



INTERNATIONAL NARCOTICS
CONTROL BOARD

ILLICIT DRUG MANUFACTURING EQUIPMENT

and article 13 of the United Nations
Convention against Illicit Traffic in
Narcotic Drugs and Psychotropic
Substances of 1988



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Contents

I. Introduction	iv
II. Equipment and the provisions of the 1988 Convention and relevant resolutions.....	2
III. Action taken by Governments and by the International Narcotics Control Board	4
1. Legislative, monitoring and control measures	5
2. Enhancing knowledge regarding trends in equipment used for illicit purposes, and related action by Governments	7
3. Development of guidance and awareness-raising materials.....	8
4. Development of operational tools	8
5. International cooperation and other international initiatives focusing on equipment.....	8
IV. Major trends and developments related to equipment	10
V. Conclusions and recommendations.....	16

I.

Introduction

1. The illicit manufacture of drugs requires not only the necessary precursor chemicals but also an array of materials and equipment. The equipment in question can include, but is not limited to, tableting and encapsulating machines, punches and dies, reaction vessels, specialized glassware and heating mantles. The specific nature of the equipment depends on the level of sophistication of the illicit laboratory and the drugs being manufactured. As a result, at any given point in time, some items of equipment may be specific to a particular geographical region while others are encountered worldwide. The equipment used in the illicit manufacture of synthetic drugs is usually more sophisticated than that used in the illicit manufacture of cocaine and heroin.

2. Article 13 of the United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances of 1988 provides a basis for international action and cooperation to prevent equipment from reaching illicit laboratories and to investigate cases of diversion of such equipment. The potential of article 13 has, however, not been explored to the extent possible.

3. The Board has therefore raised awareness about the importance of article 13 as a complementary tool in addressing the illicit manufacture of drugs by developing guidance materials and practical tools providing various options, measures and approaches to guide international policy efforts and action aimed at preventing the diversion of equipment essential for illicit drug manufacture and encouraging cooperation to that end.

4. The present technical paper was prepared by the Board pursuant to article 23 of the 1988 Convention. It is intended to provide a situation analysis and baseline for the equipment used in the illicit manufacture of drugs¹ in the context of article 13. It contains information related to equipment and provisions of the 1988 Convention and relevant resolutions, action taken by Governments and by the Board, and analysis of current trends and developments. The last part of the paper includes conclusions and recommendations for Governments on the implementation of article 13 of the 1988 Convention. The paper is also intended to contribute to the awareness-raising initiatives implemented by the Commission on Narcotic Drugs and other specialized forums.

5. The information presented in this paper comes from sources such as Government reports, technical research, surveys, open sources and expert meetings. The Board hopes that the information and analysis provided in this document will be useful for Governments in their efforts to monitor equipment of potential use in the illicit manufacture of drugs.

¹The term “drugs” throughout this document should be understood to refer to narcotic drugs and psychotropic substances under international control, as well as new psychoactive substances and precursors. All illicit manufacture requires equipment.

II.

Equipment and the provisions
of the 1988 Convention and
relevant resolutions

**ARTICLE 13 OF THE UNITED NATIONS
CONVENTION AGAINST ILLICIT TRAFFIC IN
NARCOTIC DRUGS AND PSYCHOTROPIC
SUBSTANCES OF 1988**

“The Parties shall take such measures as they deem appropriate to prevent trade in and the diversion of materials and equipment for illicit production or manufacture of narcotic drugs and psychotropic substances and shall cooperate to this end.”

6. Article 13 of the 1988 Convention requires parties to prevent trade in and diversion of materials and equipment for illicit production or manufacture of narcotic drugs and psychotropic substances and requires them to cooperate with each other. It does not, however, contain any specific provisions that would define how the article should be implemented.

7. In addition to article 13, article 3 of the 1988 Convention provides a framework for national efforts to counter and establish as criminal offences under each country’s domestic law the manufacture, transport or distribution of equipment when it is to be used for illicit purposes. Parties to the Convention thus share the responsibility for preventing the diversion of materials and equipment in the context of article 13 as they do for preventing the substances listed in Tables I and II of the Convention from being diverted into illicit channels pursuant to article 12, and to cooperate to that end.

8. In recognition of the importance of article 13, there have been several equipment-related resolutions adopted in various United Nations forums. As early as 1998, in its resolution S-20/4, the General Assembly requested Member States to monitor, to the extent possible, sales of laboratory equipment, in compliance with article 13 of the 1988 Convention.

9. In 2001, the Economic and Social Council, in its resolution 2001/14, on prevention of diversion of precursors used in the illicit manufacture of synthetic drugs, urged Governments to implement operating procedures for the control of precursors and chemicals, including the

tracking of essential laboratory equipment used in the illicit manufacture of drugs pursuant to article 13 of the 1988 Convention.

10. In 2005, the Commission on Narcotic Drugs, in its resolution 48/11, called upon Governments to initiate, where appropriate, investigations by their law enforcement authorities into seizures and cases involving the diversion or smuggling of precursors and essential equipment, with a view to tracking them back to the source of diversion. It also called upon Governments to communicate, where possible, the details of those seizures and backtracking investigations on a real-time basis to INCB and to the States concerned.

11. In the Political Declaration and Plan of Action on International Cooperation towards an Integrated and Balanced Strategy to Counter the World Drug Problem of 2009 Member States were called upon to identify best practices for systematically conducting inventories of clandestine laboratory sites, including the laboratory equipment and other items used, and improve the exchange of such information in a timely and standardized way. Member States were also called upon to monitor, on a voluntary basis and to the extent possible, the sale of laboratory and other equipment, such as tablet presses, in compliance with article 13 of the 1988 Convention.

12. In 2019, the Commission on Narcotic Drugs adopted resolution 62/4, in which it called upon all Member States to increase operational use of article 13 of the 1988 Convention. It encouraged INCB to provide guidelines on the most effective ways to prevent the diversion of material and equipment essential for the illicit production or manufacture of narcotic drugs and psychotropic substances in the context of article 13 of the 1988 Convention.

13. Finally, in its resolution 63/1 of March 2020, the Commission on Narcotic Drugs encouraged Member States to consider applying the guidelines to prevent and investigate the diversion of materials and equipment essential for illicit drug manufacture in the context of article 13 of the 1988 Convention, developed by INCB pursuant to resolution 62/4. The call was reiterated in 2022, in Commission on Narcotic Drugs resolution 65/3.

III.

**Action taken by Governments
and by the International
Narcotics Control Board**

1. Legislative, monitoring and control measures

14. According to the information available to the Board, only a limited number of countries have put in place measures to implement article 13 of the 1988 Convention which would address the use of equipment in the illicit manufacture of drugs. The approach taken by a given country and the focus of those efforts in large part reflect the local circumstances and threats related to illicit drug manufacture.

15. Some Governments have adopted regulatory controls, including provisions regarding possession, production and/or manufacture, sale, importation, exportation or transport of certain types of equipment. The focus of the regulatory approaches has mostly been on specialized equipment, such as tableting and encapsulating machines, rather than on items with more generalized use. Other Governments have opted for voluntary monitoring mechanisms by engaging with the private sector or have adopted a mix of the two approaches. Some Governments adopted their respective approaches relatively recently, whereas others have used the same approach for many years.

■ *National approaches*

16. In Australia, since 2010, there has been a focus on the control of tablet presses. At the federal level, regulations prohibit the importation of such equipment without prior permission and those controls are complemented at the state and territorial levels, where possession of tablet presses without a legitimate reason is prohibited. In addition to its regulatory measures, Australia developed a “Code of practice for supply diversion into illicit drug manufacturing” to assist chemical manufacturers, importers and distributors, as well as scientific equipment and instrument suppliers, in preventing the diversion of their products into the illicit manufacture of drugs. The implementation of the Code, among other elements, depends on the extent of cooperation of those industries in monitoring transactions, identifying suspicious ones and cooperating with law enforcement. There is a particular focus on basic laboratory equipment such as Buchner funnels and flasks, magnetic stirrers and hotplates, separating funnels and laboratory balances that can be used in the illicit manufacture of drugs.

17. In 2020, regulations were amended to prohibit the importation of complete and incomplete encapsulating machines, as well as incomplete tablet presses, without prior permission. Extending the prohibition to incomplete tablet presses and encapsulating machines ensures that the importation of such equipment that is not yet in full working order but that could be converted to full working order with some additional parts is subject to the same measures. There are also regulations in place in some jurisdictions within Australia to control laboratory equipment such as glass flasks, condensers, heating mantles, rotary evaporators and distillation heads.

18. In Canada, at the federal level, the Controlled Drugs and Substances Act includes provisions to regulate certain equipment, in particular tablet presses and encapsulating machines. The initial goal was to target methamphetamine manufacture but has since been changed to cover illicit manufacture and trafficking at large. Anyone wishing to import the designated devices must first seek authorization to do so. The Act also has a provision allowing authorities to conduct a criminal investigation into equipment, chemicals and other property related to the illicit manufacture of drugs, as well as trafficking. This includes possession for use in the production or trafficking of substances. Furthermore, the Act prohibits the possession, production, sale, importation or transport of anything intended for use in the production of a controlled substance, unless the production of the controlled substance is lawfully authorized.

19. In response to the high incidence of opioid-related deaths, the provincial government of British Columbia has implemented its own controls over equipment. The Pill Press and Related Equipment Control Act and related Regulations (2019) cover tablet presses, punches, dies and encapsulating machines, as well as pharmaceutical mixers and blenders. Owners and sellers of such equipment must be registered, and there are reporting and monitoring functions in place.

20. In Germany, there are no specific regulations or restrictions regarding the trade in equipment. However, according to the national penal code, persons that sell or

provide equipment knowing that it is to be used for illicit purposes can be charged for aiding and abetting in the activity. Monitoring of equipment in the country has been carried out through voluntary engagement of the relevant equipment industry partners, including companies that produce or trade in tableting machines, pill presses, punches, dies, heating mantles and large round-bottom glass flasks, and there has also been a special focus on second-hand markets and traders of that equipment. The voluntary approach is well established in the country not only for equipment-related partners but also for industries dealing with precursors and non-scheduled chemicals. The key elements of the concept are sensitizing industry partners regarding the possible use for illicit drug manufacture of the equipment they produce or sell, and requesting them to cooperate with the police in the identification of suspicious orders, thereby preventing the infiltration of criminal operators into the licit market.

21. In Mexico, a federal law enacted in 1997 regulates equipment for processing solid, semi-solid or liquid materials into capsules or tablets, under which the details of such equipment when produced, disposed of, acquired, imported, exported or stored must be reported annually to the Ministry of Economy. Known or attempted diversions of equipment must be reported to the Attorney General of the Republic.

22. The Netherlands has for some time been faced with the challenges posed by the illicit manufacture of drugs such as methamphetamine and other synthetic drugs, including new psychoactive substances, and cocaine. Developments in the Netherlands can therefore often be seen as an early warning for new trends in the illicit manufacture of drugs and precursors. At the same time, none of the equipment that can be used in the illicit manufacture of drugs is forbidden or controlled by law in the Netherlands. The facilitation² of illicit operations is, however, an offence under the country's Opium Act.

23. The Russian Federation has a decree that covers tools and equipment used for production and manufacture of narcotic drugs and psychotropic substances. The decree, which was renewed on 30 November 2021, covers the development, production, manufacture, storage, transportation, shipment, release, sale, distribution, acquisition,

use, import, export and destruction of tools and equipment under special control, including tableting machines.

24. In the United States of America, the focus of recent controls has been on tableting and encapsulating machines, in large part as a response to the challenges presented by overdoses and deaths caused by fentanyl and synthetic opioids. Federal legislation is in place requiring individuals wishing to import or export a tableting or encapsulating machine to report such transactions to the Drug Enforcement Administration. The reporting obligation also applies to domestic transactions involving such equipment. In addition, certain activities, such as possession, manufacture, distribution, export or import involving certain items of laboratory equipment included on a special surveillance list published by the Attorney General, when conducted knowingly, intentionally, or having reasonable cause to believe that those items are used for illicit drug manufacture, are considered unlawful acts under the country's Controlled Substances Act.

25. Detailed information on controls in place in other countries is limited. According to anecdotal information, some countries, such as Thailand, are known to have registration requirements in place related to the import of certain items of equipment. Other countries, such as Lithuania and the Philippines, impose penalties on those who provide or otherwise make available equipment that they knew or should have known was to be used in the illicit cultivation or manufacture of drugs.

■ *General provisions of other legislation applicable to equipment used for the illicit manufacture of drugs*

26. In the absence of equipment-specific regulations, national legislation often includes general provisions that may assist in addressing the use of equipment for illicit purposes. National penal codes may contain provisions, pursuant to article 3 of the 1988 Convention, that establish as criminal offences the manufacture, transport or distribution of equipment when committed intentionally and with the knowledge that the equipment is to be used in, or for the illicit cultivation, production or manufacture of, narcotic drugs or psychotropic substances.

²Facilitators are companies or persons who knowingly provide supplies or services to a criminal organization or network but that are not necessarily part of that organization or network.

27. In some cases, legislation regarding copyright infringement might be used when certain equipment is used in the illicit manufacture of drugs. One example includes punches and dies of tableting machines used to manufacture counterfeit pharmaceuticals; as the markings on the equipment are typically trademarks, legislation regarding copyright infringement can be applied.

2. Enhancing knowledge regarding trends in equipment used for illicit purposes, and related action by Governments

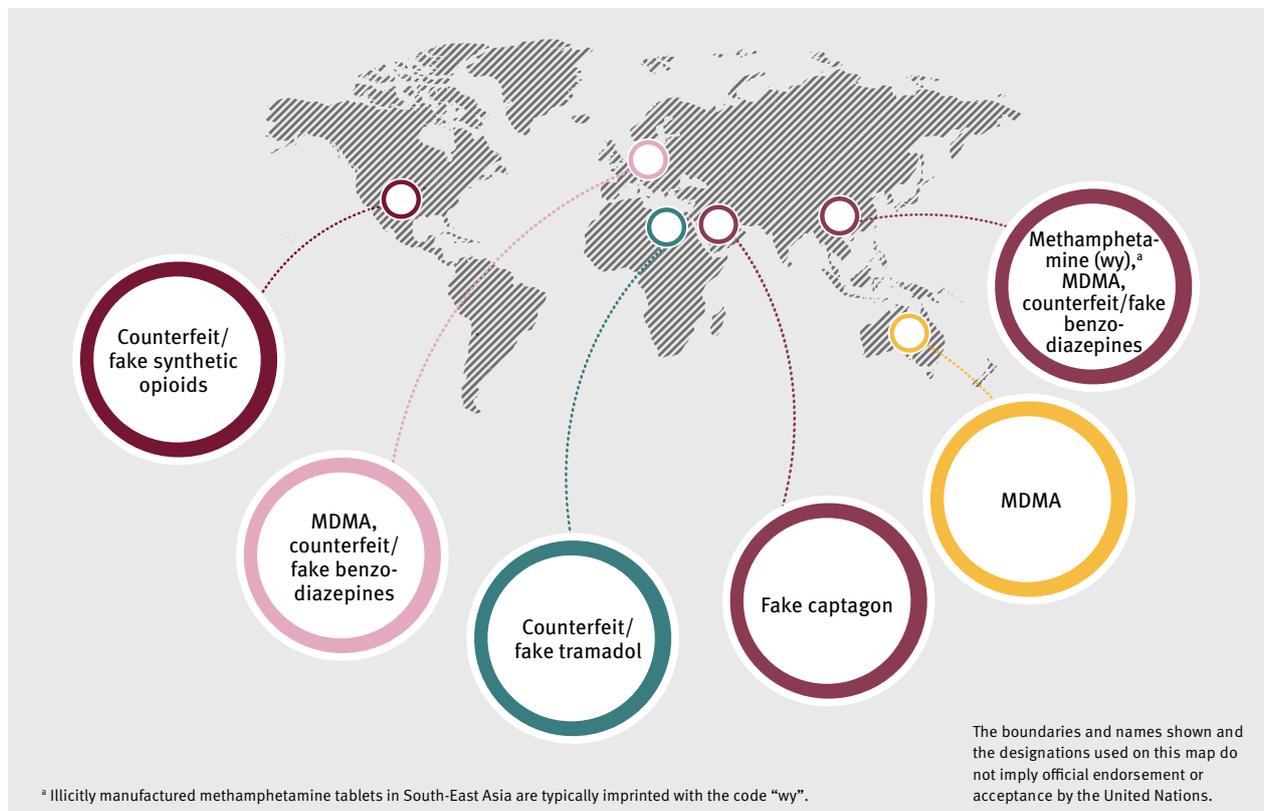
28. To enhance the knowledge regarding trends in equipment used for illicit purposes, the Board carried out, in 2018, its first survey to identify the types of equipment that have been most frequently encountered for use in the illicit manufacture (including tableting) of synthetic drugs, new psychoactive substances and precursors, and

to assess the legislative basis and extent of equipment-related activities within and between countries.

29. A total of 40 responses from 36 countries and territories were received. The majority of respondents reported seizures involving new, commercially produced equipment. Tableting machines were among the most consistently mentioned pieces of equipment by respondents from almost all regions of the world. Following the survey, the Board coordinated an international activity in 2019 to gather specific information on the types and sources of tableting and encapsulating machines used for clandestine drug manufacture during the period 2017–2019. The focus on tableting and encapsulating machines was based on their widespread use in illicit drug manufacturing operations around the world, albeit with regional differences (see figure I below).³

30. In 2019 and 2021, the Board convened three expert group meetings to enhance knowledge regarding trends in equipment used for illicit purposes and on actions adopted

Figure I. Schematic overview of illicitly manufactured tablets, by drug and region



³E/INCB/2019/4, para. 234.

by Governments. The Board has also discussed equipment, and article 13 of the 1988 Convention as a valuable complementary tool in addressing illicit drug manufacture, in its annual reports and annual reports on precursors.⁴

3. Development of guidance and awareness-raising materials

31. In 2020, INCB released its first guidance document related to equipment in the context of article 13 of the 1988 Convention, entitled “Guidelines to prevent and investigate the diversion of materials and equipment essential for illicit drug manufacture in the context of article 13 of the United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances of 1988”. The Guidelines outline measures and approaches ranging from raising awareness in, and conducting voluntary initiatives in cooperation with, industry of the misuse of equipment for illicit drug manufacture, to the establishment of more comprehensive regulatory systems. Moreover, the Guidelines are designed as a practical tool for competent authorities around the world where the potential threat of diversion of equipment may range from limited to significant, and are available in all languages of the United Nations on the INCB secure web page.

32. In addition to the Guidelines, in March 2022, INCB launched an awareness-raising and guidance document for policymakers related to illicit drug manufacturing equipment and article 13 of the 1988 Convention. The document provides policymakers with measures, approaches and tools that they might implement in the context of article 13 and serves as a resource for the development of strategies in response to the circumstances policymakers face with regard to the illicit manufacture of drugs, within any legislative or constitutional requirements that may exist.

4. Development of operational tools

33. In October 2021, the Precursors Incident Communication System (PICS), the Board’s secure online platform for sharing information related to precursors used

for illicit drug manufacture, was upgraded with features that provide a function for extensive searches and enable improved information-sharing and analysis, as well as features aimed at facilitating a more meaningful exchange of information regarding cases involving equipment. In addition to information on actual seizures of equipment, PICS provides for the sharing of details of suspicious shipments. It also has options to choose the type of equipment seized in an incident and to indicate whether the equipment in question is new, second-hand or custom-made.

34. In March 2022, the Board launched the *International Monitoring List of Equipment Used in the Illicit Manufacture of Drugs*, a complementary operational tool to help Governments address the challenges posed by the misuse of equipment in the illicit manufacture of drugs. The list includes equipment of international relevance for which substantial evidence exists of its use in the illicit manufacture of drugs. In some instances, the list can be used to identify new equipment previously unknown to be used for this purpose, thereby serving as an early warning tool. It can also facilitate and promote voluntary cooperation with the relevant industry for preventing such equipment from falling into the hands of traffickers. Given the nature and purpose of the list, it is accessible only to competent national authorities, on the INCB secure website.

35. INCB is also working with the World Customs Organization (WCO) to establish unique Harmonized System codes for selected items of equipment (see paragraph 40 below).

5. International cooperation and other international initiatives focusing on equipment

36. Several international and regional organizations address the misuse of equipment for illicit purposes through their respective mandates and scope of work, and INCB has long-standing partnerships with many of them in the areas of precursors and equipment. The scope of cooperation ranges from the exchange of expertise and expert contributions at relevant meetings to the

⁴The most comprehensive review is included in chapter IV of the report on precursors for 2019 (E/INCB/2019/4, paras. 229–238). In addition, there have been two global topics, in the INCB annual reports for 2020 (E/INCB/2020/1, paras. 128–131) and for 2021 (E/INCB/2021/1, paras. 125–128).

sharing of operational information and collaboration in awareness-raising and training initiatives. The following paragraphs summarize aspects of cooperation between the Board and some of its international and regional partners, as well as relevant related initiatives.

■ **European Union Agency for Law Enforcement Cooperation**

37. The European Union Agency for Law Enforcement Cooperation (Europol) has supported and contributed to the work of expert group meetings and the development of equipment-related guidance materials. INCB and Europol also cooperate to disseminate relevant guidance and operational materials from each other through their respective networks. For example, through such cooperation, the Europol manual entitled *EU manual on illicit synthetic drugs/NPS production*, which contains an overview of seized equipment, along with short descriptions of the methods encountered in Europe, was made available to the Board's PICS user network. In addition, all INCB alerts related to synthetic drugs and precursors are disseminated by Europol through its Secure Information Exchange Network Application (SIENA)⁵ to all relevant law enforcement partners.

38. The Europol Illicit Laboratory Comparison System, a database of photographic evidence and other non-personal information collected from illicit laboratories, was established in 2004 as one of the tangible results from two meetings of the Equipment Working Group under the Board's Project Prism. It provides support for investigations in European Union member States and facilitates the identification of links between different cases involving equipment, laboratories and operators. INCB and Europol are currently exploring synergies between the System and PICS.

■ **Inter-American Drug Abuse Control Commission of the Organization of American States**

39. The Inter-American Drug Abuse Control Commission is the body of the Organization of American States (OAS) responsible for the implementation of the drug control policies and strategies of OAS in the western hemisphere. As early as 2009, a meeting of the Commission's Group of Experts on Chemical Substances and Pharmaceutical Products considered the issue of article 13 of the 1988 Convention and subsequently published a document entitled "Concept paper regarding the regulation of equipment used in the illegal manufacture of synthetic drugs". The document outlines the fundamental principles and key elements for the regulation of equipment used in the illicit manufacture of drugs and is available on the Commission's web page.⁶

■ **World Customs Organization**

40. WCO is the custodian of the Harmonized Commodity Description and Coding System, an international product nomenclature used by customs authorities around the world to identify products when assessing duties and taxes and for gathering statistics throughout the export process for goods. Building on the successful cooperation in precursor-related matters, INCB is working with WCO to establish unique Harmonized System codes for selected equipment. The codes are expected to become available in the 2027 edition of the Harmonized System nomenclature as the foundation for all Governments for the effective monitoring of trade in those items of equipment.

■ **Other entities**

41. Key potential partners for collaboration and information exchange include the International Criminal Police Organization (INTERPOL) and UNODC. INCB is aware of several institutions offering practical training related to equipment seizures and the dismantling of laboratories and with whom partnerships could be envisaged.

⁵ A secure channel used by Europol to communicate with member States and associated partners.

⁶ www.cicad.oas.org/reduccion_oferta/resources/chems/Equipment_eng.pdf.

IV.

**Major trends and
developments related
to equipment**

42. The present chapter provides an overview of the major trends and developments related to equipment used for illicit purposes. The chapter is based on information received through various mechanisms, such as PICS, Project Cohesion and Project Prism,⁷ surveys, expert group meetings, and national reports and other official information from Governments, including those retrieved from open sources.

43. At present, there is limited systematic information available about equipment seized by law enforcement entities or outcomes of investigations through backtracking or other means, making a meaningful analysis of trends difficult. In addition, and as with precursors, analysis is further complicated by country-specific circumstances, including the presence and scope of controls which are usually limited to certain equipment. Similarly, if a specific drug is the primary drug of illicit manufacture in a given country or is the main focus of national

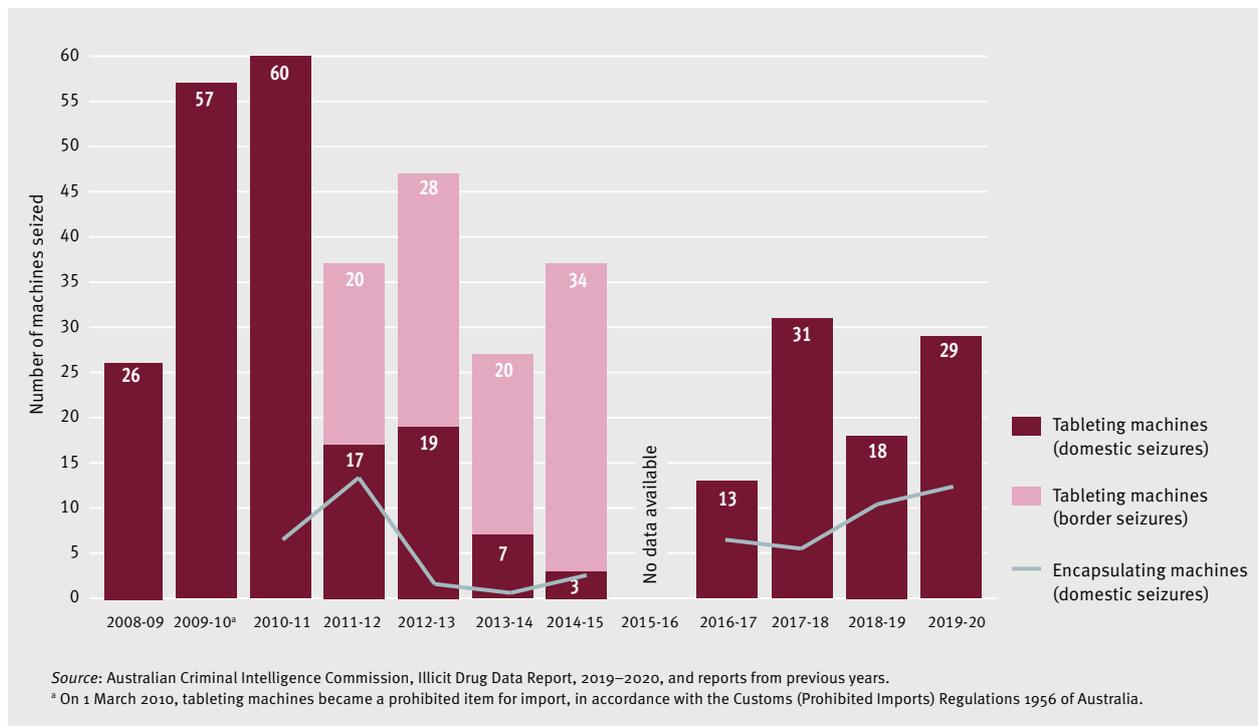
law enforcement activity, then the equipment used in the illicit manufacture of that drug will dominate seizure information.

44. The following paragraphs summarize the available information, both quantitative and qualitative.

Quantitative data

45. Australia is one of the few countries that has, over time, collected statistics related to the seizure of tableting and encapsulating machines. While the number of items seized has decreased significantly since tableting machines became a prohibited item for import in 2010, seizures of tableting machines have fluctuated in recent years, showing a 61 per cent increase in 2019/20, after a 42 per cent decrease in the preceding fiscal year (see figure II below).

Figure II. Seizures of tableting and encapsulating machines in Australia, 2008–2020



⁷Project Cohesion (since 2006) and Project Prism (since 2003) serve as the frameworks for international cooperation in matters related to trafficking in chemicals used in the illicit manufacture of drugs, specifically cocaine and heroin (Project Cohesion), and amphetamine-types stimulants and other synthetic drugs (Project Prism).

46. In Germany, 14 tableting machines were seized between 2017 and 2021, all of which were of the size used for the small-scale manufacture of 3,4-methylenedioxymethamphetamine (MDMA, commonly known as “ecstasy”) tablets and, in one case, of anabolic steroid tablets. In most cases, where known, the machines originated in Asia and the “ecstasy” was smuggled from the Netherlands.

47. Open-source data from the United Kingdom of Great Britain and Northern Ireland and the United States provide orders of magnitude for seizures of tableting and encapsulating machines in other countries. In 2021, for example, 24 tableting machines were seized in Scotland, where the focus of the police is on the disruption of the illicit manufacture of tablets containing benzodiazepines. In the United States, cooperation between the Customs and Border Protection service and the Drug Enforcement Administration led to the seizure of 37 illegally imported tableting machines and 2,305 encapsulating machines in the 2021 financial year.

■ *Qualitative data*

48. In addition to time series and quantitative trend data, qualitative information provides a sense of the current situation regarding equipment used in the illicit manufacture of drugs and precursors. Such information is predominantly available from PICS and initiatives under Project Cohesion and Project Prism, as well as inputs from national experts relating to such activities.

49. PICS is an important source of information on equipment seizures, in particular for operational information for front-line officers. As at finalization of this publication, over 50 incidents in which drug manufacturing equipment was also seized have been communicated through PICS. Information on those incidents was voluntarily shared by Governments or obtained from official media reports, with the earliest report dating back to 2016. Apart from one case of a new tableting machine believed to be used for the manufacture of tramadol tablets seized at a seaport in Libya in August 2021 on the grounds of misdeclaration, all the cases shared through PICS relate to illicit laboratories and were not a result of seizures at border crossings. Illicit laboratories ranged from small-scale, located in private residences, to relatively large-scale, inside commercial or industrial

establishments, and were mostly for the manufacture of amphetamine, methamphetamine, “ecstasy” or fentanyl, judging from the nature of the precursors and end products that were seized in the incidents, and were mainly located in North America and Eastern Europe.

50. In over half of the cases, the items seized were tablet or pill presses, in some cases accompanied by punches and dies. Many of the incidents were entered into PICS as part of the international activity to gather information on tableting and encapsulating machines used for clandestine drug manufacture carried out in 2019. Other items of equipment reported seized included drying ovens, reactors, glassware (including round-bottom flasks), heating mantles, vacuum pumps, distillation condensers, separation funnels, reflux condensers and rotary evaporators.

■ *Sharing actionable information on equipment incidents*

51. As with any other investigation, the quality of investigations into cases regarding equipment depends greatly on the details provided on the incident. For instance, relevant details for tableting or encapsulating machines would include the brand name, model, serial or registration number, manufacturer’s details, number of punch stations and punches present, and whether they were obtained directly from a manufacturer or through a trader.

52. Investigative activities can benefit from intelligence or information-sharing. Through the backtracking process and investigations, it may be possible to link cases in different countries or identify new custom-made equipment and then establish a common source or manufacturer of a given custom-made piece. Unfortunately, at present, identification details such as the brand, manufacturer and serial number are often removed from the equipment and most of the reported seizures lack specific details that would enable meaningful backtracking investigations.

■ *Sources of equipment*

53. Respondents to the survey on equipment conducted by INCB in 2018 suggested that most equipment seizures

involved commercially produced rather than custom-made equipment and that the equipment was mostly new rather than second-hand.⁸ Custom-made equipment, including purpose-built glassware and modified equipment does, however, constitute a significant share of the equipment seized in illicit laboratories in several parts of the world. For example, in the Netherlands, it is estimated that more than 90 per cent of equipment seized is custom-made or modified. Equipment may be fully custom-made at the request of organized criminal groups but, typically second-hand equipment is purchased on the Internet and then modified locally. Second-hand industrial equipment may also be sourced from companies specializing in second-hand pharmaceutical machinery, or directly from breweries and the food industry, including through Internet platforms and markets specializing in second-hand trade, and then modified or repurposed. Some equipment is stolen or diverted from industrial facilities.

54. The level of customization seen in Europe is not seen in Canada or the United States. Tableting machines and glassware found in illicit laboratories in Canada are mostly of commercial grade and equipment found in illicit laboratories in Asia is often second-hand.

55. Other equipment seized in illicit manufacturing and distribution units includes blister machines, automatic powder filling or dosing machines, sachet machines, liquid dosing machines and tablet counting machines. They often come from the same manufacturers or facilitators as the tableting machines.

56. The removal of identification plates and numbers from equipment, whether purchased through legitimate domestic sources, imported or diverted, makes backtracking investigations to establish the origin difficult. The same applies to customized or modified equipment. It has, however, been possible, to “fingerprint” customized or modified equipment and link it from one case to another or to a particular tool, based on features such as common toolmarks,⁹ configuration and layout of components or characteristic welding. Even in cases where the identification plates are available and it is possible to trace the equipment to a particular manufacturer in another country, backtracking investigations remain challenging, given

that such items may have myriad legal uses and may therefore be legitimately traded. If there are no regulations governing the manufacture and trade in such equipment in the country concerned, identifying the point of diversion becomes extremely difficult.

57. Customization can also apply to the illicit laboratory structure. For instance, in Europe, it is reflected in the engineering of improved and scaled-up air purification systems. Another important scenario is the misuse of available manufacturing infrastructure and equipment of chemical or pharmaceutical factories that have been abandoned, closed or have experienced economic difficulties.

■ *Capacity and sophistication of equipment, and types of materials*

58. In recent years, in Europe in particular, the capacity of the equipment used in illicit laboratories has increased significantly, with reaction vessels capable of holding up to 4,000 litres being used. In addition to capacity, process engineering and the use of multipurpose equipment have increased, and illicit operators have access to sophisticated and high-quality equipment. For example, the logos for punches and cocaine logo plates are often designed with the aid of computers.

59. In addition, in Europe, specifically in the Netherlands, there is significantly less glassware used in illicit laboratories and there has been a concomitant increase in the use of stainless steel and hard plastic equipment.

■ *Geographical trends*

60. There is limited systematic information available about the specific similarities or differences between illicit laboratory operations between countries and regions. The Board is, however, aware of a few examples that illustrate possible links between illicit operations. Common toolmarks on customized equipment found in illicit laboratories in Belgium, Germany and the Netherlands allowed links to be established, as was also the case through a comparison of the specific types of

⁸ E/INCB/2019/4, para. 233.

⁹ A toolmark is a deficiency mark in the equipment caused by the tools used in the customization process.

equipment found in illicit laboratories in Poland and Spain. An illicit laboratory dismantled in Lebanon in 2015 was identified as having been run by an organizer known from a specific illicit laboratory incident in the Netherlands, with some of the equipment used in Lebanon being similar to that used in the Netherlands.

61. Cocaine refining laboratories (also known as secondary extraction, or “washing”, laboratories) in the Netherlands were found to have been copies of laboratories dismantled in Colombia and were using custom-made equipment produced by Dutch facilitators, based on technical drawings that had originated in South America, thereby illustrating that interregional linkages are not limited to synthetic drugs.

V.

**Conclusions and
recommendations**

62. The present chapter summarizes the key conclusions of the paper and provides some recommendations to Governments with a view to increasing the operational use of article 13 of the 1988 Convention in order to prevent trade in and diversion of equipment for the illicit production or manufacture of narcotic drugs and psychotropic substances.

63. The illicit manufacture of drugs requires precursors or other chemicals, the necessary equipment, a process or “recipe”, and a level of expertise to apply all those components. The 1988 Convention provides a framework for the control of drugs, including their illicit manufacture. In the past decades, the focus of Governments has been on precursor chemicals in the context of article 12 of the Convention, with few addressing the provisions found in article 13 dealing with equipment and materials used in the illicit manufacture of drugs. Although parties to the 1988 Convention have a responsibility to implement all provisions of the international agreement, including those related to article 13, only a few appear to have done so.

64. Various steps have been taken to provide Governments with the means to report and otherwise share the information available regarding equipment used in the illicit manufacture of drugs. They include the *International Monitoring List of Equipment Used in the Illicit Manufacture of Drugs* and the enhanced capabilities of PICS. Similarly, resources such as an awareness-raising and guidance document for policymakers related to illicit drug manufacturing equipment and article 13 of the 1988 Convention, and guidelines to prevent and investigate the diversion of materials and equipment essential for illicit drug manufacture have been developed by the Board to help Governments implement article 13. The establishment of unique Harmonized System codes for equipment will serve as an additional tool for Governments in that regard.

65. While the approach taken by individual Governments may be unique, each can benefit from the experiences of others. Available information about national approaches to the implementation of article 13 of the 1988 Convention is summarized on the Board’s website and is intended to serve as a repository of such approaches, providing guidance to interested Governments.

► Governments that have not yet implemented article 13 of the 1988 Convention are therefore encouraged to examine ways that they might do so. They are encouraged to make full use of the available resources and share their approaches and experiences in preventing and investigating the diversion and use of equipment for the illicit manufacture of drugs, including with the Board.

66. At present, there is limited information available or reported on a systematic basis regarding the diversion, seizure and investigation of equipment used in the illicit manufacture of drugs. This adversely affects the potential for information-sharing, investigations, in particular those of a more complex and international nature, and trend analysis regarding equipment used.

► Governments and law enforcement agencies are encouraged to conduct backtracking and other investigations regarding seized equipment, working with entities in other countries as appropriate, and to consider sharing experiences in the marking and tracking of equipment for investigative purposes. Governments are also encouraged to communicate equipment-related incidents through PICS.

67. As is the case with chemicals, most items of equipment also have legitimate applications in chemical, pharmaceutical and other industries. Therefore, it is important to find balanced approaches to prevent the diversion of such equipment into illicit channels while ensuring their availability for legitimate purposes. Information about the use of particular items and types of equipment at the national level is, however, limited in most countries.

► Governments are therefore encouraged to consider enhancing knowledge related to the licit and illicit uses of equipment within their territories. This could include surveying companies as to whether or not specific types of equipment, such as tableting machines, have a legitimate use, and which domestic businesses are able to produce certain items of customized equipment or perform specific modifications, such as glass-blowing businesses. Governments are also encouraged to strengthen voluntary cooperation measures with industries that manufacture, trade in or in any way deal with equipment, to prevent its diversion for illicit purposes.

