84. INCB was also requested to make a presentation focusing on emerging precursor chemicals and new psychoactive substances at an expert panel discussion on opioids held by the Roma-Lyon group of the Group of Seven.

85. **INCB would like to acknowledge the contributions of its international and regional partners in advancing precursor control efforts worldwide.**

III. Extent of licit trade and latest trends in trafficking in precursors

86. The present chapter provides an overview of the major trends and developments in both licit trade and trafficking in precursor chemicals, by substance group. It summarizes information on seizures and cases of diversion or attempted diversion from international trade, as well as activities associated with illicit drug manufacture, with a view to addressing gaps and weaknesses in precursor control mechanisms. The chapter is based on information provided to the Board through various mechanisms, such as form D, the PEN Online system, PICS, Project

[14] WCO has also been cooperating with INCB in a similar manner with regard to identifying the applicable, or establishing unique, Harmonized System codes for essential drug manufacturing equipment.

[15] See the INCB report on precursors for 2019 (E/INCB/2019/4), chap. IV.

Prism and Project Cohesion, and through national reports and other official information from Governments.

87. The present chapter also provides information about non-scheduled chemicals, including designer precursors, that, despite not being included in the tables of the 1988 Convention, are nonetheless used in illicit drug manufacture. In the present report, information on these substances is generally presented in dedicated subsections, but may also be found in the sections providing details on trends with regard to substances in Table I and Table II of the 1988 Convention, especially in cases where the non-scheduled chemicals being discussed are part of a more complex development. Information on substances not included in Table I or Table II of the 1988 Convention is reported to INCB pursuant to article 12, subparagraph 12 *(b)*, of the Convention. It is also shared through PICS, which has thus developed into an early warning system for precursors.

88. Overall, trafficking in controlled precursors appears to have remained largely unaffected by the restrictions on movement resulting from the COVID-19 pandemic, as no permanent shifts or trends in precursor trafficking have been attributed to the pandemic.

A. Substances used in the illicit manufacture of amphetamine-type stimulants

1. Substances used in the illicit manufacture of amphetamines

(a) Ephedrine and pseudoephedrine

89. Ephedrine and pseudoephedrine are precursors used in the illicit manufacture of methamphetamine but can be substituted with P-2-P, phenylacetic acid, APAAN, APAA, MAPA and a number of non-scheduled substances (see subsects. *(c)* and *(d)* below, and annex VIII). Both ephedrine and pseudoephedrine are also used for legitimate medical purposes and are therefore among the most frequently and widely traded substances included in Table I of the 1988 Convention.

Licit trade

90. Between 1 November 2020 and 1 November 2021, exporting countries sent almost 4,200 pre-export notifications through the PEN Online system for planned shipments of ephedrine and pseudoephedrine, in bulk and in the form of pharmaceutical preparations. The notifications were for a total of more than 906 tons of pseudoephedrine and almost 57 tons of ephedrine. The shipments originated in 44 exporting countries and territories and were destined for 167 importing countries and territories. Overall, the level of trade in both ephedrine and pseudoephedrine was about 30 per cent lower than the average of the past three reporting years.

91. Table 3 below presents the 10 countries with the largest volume of imports of ephedrine and pseudoephedrine, ranked in terms of the volume notified through the PEN Online system, in the reporting period.

Table 3. The 10 countries with the largest imports of ephedrine and pseudoephedrine, by volume, 1 November 2020–1 November 2021

Ranking	*Ephedrine*	*Pseudoephedrine*
1	Nigeria	United States
2	Singapore	Egypt
3	Indonesia	Switzerland
4	Ghana	Belgium
5	Republic of Korea	Pakistan
6	United States	France
7	France	Indonesia
8	Uganda	Saudi Arabia
9	Canada	Singapore
10	Egypt	Japan

92. In 2020, China reported a stopped shipment of 8 tons of pseudoephedrine destined for Switzerland. Furthermore, the Board was made aware of a proposed shipment of 500 kg of ephedrine hydrochloride from India to Mozambique. The importer in this case was a first-time importer. During inquiries initiated by the Board, the Government of Mozambique informed the Board that the importing company had no authorization to import the ephedrine in question and that earlier, in 2019, the import certificate submitted by the company had been found to be fake. The proposed shipment was accordingly stopped.

93. In a similar incident, a quantity of 500 kg of ephedrine was intended to be exported from a known manufacturer and exporter in India to a first-time importer in Ghana, in August 2020. The shipment was objected to by Ghana and subsequent investigations in that country revealed that the import permit had been forged. The shipment was stopped by India. Further investigations are ongoing.

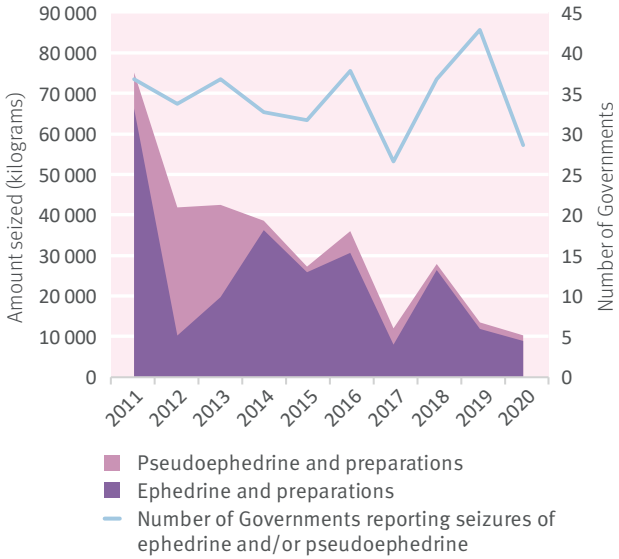
94. The incidents described above indicate that there continues to be a likelihood of diversion attempts from legitimate international trade in precursors. **The Board would like to remind Governments to continue to remain vigilant about such attempts. The Board also commends the efforts of the Governments of Ghana, India and Mozambique to conduct due diligence with**

regard to new importers of large quantities of ephedrine, thereby preventing possible trafficking attempts.

Trafficking

95. On form D for 2020, seizures of about 8.9 tons of ephedrine by 28 countries and about 1.4 tons of pseudoephedrine by 22 countries and territories were reported to INCB from all regions (see figure IV). China alone accounted for seizures of 7.3 tons of ephedrine, followed distantly by Myanmar (630 kg) and India (585 kg) in order of quantities seized. This follows seizures of 8.6 tons of ephedrine by China in 2019. The total of 10.3 tons of ephedrine and pseudoephedrine seized continued the declining trend of seizures of the substances observed in the past and falls significantly short of explaining the amount of methamphetamine seized in those regions where ephedrines-based manufacturing methods are known to prevail, as evidenced by forensic analysis. In the past decade, the number of countries reporting seizures of ephedrines has ranged from 26 in 2017 to 42 in 2019, with the total amount seized globally showing a fluctuating trend. Totalling 10.3 tons, seizures in 2020 were the lowest in the last 10 years. The marked decline in the amount of ephedrines seized coincides with the emergence of the use of alternative precursors for the manufacture of amphetamine and methamphetamine (see subsect. 1 *(d)* below).

Figure IV. Seizures of ephedrine and pseudoephedrine, as reported by Governments on form D, 2011–2020



Oceania

96. Australia and New Zealand are the only countries in the Oceania region that have reported seizures of ephedrines in the last 10 years. Of the total quantity of 21 tons seized in that period, Australia reported seizures of 16 tons, accounting for over 75 per cent of the total. In 2020, the largest amount of ephedrines seized was reported in Australia, totalling about 650 kg. However, this quantity represents one of the lowest reported by the country in the last 10 years, with the highest being over 6 tons in 2017. Thus, while the overall trend in quantities of ephedrines seized has been declining in Australia, for the first time in the last five years, the country reported seizures of 180 kg of ephedrine preparations and 475 kg of pseudoephedrine preparations. The ephedrine preparations were predominantly sourced from China and the pseudoephedrine preparations from India. The seizure by Australia of 475 kg of pseudoephedrine represents a major share of the global quantity of 1.4 tons seized in 2020, over half of which was sourced from India. In addition, in 2021, Australia communicated through PICS a seizure of 50 kg of pseudoephedrine, which was also sourced from India, indicating a trend of trafficking in pseudoephedrine from India to Australia, mostly on postal, courier and air freight routes.

97. On form D for 2020, New Zealand reported seizures of about 130 kg of ephedrine raw material, which was significantly less than the amount seized in 2019 (340 kg). The origin of the amounts seized was not known. Seizures of ephedrine have declined progressively in New Zealand for the last five years, to just over 10 per cent of the 1.2 tons seized in 2016. In September 2021, Belgium communicated through PICS an incident involving 3.5 kg of pseudoephedrine originating from the Democratic Republic of the Congo and destined for New Zealand in an air shipment concealed in spools of fishing line declared as accessories, indicating a possible new source of the substance for use in New Zealand.

East and South-East Asia

98. East and South-East Asia accounted for more than 80 per cent of global seizures of ephedrines in 2020. On form D for 2020, a total of 8.3 tons of ephedrine and pseudoephedrine were seized in the region, in China, including Hong Kong, and Myanmar; China alone accounted for 7.6 tons of the total and Myanmar for 632 kg. Of the approximately 100 tons of ephedrines seized globally in the last five years, China alone accounted for 47 tons. Nevertheless, the trend in China continued to decline after peaking at nearly 26 tons seized in 2016. Given that the illicit manufacture of methamphetamine in East and South-East Asia is believed to be predominantly ephedrines-based, the amount of ephedrines seized in the region does not completely correspond to the large quantity of methamphetamine seized, a trend previously reported by the Board. However, China also reported seizures of internationally non-scheduled chemicals in

sizeable quantities, which indicates the use of such chemicals in illicit ephedrine manufacture (see para. 136 below).

99. Myanmar reported two seizures of ephedrine totalling 630 kg on form D for 2020. In both cases, the country of origin was reported as China. This represents the largest quantity of ephedrine seized in Myanmar in the last 10 years. Malaysia, which had reported significant seizures of ephedrines over the last five years, did not report any such seizures in 2020. However, seizures from illicit laboratories of small quantities of red phosphorous and sodium hydroxide (caustic soda) were reported by Malaysia. The country has also, in the past, reported seizures of such internationally non-scheduled substances from illicit laboratories involved in the manufacture of methamphetamine.

100. After reporting seizures of large quantities of pseudoephedrine in 2017 (1.1 tons) and 2016 (3.8 tons), Thailand did not report any seizures of ephedrines or any other internationally scheduled or non-scheduled precursor chemicals in 2020. Nevertheless, Thailand is one of the three countries, along with the United States and Mexico, that together account for about half of the global quantities seized of the three main amphetamine-type stimulants.[16] It is evident that there is still insufficient information relating to trafficking in ephedrines originating from the East and South-East Asian region, one of the global hotspots for the illicit manufacture of amphetamine-type stimulants. **The Board urges the countries of the region to analyse the pattern of illicit manufacture of amphetamine-type stimulants in order to better understand and therefore better control any possible diversion of precursors and illicit drug manufacture.**

West Asia

101. In West Asia, the only seizures of ephedrines, albeit in minor quantities, were reported by Turkey and Kazakhstan. Turkey reported nine cases, totalling 7.3 kg of ephedrine, and Kazakhstan reported a single case involving 0.1 kg of the substance.

102. The only other countries in the region having reported any seizures of ephedrines in the last five years are Afghanistan and Pakistan. Afghanistan reported seizures of pseudoephedrine totalling 440 kg in 2019, having reported smaller quantities in previous years. The absence of seizures of ephedrine in Afghanistan in 2020 may indicate an increase in the use of the *Ephedra* plant, which grows wild in the country, for the illicit manufacture of methamphetamine. The Board has noted this development with concern since 2018. While no seizures of the *Ephedra* plant were reported by Afghanistan on form D for 2020, the continued seizures of methamphetamine sourced from Afghanistan suggests that the use of the *Ephedra* plant for illicit methamphetamine manufacture in that country could be of considerable scale. At the same time, forensic analysis of methamphetamine tablets seized, and presumed to have been manufactured, in Afghanistan, suggests that pharmaceutical preparations continued to be used as starting materials for illicit methamphetamine manufacture in that country.

South Asia

103. In 2020, India was once again the only country in the South Asian region to report seizures of ephedrines, continuing the trend from previous years. Seven cases involving a total of 585 kg of ephedrine and 13 cases involving a total of 255 kg of pseudoephedrine were reported. The origin of the substances in all of the cases was India itself. Apart from one seizure of over 480 kg of illicitly manufactured ephedrine from the premises of a factory in western India, most of the remaining seizures were effected when attempts were made to ship the substances on postal, courier or air cargo routes, using various concealment methods. Australia was reported as the destination in 11 cases and Malaysia and South Africa in one case each. Additional cases communicated through PICS confirm this trend of trafficking in ephedrine and pseudoephedrine from India to Australia. In one case, 25 kg of pseudoephedrine concealed in kitchen items were interdicted from an air freight shipment destined for Australia in February 2021. Furthermore, Australia communicated a seizure of 50 kg of pseudoephedrine transported by air from a source in India in June 2021. From media reports, the Board is aware of the dismantling in August 2021 of an illicit laboratory involved in the manufacture of ephedrine in Gujarat in western India.

104. The Board appreciates the efforts of the Governments of Australia and India to interdict consignments transported on the postal, courier and air cargo routes, which often involve novel concealment methods. At the same time, the **Board encourages the Government of India to investigate whether the seized substances have been illicitly manufactured or diverted from domestic distribution channels. In either case, closer monitoring of the domestic distribution channels for such chemicals and voluntary cooperation measures with the chemical industries concerned are likely to be effective in curbing such attempts at illicit manufacturing and trafficking.**

Africa

105. Only two countries in the African region, Botswana and Nigeria, reported seizures of ephedrine on form D for

[16] World Drug Report 2021, booklet 4, *Drug Market Trends: Cocaine, Amphetamine-type Stimulants* (United Nations publication, 2021).

2020. However, the Government of Burundi informed the Board separately of a seizure of 2 tons of ephedrine in its territory in 2021. In 2020, Botswana seized a small quantity of less than 50 grams of ephedrine that originated in South Africa. In the same year, Nigeria seized 19 kg of ephedrine in two cases. In one case, 16 kg of ephedrine concealed in a microphone was intercepted during an attempt to smuggle it to the Democratic Republic of the Congo by air. In the other case, 3 kg of the substance was discovered during routine checks of the cargo area of an airport, concealed in cans of tinned tomatoes destined for South Africa. The Democratic Republic of the Congo was also identified as the source country in a case involving a seizure of 3.5 kg of pseudoephedrine destined for New Zealand in September 2021 (see also para. 97).

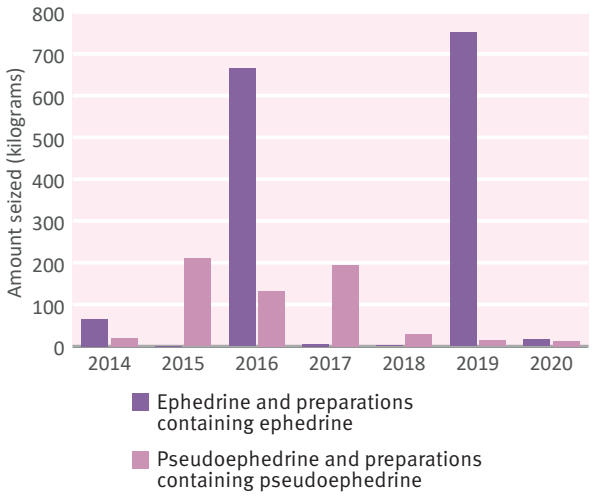
106. Together, these seizures represent the smallest amount of ephedrine seized in Africa in the last five years by a substantial degree, as the seizures in previous years involved quantities totalling hundreds of kilograms. However, large quantities of ephedrine and pseudoephedrine were imported into the region for licit purposes, with Nigeria reporting licit requirements of more than 10 tons of ephedrine and more than 23 tons of pseudoephedrine (see table 3 above). Imports of similar quantities were pre-notified to Nigeria through the PEN online system in 2020. In the past, the Board has reported the dismantling of illicit methamphetamine laboratories in Nigeria that had used ephedrines-based methods and had apparently been supplied by imported shipments that had been subsequently diverted. **The Board encourages the Governments in the region to review their legitimate requirements for precursors of amphetamine-type stimulants and to provide complete information to the Board in respect of seizures of substances in Table I and Table II of the 1988 Convention.**

Americas

107. The situation in North America is characterized by sporadic seizures of large quantities of ephedrines in certain years, interspersed with negligible seizures in others. After reaching a six-year high in 2019, the volume of ephedrines seized in North America returned to negligible levels in 2020 (see figure V). Of the countries in South America, only Argentina reported seizures of ephedrines on form D for 2020 (less than 1 kg). No seizures of ephedrines were reported by any country in Central America and the Caribbean.

108. Canada reported the seizure of only 14 kg of ephedrine in 2020, after reporting seizures of 750 kg of the substance and some 28,000 pseudoephedrine tablets in 2019. The Board is also aware of a further seizure of 100 kg of ephedrine tablets in May 2020 in Canada, the result of a year-long operation during which multiple drug seizures and arrests were made. All chemicals seized during the operation are believed to have been obtained through domestic diversion. The ephedrine had been extracted from domestically-sourced legitimate pharmaceutical preparations.

Figure V. Seizures of ephedrine and pseudoephedrine, as reported by Governments in North America, 2014–2020



109. In Mexico and the United States, the trend of negligible seizures of ephedrines observed in past years continued, reflecting that the illicit market in North America has been predominantly supplied by methamphetamine manufactured in large-scale laboratories using P-2-P-based methods.

110. However, United States authorities believe that individuals and organized groups have continued to engage, although to a lesser degree, in activities to obtain pseudoephedrine and ephedrine products for local manufacture in amounts that exceed the limits established under the country's Combat Methamphetamine Epidemic Act of 2005 (a daily sales limit of 3.6 grams and a cumulative purchase limit of 9 grams within a 30-day period) by visiting multiple retail establishments to buy the products, an activity referred to as "smurfing". In addition, traffickers have been relying on crude manufacturing methods such as the "one pot method", requiring smaller amounts of pseudoephedrine tablets, which, after being collected, are combined with other household products that are easily obtainable. According to the United States authorities, illicit methamphetamine laboratories that were supplied with ephedrine and pseudoephedrine, as well as essential chemicals, from legitimate domestic markets were implicated in nearly 75 per cent of the 656 total incidents involving illicit laboratories in that country.

Europe

111. A total of 14 European countries reported seizures of ephedrines in 2020, a sharp decline from the number that had reported such seizures in previous years (19 countries in 2019, 20 in 2018, 16 in 2017 and 21 in 2016). Poland accounted for the largest total quantity seized in Europe. Ukraine seized 76 kg of pseudoephedrine preparations, with Egypt, Israel, the Republic of Moldova and Ukraine itself being the most frequently identified sources of the preparations; one seizure of 22 kg of ephedrine preparations had been domestically sourced. Bulgaria, Czechia and Hungary each reported seizures of ephedrines in excess of 20 kg, after having reported no seizures of the substances in 2019. The remaining countries in Europe reported seizures of very small amounts.

112. The amount and type of ephedrines seized in Europe and the declining number of countries reporting seizures of these substances indicates a decisive trend in which their use is limited to small laboratories using only preparations of ephedrine and pseudoephedrine, as opposed to larger laboratories, which rely increasingly on MAPA or non-scheduled chemicals (see subsect. *(d)* below).

(b) Norephedrine and ephedra

Licit trade

113. Between 1 November 2020 and 1 November 2021, 15 exporting countries pre-notified, through the PEN Online system, 194 shipments of norephedrine to 37 importing countries, involving a total of more than 25 tons of raw material and more than 4 tons in the form of pharmaceutical preparations. Shipments amounting to 1 ton or more were pre-notified to the following importing countries, in descending order of the amounts shipped: United States, Denmark, Indonesia, Japan, Myanmar and Philippines. Overall, international trade in norephedrine, a substance that can be used in the illicit manufacture of amphetamine, remained at a low level compared with trade in other precursors of amphetamine-type stimulants.

Trafficking

114. Global seizures of norephedrine, as reported on form D for 2020, were limited to 4 kg and five countries, namely, Australia, Canada, Turkey, Ukraine and the United States, with the latter country alone accounting for 3.5 kg of the total quantity seized. Apart from seizures of nearly 250 kg of the substance in Australia and about 20 kg in the United Kingdom in 2017, total global seizures of norephedrine have amounted to less than 15 kg in the last five years.

115. China is the only country in the world to have reported seizures of the *Ephedra* plant on form D since 2011. The country reported seizures of the *Ephedra* plant in the amount of 100,765 kg in 2019 and 108,363 kg in 2020. Unfortunately, no further details of the seizures were provided on form D.

(c) P-2-P, phenylacetic acid, APAAN, APAA and MAPA

116. With the scheduling of MAPA, effective 3 November 2020, three alternative precursors of P-2-P and, subsequently, of amphetamine and methamphetamine, have been placed under international control since 2014. All three chemicals (APAAN, APAA and MAPA) are considered to be designer precursors that are traded in very limited quantities or not at all. By contrast, P-2-P and phenylacetic acid are traded legitimately, albeit to a different extent. Non-scheduled alternatives to P-2-P, pre-precursors and designer precursors that are used in the illicit manufacture of amphetamine and methamphetamine are discussed in subsection *(d)* below.

Licit trade

117. Between 1 November 2020 and 1 November 2021, proposed international trade in P-2-P and phenylacetic acid recorded in the PEN Online system was at a level similar to previous years. Sixteen proposed shipments of P-2-P, from three exporting countries to seven importing countries, and about 770 proposed shipments of phenylacetic acid, from 16 exporting countries to 51 importing countries and territories, were pre-notified through the PEN Online system.

118. By contrast, there have been only 7 pre-export notifications for APAAN since its international scheduling in 2014, no notifications for APAA since its scheduling in 2019 and one pre-export notification for MAPA since November 2020. All of the transactions notified through PEN Online involved small amounts for reference and laboratory purposes.

Trafficking

119. In 2020, seizures of **P-2-P** were reported by countries in all regions except Africa. The largest total amounts seized were reported by Mexico (more than 11,000 litres), followed by the Netherlands (more than 4,200 litres) and China (almost 2,800 litres). As in previous years, in most cases, the substance was seized from illicit laboratories or warehouses, indicating that it had been illicitly manufactured rather than having been diverted from a legitimate source. Seizures totalling more than 100 litres were also reported by Belgium, Jordan, Myanmar and Poland. **The Board would like to once more remind Governments of the importance of determining and reporting on whether P-2-P has been diverted from a legitimate**

source and if so, what that source was, or whether the P-2-P has been illicitly manufactured from other controlled precursors or from non-scheduled alternative precursors. Distinguishing the two scenarios – diversion from legitimate sources and illicit manufacture – will enable the authorities concerned, and the Board, to devise appropriate approaches to address the underlying weaknesses.

120. The largest amount of **phenylacetic acid** seized in 2020 was reported by Mexico. However, at about 570 kg, the total amount reported seized was just above 15 per cent of the amount reported in 2019. Seizures occurred in illicit laboratories where the substance was presumably manufactured illicitly from pre-precursors such as benzyl cyanide (see para. 131 below) and subsequently used for the illicit synthesis of P-2-P and methamphetamine. This matches the situation in previous years. Seizures reported by other countries were negligible.

121. On form D for 2020, only countries in Europe reported seizures of **APAA**. As in previous years, the largest amounts seized were reported by the Netherlands (totalling more than 1.2 tons) and Belgium (about 220 kg). However, the total quantity seized amounted to only about 30 per cent of the total in previous years, supporting the observation that seizures of designer precursors tend to decline rapidly after their international scheduling. Quantities of **APAAN** reported seized on form D for 2020 totalled less than 25 kg.

122. Nine countries reported seizures of **MAPA** on form D, totalling more than 32.5 tons. The largest amounts seized were reported by Belgium (10.8 tons), followed by Germany (7.6 tons), Hungary (7.3 tons) and the Netherlands (almost 5 tons). More than 875 kg of MAPA were reported seized by Australia, the first such seizures of the substance in Oceania and indeed outside Europe. China, including Hong Kong, was the reported country of origin, when the origin could be traced. However, India and the Netherlands were also identified as the countries of origin for some shipments of up to 45 kg. Taken together, the more complex routing of shipments of MAPA within Europe and the emergence of seizures of the substance in previously unaffected regions reflects an adaptation of illicit market dynamics in response to the international scheduling of the substance in 2020.

123. In 2021, through PICS, the Netherlands communicated incidents involving a total of almost 3,800 litres of P-2-P; most of the incidents occurred in illicit laboratories. In cases where such information was available, traces of MAPA or P-2-P methyl glycidic acid derivatives found in the laboratories suggested the illicit manufacture of P-2-P from those starting materials. By contrast, only one incident involving APAA (50 kg) was communicated through PICS and no additional incidents involving APAAN were communicated through the system in 2021.

124. Incidents involving MAPA totalled more than 11 tons in 2021, of which about 4.4 tons were seized in illicit laboratories and warehouses, 5 tons at airports and about 1.5 tons on an inland road or highway. All of the MAPA seized at borders had been misdeclared, most frequently as "microcrystalline cellulose". All of the incidents recorded in PICS were communicated by European countries; where such information was available, the country of origin was identified as China, including Hong Kong. A seizure at Istanbul Airport of a shipment of 4.3 tons of MAPA, which was to be smuggled by land to the Netherlands, is another indication that trafficking routes are becoming more complex as controls tighten. An illustration of incidents involving selected designer precursors of P-2-P communicated through PICS is provided in figure I above.

(d) Use of non-scheduled chemicals and other trends in the illicit manufacture of amphetamine and methamphetamine

125. The majority of the non-scheduled chemicals that have emerged in recent years in connection with the illicit manufacture of amphetamine and methamphetamine are closely related in chemical structure to chemicals in Tables I and II of the 1988 Convention and can be converted into the related controlled chemical by readily applicable means. Chemically, they include common derivatives, including reversibly formed derivatives and stable intermediates. Since these precursors are often purpose-made and designed to circumvent existing controls, they may also disappear quickly after being placed under control (see para. 30 above). In addition, countries continue to report a number of common chemicals that are available off the shelf and that have long been included in the limited international special surveillance list of non-scheduled substances and other regional or national watch lists as substitutes for controlled precursors (see paras. 129–137 below).

Derivatives of P-2-P methyl glycidic acid and *alpha*-phenylacetoacetic acid

126. On form D for 2020, seven countries reported seizures of non-scheduled designer precursors of amphetamine and methamphetamine; all of them were reported by countries in Europe. The largest amounts in 2020 involved **P-2-P methyl glycidic acid derivatives,** of which Belgium seized 695 litres and the Netherlands about 540 kg. Germany and the Netherlands also reported seizures of

EAPA, the ethyl ester analogue of MAPA. While not under international control, P-2-P methyl glycidic acid was placed under regional control in the European Union in November 2020.

127. In the first 10 months of 2021, seven incidents involving P-2-P methyl glycidic acid derivatives were communicated through PICS, amounting to almost 195 kg. All of the incidents were communicated by the Netherlands; none of them involved a border seizure.

128. In addition, laboratory impurity analysis provided further forensic evidence of the use of P-2-P methyl glycidate as an alternative precursor for the illicit manufacture of amphetamine for "captagon" tablets seized in Lebanon. Both APAAN and P-2-P methyl glycidate have thus now been found to be associated with "captagon" seized in Jordan, Lebanon and the United Arab Emirates. **The Board encourages the countries with the capacity to conduct forensic profiling analyses to invest in such in-depth analyses, with a view to identifying the precursors used in illicit drug manufacture.**

Benzaldehyde, nitroethane and 1-phenyl-2-nitropropene

129. **Benzaldehyde** and **nitroethane** are indicative of the so-called nitrostyrene method for the manufacture of P-2-P and, subsequently, methamphetamine or amphetamine. On form D for 2020, seizures of one or both of these chemicals were reported by seven countries. After two years without any such seizures, significant amounts of benzaldehyde, totalling 1,150 litres, were reported seized in Mexico. This was the largest amount of the substance seized in 2020 worldwide. The second largest amount of benzaldehyde seized (about 385 kg) was reported by Estonia, followed by Argentina (100 litres); a number of countries in Europe reported amounts indicative of small-scale user-based manufacture.

130. **1-Phenyl-2-nitropropene** is the chemical intermediate derived from the reaction between benzaldehyde and nitroethane and may also be encountered as a starting material in illicit laboratories. On form D for 2020, seizures of small quantities of the substance were reported by a few countries in Europe.

Benzyl chloride, sodium cyanide and benzyl cyanide

131. On form D for 2020, five countries reported seizures of benzyl chloride, sodium cyanide and/or benzyl cyanide. **Benzyl cyanide** is the chemical intermediate derived from the reaction between **benzyl chloride** and **sodium cyanide** and may also be encountered as a starting material in illicit laboratories. The reaction may then proceed by way of APAAN or phenylacetic acid to P-2-P and, subsequently, methamphetamine or amphetamine.

132. In 2020, Mexico was the only country to report notable seizures of benzyl chloride (almost 10,800 litres). In addition, more than 3,300 litres of benzyl cyanide were reported seized in that country. Seizures of benzyl cyanide were also reported by Jordan and the Netherlands (more than 200 litres each). Seizures of P-2-P, phenylacetic acid and/or APAAN in these countries are indicative of their illicit manufacture rather than their diversion from legitimate sources. This likely applies to seizures of more than 11,000 litres of P-2-P in Mexico, more than 4,200 litres in the Netherlands and 120 litres in Jordan in 2020 (see also para. 119 above).

133. **Sodium cyanide** is the chemical that is reacted with benzyl chloride to produce benzyl cyanide, which can be further converted into P-2-P by way of APAAN or phenylacetic acid. On form D for 2020, record seizures of sodium cyanide, amounting to almost 108 tons, were reported by Myanmar, compared with the 4.6 tons reported seized by the country in 2019. Mexico reported seizures totalling slightly more than 5 tons in 2020.

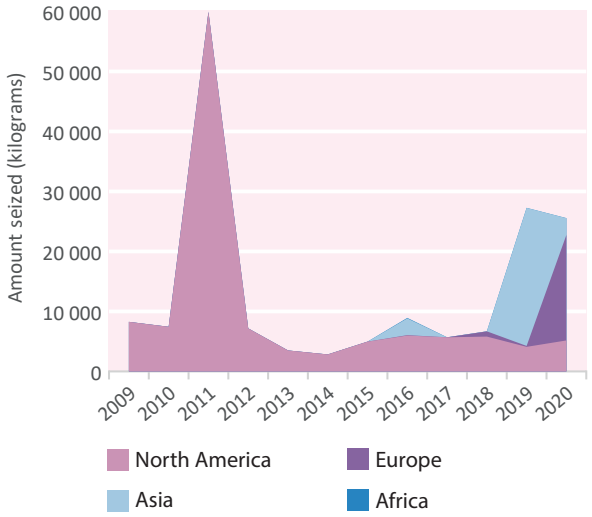
Other chemicals not under international control that were seized in relation to the clandestine manufacture of amphetamine or methamphetamine[17]

134. Seizures of **tartaric acid**, a separation agent that is used to increase the potency of methamphetamine manufactured using P-2-P-based methods, have been reported by Mexico regularly since 2009, coinciding with that country's ban on imports of ephedrine and the subsequent shift to the use of P-2-P-based methods in the illicit manufacture of methamphetamine in the country. As a result of the increase in illicit methamphetamine manufacture in Europe and a partial shift to P-2-P-based methods in East and South-East Asia, notable seizures of tartaric acid started being reported by countries in those regions as well (see figure VI). Small amounts of tartaric acid were also reported by Nigeria in 2016, in connection with the first industrial-scale illicit methamphetamine laboratory in that country.[18]

[17] See also paras. 145–146 on methylamine below.

[18] INCB report on precursors for 2016 (E/INCB/2016/4), para. 101.

Figure VI. Seizures of tartaric acid, as reported by Governments in selected regions on form D, 2009–2020



135. In its report for 2020, INCB noted the use in illicit laboratories in the Netherlands of a modified and significantly more efficient method for manufacturing methamphetamine, which involves, in addition to tartaric acid, two chemicals, known as **AIBN** (azobisisobutyronitrile) and **methyl thioglycolate**. Both chemicals are used along with other chemicals usually associated with P-2-P-based manufacturing methods. Their use in such methods increases the output of more potent methamphetamine.[19] On form D for 2020, the Netherlands reported seizures of more than 325 kg of AIBN and 525 kg of methyl thioglycolate.

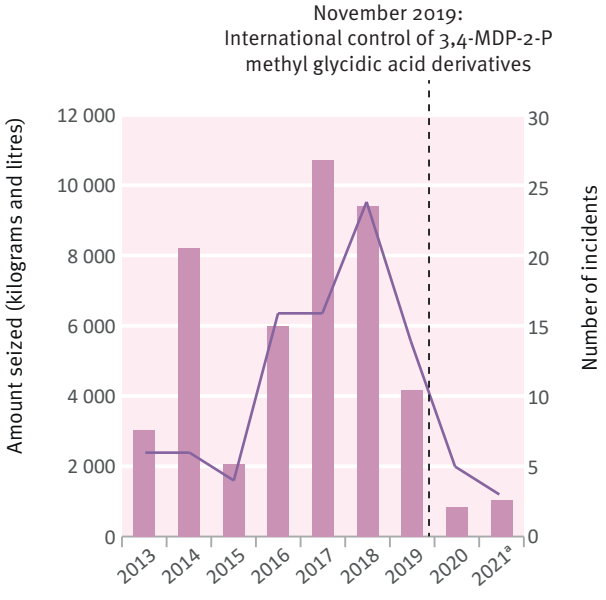
136. Notwithstanding signs of a partial shift to P-2-P-based methods in East and South-East Asia, ephedrines-based methods continue to be the predominant methods of illicit methamphetamine manufacture in that region. However, there has also been diversification towards the use of alternative precursors in the region, including for the illicit manufacture of ephedrine. On form D for 2020, China reported the seizure of significant amounts of chemicals indicative of such illicit manufacture of ephedrine or pseudoephedrine. Among the chemicals reported were almost 110 tons of **propiophenone**, 1.4 tons of **bromine** and 6.4 tons of **2-bromopropiophenone**. In addition, China seized more than 700 kg of **chloroephedrine**, an intermediate product in the manufacture of methamphetamine from ephedrine or pseudoephedrine using the so-called Emde method, which has been the predominant method for the illicit manufacture of methamphetamine in East and South-East Asia.

137. By contrast, the so-called Nagai method is the predominant ephedrines-based method for the illicit manufacture of methamphetamine in other parts of the world, including Europe, Oceania and West Asia. Chemicals associated with this manufacturing method include **iodine, hydriodic acid, red phosphorous, hypophosphorous acid** and **phosphorous acid**. On form D for 2020, Canada, Indonesia, Malaysia, New Zealand and the United States, as well as a number of countries in Europe, reported seizures of one or more of these chemicals, usually indicative of smaller-scale manufacturing operations.

2. Substances used in the illicit manufacture of MDMA and its analogues

138. As regards the extent of the use of the various precursors of MDMA for illicit purposes, there continues to be little evidence of 3,4-MDP-2-P, piperonal, safrole or isosafrole being used as starting materials in illicit manufacture. While seizures of the recently scheduled substances 3,4-MDP-2-P methyl glycidate and 3,4-MDP-2-P methyl glycidic acid appear to have levelled off (see figure VII), the range of non-scheduled alternatives has further evolved. In terms of licit trade, piperonal remains the most widely traded precursor among the six precursors of MDMA under international control.

Figure VII. Incidents involving 3,4-MDP-2-P methyl glycidic acid derivatives communicated through PICS, 2013–2021



[a] Data only cover the first 10 months of 2021.

[19] INCB report on precursors for 2020 (E/INCB/2020/4), figure IX.

(a) 3,4-MDP-2-P, 3,4-MDP-2-P methyl glycidate, 3,4-MDP-2-P methyl glycidic acid and piperonal

Licit trade

139. Between 1 November 2020 and 1 November 2021, 17 exporting countries and territories notified the authorities of 51 importing countries and territories of approximately 860 proposed exports of piperonal. The number of both exporting countries and importing countries in that period remained about the same as in previous years. There was only one proposed shipment of 3,4-MDP-2-P, involving a very small quantity. No trade in the two designer precursors of MDMA – 3,4-MDP-2-P methyl glycidate and 3,4-MDP-2-P methyl glycidic acid – was reported.

Trafficking

140. On form D for 2020, the Governments of 15 countries and territories reported seizures of 3,4-MDP-2-P, 3,4-MDP-2-P methyl glycidate, 3,4-MDP-2-P methyl glycidic acid and/or piperonal. The only countries that reported notable seizures of **3,4-MDP-2-P** were Belgium (310 litres) and the Netherlands (about 330 litres). As in the past, it is assumed that the amounts seized had typically been manufactured illicitly. Similar to previous years, the largest seizures of **3,4-MDP-2-P methyl glycidic acid derivatives** were reported by the Netherlands, totalling more than 950 kg of 3,4-MDP-2-P methyl glycidic acid and almost 480 litres of 3,4-MDP-2-P methyl glycidate. For the first time, Hong Kong, China, reported a seizure of 3,4-MDP-2-P methyl glycidate, in the amount of 40 kg, en route from China to Australia. Another 5 kg of the substance were seized in Australia, and about 7 kg were seized in Ukraine. With the exception of Africa, seizures of derivatives of 3,4-MDP-2-P methyl glycidic acid have now been reported in all regions. However, the amounts seized have fluctuated considerably from year to year, often reflecting a limited number of significant seizures. As in previous years, seizures of **piperonal** in 2020 remained negligible.

141. Incidents involving the above-mentioned chemicals, with the exception of piperonal, continued to be reported in 2021. Through PICS, INCB is aware of seizures totalling more than 1 ton of 3,4-MDP-2-P methyl glycidic acid derivatives in the first 10 months of 2021. In addition, incidents involving the use of almost 900 litres of 3,4-MDP-2-P in illicit laboratories were communicated through PICS. All of those incidents occurred in the Netherlands.

(b) Safrole, safrole-rich oils and isosafrole

Licit trade

142. Between 1 November 2020 and 1 November 2021, five exporting countries sent 31 pre-export notifications regarding safrole to the authorities of 12 importing countries and territories through the PEN Online system. The notifications concerned a total volume of approximately 1,000 litres, which was about one third less than the previous year. There were only a few pre-export notifications for safrole-rich oils, involving negligible amounts, and none for isosafrole, during that period.

Trafficking

143. On form D for 2020, as in previous years, very few Governments reported seizures of safrole and safrole-rich oils. The largest amount was reported by Afghanistan (400 litres, in six incidents). However, no further details were provided, and despite analogies with illicit methamphetamine manufacture in terms of manufacturing methods, the use of safrole for the illicit manufacture of MDMA in Afghanistan remains speculative. The second largest total quantity of safrole seized in 2020 – amounting to only about 14 litres – was reported by the Netherlands. Turkey reported seizures of isosafrole in negligible amounts, the first reported seizures of the substance worldwide since 2016.

(c) Use of non-scheduled substances and other trends in the illicit manufacture of MDMA and its analogues

144. While the effects of the international scheduling of 3,4-MDP-2-P methyl glycidate and 3,4-MDP-2-P methyl glycidic acid in November 2019 have yet to be fully evident in seizure statistics, traffickers appear to have started to show an interest in an alternative precursor, **MAMDPA**, the "ecstasy"-type analogue of MAPA, of which nearly 340 kg were seized in the Netherlands, having allegedly originated in Hong Kong, China. The emergence of MAMDPA provides further evidence supporting the Board's call to address groups of substances that are closely related chemically.

3. Other trends in the illicit manufacture of amphetamine-type stimulants

Methylamine

145. Methylamine is a versatile chemical that is required in the illicit manufacture of a number of amphetamine-type stimulants (e.g., methamphetamine and MDMA) and

new psychoactive substances, namely, synthetic cathinones, as well as ephedrine.

146. On form D for 2020, the largest quantity of methylamine seized was reported by Mexico (more than 11,000 litres of methylamine and almost 70,000 kg of methylamine hydrochloride), followed by the Netherlands (more than 17,000 litres) and Belgium (more than 4.1 tons). During the first 10 months of 2021, seizures totalling more than 11,500 litres were communicated through PICS. All of the seizures occurred in the Netherlands. Seized in illicit laboratories, the substance was often found in an alcoholic mixture. In addition, in 2021, Austria dismantled an illicit laboratory and seized 125 kg of methylamine.

Hydrogen gas

147. Hydrogen gas can be used as a reducing agent in the illicit manufacture of several synthetic drugs. On form D for 2020, Germany reported 14 thefts of hydrogen gas, totalling more than 15,500 litres. These occurrences confirm a trend that started in 2015, with amounts fluctuating from year to year and several companies having been targeted repeatedly despite the tightening of their security measures. Authorities in Germany estimated that the amount stolen in 2020 could potentially have been used in the illicit manufacture of more than 23 tons of MDMA. Many of the stolen gas cylinders were subsequently found, mainly in the Netherlands, but also in Belgium. In 2020, the two countries reported seizures of almost 5,500 litres and 70 litres of hydrogen gas, respectively. Thefts (in Germany) and seizures (in the Netherlands) of hydrogen gas also continued to be communicated through PICS in 2021. Amounts reported in the first 10 months of 2021 exceeded the amounts reported on form D for 2020.

Other chemicals not under international control

148. As in previous years, chemicals frequently mentioned on form D for 2020 included chemicals associated with the so-called Leuckart method of illicit manufacture, which can be used to manufacture amphetamine and methamphetamine from P-2-P, or to manufacture MDMA and related substances from 3,4-MDP-2-P. As in previous years, significant amounts of such chemicals were seized in illicit laboratories and warehouses in Europe, notably in the Netherlands (almost 29,000 litres of **formamide** and 19,000 litres of **formic acid**), Belgium (8,300 litres of formamide and 8,000 litres of formic acid), and Germany (more than 1,650 litres of formamide and almost 1,000 litres of formic acid). In addition, Afghanistan reported two seizures of formic acid totalling more than 5,800 litres, an indication of a possible evolution of the illicit manufacture of methamphetamine in that country. The substance allegedly originated in the Islamic Republic of Iran.

B. Substances used in the illicit manufacture of cocaine

1. Potassium permanganate

149. Potassium permanganate is the principal oxidizing agent used in the illicit manufacture of cocaine, and most of the cocaine that is seized continues to be highly oxidized.[20]

Licit trade

150. Between 1 November 2020 and 1 November 2021, the authorities of 33 exporting countries and territories sent approximately 1,900 pre-export notifications to 119 importing countries and territories relating to a total of more than 36,000 tons of potassium permanganate. The main exporter was China, accounting for 69 per cent of the total amount of pre-notified exports, followed by India and the United States, accounting for more than 18 per cent and 9 per cent, respectively.

151. Imports of the substance by the three coca-producing countries in South America – Bolivia (Plurinational State of), Colombia and Peru – continued to account for a very limited proportion (less than 1 per cent only) of the total global amount imported. Imports of the substance by other countries in South America amounted to 5 per cent (1,907 tons), representing another year-on-year increase in such imports. None of those countries exported or re-exported potassium permanganate in any significant amounts.

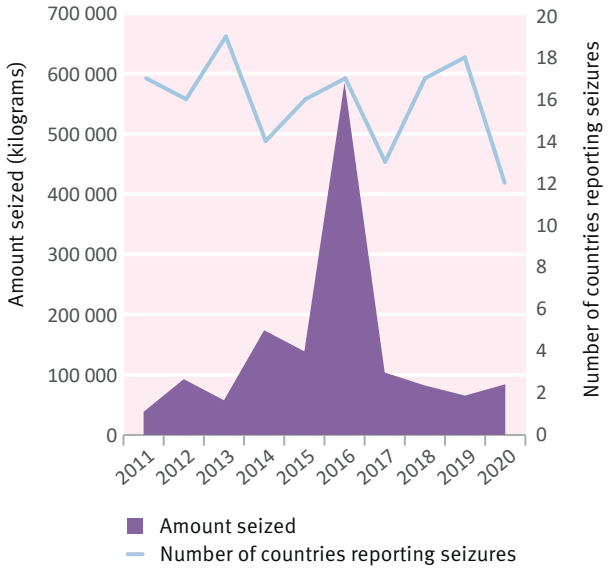
152. On form D for 2020, China reported having stopped 25 exports involving a total of more than 1,685 tons of potassium permanganate destined for 15 countries. India stopped the export of 5.1 tons of the substance to two destination countries. The shipments were stopped because the importing authorities objected through PEN Online. Most of the objections were for administrative reasons such as the absence or late submission of a valid import authorization.

Trafficking

153. For many years, global seizures of potassium permanganate have fluctuated around 95 tons (with an outlier in 2016) (see figure VIII) and have predominantly been reported by countries in South America and by China.

[20] According to results from the Cocaine Signature Program of the United States Drug Enforcement Administration Special Testing and Research Laboratory, only about 1 per cent of the cocaine samples examined, from seizures in 2020 in the United States, were moderately or not oxidized.

Figure VIII. Seizures of potassium permanganate, as reported by Governments on form D, 2011–2020



154. Among the countries in South America that have reported seizures of potassium permanganate, Colombia has accounted for the bulk of the quantities seized each year. In 2020, Colombia reported seizures totalling almost 65 tons. However, seizures of precursors of potassium permanganate in that country point to domestic illicit manufacture as a notable source of the seized potassium permanganate.

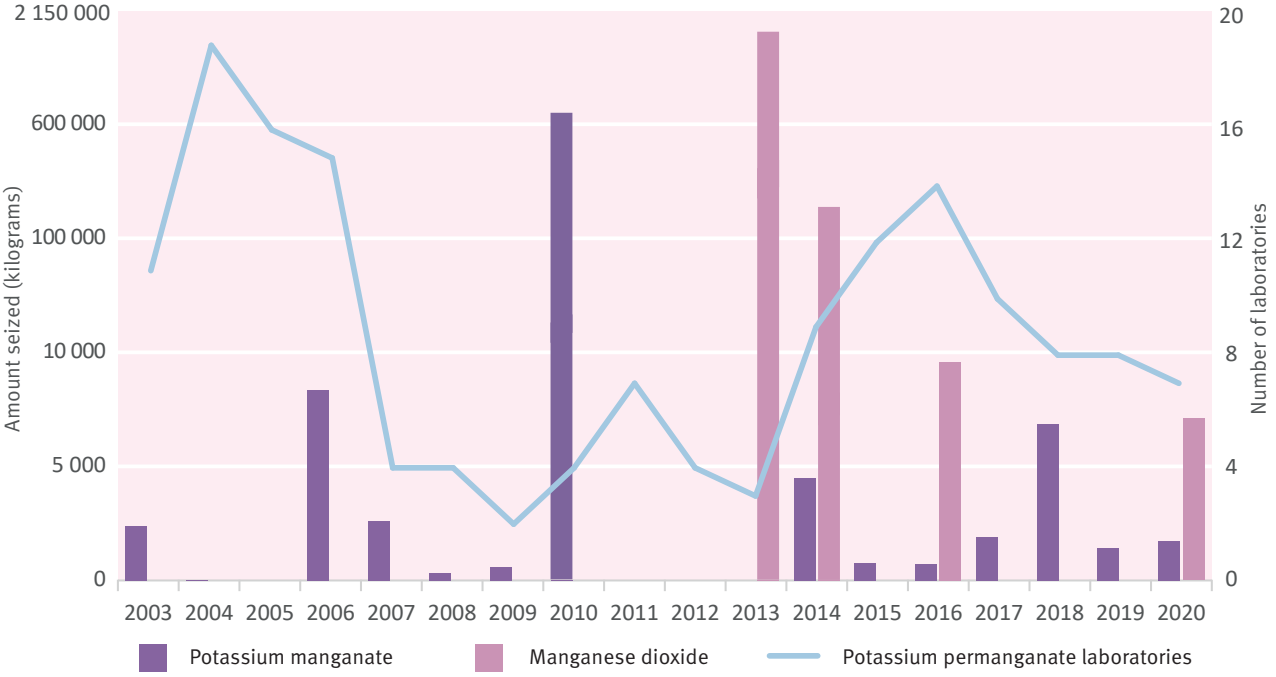
155. Seizures of potassium permanganate reported on form D for 2020 by Chile, Venezuela (Bolivarian Republic of) and Bolivia (Plurinational State of) (in descending order of amounts seized) were the largest after those reported by Colombia and together amounted to about 25 per cent of the total amount seized in Colombia.

2. Use of non-scheduled substances and other trends in the illicit manufacture of cocaine

156. Over the years, a variety of chemicals have been encountered in clandestine cocaine laboratories. These have included: *(a)* precursors of and substitutes for potassium permanganate; *(b)* chemicals that help to improve the efficiency of the manufacturing process, such as sodium metabisulfite and calcium chloride; *(c)* a variety of common acids, bases and solvents used in the extraction of cocaine base from coca leaves and for the conversion of cocaine base into hydrochloride; and *(d)* chemicals used to illicitly manufacture controlled precursors used in cocaine processing. Most of these chemicals are sourced domestically.

157. Seizures of **manganese dioxide** (pyrolusite) and **potassium manganate**, two pre-precursors of potassium permanganate, have been reported regularly by Colombia. On form D for 2020, Colombia reported seizures totalling 7.1 tons of manganese dioxide (three incidents) and 1.7 tons of potassium manganate (five incidents); the latter

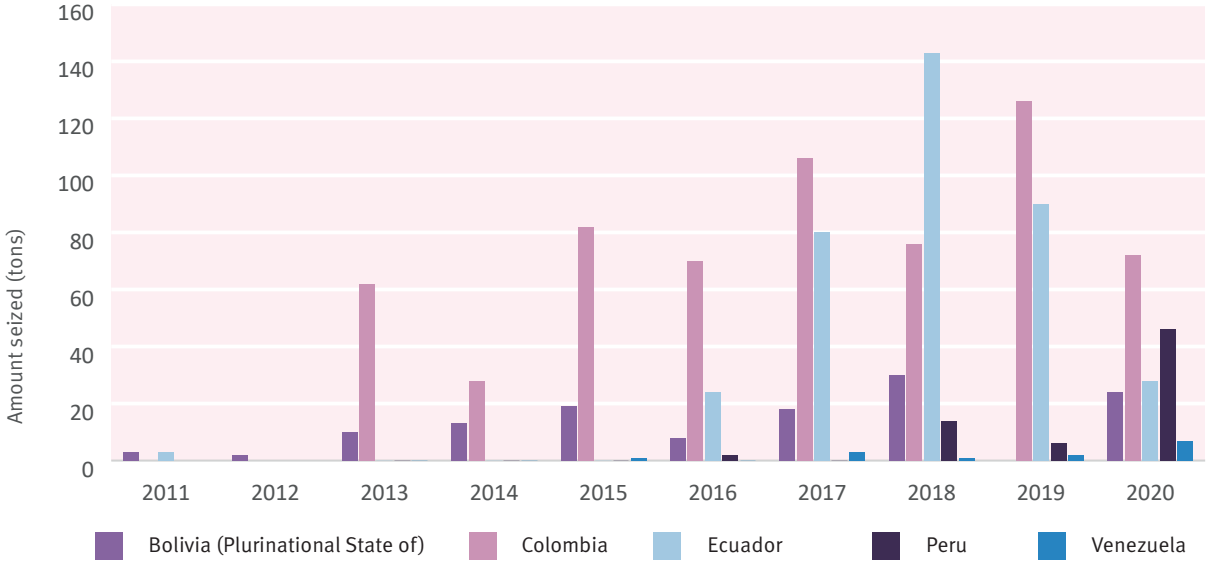
Figure IX. Seizures of potassium manganate and manganese dioxide reported by Colombia on form D, and potassium permanganate laboratories dismantled in Colombia, 2003–2020[a]



Source: INCB and the Colombian Drug Observatory

[a] To aid in visually representing the large amounts of chemicals seized in 2010, 2013 and 2014, the left vertical axis has been presented in non-linear increments.

Figure X. Seizures of calcium chloride, as reported by Governments in South America on form D, 2011–2020



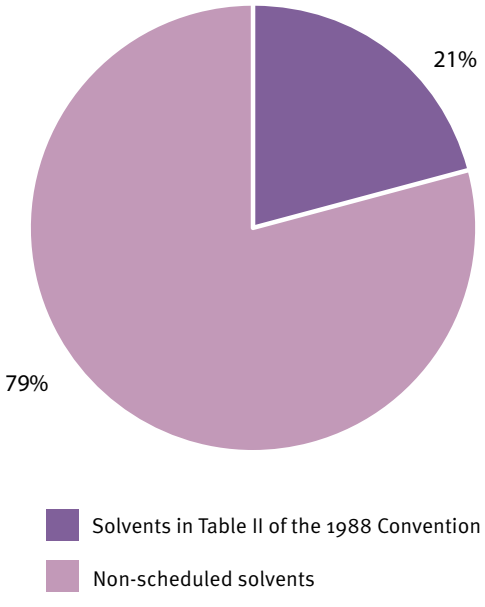
may have been manufactured illicitly, as it is an intermediate in the manufacture of potassium permanganate from manganese dioxide. Seizures of potassium (and sodium) manganate were also reported by the Netherlands in 2018 and 2019, however in substantially smaller quantities. Colombia has also regularly reported the dismantling of laboratories engaged in the illicit manufacture of potassium permanganate. In the first 10 months of 2021, six such laboratories were destroyed.[21]

158. Several countries, in particular in South America, regularly report on form D notable seizures of **sodium hypochlorite**, locally known as "*lejía*" ("bleach"), a possible complement used in the manufacture of potassium permanganate. During the period 2011–2020, the Plurinational State of Bolivia and Peru accounted for, respectively, 55 per cent and 41 per cent of the total amount of sodium hypochlorite reported seized. In 2020, Argentina reported the largest quantities of the substance seized.

159. Analysis of quantities of **sodium metabisulfite** reported seized on form D for 2020 confirmed the practice of standardizing the oxidation level of cocaine base sourced from multiple extraction laboratories prior to further processing. As in previous years, the largest amounts seized were reported by Bolivia (Plurinational State of), Colombia, Peru and Venezuela (Bolivarian Republic of). Similarly, as in previous years, seizures of small amounts of sodium metabisulfite were also reported by countries situated along cocaine trafficking routes, such as Ecuador, and by destination countries, such as the Netherlands, where cocaine was recovered from the materials into which it had been incorporated for the purpose of smuggling.

160. Since 2018, INCB has reported on increasing seizures of **calcium chloride**, a drying agent for solvents, in countries in South America.[22] The Board has also pointed to the difficulties associated with backtracking investigations conducted between alleged source, transit and destination countries. In 2020, following the placement of calcium

Figure XI. Proportion of seizures of solvents used for illicit cocaine processing, as reported by Governments in South America, 2016–2020



[21] Colombian Drug Observatory (www.odc.gov.co/sidco/oferta/infraestructura-sustancias-quimicas).

[22] INCB report on precursors for 2018 (E/INCB/4/2018), para. 170.

chloride under control in Peru in January of that year, seizures of calcium chloride in that country increased to almost 46 tons, a level second only to that reported by Colombia (more than 71 tons). Seizures in Ecuador decreased for the second consecutive year, to about 28 tons (see figure X). In addition, the topic of the seizures in Ecuador was featured in investigative media reports in 2020 and 2021, in which it was suggested that one of the companies concerned had stopped selling calcium chloride in South America.

161. A variety of common **solvents** are used in the extraction of cocaine base from coca leaves and for the conversion of cocaine base into hydrochloride salt. Most of the solvents can be replaced by others with similar properties, and the preference for a particular solvent is often a result of its accessibility and the illicit operators' experience with it.

162. With regard to seizures of solvents required for the final conversion of cocaine base into cocaine hydrochloride, the overall situation in 2020 was similar to previous years. Significant seizures of solvents, whether under international control or not, continued to be reported by countries in South America, totalling more than 81 per cent of the volume of solvents reported seized worldwide. Within that region, in the period 2016–2020, about 21 per cent of the total volume of solvents seized consisted of acetone and methyl ethyl ketone, two solvents in Table II of the 1988 Convention, while 79 per cent consisted of solvents that are not under international control (see figure XI) but that are under national control in several countries in the region, namely, acetate solvents and methyl isobutyl ketone.

163. Cocaine-related incidents, typically involving so-called secondary extraction, or "washing", laboratories, also continued to be reported in Europe. In the period 2020–2021, the Board became aware of 11 such incidents in the Netherlands. The chemicals seized included acids and solvents listed in Table II of the 1988 Convention, non-scheduled substitutes, such as acetate solvents, and bases. Several thousand litres of solvents were seized, reflecting the methods used by these laboratories, in which cocaine is recovered after being mixed with, or incorporated into, other substances for the purpose of smuggling. Most of the chemicals were sourced from within the European common market. Seizures also included cutting agents used for bulking the resulting cocaine hydrochloride. Cocaine extraction laboratories have also been encountered in Spain.

C. Substances used in the illicit manufacture of heroin

1. Acetic anhydride

164. Acetic anhydride – used primarily in the manufacture of heroin but also in the illicit manufacture of P-2-P and, subsequently, amphetamine and methamphetamine, as well as in the illicit manufacture of *N*-acetylanthranilic acid, a precursor for methaqualone – is one of the most frequently traded substances in Table I of the 1988 Convention. The extent of diversion of acetic anhydride from international trade channels remains limited, but diversion of the substance from domestic trade and distribution channels is gaining importance. A significant portion of recent global acetic anhydride seizures, including in Afghanistan and its neighbouring countries, continued to originate in China and the European Union (see also para. 19 above).

Licit trade

165. From 1 November 2020 to 1 November 2021, 1,974 shipments of acetic anhydride destined for 84 importing countries were pre-notified by 22 exporting countries. About 65 per cent of the total amount of acetic anhydride pre-notified during the reporting period was destined for a limited number of companies in Belgium[23] and was believed to have been imported for further distribution within the European Union.

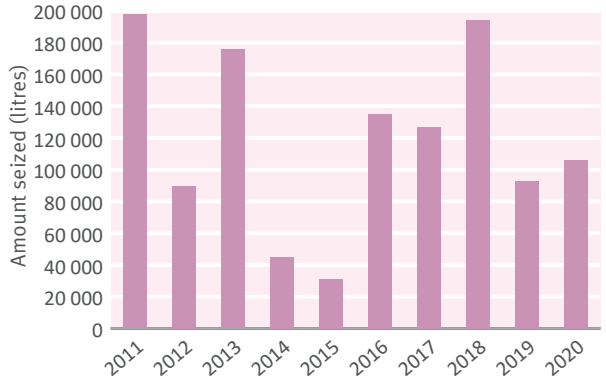
166. About 4 per cent of the shipments of acetic anhydride pre-notified worldwide during the reporting period were objected to by the importing countries concerned. In particular, authorities in the United States objected to 50 per cent of the shipments of acetic anhydride pre-notified by authorities in Mexico, for administrative reasons. In the past four reporting periods, authorities in the United States objected to an average of 80 per cent of the shipments of acetic anhydride pre-notified by authorities in Mexico. **The Board encourages the Governments of Mexico and the United States and other Governments with high rates of objections to analyse and address the root causes, and to take mutually acceptable remedial measures, as deemed appropriate, to increase the efficiency of administrative control over the trade in acetic anhydride, without compromising the capacity of the countries concerned to identify and address actual diversions of the substance from either domestic or international trade.**

[23] The imports of acetic anhydride into Belgium also included pre-notified shipments of the substance originating in the United Kingdom. Such shipments were not pre-notified at the time when the United Kingdom was a State member of the European Union.

Trafficking

167. In the period 2011–2020, seizures of acetic anhydride reported by Governments on form D totalled between 31,000 litres and 198,000 litres per year and totalled 1,195,000 litres for the period overall (see figure XII). China (354,000 litres), Afghanistan (182,000 litres), Mexico (148,000 litres), the Islamic Republic of Iran (113,000 litres), Pakistan (107,000 litres) and Turkey (100,000 litres) were the countries that reported seizures of 100,000 litres or more of the substance during that period. According to information communicated through PICS, countries in West and Central Europe (27 incidents) and China (11 incidents), as well as Taiwan Province of China (4 incidents) and the United Arab Emirates (4 incidents), were among the most frequently identified countries of origin or departure for the acetic anhydride seized worldwide in the past two decades.

Figure XII. Seizures of acetic anhydride, as reported by Governments on form D, 2011–2020



168. On form D for 2020, 17 countries and territories reported seizures of acetic anhydride. The largest volume was reported by China (48,900 litres), followed by the Islamic Republic of Iran (15,000 litres), the United Arab Emirates (13,300 litres), Myanmar (12,200 litres) and Turkey (12,100 litres).

169. The total amount (106,000 litres) of acetic anhydride reported seized worldwide in 2020 did not indicate any major impact on the availability of the substance for illicit purposes as a consequence of restrictions on the movement of people and goods resulting from the COVID-19 pandemic. In the first 10 months of 2021, only eight seizures of acetic anhydride, amounting to 24,900 litres, were communicated through PICS. From other sources of information, the Board is aware of purported additional seizures of the substance in 2021, which had not been communicated through PICS at the time of writing.

170. In 2020, seizures of acetic anhydride in Afghanistan amounted to only 656 litres, 130 litres less than in 2019, and represented the smallest amount of the substance seized in the country since the Government of Afghanistan started reporting seizures of precursors on form D in 2008. In the first 10 months of 2021, Afghanistan only communicated one seizure of the substance through PICS, involving 18 litres. The small amount of acetic anhydride seized in Afghanistan in 2020 does not, however, indicate a diminished need for the substance for the illicit manufacture of heroin, as corroborated by seizures of large amounts of acetic anhydride elsewhere, including in West Asia, believed to be destined for Afghanistan. The small volume of acetic anhydride seized may, however, in part be attributed to an increase in the trafficking of acetyl chloride, an alternative acetylating agent that could replace a portion of the acetic anhydride used in illicit heroin laboratories (see paras. 182–184 below).

171. With regard to Central Asian countries bordering Afghanistan, the situation regarding acetic anhydride trafficking has not significantly changed in the past two decades. Since 2000, Tajikistan and Uzbekistan are the only countries to have reported seizures of the substance on form D, having reported a combined total of 335 litres in the period 2017–2019. There were no reported seizures of the substance in Tajikistan, Turkmenistan or Uzbekistan in 2020.

172. Pakistan did not submit form D for 2020. However, three seizures of acetic anhydride totalling 5,130 litres were communicated through PICS. The largest of these seizures took place in the seaport of Karachi, Pakistan in June 2020 and involved 2,972 litres of the substance, allegedly originating in China. No seizures of acetic anhydride were communicated by Pakistan in the first 10 months of 2021. From a media report,[24] INCB is aware that in 2021 authorities in Pakistan arrested an individual who had been involved in the trafficking of large amounts of acetic anhydride to Pakistan through the United Republic of Tanzania in 2016. Further details of the case, the investigation of which was supported by several countries and the Board, are contained in the Board's reports for previous years.[25] Confirmation of the arrest and the suspected links to the trafficking incident in 2016 is awaited.

[24] Faraz Khan, "CTD arrests two TTP suspects for 'terror-financing'", *The News* (e-paper), 28 September 2021.

[25] INCB report on precursors for 2016 (E/INCB/2016/4), paras.141–142; INCB report on precursors for 2018 (E/INCB/2018/4), para. 58.

173. In April 2020, the Islamic Republic of Iran seized a shipment of 13,900 litres (15,000 kg) of acetic anhydride, misdeclared as paint in the seaport of Bandar Abbas, Islamic Republic of Iran. The shipment was destined for Afghanistan and had reportedly been shipped from the United Arab Emirates.

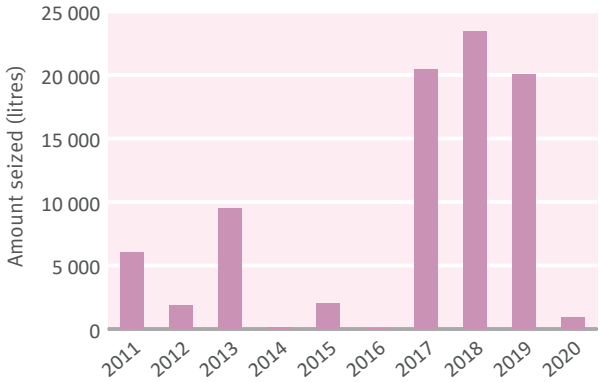
174. In June 2020, authorities of the United Arab Emirates seized a shipment of 13,300 litres of acetic anhydride in the port of Jebel Ali in Dubai. The consignment was smuggled in a sea container that had originated in Taiwan Province of China and had transited through the port of Bandar Abbas in the Islamic Republic of Iran. It was concealed in jerry cans and packed in cardboard boxes labelled as a motor oil. The labels were similar to others that had previously been found elsewhere in West Asia in connection with other seizures of acetic anhydride purportedly originating in Taiwan Province of China. Although the United Arab Emirates has frequently been used as a transit country for the trafficking of acetic anhydride, this was only the second seizure of the substance to be reported by the country since 2000.

175. Seizures of acetic anhydride in China reported on form D for the years 2011 to 2020 cumulatively accounted for 30 per cent of global seizures of the substance in that period. In 2020, China reported seizures amounting to 48,900 litres. However, no further information was provided.

176. From the mid-1990s until the early 2000s, seizures of acetic anhydride in Myanmar, one of the countries of the so-called Golden Triangle region of South-East Asia, amounted to, on average, about 8,000 litres annually. In the beginning of the 2010s, seizures of the substance in the country almost stopped, or were not reported, before resuming at the end of that decade. In 2019, seizures of the substance amounted to 4,100 litres. In 2020, three seizures of the substance in Shan State, Myanmar, amounted to a total of 12,200 litres, the second largest amount of the substance reported seized in Myanmar since 1999. The Board is also aware of a purported seizure of about 7,000 litres (7.5 tons) of acetic anhydride in Lang Son Province in Viet Nam in November 2020. The seizure was a result of cooperation between the authorities of China and Viet Nam and led to a further seizure of 22,000 litres (23.5 tons) of the substance in China. According to data provided on form D, the seizure in Viet Nam was the first seizure of acetic anhydride in the country since 1990.

177. Despite the continued illicit cultivation of opium poppy in Mexico, quantities of acetic anhydride seized in the country in recent years have been small. In 2019 and 2020, seizures of the substance amounted to 15 litres and 735 litres, respectively.

Figure XIII. Seizures of acetic anhydride, as reported by European Union member States on form D, 2011–2020



178. In April 2021, police in Guatemala seized about 4,000 litres of acetic anhydride. The seized substance may have been used either for the processing of locally cultivated illicit opium poppy or for further trafficking to Mexico. Prior to 2021, the last seizures of acetic anhydride in Guatemala were reported by the Government in 2011 (512 litres).

179. In the period 2011–2020, the largest amounts of acetic anhydride seized in Europe were reported by European Union member States. Specifically, the Netherlands (25,800 litres), Bulgaria (19,500 litres) and Spain (9,600 litres) together accounted for 63 per cent of the total of 87,600 litres seized in Europe in that period. In 2020, the quantities of acetic anhydride seized in European Union member States were significantly lower than in the period 2017–2019 (see figure XIII). European Union member States, however, continued to be reported as the source of the substance seized elsewhere, in particular in Turkey. By October 2021, the Netherlands was the only European Union member State having reported seizures of acetic anhydride (5,600 litres) in the course of the year.

180. On form D for 2020, Turkey reported nine seizures of acetic anhydride amounting to a total of 12,136 litres. The largest of the seizures involved 6,000 litres of the substance, smuggled from Germany. The Board is also aware of a purported seizure in the country of about 9,000 litres of acetic anhydride in March 2021. The suspected country of origin of the substance was Poland. In early June 2021, customs authorities in Turkey seized 14,955 litres (16.2 tons) of acetic anhydride that had transited Croatia, Serbia and Bulgaria. To circumvent detection, the traffickers had used two identical trucks equipped with a built-in device enabling the instant change of the trucks' number plates, to be activated in the case of a customs inspection.

2. Use of non-scheduled substances and other trends in the illicit manufacture of heroin

181. The illicit manufacture of heroin requires, in addition to acetic anhydride, a variety of other common chemicals not under international control. Moreover, the Board has alerted Governments to chemicals that have been known to be used as cover loads or to otherwise conceal acetic anhydride. There are also chemicals that can substitute for acetic anhydride as acetylating agents in the conversion of morphine to heroin.

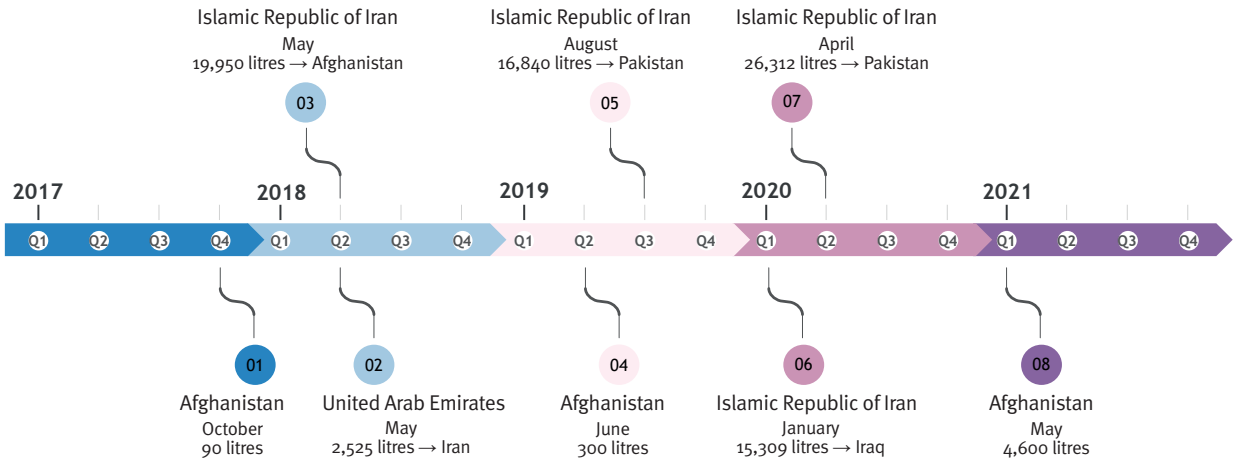
182. One such chemical is **acetyl chloride,** which is included in the INCB limited international special surveillance list of non-scheduled substances and is under national control in several countries worldwide, including Afghanistan and Pakistan. Since acetyl chloride is not under international control, its international trade is not monitored through the system of pre-export notifications, and patterns of international trade in and legitimate needs for the substance are not currently systematically available to the Board. However, because of its use as an acetylating agent, acetyl chloride is an important industrial chemical and hence is traded widely.

183. Because of its hazardous properties, acetyl chloride is more difficult to handle than acetic anhydride. This could be one of the reasons why incidents involving trafficking in the substance and reports of its use in illicit heroin laboratories have been rather rare in the past. In West Asia, the situation with regard to trafficking in acetyl chloride started to change around the period 2017–2018. Since then, a total of about 86,000 litres of acetyl chloride have been seized in Afghanistan, Iran (Islamic Republic of) and the United Arab Emirates (see figure XIV). This compares with the total of 137,800 litres of acetic anhydride seized in the three countries in the same period. The destination countries of the seized shipments of acetyl chloride were Afghanistan, Iran (Islamic Republic of), Iraq and Pakistan. China was identified as the source country when such information was available.

184. In 2021, the Turkish authorities seized 21.8 tons of what was reported as a mixture containing acetyl chloride, from a container purportedly shipped from China. This was the first time that acetyl chloride in that form was communicated through PICS. The amount of acetyl chloride in the mixture was not reported.

185. In 2018, the UNODC Country Office in Afghanistan conducted a forensic experiment that showed that heroin manufactured by means of acetylation of morphine with acetyl chloride produced unique acetylated sugars that could be used as markers. **The Board encourages all Governments with the necessary forensic capacity to analyse samples of seized heroin with a view to establishing whether acetic anhydride or acetyl chloride was used as the acetylating agent in the illicit manufacture of the heroin. Furthermore, the Board urges all countries concerned to take the necessary measures to fully investigate seizures of acetyl chloride and identify those involved in the trafficking of the substance. The Governments of countries that trade in acetyl chloride are encouraged to analyse patterns of licit trade in the substance and to review domestic control measures to verify, to the extent possible, the legitimacy of the past trade in and end uses of the substance. Voluntary cooperation with the private sector in this regard is also encouraged.**

Figure XIV. Seizures of acetyl chloride in Afghanistan, Iran (Islamic Republic of) and the United Arab Emirates, as reported on form D and communicated through PICS, 2017–2021



186. **Glacial acetic acid** is a chemical that has repeatedly been reported as being used as a cover load or to otherwise conceal acetic anhydride. It is also included in the INCB limited international special surveillance list. On form D for 2020, the amounts of glacial acetic acid reported seized worldwide totalled 1,700 litres, including 250 litres of the substance seized in Afghanistan.

187. **Ammonium chloride** is another non-scheduled chemical frequently associated with the illicit manufacture of heroin, in which it is used in the process of extracting morphine from opium. In 2020, China reported having stopped shipments to Myanmar of quantities of ammonium chloride totalling more than 18,000 tons; unfortunately, no further details were provided. Quantities of ammonium chloride seized in Afghanistan in 2020 amounted to a total of 11,300 kg, almost double the total amount seized in the country in the period 2017–2019 (6,200 kg). Mexico also reported a seizure of a significant amount of ammonium chloride (5,300 kg) on form D for 2020. However, the quantity reported, which had been seized in a single incident, may have been destined for the illicit manufacture of methamphetamine. Neither Afghanistan nor Mexico provided information on the origin of the substance.

D. Substances used in the illicit manufacture of other narcotic drugs and psychotropic substances

1. Ergot alkaloids and lysergic acid

188. Seizures of ergot alkaloids (ergometrine and ergotamine) and lysergic acid have traditionally been very small – typically in quantities less than 1 kg – because of the potency of the end product, LSD. Against that backdrop, on form D for 2020, only Australia, Canada, Georgia, Turkey and the United States reported notable seizures of lysergic acid. Australia also reported seizures of ergotamine. No further information was provided on any of the incidents. Shipments of lysergic acid and ergotamine seized in Australia were identified as having originated or departed from a number of countries, notably Germany and the Netherlands (in the case of the lysergic acid), and Singapore (in the case of the ergotamine).

2. *N*-Acetylanthranilic acid, anthranilic acid and alternative precursors of methaqualone

189. On form D for 2020, Mozambique reported seizures of *N*-acetylanthranilic acid totalling 1,320 kg, although no further details were provided. The second largest amount of the acid seized (156 kg) was reported by China. Small seizures of methaqualone precursors, totalling less than 2 kg, were reported by Canada and Germany (in descending order of amounts seized).

190. In September 2020, authorities in South Africa dismantled a warehouse in which significant amounts of chemicals, including anthranilic acid, and laboratory equipment were stored. However, there was no indication of methaqualone having been manufactured on site. It is the Board's understanding that investigations are ongoing to establish the source of the chemicals and the laboratory equipment.

191. In addition, during the first 10 months of 2021, South Africa communicated another incident through PICS involving 1,700 kg of acetanthranil, which had arrived from Kenya by air. Acetanthranil is a stable intermediate and immediate precursor of methaqualone that is converted through a single-step synthetic process. It has no known legitimate uses other than in the manufacture of substances related to methaqualone and it is not under international control. There have been four incidents involving acetanthranil in South Africa since November 2018, totalling more than 8.2 tons of the substance. Three incidents occurred at an airport and one in an illicit laboratory. They provide evidence of the fact that the African continent has not been spared from the emergence of non-scheduled chemicals and designer precursors.

3. Precursors of fentanyl, fentanyl analogues and other synthetic opioids, and alternative chemicals

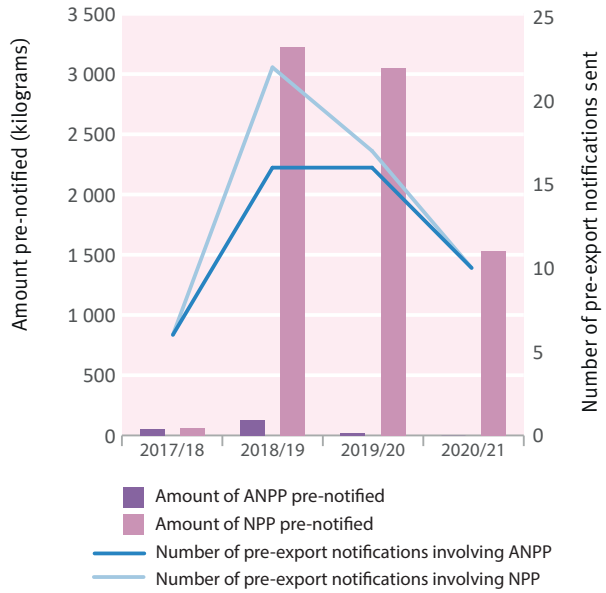
Licit trade

192. International trade in NPP and ANPP, the two fentanyl precursors under international control, is limited to a few exporting and importing countries. Between 1 November 2020 and 1 November 2021, 10 proposed shipments of NPP were pre-notified by the authorities of two exporting countries to six importing countries known to manufacture fentanyl legitimately. The total quantity involved was slightly more than 1.5 tons and thus amounted to only about half of the total quantity involved in each of the two previous reporting periods. The largest exporter of NPP was France.

193. With regard to ANPP, authorities of four exporting countries sent 10 pre-export notifications to nine importing countries and territories, involving a total of only a few grams of ANPP for research and laboratory analytical purposes. On form D for 2020, India reported having stopped, on the basis of the importing authority's objection, an export of 2 kg of ANPP to Brazil; had it been allowed to

proceed, it would have been the third largest shipment of ANPP ever pre-notified through PEN Online.

Figure XV. Proposed exports of the two fentanyl precursors, pre-notified by exporting Governments through the PEN Online system, 2018–2020[a]



[a] Reporting periods are from 1 November of the first year to 1 November of the following year.

Trafficking

194. On form D for 2020, the United States, Mexico and Estonia, in descending order of the amounts seized, were the only countries to report notable seizures of the two fentanyl precursors under international control. Interestingly, although there has been very limited international trade in ANPP, most of the reported seizures of fentanyl precursors in 2020 involved ANPP, totalling more than 340 kg in the United States and more than 100 kg in Mexico. While the amounts seized in the United States were reported to have been of domestic origin, Mexico identified China as the country of origin. The discrepancies observed between the legitimate trade in and seizures of ANPP suggest that the substance is sourced from illicit channels.

195. Mexico and the United States were also the only countries to report seizures of internationally non-scheduled alternative precursors of fentanyl. Specifically, Mexico reported seizures of almost 300 kg of **4-AP**. The United States seized about 10 kg of that substance, as well as nearly 75 kg of its masked derivative, **boc-4-AP**. Both of the substances were seized while transiting the United States from China or Hong Kong, China, to Mexico. In addition, boc-4-AP was encountered in Canada for the first time in 2020. From other sources, INCB is also aware of small seizures of 4-AP in Canada.

196. Seizures involving smaller amounts of boc-4-AP were also communicated through PICS in the first 10 months of 2021. In addition, data from PICS suggest a further evolution of fentanyl precursors, namely, a shift from 4-AP and a corresponding increase in incidents involving, and amounts of, **4-piperidone** and its monohydrate hydrochloride salt, as well as its masked derivative, **1-Boc-4-piperidone**. Seizures of these substances were effected in a seaport in Canada and at airports in Mexico and the United States. The alleged origin in the majority of the incidents was China, including Hong Kong. Two out of the seven consignments had been correctly declared at customs, while the others had been misdeclared. None of these chemicals are under international control, although INCB has previously alerted Governments to their role as alternative precursors.

197. Mexico and the United States also reported seizures of fentanyl precursor analogues and their masked derivatives, namely, precursors of *para*-fluorofentanyl, on form D for 2020.

198. Outside North America, the Netherlands reported an incident in October 2020 involving the seizure of several hundreds of litres of **aniline**, **(2-bromoethyl)benzene** and **propionyl chloride** from an illicit warehouse. The combination of the seized chemicals suggested that they may have been intended for the illicit manufacture of fentanyl or fentanyl analogues using any of the three major methods of manufacture of the substance. Irrespective of the method, however, in each case, additional chemical alternatives to the two fentanyl precursors under international control would have been necessary for the synthesis.

E. Substances not listed in Table I or Table II of the 1988 Convention that are used in the illicit manufacture of other narcotic drugs and psychotropic substances or substances of abuse not under international control

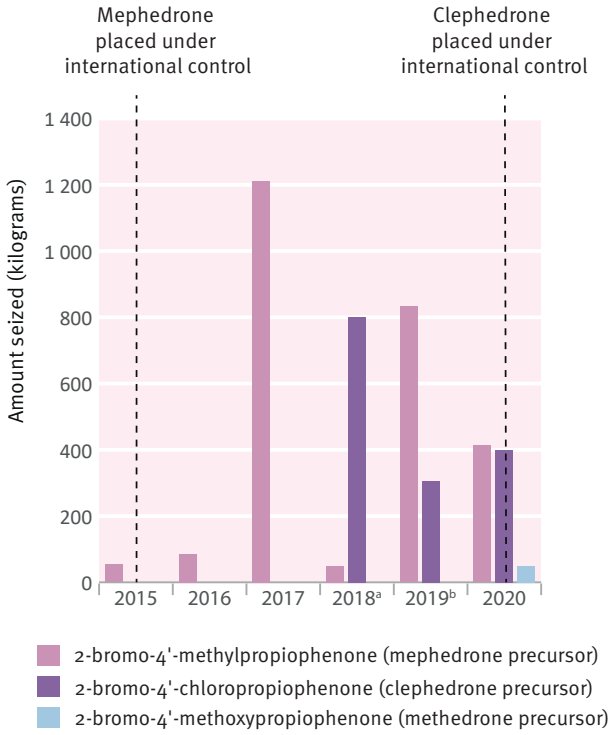
1. Precursors of GHB

199. **GBL** is a chemical precursor of GHB but may also be directly ingested, as it is metabolized into GHB in the body. Because of this "dual use", GBL may be controlled nationally as precursor or as a psychotropic substance. As a result, not all countries where GBL is controlled nationally submit reports on seizures of the substance to INCB. On form D for 2020, 13 countries reported seizures of GBL. The largest amounts seized were reported by the Netherlands (21,000 litres) and Slovenia (12,700 litres); in

both countries, the total amounts were seized in single incidents, in a warehouse in the Netherlands, and as a transit consignment to Austria, in Slovenia. As in past years, except for the seizures reported by the United States, all seizures of GBL reported on form D for 2020 were reported by European countries. Some European countries, and Australia, did not report seizures of GBL on form D but shared incidents involving the substance through PICS. Seizures in Australia totalled almost 1 ton in 2020 and occurred exclusively at airports. As in the past, shipments of GBL seized in Australia originated predominantly in China, including Hong Kong, while the Netherlands was identified as the country of origin, where such information was available, of the quantities seized in Europe.

200. Seizures of GBL communicated through PICS in the first 10 months of 2021 totalled more than 1.8 tons, with about 72 per cent of the incidents having been communicated by Australia. Seizures of **1,4-butanediol**, a precursor of GBL and pre-precursor of GHB that is also readily converted to GHB upon ingestion, were negligible in 2020.

Figure XVI. Seizures of three precursors of three synthetic cathinones, as reported by Governments on form D, 2015–2020



[a] The amount of 2-bromo-4'-chloropropiophenone seized was communicated through PICS but not on form D.
[b] Out of this amount of 2-bromo-4'-methylpropiophenone, a total of 800 kg were communicated through PICS but not reported on form D.

2. Precursors of new psychoactive substances, including substances recently scheduled under the Single Convention on Narcotic Drugs of 1961 as amended by the 1972 Protocol or the Convention on Psychotropic Substances of 1971

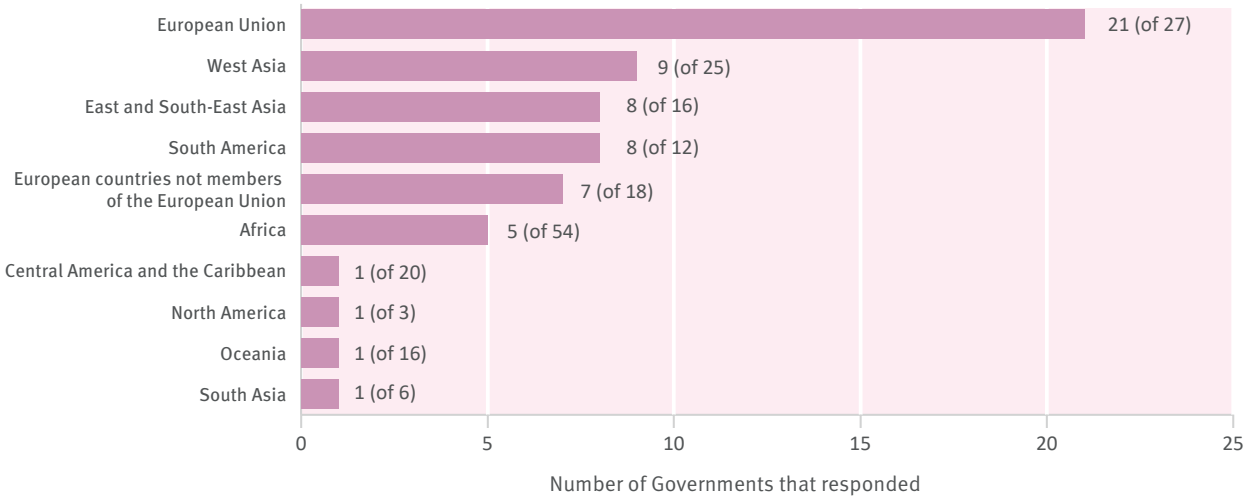
201. There has been no systematic reporting on seizures of precursors of new psychoactive substances and substances recently placed under international control. As in past years, in 2020, such seizures were typically reported by a number of European countries and involved precursors of synthetic cathinones. Specifically, on form D for 2020, the largest reported seizures involved **2-bromo-4'-chloropropiophenone** (a precursor of various 4-chloro-substituted cathinone derivatives, such as 4-CMC (clephedrone)) and **2-bromo-4'-methylpropiophenone** (a mephedrone precursor), totalling 400 kg and 405 kg, respectively. In addition, two seizures amounting to 50 kg of **2-bromo-4'-methoxypropiophenone** (a methedrone precursor) were also reported.

202. In the first 10 months of 2021, a seizure of 139 kg of 2-bromo-4'-methylpropiophenone was communicated through PICS by Austria. In addition, the detection of laboratories for the illicit manufacture of mephedrone and *alpha*-pyrrolidinopentiophenone (*alpha*-PVP) and corresponding seizures of precursors in the Russian Federation continued to be communicated in 2020 and 2021.

IV. Domestic controls: the extent of utilization of the provisions of article 12, paragraph 8, of the 1988 Convention

203. The past 15 years of international precursor control has shown that, as a result of more effective control and monitoring, the diversion of precursors for illicit activities has evolved from being perpetrated through international trade to now being essentially domestic in nature. The

Figure XVII. Governments that responded to the survey on national drug precursor legislation and domestic controls, by region



Board has most recently drawn attention to this issue in its report on precursors for 2020.[26]

204. To take stock of the status of implementation of the existing international precursor control system, the scope and extent of domestic controls pursuant to article 12, paragraph 8, of the 1988 Convention, and the extent to which Governments have implemented the scheduling decisions of the Commission on Narcotic Drugs, the Board surveyed all Governments in June 2021. As at 1 November 2021, 62 Governments[27] and the European Commission had responded to the survey (see figure XVII).[28] Of those, 53 submitted detailed responses regarding specific control measures.

205. More specifically, in addition to the monitoring of international trade in precursors, the Board has previously identified four areas that it considers important for preventing the diversion of precursors from licit to illicit channels at the domestic level. These areas include the monitoring of and controls over *(a)* manufacture and *(b)* distribution (both measures are referred to in article 12, paragraph 8, of the 1988 Convention), and the monitoring of *(c)* the end uses of, and *(d)* Internet-facilitated trade involving, precursor chemicals. The Board surveyed Governments with regard to these areas, in relation to substances in Table I and Table II of the 1988 Convention, as well as additional chemicals that are not included in Table I or Table II but that are under national control. To put the responses into context, the survey also inquired about the status of national controls over the 30 substances currently under international control.

Controls over domestic manufacture, trade and distribution

206. Almost 60 per cent of the respondents – 31 of the 53 – reported not having controls over domestic manufacture of one or more substances listed in Table I or Table II of the 1988 Convention. With specific regard to substances in Table I, 12 respondents, or about 25 per cent, reported having no such controls. One Government reported that it had no controls over the domestic manufacture of any of the 30 substances listed in Tables I and II, and another Government reported having no controls over 23 of the 30 substances.

207. The pattern of controls over domestic manufacture is mirrored by a similar pattern of controls over domestic trade and distribution. One quarter of the respondents reported not having controls over domestic trade and distribution of one or more substances included in Table I of the 1988 Convention. Three Governments reported not

[26] INCB report on precursors for 2020 (E/INCB/2020/4), paras. 210–211.

[27] Albania, Andorra, Argentina, Austria, Azerbaijan, Belgium, Bolivia (Plurinational State of), Brazil, Brunei Darussalam, Bulgaria, Burkina Faso, Chile, China, Croatia, Ecuador, Egypt, El Salvador, Finland, France, Germany, Ghana, Guatemala, Hungary, India, Ireland, Italy, Latvia, Lebanon, Lithuania, Madagascar, Malaysia, Malta, Mexico, Morocco, Myanmar, Netherlands, New Zealand, Norway, Pakistan, Paraguay, Peru, Philippines, Poland, Portugal, Republic of Korea, Romania, Russian Federation, Saudi Arabia, Serbia, Singapore, Slovakia, Slovenia, Spain, Sweden, Syrian Arab Republic, Tajikistan, Thailand, Turkey, Ukraine, United Arab Emirates, United Kingdom and Uzbekistan.

[28] Given that, in the European Union, the legislation and measures decided by the European Commission are directly applicable in the 27 European Union member States through European Union regulations (for example, on, inter alia, monitoring, scheduling and "catch-all" clauses), the response by the European Commission reflects, to a large extent, the situation in the 27 European Union member States, even though only 21 of them responded directly.

having controls over domestic trade and distribution of any of the 22 substances listed in Table I and two Governments reported having no such controls over two thirds of the substances in Table I.

208. The survey also enquired about the existence of controls over end use. In this respect, 17 Governments reported that they had no controls over the end use of one or more substances listed in Table I. In that connection, it was reported that the European Union regulations on precursors require that the "users"[29] of listed chemicals obtain a licence from the competent authority in the respective country.

209. Governments were also asked to report on the existence in their regulations of specific measures such as the registration of trading companies and end users, the reporting of domestic trade, the submission of end-use declarations and the reporting of suspicious orders. While some such measures were provided for in legislation, others were purely voluntary in nature. However, as shown in table 4, a significant proportion of the responding Governments reported not making use of such additional specific measures.

Table 4. Specific control measures applicable to domestic trade, distribution and use

Measures required in respect of one or more substances in Table I of the 1988 Convention	*Percentage of Governments reporting the absence of required measures*
Registration of trading companies	21
Registration of end users	68
Reporting of domestic trade	23
End-use declaration	32

210. As regards the reporting of suspicious orders, 57 per cent of the Governments indicated that the reporting of suspicious orders involving substances in Table I was mandatory and 21 per cent indicated that such reporting was voluntary.

211. With regard to the requirement to report suspicious orders, almost 80 per cent of the respondents mentioned having such a requirement in place in relation to the monitoring of international trade, as envisaged in article 12, paragraph 9 *(a)*, of the 1988 Convention. A total of 31 Governments confirmed that the reporting of suspicious orders was mandatory for companies with regard to at least one precursor, while 11 Governments confirmed that such reporting was voluntary for companies with regard to at least one precursor.

[29] The term "user" is defined in the European Union regulations as a natural or legal person other than an operator who possesses a scheduled substance and is engaged in the processing, formulation, consumption, storage, keeping, treatment, filling into containers, transfer from one container to another, mixing, transformation or any other utilization of scheduled substances. By contrast, an "operator" is defined as a natural or legal person engaged in the placing on the market of scheduled substances.

Control over Internet-facilitated trade

212. The use of the Internet, specifically, the surface web, by traffickers to source or sell precursor chemicals for use in illicit drug manufacture has been reported by the Board for nearly a decade.[30] Accordingly, the survey enquired whether Governments implemented any controls over Internet-facilitated trade.[31] A large proportion of the responding Governments, 70 per cent, confirmed that Internet-facilitated trade was controlled at the national level with regard to at least one precursor. However, there appear to be differences in the way in which some Governments interpreted the question. Specifically, it is not clear whether the term "Internet-facilitated trade" was interpreted as referring only to the simple facilitation of supply, trade, import or export of drug precursors by duly registered precursor operators, or whether the term also applied to listings of precursors on business-to-business Internet trading platforms, regardless of whether or not such listings were specifically associated with the supply of or trade in chemicals.

Controls applied to substances not under international control

213. Considering that many Governments have in place national controls over several internationally non-scheduled chemicals, the survey extended the same questions about domestic controls to other chemicals found to have been used in the illicit manufacture of drugs.

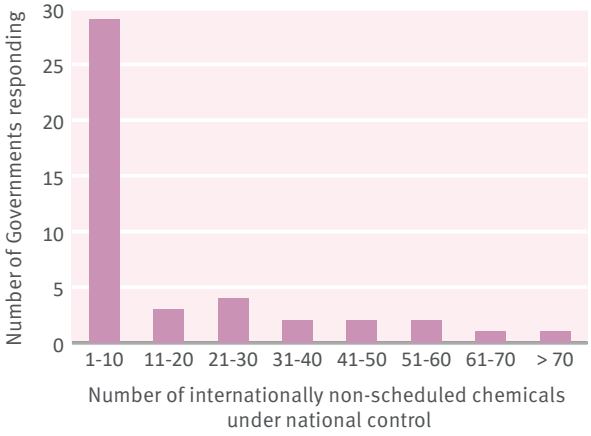
214. Almost 80 per cent of the responding Governments reported that they had placed internationally non-scheduled chemicals under national control, with a range of between 1 and more than 70 chemicals listed in their individual national legislation. The Board is also aware that some countries generically extend the definitions of chemicals under control, for example, by including derivatives of listed chemicals and other substances closely related to them in the definitions.

215. With regard to the domestic control measures applied, about 85 per cent of responding Governments that have controls in place over additional chemicals not under international control monitor the domestic manufacture of, trade in and distribution of those additional chemicals, in line with the recommendation in article 12, paragraph 8, of the 1988 Convention regarding substances in Table I and Table II of the Convention. It appears, therefore, that when

[30] The most comprehensive account is included in the INCB report on precursors for 2017 (E/INCB/2017/4), paras. 224–239.

[31] For the purposes of the survey, the term "Internet-facilitated trade" was defined as encompassing any activity involving the offering for sale or distribution, or mediating in the sale or purchase through a website, social media or in any other manner, of precursors.

Figure XVIII. Number of internationally non-scheduled chemicals under national control, as reported by responding Governments



Governments have controls in place over additional substances beyond those listed in the tables of the 1988 Convention, the recommendations contained in article 12, paragraph 8, regarding control over domestic manufacture and distribution are more likely to be followed with regard to those additional substances than they are with regard to substances under international control. However, the same level of control is not seen with respect to the end use of and Internet-facilitated trade in internationally non-scheduled chemicals. The Board has observed that, in a number of countries that have national controls in place over additional chemicals, the controls only apply to the import and/or export of those chemicals.

Status of national controls over substances listed in Table I and Table II of the 1988 Convention

216. Considering that, in the last seven years, seven chemicals were placed under international control, the Board also surveyed Governments on the status of controls over the 30 substances currently listed in Table I and Table II of the 1988 Convention. A total of 40 Governments indicated that all internationally controlled drug precursors were also controlled under their national legislation. However, 22 Governments reported that not all 30 substances were under national control. In the majority of those cases, the countries had enacted legislation to control only the 23 precursor chemicals that were under international control at the time of the coming into force of the 1988 Convention, in 1990.

217. About 25 per cent of the Governments that submitted detailed responses regarding specific control measures reported that one or more of the 22 substances included in Table I of the 1988 Convention still had not been placed under national control. Of those Governments, eight reported not having five or more substances listed in Table I under control. Acetic anhydride and potassium permanganate were the only two substances in Table I that all of the respondents reported as being under national control.

218. MAPA was the substance in Table I most frequently reported (by 13 Governments) as not yet being under national control. The recent international scheduling of MAPA, in November 2020, may explain the lack of national controls. Likewise, the substances added to Table I in 2019, namely, 3,4-MDP-2-P methyl glycidate, 3,4-MDP-2-P methyl glycidic acid and APAA, were reported by 12, 11 and 10 Governments, respectively, as not being under national control. However, even with regard to substances that were placed under international control earlier, such as the two fentanyl precursors, NPP and ANPP, which were placed under international control in 2017, nine Governments responding to the survey reported a lack of controls. Likewise, eight Governments reported not having controls in place over APAAN, even though the substance was placed under international control in 2014. These responses indicate substantial time gaps in the implementation of the scheduling decisions of the Commission on Narcotic Drugs.[32]

Conclusion

219. The survey has substantiated the Board's earlier assessment that there is a need to further enhance domestic controls over chemicals in Table I and Table II of the 1988 Convention in relation to a number of areas. The survey indicates that almost 60 per cent of the responding Governments do not control all of the substances in Table I and Table II. Similarly, 62 per cent of the responding Governments do not control domestic trade and distribution of those substances, and their end use is even more often not controlled (68 per cent of responding Governments). Thus, as a substance moves through the supply chain, from manufacture to distribution to end use, the degree of control over it progressively declines, as reflected by the increasing number of countries that report a lack of controls. On the other hand, domestic controls appear to be implemented more consistently for chemicals that are under national control but that are not listed in the tables of the 1988 Convention.

220. The survey has also revealed that about a third of all responding Governments still do not control all of the

[32] In accordance with article 12, paragraph 6, of the 1988 Convention, any decision of the Commission on Narcotic Drugs with regard to the inclusion of substances in Table I or II of the Convention is to become fully effective with respect to each party 180 days after the date of communication of the decision.

substances in Table I and Table II of the 1988 Convention. This is particularly concerning when considering that these substances have been scheduled for a long time.

221. Valuable responses were also received with regard to details of the systems of control applied to the import and export of substances in the tables of the 1988 Convention, the status of the monitoring of international trade in additional chemicals that are not included in those tables but that are under national control in different countries, and the sanctions for non-compliance with national control measures. Reported administrative sanctions ranged from simple notification to administrative pecuniary penalties and revocation and/or permanent cancellation of the registration of the offending operator. Criminal sanctions ranged from confiscation, fines up to several times the value of the seized consignment and imprisonment of a few months to several years. The punishment itself typically depended on the manner of commission and intent.

222. Finally, respondents elaborated on and provided practical examples of the specific information and level of detail that they would need to allow them to act on information, intelligence or evidence from counterparts or to launch investigations, especially with regard to chemicals not under control in their country.

223. The information provided will assist the Board in updating its information package on the control of precursors, enhancing its dialogue with individual Governments and contributing to policy discussions on the international precursor control framework. **INCB commends all of the Governments that have provided these valuable insights into the scope and extent of their national legislation, including domestic controls over both substances in Table I and Table II of the 1988 Convention and additional chemicals that are not included in Table I or Table II but that are under national control.**

V. Conclusions and recommendations

224. The present chapter summarizes the key conclusions of this report and provides recommendations to Governments with a view to preventing trafficking in precursors and strengthening the functioning of the precursor control system at the national, regional and international levels. Specific recommendations and conclusions are also incorporated in previous chapters of the report, presented in bold text.

Urgent need to accelerate the global momentum in addressing the proliferation of non-scheduled chemicals and designer precursors

225. The persistent appearance of non-scheduled chemicals and designer precursors in the manufacture of drugs is widely understood as a key threat to the international precursor control system. The Board has repeatedly drawn attention to the risks that chemicals not under international control and the rapidly evolving environment of illicit drug manufacture represent for regulatory, law enforcement and judicial authorities globally.

226. Drug traffickers continue to avoid the use of traditional, controlled precursors in the illicit manufacture of heroin, cocaine, amphetamines and methamphetamines, MDMA, fentanyls and methaqualone. As in recent years, non-scheduled chemicals were found to be used for the illicit manufacture of all major semi-synthetic and synthetic drug classes and are now present in all regions of the world. This is supported by the fact that, out of all substances communicated through PICS during the reporting period, three quarters of them were non-scheduled chemicals (see section II.H.2).

227. The need to address the challenge through a strengthened and broader approach is progressively gaining momentum. In October, the Government of the United States officially initiated the procedure for adding three fentanyl precursors to the tables of the 1988 Convention. Individual countries are increasingly considering internal markets and resorting to national scheduling measures to reduce the possibility of diversion and subsequent international trafficking. Acknowledging the proliferation of non-scheduled chemicals and designer precursors as one of the main challenges to its precursor control framework, the European Union is paving the way for regional action guided by the advice of a newly established ad-hoc working group on designer precursors (see section II.D).

228. To further counter the rapid spread of such chemicals globally, the Board held several international policy discussions and undertook other efforts during the reporting period, as discussed in section II.D of the present report. These activities are aimed at building a global movement to devise a coherent global policymaking approach and foster consensus among Member States. **INCB encourages Governments to accelerate the momentum and increase international cooperation towards attaining global consensus on internationally binding measures, as well as voluntary measures, including those outlined in the Board's guidance document "Proliferation of non-scheduled chemicals and designer precursors: options for global action", regarding non-scheduled chemicals and designer precursors. In addition, Governments are encouraged to continue**

to identify approaches and measures, share successful national practices, engage with industry partners, and enhance capabilities and the use of forensic profiling analysis, with a view to identifying the precursors used in illicit drug manufacture.

Comprehensive and timely data and information underpin the capacity to address emerging trends effectively and proactively

229. The increased sophistication and diversification seen in illicit drug manufacture, the rapid emergence of alternative chemicals and derivatives of scheduled precursors and the increasingly complex trafficking landscape are among the disconcerting trends discussed in this report that are posing challenges to the international precursor control framework. More concretely, the new trafficking routes for MAPA detected within Europe and, recently, for the first time, also outside the region, as well as the appearance of alternative precursors of MAPA, 4-AP and other precursors (see chapter III), were made known thanks to the information communicated by Governments through PICS and/or reported on form D.

230. As such, the provision of timely and complete information containing circumstantial evidence on precursor-related incidents and sources and methods of diversion is integral to proactively addressing new trends at an early stage and ensuring the effective functioning of the control system. It can also aid in identifying possible loopholes in precursor control that are susceptible to exploitation by trafficking organizations, gathering relevant intelligence and insights on modi operandi and preventing diversion from licit trade.

231. The Board expresses its concern about the lack of details provided on some submissions of form D and the decreased number of countries submitting data on licit trade in internationally scheduled substances and on the licit uses of and/or requirements for such substances during the reporting period. The continuing divergence between the amounts of drugs manufactured illicitly and the reported amounts of seized chemicals used in such manufacture also remains problematic. This concerns in particular the illicit manufacture of methamphetamine in East and South-East Asia, where the large and consistent seizures of end products contrasts with the declining seizures of ephedrine and pseudoephedrine. A possible explanation may be the increasing recourse to alternative, non-scheduled chemicals. However, the context cannot be fully assessed, owing to the lack of quality and timely data.

232. **The Board thanks all Governments for the information supplied in their annual submissions of form D and calls for the submission of more comprehensive data. The Board also encourages Governments to do the following:**

(a) **Communicate precursor-related incidents on an ongoing basis through PICS so that Governments can take advantage of the real-time exchange of actionable information relating to smuggling attempts and seizures of precursors, including information on sources and methods of diversion**;

(b) **Share more relevant and timely information on incidents involving internationally scheduled substances and incidents involving non-scheduled chemicals, designer precursors and precursors of new psychoactive substances, as well as substances recently scheduled under the 1961 and 1971 Conventions;**

(c) **Improve the accuracy of estimates of annual legitimate requirements for imports of precursors of amphetamine-type stimulants so that they reflect the current market environment.**

The focus on domestic manufacture and distribution channels remains critical to tackling diversion carried out through domestic distribution channels

233. The rise in the diversion of precursors through domestic channels rather than through international trade, largely due to effective international control measures, is a long-term trend in precursor control. Although the functioning of domestic control systems is within the purview of States, the provisions contained in article 12, paragraph 8, of the 1988 Convention relating to domestic controls are an important complement to international efforts.

234. As revealed in the global survey on national drug precursor legislation and domestic controls carried out by the Board in June 2021, lack of control over domestic trade in and distribution of one or more substances included in Table I of the 1988 Convention was reported by one quarter of the responding Governments. In the absence of controls over domestic manufacture, trade and distribution, traffickers may attempt to obtain these substances, ostensibly through legal means, by approaching unsuspecting chemical traders. **The Board therefore reiterates its call to Governments to pay increased attention to the strengthening of comprehensive precursor monitoring systems at the national level and to refer to the guidance provided in article 12, paragraph 8, of the 1988 Convention.**

235. The global survey also revealed that about a third of the responding Governments have not established national control over all of the substances in Table I and Table II of the 1988 Convention. **The Board emphasizes the critical importance of the full implementation of the**

scheduling decisions of the Commission on Narcotic Drugs for effective global precursor control and urges the parties to the 1988 Convention to ensure that, in all cases, those scheduling decisions become fully effective at the national level within 180 days after being communicated by the Secretary-General, as provided for in article 12, paragraph 6, of the Convention.

236. A long-standing missing link in the investigation of seizures of methamphetamine is information on the origin of its precursors, ephedrine and P-2-P, and whether those precursors have been diverted through domestic distribution channels or have been illicitly manufactured (see sect. III.A.1 *(c)*). **The Board encourages Governments to determine and report on whether seized precursors such as ephedrine and P-2-P have been diverted from a legitimate source, or whether they have been illicitly manufactured from other controlled precursors or from non-scheduled alternative precursors. This will facilitate the development of appropriate measures and the addressing of underlying weaknesses in control systems.**

Continued vigilance after diversion attempts through legitimate international trade and more systematic use of the PEN Online system are necessary

237. Despite the less frequent diversion through international trade, the Board still warns about the likelihood of possible diversion attempts of precursors through legitimate international trade channels, after two large-scale shipments of ephedrine, involving first-time importers, were stopped. The present report describes how the incidents, involving a cumulative total of 1 ton of the substance, were not allowed to proceed from India after the legitimacy of the importing companies in Ghana and Mozambique was not confirmed (see sect. III.A.1).

238. Such examples demonstrate the importance for Governments of practicing due diligence, as well as the effectiveness of the PEN Online system in enabling importing countries or territories to object to proposed imports and facilitating communication between the exporting and importing countries. Governments are reminded that parties to the 1988 Convention are required to notify the concerned competent national authorities of any suspicious shipment involving substances listed in Table I or Table II of the Convention, as stipulated in article 12, paragraph 9 *(c)*, of the Convention.

239. **The Board reminds Governments to remain vigilant about similar diversion attempts involving ephedrines or other chemicals under international control and encourages exporting countries to systematically take advantage of the PEN Online system to supply notification of shipments, especially in instances where the legitimacy of such shipments is in question. In these cases, the Board recommends that Governments clearly indicate that the shipment would not proceed without the explicit approval of the authorities of the importing country or territory.**[33]

240. **INCB also urges Governments to afford equal investigative attention to foiled attempts to divert a substance as would be applied to a seizure of the same substance, since such cases provide valuable intelligence which, if shared internationally, could prevent attempts to divert the substances from other sources.**

Need to mainstream cooperation with industry as a key component of the strategy to prevent the diversion of precursors

241. INCB has repeatedly pointed out that cooperation with industry is one of the central pillars of the global precursor control system. In line with its mandate, the Board has continued to support Governments in their efforts to establish and implement this concept, aimed at ensuring effective and sustainable prevention of the diversion of precursors, through timely cooperation between national authorities and relevant sectors of industry. A robust framework of cooperation between Governments and industry would complement the regulatory efforts relating to substances that are not under control. Industry cooperation is not only limited to the chemical and pharmaceutical manufacturing industries but also to industries concerned in any way with the supply of the substances, that is, those involved in their trade and distribution. In the past, the Board has also reported on the successes that cooperation with business-to-business Internet platforms can yield in efforts to prevent precursor diversion.

242. An industry sector that has not received sufficient attention in the past is the sector of customized synthesis and contract manufacture. As part of this, and as alerted in the previous report on precursors, Governments that may be inclined to start or restart their own industrial pharmaceutical manufacturing plants in a bid to prevent supply-chain disruptions resulting from the COVID-19 pandemic should be aware that the relevant chemical intermediaries for the needed active pharmaceutical ingredients may also, if diverted, serve as immediate precursors of narcotic drugs or psychotropic substances.

243. INCB has developed several tools for this purpose, including the limited international special surveillance list of non-scheduled substances, which is regularly updated to incorporate current trends. In addition to 56 chemicals,

[33] A summary of minimum action for international trade monitoring through the PEN Online system is available in the INCB report on precursors for 2015 (E/INCB/2015/4), box 1.

the list includes extended definitions to cover the substances closely related to the listed substances. The list also highlights chemicals with no known legitimate uses.

244. **The Board welcomes any industry-related initiatives aimed at preventing the diversion of precursors and encourages Governments to continue their efforts to establish and implement such mechanisms. In doing so, INCB tools such as the international special surveillance list and the other tools made available to competent national authorities on the INCB secure website could be utilized. Governments that have built successful models of industry cooperation are encouraged to share them with the Board, to be showcased as global good practices.**

Glossary

In the present report, the following terms and definitions have been used:

chemical intermediate	A chemical generated during a multi-step synthesis process that is normally not isolated but immediately consumed in the next synthesis step. Stable chemical intermediates can be isolated and have been encountered as purpose-made substitute chemicals for controlled precursors
designer precursor	A close chemical relative of a controlled precursor that is purpose-made to circumvent controls and usually does not have any recognized legitimate use
diversion	The transfer of substances from licit to illicit channels
forensic profiling analysis	In-depth laboratory analysis to trace any by-products generated during illicit manufacture, with a view to, inter alia, identifying the precursors used in such manufacture
immediate precursor	A precursor that is generally only one reaction step away from the end product
industrial-scale laboratory	A laboratory manufacturing synthetic drugs in which oversized equipment and/or glassware that is either custom-made or purchased from industrial processing sources and/or that uses serial reactions is used and in which significant amounts of drugs are produced in very short periods of time, the amount being limited only by the need for access to precursors and other essential chemicals in adequate quantities and for the logistics and workers to handle large amounts of drugs and chemicals
limited international special surveillance list of non-scheduled substances	A list prepared, pursuant to Economic and Social Council resolution 1996/29, and regularly updated by INCB that includes substitute and alternative chemicals, as well as groups of common derivatives and other related substances that can be converted into one of the scheduled precursors by readily applicable means, and for which substantial information exists on their use in illicit drug manufacture
pharmaceutical preparation	A preparation for therapeutic (human or veterinary) use in its finished dosage form that contains precursors present in such a way that they can be used or recovered by readily applicable means; such preparations may be presented in their retail packaging or in bulk
precursor	In general, a starting material used to manufacture a narcotic drug, psychotropic substance or another precursor; sometimes used to refer exclusively to the substances in Table I and Table II of the 1988 Convention
pre-precursor	A precursor of a precursor
seizure	Prohibiting the transfer, conversion, disposition or movement of property or assuming custody or control of property on the basis of an order issued by a court or a competent authority; it may be temporary or permanent (i.e. confiscation); different national legal systems may use different terms
stopped shipment	A shipment permanently withheld, either because reasonable grounds exist to believe that it may constitute an attempted diversion, or as a result of administrative problems or because of other grounds for concern or suspicion
suspicious order (or suspicious transaction)	An order (or transaction) of questionable, dishonest or unusual character or condition, for which there is reason to believe that a chemical that is being ordered, imported or exported or is transiting a country or territory is destined for the illicit manufacture of narcotic drugs or psychotropic substances

Annex I

Parties and non-parties to the United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances of 1988, by region, as at 1 November 2021

Note: The date on which the instrument of ratification or accession was deposited is indicated in parentheses.

Region	*Party to the 1988 Convention*		*Non-party to the 1988 Convention*
AFRICA	Algeria (9 May 1995)	Gabon (10 July 2006)	Equatorial Guinea
	Angola (26 October 2005)	Gambia (23 April 1996)	Somalia
	Benin (23 May 1997)	Ghana (10 April 1990)	South Sudan
	Botswana (13 August 1996)	Guinea (27 December 1990)	
	Burkina Faso (2 June 1992)	Guinea-Bissau (27 October 1995)	
	Burundi (18 February 1993)	Kenya (19 October 1992)	
	Cabo Verde (8 May 1995)	Lesotho (28 March 1995)	
	Cameroon (28 October 1991)	Liberia (16 September 2005)	
	Central African Republic (15 October 2001)	Libya (22 July 1996)	
	Chad (9 June 1995)	Madagascar (12 March 1991)	
	Comoros (1 March 2000)	Malawi (12 October 1995)	
	Congo (3 March 2004)	Mali (31 October 1995)	
	Côte d'Ivoire (25 November 1991)	Mauritania (1 July 1993)	
	Democratic Republic of the Congo (28 October 2005)	Mauritius (6 March 2001)	
	Djibouti (22 February 2001)	Morocco (28 October 1992)	
	Egypt (15 March 1991)	Mozambique (8 June 1998)	
	Eritrea (30 January 2002)	Namibia (6 March 2009)	
	Eswatini (8 October 1995)	Niger (10 November 1992)	
	Ethiopia (11 October 1994)	Nigeria (1 November 1989)	

Region	*Party to the 1988 Convention*		*Non-party to the 1988 Convention*
	Rwanda (13 May 2002)	Togo (1 August 1990)	
	Sao Tome and Principe (20 June 1996)	Tunisia (20 September 1990)	
	Senegal (27 November 1989)	Uganda (20 August 1990)	
	Seychelles (27 February 1992)	United Republic of Tanzania (17 April 1996)	
	Sierra Leone (6 June 1994)	Zambia (28 May 1993)	
	South Africa (14 December 1998)	Zimbabwe (30 July 1993)	
	Sudan (19 November 1993)		
Regional total 54	**51**		**3**
AMERICAS	Antigua and Barbuda (5 April 1993)	Guatemala (28 February 1991)	
	Argentina (10 June 1993)	Guyana (19 March 1993)	
	Bahamas (30 January 1989)	Haiti (18 September 1995)	
	Barbados (15 October 1992)	Honduras (11 December 1991)	
	Belize (24 July 1996)	Jamaica (29 December 1995)	
	Bolivia (Plurinational State of) (20 August 1990)	Mexico (11 April 1990)	
	Brazil (17 July 1991)	Nicaragua (4 May 1990)	
	Canada (5 July 1990)	Panama (13 January 1994)	
	Chile (13 March 1990)	Paraguay (23 August 1990)	
	Colombia (10 June 1994)	Peru (16 January 1992)	
	Costa Rica (8 February 1991)	Saint Kitts and Nevis (19 April 1995)	
	Cuba (12 June 1996)	Saint Lucia (21 August 1995)	
	Dominica (30 June 1993)	Saint Vincent and the Grenadines (17 May 1994)	
	Dominican Republic (21 September 1993)	Suriname (28 October 1992)	
	Ecuador (23 March 1990)	Trinidad and Tobago (17 February 1995)	
	El Salvador (21 May 1993)	United States of America (20 February 1990)	
	Grenada (10 December 1990)	Uruguay (10 March 1995)	

Region	*Party to the 1988 Convention*		*Non-party to the 1988 Convention*
	Venezuela (Bolivarian Republic of) (16 July 1991)		
Regional total 35	**35**		**0**
ASIA	Afghanistan (14 February 1992)	Lebanon (11 March 1996)	
	Armenia (13 September 1993)	Malaysia (11 May 1993)	
	Azerbaijan (22 September 1993)	Maldives (7 September 2000)	
	Bahrain (7 February 1990)	Mongolia (25 June 2003)	
	Bangladesh (11 October 1990)	Myanmar (11 June 1991)	
	Bhutan (27 August 1990)	Nepal (24 July 1991)	
	Brunei Darussalam (12 November 1993)	Oman (15 March 1991)	
	Cambodia (2 April 2005)	Pakistan (25 October 1991)	
	China (25 October 1989)	Philippines (7 June 1996)	
	Democratic People's Republic of Korea (19 March 2007)	Qatar (4 May 1990)	
	Georgia (8 January 1998)	Republic of Korea (28 December 1998)	
	India (27 March 1990)	Saudi Arabia (9 January 1992)	
	Indonesia (23 February 1999)	Singapore (23 October 1997)	
	Iran (Islamic Republic of) (7 December 1992)	Sri Lanka (6 June 1991)	
	Iraq (22 July 1998)	State of Palestine (29 December 2017)	
	Israel (20 March 2002)	Syrian Arab Republic (3 September 1991)	
	Japan (12 June 1992)	Tajikistan (6 May 1996)	
	Jordan (16 April 1990)	Thailand (3 May 2002)	
	Kazakhstan (29 April 1997)	Timor-Leste (3 June 2014)	
	Kuwait (3 November 2000)	Turkey (2 April 1996)	
	Kyrgyzstan (7 October 1994)	Turkmenistan (21 February 1996)	
	Lao People's Democratic Republic (1 October 2004)	United Arab Emirates (12 April 1990)	

Region	*Party to the 1988 Convention*		*Non-party to the 1988 Convention*
	Uzbekistan (24 August 1995)	Yemen (25 March 1996)	
	Viet Nam (4 November 1997)		
Regional total 47	**47**		**0**
EUROPE	Albania (27 July 2001)	Liechtenstein (9 March 2007)	
	Andorra (23 July 1999)	Lithuania[a] (8 June 1998)	
	Austria[a] (11 July 1997)	Luxembourg[a] (29 April 1992)	
	Belarus (15 October 1990)	Malta[a] (28 February 1996)	
	Belgium[a] (25 October 1995)	Monaco (23 April 1991)	
	Bosnia and Herzegovina (1 September 1993)	Montenegro (3 June 2006)	
	Bulgaria[a] (24 September 1992)	Netherlands[a] (8 September 1993)	
	Croatia[a] (26 July 1993)	North Macedonia (13 October 1993)	
	Cyprus[a] (25 May 1990)	Norway (14 November 1994)	
	Czechia[a] (30 December 1993)	Poland[a] (26 May 1994)	
	Denmark[a] (19 December 1991)	Portugal[a] (3 December 1991)	
	Estonia[a] (12 July 2000)	Republic of Moldova (15 February 1995)	
	Finland[a] (15 February 1994)	Romania[a] (21 January 1993)	
	France[a] (31 December 1990)	Russian Federation (17 December 1990)	
	Germany[a] (30 November 1993)	San Marino (10 October 2000)	
	Greece[a] (28 January 1992)	Serbia (3 January 1991)	
	Holy See (25 January 2012)	Slovakia[a] (28 May 1993)	
	Hungary[a] (15 November 1996)	Slovenia[a] (6 July 1992)	
	Iceland (2 September 1997)	Spain[a] (13 August 1990)	
	Ireland[a] (3 September 1996)	Sweden[a] (22 July 1991)	
	Italy[a] (31 December 1990)	Switzerland (14 September 2005)	
	Latvia[a] (25 February 1994)	United Kingdom of Great Britain and Northern Ireland[b] (28 June 1991)	

Region	*Party to the 1988 Convention*		*Non-party to the 1988 Convention*
	Ukraine (28 August 1991)	European Union[c] (31 December 1990)	
Regional total 46	**46**		**0**
OCEANIA	Australia (16 November 1992)	New Zealand (16 December 1998)	Kiribati
	Cook Islands (22 February 2005)	Niue (16 July 2012)	Papua New Guinea
	Fiji (25 March 1993)	Palau (14 August 2019)	Solomon Islands
	Marshall Islands (5 November 2010)	Samoa (19 August 2005)	Tuvalu
	Micronesia (Federated States of) (6 July 2004)	Tonga (29 April 1996)	
	Nauru (12 July 2012)	Vanuatu (26 January 2006)	
Regional total 16	**12**		**4**
World total 198	**191**		**7**

[a] State member of the European Union.
[b] The United Kingdom ceased to be a member of the European Union on 31 January 2020.
[c] Extent of competence: article 12.

Annex II

Submission of information by Governments pursuant to article 12 of the United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances of 1988 (form D) for the period 2016–2020

Notes: The names of non-metropolitan territories and special administrative regions are in italics.
A blank signifies that form D was not received.
"X" signifies that a completed form D (or equivalent report) was submitted (including forms in which all fields contained "nil", "0", "none", etc.).
Entries for parties to the 1988 Convention (and for the years that they have been parties) are shaded.

Country or territory	*2016*	*2017*	*2018*	*2019*	*2020*
Afghanistan	X	X	X	X	X
Albania	X	X	X	X	
Algeria	X	X	X	X	
Andorra	X	X		X	X
Angola	X	X	X	X	
Anguilla[a]					
Antigua and Barbuda					
Argentina	X	X	X	X	X
Armenia	X	X	X	X	X
Aruba[a]					
Ascension					
Australia	X	X		X	X
Austria[b]	X	X	X	X	X
Azerbaijan	X	X	X	X	X
Bahamas					
Bahrain	X	X	X	X	X
Bangladesh		X			
Barbados					
Belarus	X	X	X	X	
Belgium[b]	X	X	X	X	X
Belize		X			
Benin	X	X	X		
Bermuda[a]					
Bhutan	X	X	X	X	X
Bolivia (Plurinational State of)	X	X	X	X	X
Bosnia and Herzegovina	X	X	X	X	X
Botswana		X		X	X
Brazil	X	X	X	X	X
British Virgin Islands[a]					

Country or territory	*2016*	*2017*	*2018*	*2019*	*2020*
Brunei Darussalam	X	X	X	X	X
Bulgaria[b]	X	X	X	X	X
Burkina Faso					
Burundi				X	
Cabo Verde	X	X	X		
Cambodia					
Cameroon				X	
Canada	X	X	X	X	X
Cayman Islands[a]					
Central African Republic					
Chad				X	
Chile	X	X	X	X	X
China	X		X	X	X
China, Hong Kong SAR	X		X	X	X
China, Macao SAR			X		
Christmas Island[a,c]					
Cocos (Keeling) Islands[a,c]					
Colombia	X	X	X	X	X
Comoros					
Congo					
Cook Islands					
Costa Rica	X	X	X	X	X
Côte d'Ivoire	X				
Croatia[b]	X	X	X	X	X
Cuba					
Curaçao	X	X		X	X
Cyprus[b]	X	X	X	X	X
Czechia[b,d]	X	X	X	X	X
Democratic People's Republic of Korea	X	X	X		X
Democratic Republic of the Congo	X	X	X	X	X
Denmark[b]	X	X	X	X	X
Djibouti					
Dominica	X		X	X	X
Dominican Republic		X	X	X	X
Ecuador	X	X	X	X	X
Egypt	X	X	X	X	X
El Salvador	X	X	X	X	X
Equatorial Guinea					
Eritrea					
Estonia[b]	X	X	X	X	X
Eswatini[e]					
Ethiopia					
Falkland Islands (Malvinas)	X				
Fiji	X				
Finland[b]	X	X	X	X	X

Country or territory	*2016*	*2017*	*2018*	*2019*	*2020*
France[b]	X	X	X	X	X
French Polynesia[a]					
Gabon			X	X	X
Gambia	X				
Georgia	X	X	X	X	X
Germany[b]	X	X	X	X	X
Ghana	X	X		X	X
Gibraltar					
Greece[b]	X	X	X	X	
Grenada					
Guatemala	X	X	X	X	X
Guinea					
Guinea-Bissau					
Guyana	X		X	X	
Haiti			X		X
Holy See[f]					
Honduras	X	X	X	X	X
Hungary[b]	X	X	X	X	X
Iceland	X	X		X	X
India	X	X	X	X	X
Indonesia	X	X	X	X	X
Iran (Islamic Republic of)	X	X	X	X	X
Iraq	X			X	X
Ireland[b]	X	X	X	X	X
Israel	X	X	X	X	X
Italy[b]	X	X	X	X	
Jamaica	X	X	X	X	
Japan	X	X	X	X	X
Jordan	X	X	X	X	X
Kazakhstan	X	X	X	X	X
Kenya	X	X			
Kiribati					
Kuwait					
Kyrgyzstan	X		X	X	X
Lao People's Democratic Republic	X	X	X	X	X
Latvia[b]	X	X	X	X	X
Lebanon	X	X	X	X	X
Lesotho					
Liberia					
Libya					
Liechtenstein[g]					
Lithuania[b]	X	X	X	X	X
Luxembourg[b]	X	X		X	X
Madagascar	X		X	X	X
Malawi					

Country or territory	*2016*	*2017*	*2018*	*2019*	*2020*
Malaysia	X	X	X	X	X
Maldives	X			X	X
Mali	X				
Malta[b]	X	X	X	X	X
Marshall Islands					
Mauritania			X		
Mauritius			X	X	X
Mexico	X	X	X	X	X
Micronesia (Federated States of)					X
Monaco	X	X	X	X	X
Mongolia	X	X			
Montenegro	X	X	X	X	X
Montserrat[a]	X	X	X		
Morocco	X	X	X	X	X
Mozambique	X		X	X	X
Myanmar	X	X	X	X	X
Namibia	X				
Nauru					
Nepal		X			X
Netherlands[b]	X	X	X	X	X
New Caledonia[a]	X				
New Zealand	X	X	X	X	X
Nicaragua	X	X	X	X	X
Niger					X
Nigeria	X	X	X	X	X
Niue					
Norfolk Island[a,c]					
North Macedonia[h]			X		X
Norway		X	X	X	X
Oman	X	X			
Pakistan	X	X	X	X	
Palau					
Panama	X	X	X	X	X
Papua New Guinea					
Paraguay	X	X		X	X
Peru	X		X	X	X
Philippines	X	X	X	X	X
Poland[b]	X	X	X	X	X
Portugal[b]	X	X	X	X	X
Qatar		X	X	X	X
Republic of Korea	X	X	X	X	
Republic of Moldova	X	X	X		X
Romania[b]	X	X	X	X	X
Russian Federation	X	X	X	X	X
Rwanda				X	X

Country or territory	*2016*	*2017*	*2018*	*2019*	*2020*
Saint Helena					
Saint Kitts and Nevis					
Saint Lucia	X	X	X	X	X
Saint Vincent and the Grenadines	X		X	X	X
Samoa					
San Marino[f]			X		
Sao Tome and Principe					
Saudi Arabia	X	X	X	X	X
Senegal	X		X		
Serbia	X	X	X	X	X
Seychelles	X				
Sierra Leone			X	X	X
Singapore	X	X	X	X	X
Sint Maarten					
Slovakia[b]	X	X	X	X	X
Slovenia[b]	X	X	X	X	X
Solomon Islands					
Somalia					
South Africa	X	X	X	X	X
South Sudan		X	X		
Spain[b]	X	X	X	X	X
Sri Lanka	X	X	X		
Sudan	X	X	X	X	X
Suriname			X		X
Sweden[b]	X	X	X	X	X
Switzerland	X	X	X	X	X
Syrian Arab Republic	X	X	X	X	X
Tajikistan	X	X	X	X	X
Thailand	X	X	X	X	X
Timor-Leste				X	
Togo					
Tonga					
Trinidad and Tobago	X	X	X	X	X
Tristan da Cunha					
Tunisia	X	X	X	X	X
Turkey	X	X	X	X	X
Turkmenistan	X				
Turks and Caicos Islands[a]					
Tuvalu					
Uganda			X	X	X
Ukraine	X	X	X	X	X
United Arab Emirates	X	X	X	X	X
United Kingdom of Great Britain and Northern Ireland[i]	X	X	X	X	X
United Republic of Tanzania	X	X	X	X	X

Country or territory	*2016*	*2017*	*2018*	*2019*	*2020*
United States of America	X	X	X	X	X
Uruguay	X	X	X	X	X
Uzbekistan	X	X	X	X	X
Vanuatu					
Venezuela (Bolivarian Republic of)	X	X	X	X	X
Viet Nam		X	X	X	
Wallis and Futuna Islands[a]					
Yemen			X	X	X
Zambia					
Zimbabwe	X	X	X	X	X
Total number of Governments that submitted form D	**134**	**122**	**129**	**133**	**123**
Total number of Governments requested to provide information	**213**	**213**	**213**	**213**	**213**

[a] Territorial application of the 1988 Convention has been confirmed by the authorities concerned.
[b] State member of the European Union.
[c] Information was provided by Australia.
[d] Since 17 May 2016, "Czechia" has replaced "Czech Republic" as the short name used in the United Nations.
[e] Since 19 April 2018, "Eswatini" has replaced "Swaziland" as the short name used in the United Nations.
[f] The Holy See and San Marino did not furnish form D separately as their data are included in the report of Italy.
[g] Liechtenstein did not furnish form D separately as its data are included in the report of Switzerland.
[h] Since 14 February 2019, "North Macedonia" has replaced "the former Yugoslav Republic of Macedonia" as the short name used in the United Nations.
[i] The United Kingdom ceased to be a member of the European Union on 31 January 2020.

Annex III

Seizures of substances in Tables I and II of the United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances of 1988, as reported to the International Narcotics Control Board, 2016–2020

1. Tables A and B show information on seizures of the substances included in Tables I and II of the United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances of 1988, furnished to the International Narcotics Control Board (INCB) by Governments in accordance with article 12, paragraph 12, of the Convention. **To enhance user-friendliness, tables A and B have not been included in the present report but are available in spreadsheet format on the INCB website, in the section on the annual reports on precursors.**

Annex IV

Submission of information by Governments on licit trade in, legitimate uses of and requirements for substances in Tables I and II of the United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances of 1988 for the years 2016–2020

Notes: The names of non-metropolitan territories and special administrative regions are in italics.
A blank signifies that no information was provided.
"X" signifies that a completed form D (or equivalent report) was submitted (including forms in which all fields contained "nil", "0", "none", etc.).

Country or territory	*2016*		*2017*		*2018*		*2019*		*2020*	
	Trade	*Uses and/or require-ments*	*Trade*	*Uses and/or require-ments*	*Trade*	*Uses and/or require-ments*	*Trade*	*Uses and/or require-ments*	*Trade*	*Uses and/or require-ments*
Afghanistan	X	X	X	X	X	X	X		X	X
Albania	X	X	X	X	X	X	X	X		
Algeria	X	X	X	X	X		X	X		
Andorra			X				X	X	X	X
Angola	X		X	X	X		X			
Anguilla										
Antigua and Barbuda										
Argentina	X	X	X	X	X	X	X	X	X	X
Armenia	X	X	X	X	X		X		X	X
Aruba										
Ascension										
Australia	X	X	X	X			X	X	X	X
Austria[a]	X	X	X	X	X	X	X	X	X	X
Azerbaijan	X	X	X	X	X	X	X	X		
Bahamas										
Bahrain	X	X	X	X	X	X	X	X	X	X
Bangladesh			X	X						
Barbados										
Belarus	X	X	X	X		X	X	X		
Belgium[a]	X	X	X	X	X	X	X	X	X	X
Belize			X	X						
Benin	X	X	X	X	X	X				
Bermuda										
Bhutan	X	X	X	X	X	X	X	X	X	X

Country or territory	2016		2017		2018		2019		2020	
	Trade	Uses and/or require-ments	Trade	Uses and/or require-ments	Trade	Uses and/or require-ments	Trade	Uses and/or require-ments	Trade	Uses and/or require-ments
Bolivia (Plurinational State of)	X	X	X	X	X	X	X	X	X	X
Bosnia and Herzegovina	X	X	X	X	X	X	X	X	X	X
Botswana			X						X	X
Brazil	X	X	X	X	X	X	X	X	X	X
British Virgin Islands										
Brunei Darussalam	X	X	X	X	X	X	X	X	X	
Bulgaria[a]	X	X	X	X	X	X	X	X	X	X
Burkina Faso										
Burundi							X	X		
Cabo Verde	X	X	X	X	X	X				
Cambodia										
Cameroon							X			
Canada	X	X	X	X	X	X	X	X	X	X
Cayman Islands										
Central African Republic										
Chad										
Chile	X	X	X	X	X	X	X	X	X	X
China	X	X			X	X	X	X	X	X
China, Hong Kong SAR	X	X			X	X	X	X	X	X
China, Macao SAR					X	X				
Christmas Island										
Cocos (Keeling) Islands										
Colombia	X	X	X	X	X	X	X	X	X	X
Comoros										
Congo										
Cook Islands										
Costa Rica	X	X	X	X	X	X	X	X	X	X
Côte d'Ivoire	X	X								
Croatia[a]	X	X	X	X	X	X	X	X	X	
Cuba										
Curaçao	X	X	X	X			X	X	X	X
Cyprus[a]	X	X	X	X	X	X	X	X	X	X
Czechia[a,b]	X	X	X	X	X	X	X	X	X	X
Democratic People's Republic of Korea		X	X	X		X				X

Country or territory	2016		2017		2018		2019		2020	
	Trade	Uses and/or require-ments	Trade	Uses and/or require-ments	Trade	Uses and/or require-ments	Trade	Uses and/or require-ments	Trade	Uses and/or require-ments
Democratic Republic of the Congo	X	X	X		X	X	X	X	X	
Denmark[a]	X		X		X	X	X		X	
Djibouti										
Dominica										
Dominican Republic			X	X	X	X	X	X	X	X
Ecuador	X	X	X	X	X	X	X	X	X	X
Egypt	X	X	X	X	X	X	X	X	X	X
El Salvador	X	X	X	X	X	X	X	X	X	X
Equatorial Guinea										
Eritrea										
Estonia[a]	X	X	X	X			X	X	X	
Eswatini[c]										
Ethiopia										
Falkland Islands (Malvinas)	X	X								
Fiji	X	X								
Finland[a]	X	X	X	X	X	X	X	X	X	X
France[a]	X	X	X	X	X	X	X	X	X	X
French Polynesia										
Gabon					X		X		X	X
Gambia	X									
Georgia	X	X	X	X	X	X	X	X	X	X
Germany[a]	X	X	X	X	X	X	X	X	X	X
Ghana	X	X	X	X			X	X	X	X
Gibraltar										
Greece[a]		X	X	X	X	X	X			
Grenada										
Guatemala	X	X	X	X	X	X	X	X	X	X
Guinea										
Guinea-Bissau										
Guyana		X				X		X		
Haiti					X				X	X
Holy See[d]										
Honduras	X	X	X	X	X	X	X	X	X	X
Hungary[a]	X	X	X	X	X	X	X	X	X	X
Iceland	X	X	X	X			X	X	X	X
India	X	X	X	X	X	X	X	X	X	X
Indonesia	X	X	X	X	X		X		X	X
Iran (Islamic Republic of)	X		X	X	X	X	X	X	X	X
Iraq	X	X							X	X

Country or territory	2016		2017		2018		2019		2020	
	Trade	Uses and/or require-ments	Trade	Uses and/or require-ments	Trade	Uses and/or require-ments	Trade	Uses and/or require-ments	Trade	Uses and/or require-ments
Ireland[a]	X	X	X	X	X	X	X	X	X	X
Israel	X	X	X	X	X	X	X	X	X	X
Italy[a]	X	X	X	X	X	X	X	X		
Jamaica	X	X	X	X	X	X	X	X		
Japan	X	X	X	X	X	X	X	X	X	X
Jordan	X	X	X	X	X	X	X	X	X	X
Kazakhstan	X	X	X	X	X	X	X	X	X	X
Kenya	X	X	X	X						
Kiribati										
Kuwait										
Kyrgyzstan	X	X			X	X	X	X	X	X
Lao People's Democratic Republic	X		X	X	X	X	X	X	X	X
Latvia[a]	X	X	X	X	X	X	X	X	X	X
Lebanon	X	X	X	X	X	X	X	X	X	X
Lesotho										
Liberia										
Libya										
Liechtenstein[e]										
Lithuania[a]	X	X	X	X	X	X	X	X	X	X
Luxembourg[a]							X	X		
Madagascar	X	X			X	X	X	X	X	X
Malawi										
Malaysia	X	X	X	X	X	X	X	X	X	X
Maldives	X	X					X	X	X	X
Mali										
Malta[a]	X	X	X	X		X	X	X	X	X
Marshall Islands										
Mauritania										
Mauritius					X	X	X	X	X	X
Mexico	X	X	X	X	X	X	X	X	X	X
Micronesia (Federated States of)									X	X
Monaco	X	X	X	X	X	X	X	X	X	X
Mongolia	X		X	X						
Montenegro	X	X	X	X	X	X	X	X	X	X
Montserrat	X	X		X	X	X				
Morocco	X	X	X	X	X	X	X	X	X	X
Mozambique	X	X								
Myanmar	X	X	X	X	X	X	X	X	X	X
Namibia										
Nauru										

Country or territory	2016		2017		2018		2019		2020	
	Trade	Uses and/or require-ments	Trade	Uses and/or require-ments	Trade	Uses and/or require-ments	Trade	Uses and/or require-ments	Trade	Uses and/or require-ments
Nepal			X						X	
Netherlands[a]	X	X	X	X	X	X	X	X	X	X
New Caledonia										
New Zealand	X		X	X	X	X	X	X	X	X
Nicaragua	X	X	X	X	X		X	X	X	X
Niger										
Nigeria	X	X	X		X		X	X	X	X
Niue										
Norfolk Island[f]										
North Macedonia[g]					X	X			X	
Norway			X	X	X	X	X	X	X	X
Oman	X	X	X	X						
Pakistan	X	X	X	X	X	X	X	X		
Palau										
Panama	X	X	X	X	X		X	X	X	X
Papua New Guinea										
Paraguay	X	X					X	X	X	X
Peru	X	X			X	X	X	X	X	X
Philippines	X	X	X	X	X	X	X	X	X	X
Poland[a]	X	X	X	X	X	X	X	X	X	X
Portugal[a]	X	X	X	X	X	X	X	X	X	X
Qatar			X	X	X	X	X	X	X	X
Republic of Korea	X	X	X	X	X	X	X	X		
Republic of Moldova	X	X	X	X	X	X				
Romania[a]	X	X	X	X	X	X	X	X	X	X
Russian Federation	X	X	X	X	X	X	X	X	X	X
Rwanda							X	X	X	X
Saint Helena										
Saint Kitts and Nevis										
Saint Lucia	X	X	X	X	X		X	X	X	X
Saint Vincent and the Grenadines	X	X			X	X	X	X	X	X
Samoa										
San Marino[d]										
Sao Tome and Principe										
Saudi Arabia	X	X	X	X	X	X	X	X	X	
Senegal		X			X	X				
Serbia	X	X	X	X	X	X	X	X	X	X
Seychelles	X	X								
Sierra Leone						X	X	X	X	X
Singapore	X	X		X			X		X	

Country or territory	2016		2017		2018		2019		2020	
	Trade	Uses and/or require-ments	Trade	Uses and/or require-ments	Trade	Uses and/or require-ments	Trade	Uses and/or require-ments	Trade	Uses and/or require-ments
Sint Maarten										
Slovakia[a]	X	X	X	X	X	X	X	X	X	X
Slovenia[a]	X	X	X	X	X	X	X	X	X	X
Solomon Islands										
Somalia										
South Africa	X	X	X	X	X	X	X	X	X	X
South Sudan			X	X	X	X				
Spain[a]	X	X	X	X	X	X	X		X	X
Sri Lanka	X	X	X	X	X	X				
Sudan	X	X	X	X	X	X	X	X	X	X
Suriname					X	X				
Sweden[a]	X	X	X	X	X	X	X	X	X	
Switzerland	X	X	X	X	X	X	X	X	X	X
Syrian Arab Republic	X		X	X	X	X	X			
Tajikistan	X	X	X	X	X	X	X			X
Thailand	X	X	X	X	X	X	X	X	X	X
Timor-Leste							X	X		
Togo										
Tonga										
Trinidad and Tobago	X	X	X	X	X	X	X	X	X	X
Tristan da Cunha										
Tunisia	X	X	X	X	X	X	X	X	X	X
Turkey	X	X	X	X	X	X	X	X		
Turkmenistan	X	X								
Turks and Caicos Islands										
Tuvalu										
Uganda					X	X	X	X	X	X
Ukraine	X	X	X	X	X	X	X	X	X	X
United Arab Emirates	X	X	X	X	X	X	X	X	X	X
United Kingdom of Great Britain and Northern Ireland[h]	X	X	X	X	X	X	X		X	X
United Republic of Tanzania	X	X	X	X	X	X	X	X	X	X
United States of America	X	X	X	X	X	X	X	X	X	X
Uruguay	X	X	X	X	X	X	X	X	X	X
Uzbekistan	X	X	X	X	X	X	X	X	X	X
Vanuatu										

Country or territory	2016		2017		2018		2019		2020	
	Trade	Uses and/or require-ments	Trade	Uses and/or require-ments	Trade	Uses and/or require-ments	Trade	Uses and/or require-ments	Trade	Uses and/or require-ments
Venezuela (Bolivarian Republic of)	X	X	X	X	X	X	X	X	X	
Viet Nam					X	X	X	X		
Wallis and Futuna Islands										
Yemen					X	X	X		X	X
Zambia										
Zimbabwe	X	X	X	X			X	X	X	X
Total number of Governments that submitted form D	**124**	**120**	**117**	**113**	**117**	**111**	**118**	**106**	**112**	**103**
Total number of Governments requested to provide information	**213**	**213**	**213**	**213**	**213**	**213**	**213**	**213**	**213**	**213**

[a] State member of the European Union.
[b] Since 17 May 2016, "Czechia" has replaced "Czech Republic" as the short name used in the United Nations.
[c] Since 19 April 2018, "Eswatini" has replaced "Swaziland" as the short name used in the United Nations.
[d] The Government of Italy includes on form D licit trade data for the Holy See and San Marino.
[e] The Government of Switzerland includes on form D licit trade data for Liechtenstein.
[f] Information was provided by Australia.
[g] Since 14 February 2019, "North Macedonia" has replaced "the former Yugoslav Republic of Macedonia" as the short name used in the United Nations.
[h] The United Kingdom ceased to be a member of the European Union on 31 January 2020

Annex V

Annual legitimate requirements for ephedrine, pseudoephedrine, 3,4-methylenedioxyphenyl-2-propanone and 1-phenyl-2-propanone; substances frequently used in the manufacture of amphetamine-type stimulants

1. In its resolution 49/3, entitled "Strengthening systems for the control of precursor chemicals used in the manufacture of synthetic drugs", the Commission on Narcotic Drugs:

(a) Requested Member States to provide to the International Narcotics Control Board (INCB) annual estimates of their legitimate requirements for 3,4-methylenedioxyphenyl-2-propanone (3,4-MDP-2-P), pseudoephedrine, ephedrine and 1-phenyl-2-propanone (P-2-P) and, to the extent possible, estimated requirements for imports of preparations containing those substances that could be easily used or recovered by readily applicable means;

(b) Requested the Board to provide those estimates to Member States in such a manner as to ensure that such information was used only for drug control purposes;

(c) Invited Member States to report to the Board on the feasibility and usefulness of preparing, reporting and using estimates of legitimate requirements for the precursor chemicals and preparations referred to above in preventing diversion.

2. Pursuant to that resolution, the Board formally invited Governments to prepare estimates of their legitimate requirements for those substances. Those estimates, as reported by Governments, were published for the first time in March 2007.

3. The Board has prepared a table reflecting the latest data reported by Governments on those four precursor chemicals (and their preparations, as relevant). It is expected that those data will provide the competent authorities of exporting countries with at least an indication of the legitimate requirements of importing countries, thus preventing diversion attempts.

4. **To enhance user-friendliness, the table has not been included in the present report but is available in spreadsheet format on the INCB website, in the section on the annual reports on precursors. The data are current as at 1 November 2021.**

5. Governments are invited to review their requirements as published, amend them as necessary and inform the Board of any required change. Regular updates of the table will be available throughout the year on the Board's website, in the section on precursors (see the section on annual legitimate requirements under the "Tools and Kits" menu).

Annex VI

Governments that have requested pre-export notifications pursuant to article 12, subparagraph 10 (a), of the United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances of 1988

1. Governments of all exporting countries and territories are reminded that it is an obligation to provide pre-export notifications to Governments that have requested them pursuant to article 12, subparagraph 10 *(a)*, of the United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances of 1988, which provides that:

> "upon request to the Secretary-General by the interested Party, each Party from whose territory a substance in Table I is to be exported shall ensure that, prior to such export, the following information is supplied by its competent authorities to the competent authorities of the importing country:
>
> "(i) Name and address of the exporter and importer and, when available, the consignee;
>
> "(ii) Name of the substance in Table I;
>
> "(iii) Quantity of the substance to be exported;
>
> "(iv) Expected point of entry and expected date of dispatch;
>
> "(v) Any other information which is mutually agreed upon by the Parties."

2. Governments that have requested pre-export notifications are listed in the table below in alphabetical order, followed by the substance (or substances) for which pre-export notifications were requested, and the date of notification of the request transmitted by the Secretary-General to Governments.

3. The information is current as at 1 November 2021.

Notifying Government	*Substances for which pre-export notifications have been requested*	*Date of communication to Governments by the Secretary-General*
Afghanistan[a]	All substances included in Tables I and II	13 July 2010
Algeria[a]	All substances included in Tables I and II	10 October 2013
Antigua and Barbuda[a]	All substances included in Tables I and II	5 May 2000
Argentina	All substances included in Table I	19 November 1999
Armenia[a]	All substances included in Tables I and II[b,c]	4 July 2013
Australia[a]	All substances included in Tables I and II	12 February 2010
Austria	All substances included in Table I	19 May 2000[d]
Azerbaijan[a]	All substances included in Tables I and II	21 January 2011
Bangladesh[a]	All substances included in Tables I and II	12 May 2015
Barbados[a]	All substances included in Tables I and II[b,c]	24 October 2013
Belarus[e]	Acetic anhydride, ephedrine, potassium permanganate and pseudoephedrine	12 October 2000
Belgium	All substances included in Table I	19 May 2000[d]
Benin[a]	All substances included in Tables I and II	4 February 2000
Bhutan[a]	All substances included in Tables I and II	6 July 2018

Notifying Government	*Substances for which pre-export notifications have been requested*	*Date of communication to Governments by the Secretary-General*
Bolivia (Plurinational State of)[a]	Acetic anhydride, acetone, ethyl ether, hydrochloric acid, potassium permanganate and sulphuric acid	12 November 2001
Brazil[a]	All substances included in Tables I and II	15 October 1999 and 15 December 1999
Bulgaria	All substances included in Table I	19 May 2000[d]
Canada[a]	All substances included in Tables I and II	31 October 2005
Cayman Islands[a]	All substances included in Tables I and II	7 September 1998
Chile[a]	All substances included in Tables I and II	19 October 2012
China	Acetic anhydride	20 October 2000
China, Hong Kong SAR[a]	All substances included in Tables I and II	28 December 2012
China, Macao SAR[a]	All substances included in Tables I and II	28 December 2012
Colombia[a]	All substances included in Tables I and II	14 October 1998
Costa Rica[a]	All substances included in Tables I and II	27 September 1999
Côte d'Ivoire[a]	All substances included in Tables I and II	26 June 2013
Croatia	All substances included in Table I	19 May 2000[d]
Cyprus	All substances included in Table I	19 May 2000[d]
Czechia[f]	All substances included in Table I	19 May 2000[d]
Denmark	All substances included in Table I	19 May 2000[d]
Dominican Republic[a]	All substances included in Tables I and II	11 September 2002
Ecuador[a]	All substances included in Tables I and II	1 August 1996
Egypt[a]	All substances included in Table I and acetone	3 December 2004
El Salvador[a]	All substances included in Tables I and II	29 July 2010
Estonia	All substances included in Table I	19 May 2000[d]
Ethiopia[a]	All substances included in Tables I and II	17 December 1999
European Union (on behalf of all its member States)[g]	All substances included in Table I	19 May 2000[d]
Finland	All substances included in Table I	19 May 2000[d]
France	All substances included in Table I	19 May 2000[d]
Georgia[a]	All substances included in Tables I and II	7 September 2016
Germany	All substances included in Table I	19 May 2000[d]
Ghana[a]	All substances included in Tables I and II	26 February 2010
Greece	All substances included in Table I	19 May 2000[d]
Haiti[a]	All substances included in Tables I and II	20 June 2002
Honduras	Acetic anhydride, *N*-acetylanthranilic acid, 4-anilino-*N*-phenethylpiperidine (ANPP), ephedrine, ergometrine, ergotamine, isosafrole, lysergic acid, 3,4-methylenedioxyphenyl-2-propanone (3,4-MDP-2-P), norephedrine, *N*-phenethyl-4-piperidone (NPP), phenylacetic acid, *alpha*-phenylacetoacetonitrile (APAAN), 1-phenyl-2-propanone (P-2-P), piperonal, potassium permanganate, pseudoephedrine and safrole	18 June 2020
Hungary	All substances included in Table I	19 May 2000[d]
Iceland[a]	All substances included in Tables I and II	11 May 2021

Notifying Government	*Substances for which pre-export notifications have been requested*	*Date of communication to Governments by the Secretary-General*
India[a]	All substances included in Tables I and II	23 March 2000
Indonesia[a]	Acetic anhydride, *N*-acetylanthranilic acid, anthranilic acid, ephedrine, ergometrine, ergotamine, isosafrole, 3,4-methylenedioxyphenyl-2-propanone, phenylacetic acid, 1-phenyl-2-propanone, piperonal, pseudoephedrine and safrole	18 February 2000
Iraq[a]	All substances included in Tables I and II[b,c]	31 July 2013
Ireland	All substances included in Table I	19 May 2000[d]
Italy	All substances included in Table I	19 May 2000[d]
Jamaica	All substances included in Table I[b,c]	4 July 2013
Japan	All substances included in Table I	17 December 1999
Jordan[a]	All substances included in Tables I and II	15 December 1999
Kazakhstan[a]	All substances included in Tables I and II	15 August 2003
Kenya[a]	All substances included in Tables I and II[b,c]	10 October 2013
Kyrgyzstan[a]	All substances included in Tables I and II[b,c]	21 October 2013
Latvia	All substances included in Table I	19 May 2000[d]
Lebanon[a]	All substances included in Tables I and II	14 June 2002
Libya[a]	All substances included in Tables I and II[b,c]	21 August 2013
Lithuania	All substances included in Table I	19 May 2000[d]
Luxembourg	All substances included in Table I	19 May 2000[d]
Madagascar[a]	All substances included in Tables I and II	31 March 2003
Malaysia[a]	All substances included in Table Ib and II	21 August 1998 and 22 September 2021
Maldives[a]	All substances included in Tables I and II	6 April 2005
Malta	All substances included in Table I	19 May 2000[d]
Mexico[a]	All substances included in Tables I and II	6 April 2005
Micronesia (Federated States of)[a]	All substances included in Tables I and II[b,c]	11 February 2014
Myanmar[a]	All substances included in Tables I and II	4 November 2016
Netherlands	All substances included in Table I	19 May 2000[d]
New Zealand[a]	All substances included in Tables I and II[b,c]	3 April 2014
Nicaragua[a]	All substances included in Tables I and II	8 January 2014
Nigeria[a]	All substances included in Tables I and II	28 February 2000
Norway[a]	All substances included in Table I,[c] and anthranilic acid, ethyl ether and piperidine	17 December 2013
Oman[a]	All substances included in Tables I and II	16 April 2007
Pakistan[a]	All substances included in Tables I and II	12 November 2001 and 6 March 2013
Panama	Ephedrine, ergometrine, ergotamine, norephedrine, pseudoephedrine	14 August 2013
Paraguay[a]	All substances included in Tables I and II	3 February 2000

Notifying Government	*Substances for which pre-export notifications have been requested*	*Date of communication to Governments by the Secretary-General*
Peru[a]	Acetic anhydride, acetone, ephedrine, ergometrine, ergotamine, ethyl ether, hydrochloric acid, lysergic acid, methyl ethyl ketone, norephedrine, potassium permanganate, pseudoephedrine, sulphuric acid and toluene	27 September 1999
Philippines[a]	All substances included in Tables I and II	16 April 1999
Poland	All substances included in Table I	19 May 2000[d]
Portugal	All substances included in Table I	19 May 2000[d]
Qatar[a]	All substances included in Tables I and II[b,c]	16 July 2013
Republic of Korea[a]	All substances included in Table I, and acetone	3 June 2008
Republic of Moldova[a]	All substances included in Tables I and II[b,c]	29 December 1998 and 8 November 2013
Romania	All substances included in Table I	19 May 2000[d]
Russian Federation[a]	Acetic anhydride, ephedrine, ergometrine, ergotamine, 3,4-methylenedioxyphenyl-2-propanone, norephedrine, phenylacetic acid, 1-phenyl-2-propanone, potassium permanganate, pseudoephedrine and all substances included in Table II	21 February 2000
Saint Vincent and the Grenadines[a]	All substances included in Tables I and II[b,c]	16 July 2013
Saudi Arabia[a]	All substances included in Tables I and II	18 October 1998
Sierra Leone[a]	All substances included in Tables I and II[b,c]	5 July 2013
Singapore	All substances included in Table I	5 May 2000
Slovakia	All substances included in Table I	19 May 2000[d]
Slovenia	All substances included in Table I	19 May 2000[d]
South Africa[a]	All substances included in Table I, and anthranilic acid	11 August 1999
Spain	All substances included in Table I	19 May 2000[d]
Sri Lanka	All substances included in Table I	19 November 1999
Sudan[a]	All substances included in Tables I and II	6 May 2015
Sweden	All substances included in Table I	19 May 2000[d]
Switzerland	All substances included in Table I	25 March 2013
Syrian Arab Republic[a]	All substances included in Tables I and II	24 October 2013
Tajikistan[a]	All substances included in Tables I and II	7 February 2000
Thailand[a]	All substances included in Table I (except potassium permanganate), and anthranilic acid[b]	18 October 2010
Togo[a]	All substances included in Tables I and II	6 August 2013
Tonga[a]	All substances included in Tables I and II[b,c]	4 July 2013
Trinidad and Tobago[a]	All substances included in Tables I and II[b,c]	15 August 2013
Tunisia[a]	Acetic anhydride, *N*-acetylanthranilic acid, 4-anilino-*N*-phenethylpiperidine (ANPP), ephedrine, ergometrine, ergotamine, isosafrole, lysergic acid, 3,4-methylene-dioxyphenyl-2-propanone (3,4-MDP-2-P), norephedrine, *N*-phenethyl-4-piperidone (NPP), phenylacetic acid, *alpha*-phenylacetoacetonitrile (APAAN), 1-phenyl-2-propanone (P-2-P), piperonal, potassium permanganate, pseudoephedrine, safrole and all substances included in Table II	22 June 2020

Notifying Government	*Substances for which pre-export notifications have been requested*	*Date of communication to Governments by the Secretary-General*
Turkey[a]	All substances included in Tables I and II	2 November 1995
Uganda[a]	All substances included in Tables I and II[b,c]	6 May 2014
United Arab Emirates[a]	All substances included in Tables I[b] and II	26 September 1995
United Kingdom of Great Britain and Northern Ireland[d,h]	All substances included in Table I	19 May 2000
United Republic of Tanzania[a]	All substances included in Tables I and II	10 December 2002
United States of America	Acetic anhydride, ephedrine and pseudoephedrine	2 June 1995 and 19 January 2001
Uruguay[a]	All substances included in Tables I and II	30 December 2015
Venezuela (Bolivarian Republic of)[a]	All substances included in Tables I and II	27 March 2000
Yemen[a]	All substances included in Tables I and II	6 May 2014
Zimbabwe[a]	All substances included in Tables I and II[b,c]	4 July 2013

Note: The names of territories are in italics.

[a] The Secretary-General has informed all Governments of the request of the notifying Government to receive a pre-export notification for some or all substances listed in Table II of the 1988 Convention as well.

[b] The Government requested to also receive pre-export notifications for pharmaceutical preparations containing ephedrine and pseudoephedrine.

[c] The Governments requested to also receive pre-export notifications for safrole-rich oils.

[d] On 19 May 2000, the Secretary-General communicated to Governments the request by the European Commission on behalf of the States members of the European Union to receive pre-export notifications for the indicated substances.

[e] Not yet notified by the Secretary-General as, in a subsequent communication, the Government of Belarus requested the Secretary-General to suspend such notification until a national mechanism to receive and process pre-export notifications was established.

[f] Since 17 May 2016, "Czechia" has replaced "Czech Republic" as the short name used in the United Nations.

[g] Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain and Sweden.

[h] The United Kingdom ceased to be a member of the European Union on 31 January 2020.

Annex VII

Substances in Tables I and II of the United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances of 1988

Table I	*Table II*
Acetic anhydride	Acetone
N-Acetylanthranilic acid	Anthranilic acid
4-Anilino-*N*-phenethylpiperidine (ANPP)[a]	Ethyl ether
Ephedrine	Hydrochloric acid[d]
Ergometrine	Methyl ethyl ketone
Ergotamine	Piperidine
Isosafrole	Sulphuric acid[d]
Lysergic acid	Toluene
3,4-MDP-2-P methyl glycidate (“PMK glycidate”)[b]	
3,4-MDP-2-P methyl glycidic acid (“PMK glycidic acid”)[b]	
3,4-Methylenedioxyphenyl-2-propanone (3,4-MDP-2-P)	
Methyl *alpha*-phenylacetoacetate (MAPA)[c]	
Norephedrine	
N-Phenethyl-4-piperidone (NPP)[a]	
Phenylacetic acid	
alpha-Phenylacetoacetamide (APAA)[b]	
alpha-Phenylacetoacetonitrile (APAAN)	
1-Phenyl-2-propanone	
Piperonal	
Potassium permanganate	
Pseudoephedrine	
Safrole	
The salts of the substances listed in this Table, whenever the existence of such salts is possible.	The salts of the substances listed in this Table, whenever the existence of such salts is possible.

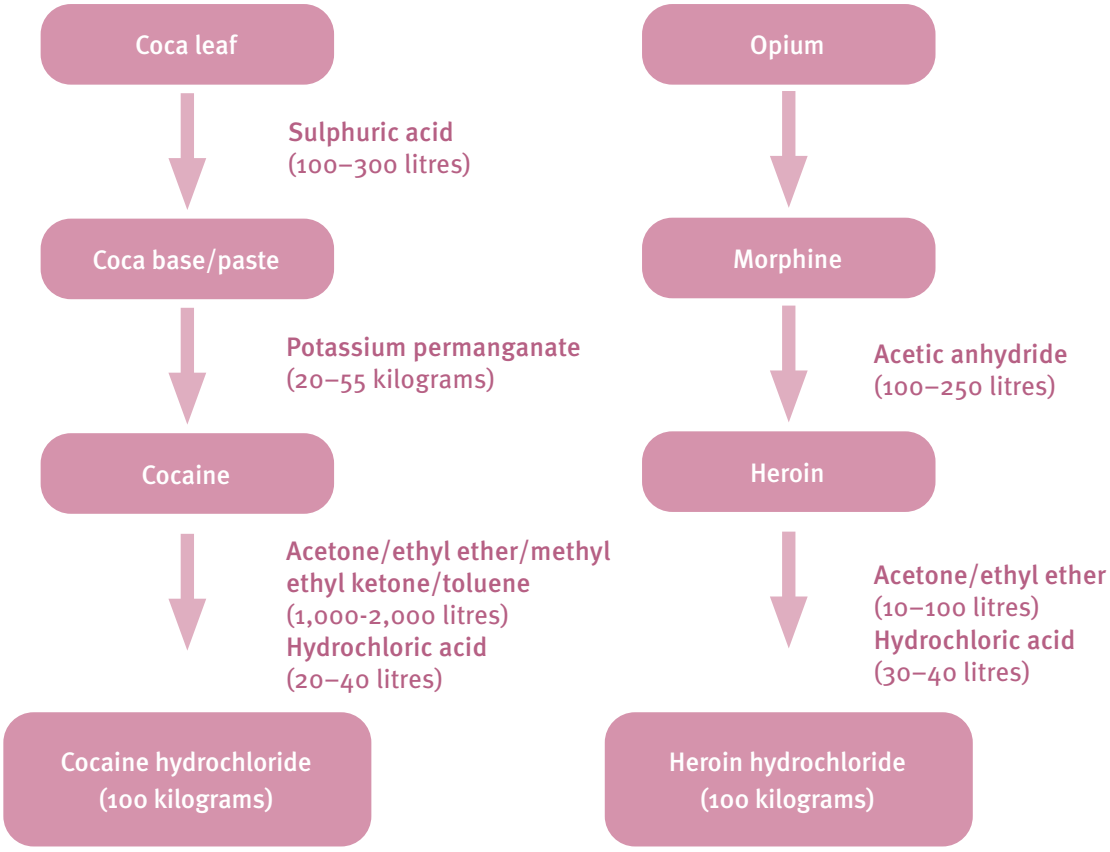
[a] Included in Table I, effective 18 October 2017.
[b] Included in Table I, effective 19 November 2019.
[c] Included in Table I, effective 3 November 2020.
[d] The salts of hydrochloric acid and sulphuric acid are specifically excluded from Table II.

Annex VIII

Use of scheduled substances in the illicit manufacture of narcotic drugs and psychotropic substances

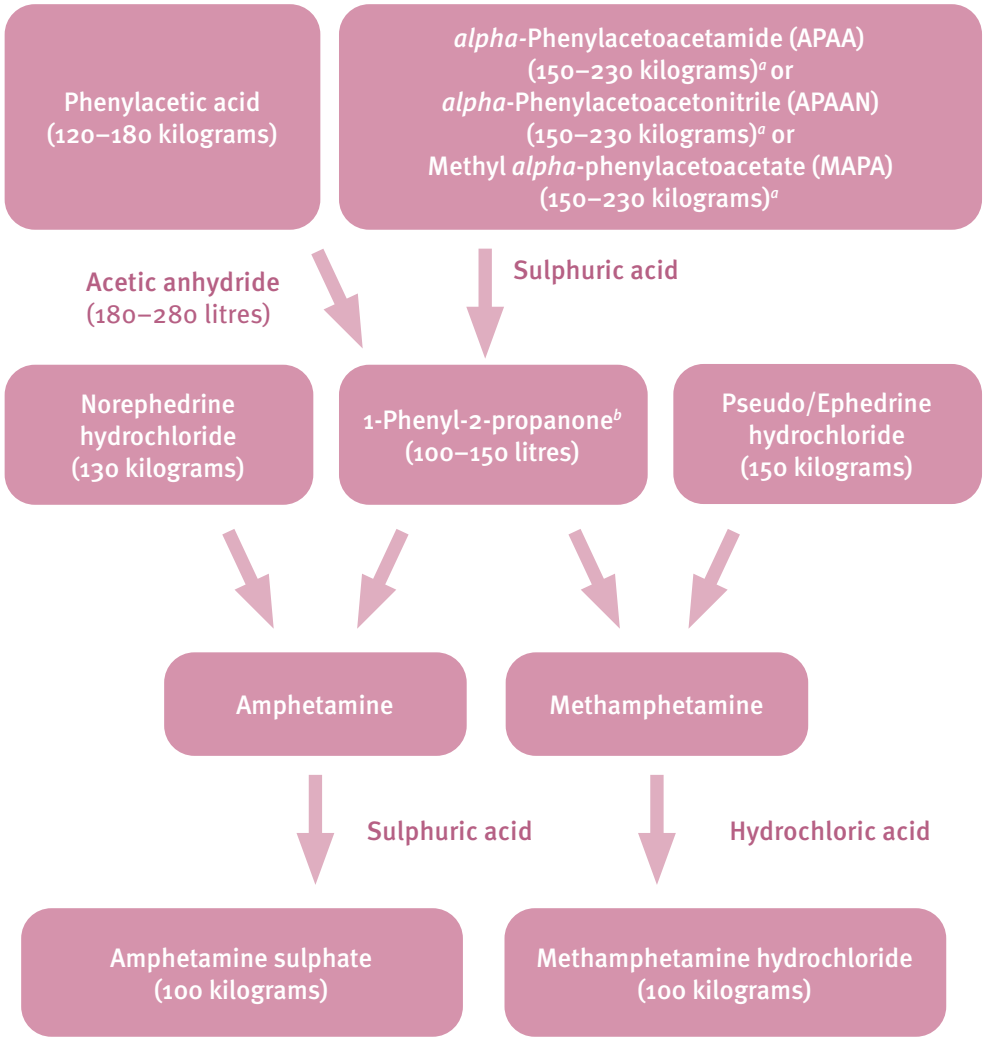
Figures I–V below depict the use of scheduled substances in the illicit manufacture of narcotic drugs and psychotropic substances. The approximate quantities provided are based on common manufacturing methods. Other manufacturing methods using scheduled substances – or even non-scheduled substances instead of or in addition to scheduled substances – may also be encountered, depending on the geographical location.

Figure I. Illicit manufacture of cocaine and heroin: scheduled substances and the approximate quantities thereof required for the illicit manufacture of 100 kilograms of cocaine or heroin hydrochloride



Note: The extraction of cocaine from coca leaf and the purification of coca paste and the crude base products of cocaine and heroin require solvents, acids and bases. A wide range of such chemicals are used at all stages of drug manufacture.

Figure II. Illicit manufacture of amphetamine and methamphetamine: scheduled substances and the approximate quantities thereof required for the illicit manufacture of 100 kilograms of amphetamine sulphate and methamphetamine hydrochloride

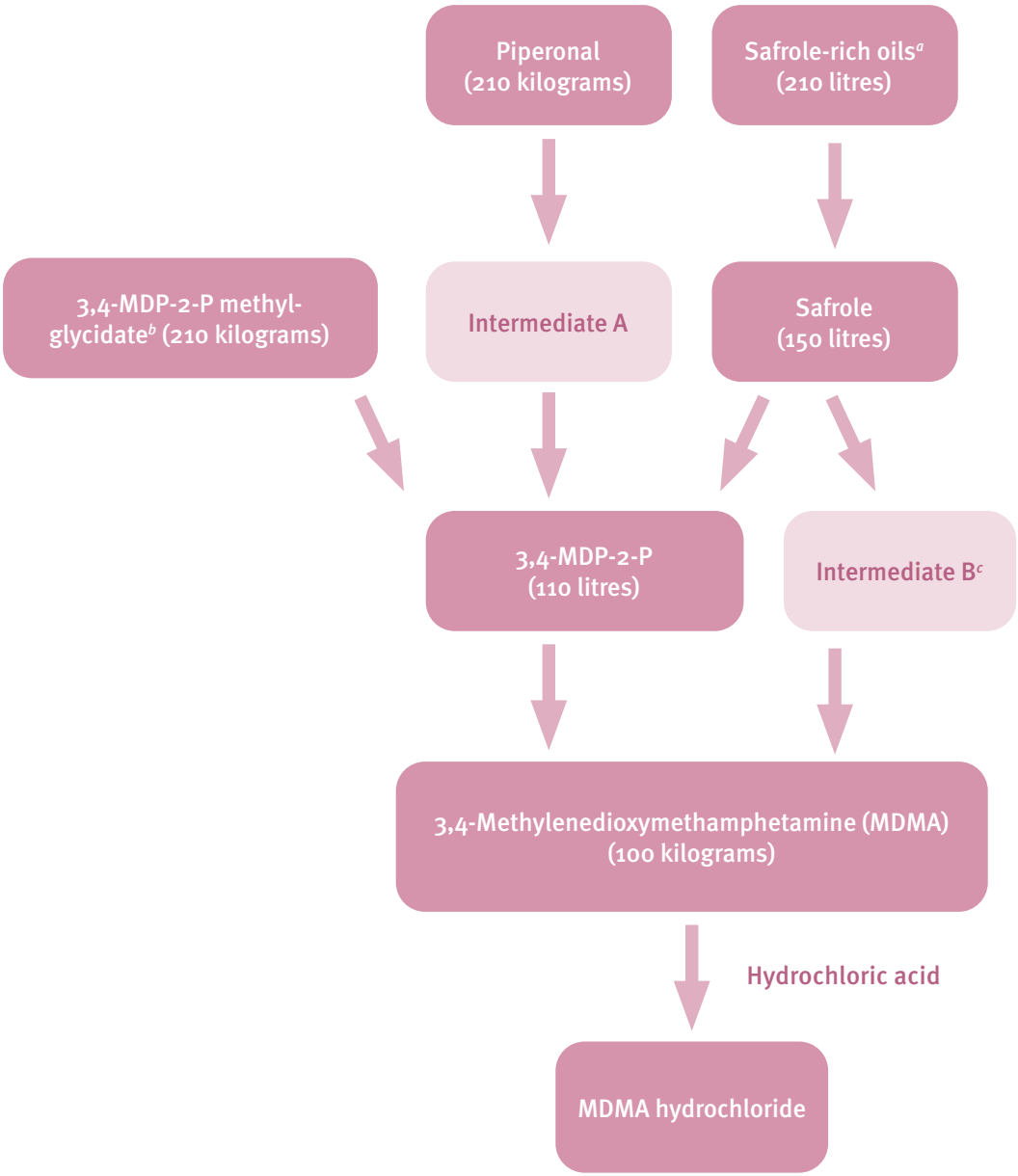


Note: Methcathinone, a less commonly encountered amphetamine-type stimulant, can be manufactured from pseudo/ephedrine hydrochloride, requiring the same approximate quantities as methamphetamine to yield 100 kilograms of hydrochloride salt.

[a]The weight range reflects the fact that APAA, APAAN and MAPA are purpose-made designer precursors without recognized legitimate uses and are therefore often impure (street-level quality).

[b]Methods based on 1-phenyl-2-propanone result in racemic *d,l*-meth/amphetamine, while methods based on ephedrine, pseudoephedrine or norephedrine result in *d*-meth/amphetamine. In a subsequent step, racemic *d,l*-meth/amphetamine can be – and actually is – separated in illicit laboratories to also produce *d*-meth/amphetamine.

Figure III. Illicit manufacture of 3,4-methylenedioxymethamphetamine (MDMA) and related drugs: scheduled substances and the approximate quantities thereof required for the illicit manufacture of 100 kilograms of MDMA



Note: Isosafrole, another precursor of MDMA under international control, is not included in this scheme, as it is not commonly encountered as a starting material; it is an intermediate in a modification of methods for manufacturing MDMA from safrole, requiring approximately 300 litres of safrole to manufacture 100 kilograms of MDMA.

[a] Assuming the safrole-rich oils have a safrole content of 75 per cent or higher.

[b] Refers, for the purpose of this scheme, to the methyl ester and salts of 3,4-MDP-2-P methyl glycidic acid (i.e., purpose-made designer precursors without recognized legitimate uses that are therefore often impure (street-level quality)).

[c] The manufacture of 100 kilograms of MDMA via intermediates B would require 200 litres of safrole.

Figure IV. Illicit manufacture of methaqualone and phencyclidine: scheduled substances and the approximate quantities thereof required for the illicit manufacture of 100 kilograms of methaqualone and phencyclidine

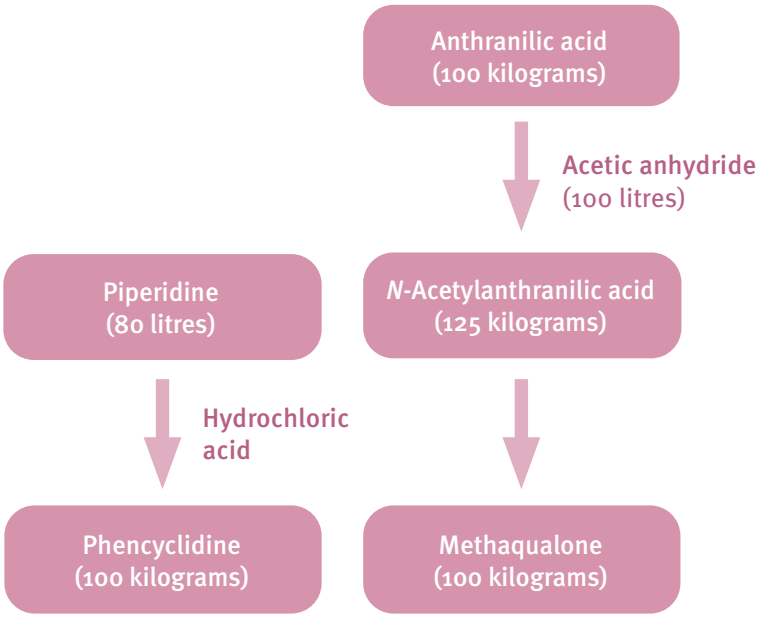
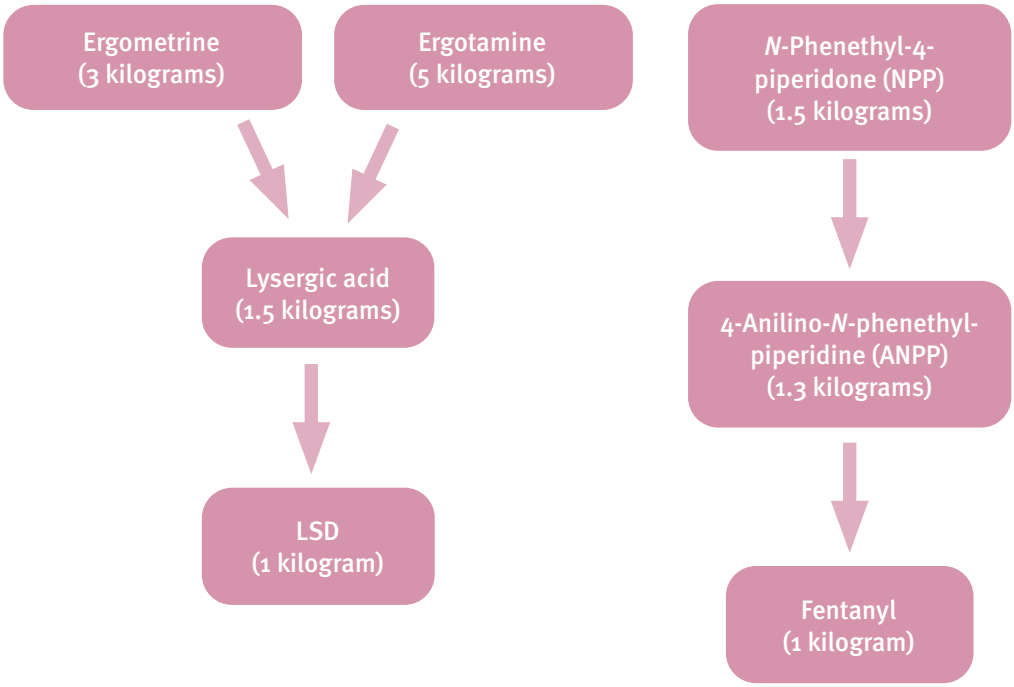


Figure V. Illicit manufacture of lysergic acid diethylamide (LSD) and fentanyl: scheduled substances and the approximate quantities thereof required for the illicit manufacture of 1 kilogram of LSD or fentanyl



Annex IX

Licit uses of the substances in Tables I and II of the United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances of 1988

Knowledge of the most common licit uses of substances in Tables I and II of the United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances of 1988, including the processes and end products in which the substances may be used, is essential for the verification of the legitimacy of orders or shipments. The most common licit uses of those substances reported to the International Narcotics Control Board are as follows:

Substance	*Licit uses*
Acetic anhydride	Acetylating and dehydrating agent used in the chemical and pharmaceutical industries for the manufacture of cellulose acetate, for textile sizing agents and cold bleaching activators, for polishing metals and for the production of brake fluids, dyes and explosives
Acetone	As a common solvent and intermediate for a variety of substances in the chemical and pharmaceutical industries, including plastics, paints, lubricants, varnishes and cosmetics; also used in the manufacture of other solvents, such as chloroform
N-Acetylanthranilic acid	Used in the manufacture of pharmaceuticals, plastics and fine chemicals
4-Anilino-*N*-phenethylpiperidine (ANPP)	Used in the pharmaceutical industry for the manufacture of fentanyl
Anthranilic acid	Chemical intermediate used in the manufacture of dyes, pharmaceuticals and perfumes; also used in the preparation of bird and insect repellents
Ephedrine	Used in the manufacture of bronchodilators (cough medicines)
Ergometrine	Used in the treatment of migraine and as an oxytocic in obstetrics
Ergotamine	Used in the treatment of migraine and as an oxytocic in obstetrics
Ethyl ether	Commonly used solvent in chemical laboratories and in the chemical and pharmaceutical industries; mainly used as an extractant for fats, oils, waxes and resins; also used for the manufacture of munitions, plastics and perfumes and, in medicine, as a general anaesthetic
Hydrochloric acid	Used in the production of chlorides and hydrochlorides, for the neutralization of basic systems and as a catalyst and solvent in organic synthesis
Isosafrole	Used in the manufacture of piperonal; to modify “oriental perfumes”; to strengthen soap perfumes; in small quantities, together with methyl salicylate, in root beer and sarsaparilla flavours; and as a pesticide
Lysergic acid	Used in organic synthesis
Methyl *alpha*-phenylacetoacetate (MAPA)	None, except – in small amounts – for research, development and laboratory analytical purposes
3,4-Methylenedioxyphenyl-2-propanone	Used in the manufacture of piperonal and other perfume components
3,4-MDP-2-P methyl glycidate	None, except – in small amounts – for research, development and laboratory analytical purposes
3,4-MDP-2-P methyl glycidic acid	None, except – in small amounts – for research, development and laboratory analytical purposes
Methyl ethyl ketone	Common solvent; used in the manufacture of coatings, solvents, degreasing agents, lacquers, resins and smokeless powders
Norephedrine	Used in the manufacture of nasal decongestants and appetite suppressants

Substance	*Licit uses*
N-Phenethyl-4-piperidone (NPP)	Used in the pharmaceutical industry, mainly for the manufacture of fentanyl and carfentanil
Phenylacetic acid	Used in the chemical and pharmaceutical industries for the manufacture of phenylacetate esters, amphetamine and some derivatives; also used for the synthesis of penicillins and in fragrance applications and cleaning solutions
alpha-Phenyl-acetoacetamide (APAA)	None, except – in small amounts – for research, development and laboratory analytical purposes
alpha-Phenyl-acetoacetonitrile (APAAN)	None, except – in small amounts – for research, development and laboratory analytical purposes
1-Phenyl-2-propanone	Used in the chemical and pharmaceutical industries for the manufacture of amphetamine, methamphetamine and some derivatives; also used for the synthesis of propylhexedrine
Piperidine	Commonly used solvent and reagent in chemical laboratories and in the chemical and pharmaceutical industries; also used in the manufacture of rubber products and plastics
Piperonal	Used in perfumery, in cherry and vanilla flavours, in organic synthesis and as a component for mosquito repellent
Potassium permanganate	Important reagent in analytical and synthetic organic chemistry; used in bleaching applications, disinfectants, antibacterials and antifungal agents and in water purification
Pseudoephedrine	Used in the manufacture of bronchodilators and nasal decongestants
Safrole	Used in perfumery, for example in the manufacture of piperonal, and for denaturing fats in soap manufacture
Sulphuric acid	Used in the production of sulphates; as an acidic oxidizer; as a dehydrating and purifying agent; for the neutralization of alkaline solutions; as a catalyst in organic synthesis; in the manufacture of fertilizers, explosives, dyestuffs and paper; and as a component of drain and metal cleaners, anti-rust compounds and automobile battery fluids
Toluene	Industrial solvent; used in the manufacture of explosives, dyes, coatings and other organic substances and as a gasoline additive

Annex X

Treaty provisions for the control of substances frequently used in the illicit manufacture of narcotic drugs and psychotropic substances

1. Article 2, paragraph 8, of the Single Convention on Narcotic Drugs of 1961 as amended by the 1972 Protocol provides that parties shall use their best endeavours to apply to substances which do not fall under the Convention, but which may be used in the illicit manufacture of drugs, such measures of supervision as may be practicable.

2. Article 2, paragraph 9, of the Convention on Psychotropic Substances of 1971 provides that parties shall use their best endeavours to apply to substances which do not fall under the Convention, but which may be used in the illicit manufacture of psychotropic substances, such measures of supervision as may be practicable.

3. Article 12 of the United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances of 1988 contains provisions for the following:

(a) General obligation for parties to take measures to prevent diversion of the substances in Tables I and II of the Convention and to cooperate with each other to that end (para. 1);

(b) Mechanism for amending the scope of control (paras. 2–7);

(c) Requirement to take appropriate measures to monitor manufacture and distribution, to which end parties may control persons and enterprises, control establishments and premises under licence, require permits for manufacture or distribution of substances in Tables I and II and prevent accumulation of such substances (para. 8);

(d) Obligation to monitor international trade in order to identify suspicious transactions, to provide for seizures, to notify the authorities of the parties concerned in case of suspicious transactions, to require proper labelling and documentation and to ensure maintenance of such documents for at least two years (para. 9);

(e) Mechanism for advance notice of exports of substances in Table I, upon request (para. 10);

(f) Confidentiality of information (para. 11);

(g) Reporting by parties to the International Narcotics Control Board (para. 12);

(h) Report of the Board to the Commission on Narcotic Drugs (para. 13);

(i) Non-applicability of the provisions of article 12 to certain preparations (para. 14).

Annex XI

Regional groupings

Reference is made throughout the present report to various geographical regions, which are defined as follows:

Africa: Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cabo Verde, Cameroon, Central African Republic, Chad, Comoros, Congo, Côte d'Ivoire, Democratic Republic of the Congo, Djibouti, Egypt, Equatorial Guinea, Eritrea, Eswatini, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, South Sudan, Sudan, Togo, Tunisia, Uganda, United Republic of Tanzania, Zambia and Zimbabwe;

Central America and the Caribbean: Antigua and Barbuda, Bahamas, Barbados, Belize, Costa Rica, Cuba, Dominica, Dominican Republic, El Salvador, Grenada, Guatemala, Haiti, Honduras, Jamaica, Nicaragua, Panama, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, and Trinidad and Tobago;

North America: Canada, Mexico and United States of America;

South America: Argentina, Bolivia (Plurinational State of), Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Suriname, Uruguay and Venezuela (Bolivarian Republic of);

East and South-East Asia: Brunei Darussalam, Cambodia, China, Democratic People's Republic of Korea, Indonesia, Japan, Lao People's Democratic Republic, Malaysia, Mongolia, Myanmar, Philippines, Republic of Korea, Singapore, Thailand, Timor-Leste and Viet Nam;

South Asia: Bangladesh, Bhutan, India, Maldives, Nepal and Sri Lanka;

West Asia: Afghanistan, Armenia, Azerbaijan, Bahrain, Georgia, Iran (Islamic Republic of), Iraq, Israel, Jordan, Kazakhstan, Kuwait, Kyrgyzstan, Lebanon, Oman, Pakistan, Qatar, Saudi Arabia, State of Palestine, Syrian Arab Republic, Tajikistan, Turkey, Turkmenistan, United Arab Emirates, Uzbekistan and Yemen;

Europe:

Eastern Europe: Belarus, Republic of Moldova, Russian Federation and Ukraine;

South-Eastern Europe: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Montenegro, North Macedonia, Romania and Serbia;

Western and Central Europe: Andorra, Austria, Belgium, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Holy See, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Monaco, Netherlands, Norway, Poland, Portugal, San Marino, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom of Great Britain and Northern Ireland;

Oceania: Australia, Cook Islands, Fiji, Kiribati, Marshall Islands, Micronesia (Federated States of), Nauru, New Zealand, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu.

About the International Narcotics Control Board

The International Narcotics Control Board (INCB) is an independent and quasi-judicial control organ, established by treaty, for monitoring the implementation of the international drug control treaties. It had predecessors under the former drug control treaties as far back as the time of the League of Nations.

Composition

INCB consists of 13 members who are elected by the Economic and Social Council and who serve in their personal capacity, not as government representatives. Three members with medical, pharmacological or pharmaceutical experience are elected from a list of persons nominated by the World Health Organization (WHO) and 10 members are elected from a list of persons nominated by Governments. Members of the Board are persons who, by their competence, impartiality and disinterestedness, command general confidence. The Council, in consultation with INCB, makes all arrangements necessary to ensure the full technical independence of the Board in carrying out its functions. INCB has a secretariat that assists it in the exercise of its treaty-related functions. The INCB secretariat is an administrative entity of the United Nations Office on Drugs and Crime, but it reports solely to the Board on matters of substance. INCB closely collaborates with the Office in the framework of arrangements approved by the Council in its resolution 1991/48. INCB also cooperates with other international bodies concerned with drug control, including not only the Council and its Commission on Narcotic Drugs, but also the relevant specialized agencies of the United Nations, particularly WHO. It also cooperates with bodies outside the United Nations system, especially the International Criminal Police Organization (INTERPOL) and the World Customs Organization.

Functions

The functions of INCB are laid down in the following treaties: Single Convention on Narcotic Drugs of 1961 as amended by the 1972 Protocol; Convention on Psychotropic Substances of 1971; and United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances of 1988. Broadly speaking, INCB deals with the following:

(a) As regards the licit manufacture of, trade in and use of drugs, INCB endeavours, in cooperation with Governments, to ensure that adequate supplies of drugs are available for medical and scientific uses and that the diversion of drugs from licit sources to illicit channels does not occur. INCB also monitors Governments' control over chemicals used in the illicit manufacture of drugs and assists them in preventing the diversion of those chemicals into the illicit traffic;

(b) As regards the illicit manufacture of, trafficking in and use of drugs, INCB identifies weaknesses in national and international control systems and contributes to correcting such situations. INCB is also responsible for assessing chemicals used in the illicit manufacture of drugs, in order to determine whether they should be placed under international control.

In the discharge of its responsibilities, INCB:

(a) Administers a system of estimates for narcotic drugs and a voluntary assessment system for psychotropic substances and monitors licit activities involving drugs through a statistical returns system, with a view to assisting Governments in achieving, inter alia, a balance between supply and demand;

(b) Monitors and promotes measures taken by Governments to prevent the diversion of substances frequently used in the illicit manufacture of narcotic drugs and psychotropic substances and assesses such substances to determine whether there is a need for changes in the scope of control of Tables I and II of the 1988 Convention;

(c) Analyses information provided by Governments, United Nations bodies, specialized agencies or other competent international organizations, with a view to ensuring that the provisions of the international drug control treaties are adequately carried out by Governments, and recommends remedial measures;

(d) Maintains a permanent dialogue with Governments to assist them in complying with their obligations under the international drug control treaties and, to that end, recommends, where appropriate, technical or financial assistance to be provided.

INCB is called upon to ask for explanations in the event of apparent violations of the treaties, to propose appropriate remedial measures to Governments that are not fully applying the provisions of the treaties or are encountering difficulties in applying them and, where necessary, to assist Governments in overcoming such difficulties. If, however, INCB notes that the measures necessary to remedy a serious

situation have not been taken, it may call the matter to the attention of the parties concerned, the Commission on Narcotic Drugs and the Economic and Social Council. As a last resort, the treaties empower INCB to recommend to parties that they stop importing drugs from a defaulting country, exporting drugs to it or both. In all cases, INCB acts in close cooperation with Governments.

INCB assists national administrations in meeting their obligations under the conventions. To that end, it proposes and participates in regional training seminars and programmes for drug control administrators.

Reports

The international drug control treaties require INCB to prepare an annual report on its work. The annual report contains an analysis of the drug control situation worldwide so that Governments are kept aware of existing and potential situations that may endanger the objectives of the international drug control treaties. INCB draws the attention of Governments to gaps and weaknesses in national control and in treaty compliance; it also makes suggestions and recommendations for improvements at both the national and international levels. The annual report is based on information provided by Governments to INCB, United Nations entities and other organizations. It also uses information provided through other international organizations, such as INTERPOL and the World Customs Organization, as well as regional organizations.

The annual report of INCB is supplemented by detailed technical reports. They contain data on the licit movement of narcotic drugs and psychotropic substances required for medical and scientific purposes, together with an analysis of those data by INCB. Those data are required for the proper functioning of the system of control over the licit movement of narcotic drugs and psychotropic substances, including preventing their diversion to illicit channels. Moreover, under the provisions of article 12 of the 1988 Convention, INCB reports annually to the Commission on Narcotic Drugs on the implementation of that article. That report, which gives an account of the results of the monitoring of precursors and of the chemicals frequently used in the illicit manufacture of narcotic drugs and psychotropic substances, is also published as a supplement to the annual report.

INTERNATIONAL NARCOTICS CONTROL BOARD

The International Narcotics Control Board (INCB) is the independent monitoring body for the implementation of United Nations international drug control conventions. It was established in 1968 in accordance with the Single Convention on Narcotic Drugs, 1961. It had predecessors under the former drug control treaties as far back as the time of the League of Nations.

Based on its activities, INCB publishes an annual report that is submitted to the United Nations Economic and Social Council through the Commission on Narcotic Drugs. The report provides a comprehensive survey of the drug control situation in various parts of the world. As an impartial body, INCB tries to identify and predict dangerous trends and suggests necessary measures to be taken.

ISBN 978-92-1-148372-7

V.21-08928