



European Monitoring Centre  
for Drugs and Drug Addiction

## PERSPECTIVES ON DRUGS

# Synthetic drug production in Europe

Europe has a long history of producing and consuming synthetic drugs. The region remains important today for the production of these substances, with manufacture taking place for both domestic consumption and export to other parts of the world. In terms of both production and use, three substances dominate the European market for synthetic drugs: amphetamine (usually the sulphate salt), ecstasy-type drugs, especially methylenedioxymethamphetamine (MDMA), and methamphetamine (usually the hydrochloride salt).

Estimating the amount of synthetic drugs produced is extremely difficult and at present no robust estimates exist for Europe. It is possible, however, to describe the main trends and developments in this area based on an extrapolation of data from seizures, law enforcement intelligence and forensic sources.

### Europe's main producer regions

For analytical purposes, synthetic drug production in Europe can be viewed as being centred on four main producer regions (EMCDDA and Europol, 2013), as set out below.

#### *North-west Europe*

Production in this area is of global significance and conducted by organised crime groups operating in the Netherlands and, to a lesser extent, Belgium. Historically, this region has been important for the supply of both amphetamine and MDMA, and is still thought to account for most of the MDMA produced in Europe. More recently, some methamphetamine production has also been detected and this drug appears to be becoming more commonly available. Amphetamine and MDMA are frequently manufactured in the same facilities, often with the use of the same equipment. Production techniques can be relatively sophisticated and this is reflected in the fact that this area is also the source of production 'know-how'. Drugs produced in this area supply markets throughout Europe, with some products also exported to other parts of the world; however, the global significance of this area for MDMA production has decreased as production capacity has developed elsewhere.

Full edition of this article with interactive features available online at

[emcdda.europa.eu/topics/pods/synthetic-drug-production](http://emcdda.europa.eu/topics/pods/synthetic-drug-production)



### South-east Europe

Historically, the main synthetic drug produced in this area has been amphetamine, indicated by large-scale seizures in both Bulgaria and Turkey. In this part of Europe amphetamine is usually produced for sale as 'Captagon' tablets intended for the Middle East, particularly the Arabian Peninsula <sup>(1)</sup>, with Bulgarian crime groups in particular now reported to be active in large-scale amphetamine production for these markets (see EMCDDA and Europol, 2013). Amphetamine production also takes place in Turkey, but probably to a lesser extent. Some information also exists to suggest the relocation of activities from south-east Europe to non-European Union (EU) countries in the Balkans, Caucasus and the Middle East. An additional new development is suggested by the fact that ten methamphetamine production facilities were detected in Bulgaria between 2010 and 2012 (Bulgaria Reitox, 2011, 2012, 2013; EMCDDA and Europol, 2013). Although the Bulgarian focal point reports that the dismantled facilities were mostly small-scale and their production intended for the domestic market, the emergence of methamphetamine production in this region represents a cause for concern.

### North-east Europe

Production in this region is largely undertaken by Polish and Lithuanian criminal organisations with the lesser involvement of groups in Latvia and Estonia. Amphetamine and methamphetamine are produced in this area for both a growing local market and export, predominantly to Nordic countries. This is illustrated by the fact that the main export market for amphetamine produced in Poland appears to be Sweden and that much of the amphetamine available in Finland is supplied from Estonia. Amphetamine production in Poland appears to be particularly significant with about 150 mid-scale production facilities dismantled between 1995 and 2012. Currently, methamphetamine production in this area is thought to be centred on Lithuania — although the evidence for this is somewhat limited with the detection of only one mid-scale facility (in 2009) — and Poland where two methamphetamine production facilities were detected in 2012 (Poland Reitox, 2013).

### Central Europe

Illicit production of amphetamine and, to a much larger extent, methamphetamine has a long history in the Czech Republic, where it dates back to the 1970s and the communist period. However, production here differs to that found in other parts of Europe as it is usually based on small kitchen laboratories with limited production runs producing small amounts of drugs for personal use or local sale.



This explains the relatively large number of production sites detected in the Czech Republic, with 235 methamphetamine 'kitchen labs' dismantled in 2012 (Czech Republic Reitox, 2013). Not all production is of this type, however, and some medium-sized production facilities have also been detected. In addition, a high-purity crystalline form of methamphetamine manufactured in the Czech Republic has recently emerged on the Czech and German markets. Methamphetamine and amphetamine production, again mostly on a small scale, also takes place in Germany, where out of the 24 illegal labs dismantled in 2012 13 were used to produce methamphetamine and 9 amphetamine. In recent years amphetamine facilities have also been dismantled in Hungary and Slovenia.

### The challenge of precursors and 'pre-precursors'

The availability of precursors and other chemicals is essential for the manufacturing of synthetic drugs. While obtaining the appropriate precursor chemicals is an ongoing problem for illicit drug producers, ensuring that precursor chemicals are not used for drug production is a major concern for drug supply reduction efforts. In Europe, the precursors most commonly used to manufacture amphetamine, methamphetamine and ecstasy-type substances have been benzyl methyl ketone (BMK), ephedrine and pseudoephedrine, and piperonyl methyl ketone (PMK), respectively (see online interactive element). All these precursors are under both European and international control. The importance of BMK should be noted, as it is a precursor for both amphetamine

<sup>(1)</sup> Captagon was originally a legal, medical drug based on phenethylamine, a stimulant. Nowadays, although the composition of 'Captagon' tablets sold on the illicit market remains unclear, laboratory analysis indicates that they contain amphetamine as their main active ingredient (Amphetamines and ecstasy: 2008 global ATS assessment, United Nations Office on Drugs and Crime, Vienna).

and methamphetamine and it can be synthesised from several 'pre-precursor' chemicals.

These precursors may be sourced in a variety of ways. Pseudoephedrine can be obtained from medicinal preparations containing this drug, usually sold in tablet form as over-the-counter medicines in many EU countries. It may, however, occasionally also be procured in bulk (powder) form. BMK and PMK have, on the other hand, historically been procured from sources outside the EU, which include the Russian Federation and China. Currently, as a result of greater international cooperation, BMK and, to an even greater extent, PMK (for which there are very few legitimate uses) both now appear to be much more difficult to source.

Illicit manufacturers, however, have adapted to these shortages and these precursors are now often synthesised/converted within Europe from imported non-scheduled chemicals sometimes referred to as 'pre-precursors' and 'masked' (or 'designer') precursors. This situation presents a challenge to controlling policies, as a greater number of chemicals need to be considered, some of which have legitimate uses. There is always a risk that as one chemical comes under scrutiny, producers will simply switch to an alternative 'pre-precursor' chemical that can be used for illicit drug production (see online interactive element).

### Significant trends in synthetic drugs production in Europe

In early 2014, the following trends could be observed.

#### *Methamphetamine*

Until recently, most of the methamphetamine available in Europe was both produced and consumed in the Czech Republic and, more recently, Slovakia. Since the late 2000s, however, it appears that the quantities of methamphetamine produced in Europe are increasing; new production areas have been noted and the drug seems to be becoming more available. The manufacture of the pure crystalline form of the drug has also been noted. Intelligence sources and the detection of production facilities suggest that methamphetamine is now manufactured in the Netherlands and Lithuania, and manufacture has been detected recently in Bulgaria and Poland. It is possible that this development is linked, at least in part, to the successful circumvention by traffickers of control measures targeting the importation of BMK or its pre-precursors (e.g. APAAN) into Europe (see

box 'APAAN, the latest challenge in Europe'). This could also mean, however, that illicit producers previously manufacturing amphetamine have now diversified into methamphetamine. This is a worrying development that deserves careful monitoring, as this drug is known to be particularly detrimental to public health.

#### *Amphetamine*

The implication of trends in amphetamine production in Europe are difficult to interpret, as a decrease in the number of production facilities dismantled in the north-west and north-east regions has been accompanied by an observed increase in the production capacity of the facilities dismantled. In the Netherlands and Belgium, for example, use of industrial-sized equipment in illicit amphetamine production facilities is now reported to have resulted in yields of up to 40 kg per batch as compared with only 5–8 kg a few years ago. A similar development has also been observed in Poland, where typical production runs are now estimated to produce around 8 kg of the drug. It is probable that producers now rely extensively on APAAN (see box 'APAAN, the latest challenge in Europe'). Overall, it appears likely that amphetamine production is becoming more centralised and sophisticated with organised crime groups able to produce larger volumes and take a more dominant share of the market.

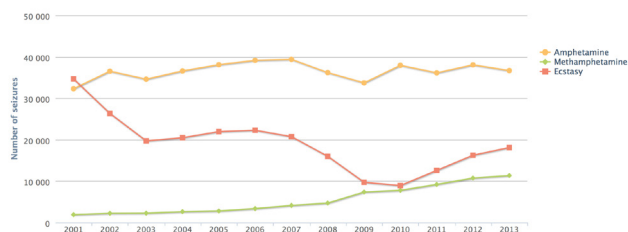
#### *Ecstasy*

The information available <sup>(2)</sup> suggests that ecstasy availability dropped sharply in Europe in 2008, reaching a low point in 2009. At this time, MDMA virtually disappeared from some markets and tablets sold as ecstasy often contained other synthetic substances. Indicators now suggest that this trend is reversing with ecstasy (MDMA) availability increasing again from 2010, although, when compared with the early 2000s, the market still appears not to have fully recovered (see 'Facts and figures'). It seems likely that the relative 'drought' of ecstasy on European markets in 2008–09 was caused by successful international cooperation and law enforcement efforts in both Europe and Asia that targeted the suppliers of the main ecstasy precursor, PMK. The increase in ecstasy availability noted since 2010 suggests that illicit manufacturers have found ways to procure alternative chemicals from which to manufacture MDMA which are likely to include PMK glycidate, sassafras oil and other safrole-rich oils (see interactive figure). The large MDMA production facilities dismantled in Belgium and the Netherlands in 2013 and early 2014 would appear to confirm this.

<sup>(2)</sup> Contents of tablets sold as ecstasy; number of seizures and quantities of ecstasy seized; and number of production facilities dismantled.

## Facts and figures

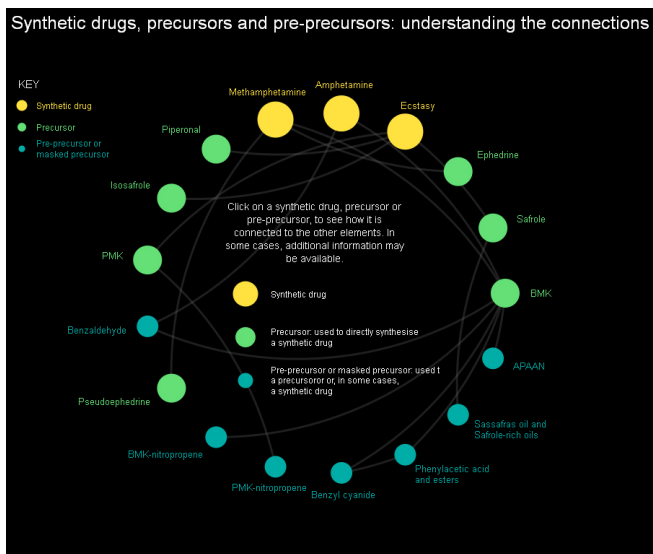
### Estimated number of amphetamine, methamphetamine and ecstasy seizures in Europe, 2001–13



Note: Data on the number of drug seizures are not available for France, the Netherlands and Poland and are not included in this graph.

Note: Data on the number of drug seizures are not available for France, the Netherlands and Poland and are not included in this graph.

## Interactive element



Interactive: synthetic drug precursors available on the EMCDDA website: [emcdda.europa.eu/topics/pods/synthetic-drug-production](http://emcdda.europa.eu/topics/pods/synthetic-drug-production)

## APAAN, the latest challenge in Europe

The chemical alpha-phenylacetoacetonitrile (APAAN) illustrates the ‘cat and mouse game’ that is played between illicit producers attempting to gain access to precursors and authorities trying to prevent them. APAAN is a precursor of BMK and was placed under control in the European Union at the end of 2013 (Official Journal of the EU, 2013), while in March 2014 the Commission on Narcotic Drugs of the United Nations voted unanimously in favour of placing APAAN under international control. The legitimate uses for APAAN in Europe are very limited, and therefore large imports are likely to be intended for conversion to BMK.

Since 2009, a large number of APAAN shipments totalling multiple tonnes have been seized or stopped in European countries including Poland (800 kg seized in 2010–11), Bulgaria (940 kg seized in 2012), Germany (500 kg in 2012), Hungary (3 tonnes in 2012) and Belgium (23 individual APAAN seizures in 2012). All of the APAAN confiscated in Europe originated from China and its main destination seemed to be the Netherlands. About 50 tonnes of APAAN were seized in the Netherlands or on their way

to the country between 2011 and 2013. In addition, many clandestine facilities converting APAAN into BMK have been dismantled in the Netherlands (17 facilities in 2012), as well as in Belgium (2 in 2012), Germany (1 in 2012) and Poland (1 in 2012). Conversion of APAAN into BMK is a hazardous process. Large quantities of acid (hydrochloric, sulphuric or phosphoric) are required for the process, which can generate toxic fumes and burning and pose a risk of explosion and fire. This constitutes a serious health and safety risk not only to those producing the drugs, but also to law enforcement officers and members of the communities where production sites are located. Furthermore, the disposal of the waste products from the conversion process can result in environmental damage.

On the basis that one litre of APAAN yields an estimated 0.7 litres of BMK, an additional concern is that several tonnes of amphetamine or methamphetamine could have been manufactured from the APAAN seized in Europe since 2010.

Source: Europol

## References

- | Bulgaria Reitox (2011), *2011 National report (2010 data) to the EMCDDA by the Reitox national focal point. Bulgaria. New development, trends and in-depth information on selected issues*, National Focal Point on Drugs and Drug Addiction, Sofia. Available online: [http://www.emcdda.europa.eu/attachements.cfm/att\\_191777\\_EN\\_Bulgaria\\_2011.pdf](http://www.emcdda.europa.eu/attachements.cfm/att_191777_EN_Bulgaria_2011.pdf)
- | Bulgaria Reitox (2012), *2012 National report (2011 data) to the EMCDDA by the Reitox national focal point. Bulgaria. New development, trends and in-depth information on selected issues*, National Focal Point on Drugs and Drug Addiction, Sofia.
- | Bulgaria Reitox (2013), *2013 National report (2012 data) to the EMCDDA by the Reitox national focal point. Bulgaria. New development, trends and in-depth information on selected issues*, National Focal Point on Drugs and Drug Addiction, Sofia..
- | Czech Republic Reitox (2013), *2013 National report (2012) data to the EMCDDA by the Reitox national focal point. The Czech Republic. New development, trends and in-depth information on selected issues*, National Monitoring Centre for Drugs and Drug Addiction, Prague, September.
- | EMCDDA and Europol (2013), *EU drug markets report. A strategic analysis*, European Monitoring Centre for Drugs and Drug Addiction and Europol, Lisbon and The Hague. Available online: <http://www.emcdda.europa.eu/publications/joint-publications/drug-markets>.
- | Official Journal of the European Union, Regulation (EU) No 1259/2013 of the European Parliament and of the Council of 20 November 2013 amending Council Regulation (EC) No 1111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors.
- | Poland Reitox (2013), *2013 National report (2012 data) to the EMCDDA by the Reitox national focal point. Poland. New development, trends and in-depth information on selected issues*, National Focal Point on Drugs and Drug Addiction, Warsaw.
- | UNODC (2008), *Amphetamines and ecstasy: 2008 global ATS assessment*, United Nations Office on Drugs and Crime, Vienna. Available online: <http://www.unodc.org/documents/scientific/ATS/Global-ATS-Assessment-2008-Web.pdf>.