EUDA
EUROPEAN UNION DRUGS AGENCY

INITIAL REPORTS

4-BMC

EUDA initial report on the new psychoactive substance 1-(4-bromophenyl)-2-(methylamino)propan-1-one (4-bromomethcathinone, 4-BMC)

In accordance with Article 9 of Regulation (EU) 2023/1322

Contents

Acknowledgements

The European Union Drugs Agency (EUDA) acknowledges the essential role of the Reitox national focal points and their national early warning systems in Member States for collecting and reporting national data and providing expertise. We also thank Europol and its National Units, the European Medicines Agency (EMA) and national medicinal product authorities, the European Chemicals Agency (ECHA), the European Centre for Disease Prevention and Control (ECDC), the European Food Safety Authority (EFSA) and the World Health Organization for their valuable contributions. Their input ensures that the report is truly multidisciplinary.

1. Introduction

1-(4-Bromophenyl)-2-(methylamino)propan-1-one (4-bromomethcathinone, 4-BMC) is a synthetic cathinone stimulant. It is a ring-substituted cathinone, which is structurally related to methcathinone ([1]), 4-methylmethcathinone (mephedrone, 4-MMC) ([2]), and 3-bromomethcathinone (3-BMC).

In Europe, 4-BMC is monitored by the EUDA as a new psychoactive substance ([3]) through the EU Early Warning System (EWS) in accordance with Article 8 of Regulation (EU) 2023/1322 ([4]).

4-BMC was formally notified as a new psychoactive substance (EMCDDA, 2019a: 15-16, 2019b) by the EUDA on behalf of Finland on 5 September 2011. The notification was based on the identification of the substance in a customs seizure of 5 grams of white powder made on 18 August 2011 in Helsinki.

Since the formal notification, information on 4-BMC has been exchanged between the EUDA and the EU EWS Network (EUDA, Europol, Reitox national focal points, and the Commission); the EMA has been kept duly informed.

Based on signals suggesting increased availability of 4-BMC in Europe, on 4 February 2025, the EUDA added 4-BMC to the list of new psychoactive substances under intensive monitoring (EMCDDA, 2019c) and requested that the Network expedite reporting of any event involving 4-BMC to the EUDA until further notice.

The EUDA is currently monitoring 178 synthetic cathinones through the EU EWS that have been identified on the European drug market between 2004 and 2024.

After falling from a peak of 1.9 tonnes in 2016, the quantity of synthetic cathinones detected in Europe rose significantly between 2020 and 2024, increasing from 0.7 tonnes in 2020 to 8.5 tonnes in 2021, 26.5 tonnes in 2022, 36.7 tonnes in 2023, and preliminary data suggesting more than 43 tonnes reported in 2024 – representing more than a 6 000% increase in the quantity of material.

([1]) Listed in Schedule I of the 1971 United Nations Convention on Psychotropic Substances.
([2]) Listed in Schedule II of the 1971 United Nations Convention on Psychotropic Substances.
([3]) As defined in point 4 of Article 1 of Council Framework Decision 2004/757/JHA of 25 October 2004 laying down minimum provisions on the constituent elements of criminal acts and penalties in the field of illicit drug trafficking (OJ L 335, 11.11.2004, p. 8).
([4]) Regulation (EU) 2023/1322 of the European Parliament and of the Council of 27 June 2023 on the European Union Drugs Agency (EUDA) and repealing Regulation (EC) No 1920/2006. https://eur-lex.europa.eu/eli/reg/2023/1322/oj/eng

This significant increase is primarily due to European suppliers importing large quantities of synthetic cathinones from chemical companies in India since 2019, apparently principally through the Netherlands. Overall, such imports total at least 106.8 tonnes between 2020 and 2024, with 43.7 tonnes in 2024 alone. This has led to some cathinones previously sourced from companies in China and subsequently controlled there to re-emerge in apparently much greater quantities on the European drug market through this new supply route. These substances include 3-MMC and 3-CMC, which were subject to initial reports and later risk-assessed and controlled in the EU, and more recently 2-MMC and NEP. In addition, other cathinones that were still on the market, such as 2-MMC, have also been imported in large quantities leading to a significant increase in availability. This increased supply has been associated with a rise in cathinone-related harms, including acute poisonings and deaths in several European countries.

In 2024, approximately 4 000 seizures of three cathinones reported to the EU Early Warning System accounted for over 40.4 tonnes: 2-MMC (33.4 tonnes), NEP (6 tonnes) and 4-BMC (1 tonnes). For each of these substances, imports originating from India accounted for more than 99% of the total quantity seized in 2024. These three cathinones are currently the subjects of EUDA initial reports.

Article 9 of Regulation (EU) 2023/1322 requires that ‘Where the Agency, the Commission or a majority of Member States considers that information on a new psychoactive substance collected in one or more Member States and shared with it or them gives rise to concerns that the new psychoactive substance might pose health or social risks at Union level, the Agency shall draw up an initial report on the new psychoactive substance.’

The initial report is submitted to the Commission and the Member States. The purpose of the initial report is to provide scientific evidence to the Commission to allow it to make an informed decision regarding whether or not there is a need to request a risk assessment on a new psychoactive substance as set out in Article 10 of Regulation (EU) 2023/1322.

Based on the information reported by the EU EWS Network, in February 2025, the EUDA assessed the existing information (EMCDDA, 2019a) ([5]) on 4-BMC, based on the following criteria:

- reports of health problems,
- reports of social problems,

([5]) This included information reported to the EUDA through the Early Warning System, including case reports and aggregated datasets.

- reports of seized material,
- pharmacological and toxicological properties and analogy with better-studied substances,
- potential for further spread.

The EUDA concluded that the assessment gave rise to concerns that 4-BMC may pose health or social risks at Union level, and, consequently, determined that an initial report should be produced.

2. Information collection process

In accordance with the requirements of Article 9 of the Regulation, on 28 February 2025, the EUDA launched a procedure for the collection of additional information on 4-BMC in order to support the production of the initial report.

The EUDA collected information through:

- a structured reporting form sent to the Reitox national focal points in the Member States, Türkiye, and Norway (Article 9(4)),
- routine monitoring of open source information,
- a search of open source information conducted specifically for the production of the initial report which included: scientific and medical literature, official reports, grey literature, internet drug discussion forums and related websites (hereafter, 'user websites') and online vendors.

In addition, the EUDA also submitted requests to:

- the World Health Organization (WHO) in order to determine if 4-BMC is under assessment or has been under assessment within the system established by the 1961 Single Convention on Narcotic Drugs, as amended by the 1972 Protocol, and the 1971 Convention on Psychotropic Substances ('United Nations system');
- the European Medicines Agency (EMA) in order to determine if 4-BMC is used as an active substance in a medicinal product for human or veterinary use at Union or national level (Article 9(5)). Specifically, the EMA was asked if 4-BMC is an active substance in:

a. a medicinal product for human use or in a veterinary medicinal product that has obtained a marketing authorisation in accordance with Directive 2001/83/ EC of the European

Parliament and of the Council ([6]), Regulation (EC) No 726/2004 or Regulation (EU) 2019/6 of the European Parliament and of the Council ([7]);

b. a medicinal product for human use or in a veterinary medicinal product that is the subject of an application for a marketing authorisation;

c. a medicinal product for human use or in a veterinary medicinal product whose marketing authorisation has been suspended by the competent authority;

d. an unauthorised medicinal product for human use in accordance with Article 5 of Directive 2001/83/EC or in a veterinary medicinal product prepared extemporaneously in accordance with Article 112(1), point (c), of Regulation (EU) 2019/6;

e. an investigational medicinal product as defined in point (d) of Article 2 of Directive 2001/20/EC of the European Parliament and of the Council ([8]);

- Europol in order to provide information on the involvement of criminal groups in the manufacture, distribution, distribution methods and trafficking of 4-BMC, and on any use of 4-BMC (Article 9(6));

- the European Chemicals Agency (ECHA), the European Centre for Disease Prevention and Control (ECDC) and the European Food Safety Authority (EFSA) in order to provide the information and data at their disposal on 4-BMC (Article 9(7)).

The information collection process was largely concluded on 14 March 2025. The EUDA received responses from all 27 Member States, Türkiye, and Norway. In addition, the EUDA received responses from the WHO, EMA, Europol, ECHA, ECDC and EFSA.

3. Methodological note

4-BMC has been available on the drug market since 2011. Although 4-BMC is screened for in many forensic and toxicology laboratories in Europe, it cannot be excluded that some cases of 4-BMC are undetected or unreported, in particular in serious adverse events.

4-BMC has two positional isomers, whose discrimination poses analytical challenges. Due to differences in reporting practices across Europe, the discrimination of 4-BMC from its

([6]) Directive 2001/83/EC of the European Parliament and of the Council of 6 November 2001 on the Community code relating to medicinal products for human use (OJ L 311, 28.11.2001, p. 67).
([7]) Regulation (EU) 2019/6 of the European Parliament and of the Council of 11 December 2018 on veterinary medicinal products and repealing Directive 2001/82/EC (OJ L 4, 7.1.2019, p. 43).
([8]) Directive 2001/20/EC of the European Parliament and of the Council of 4 April 2001 on the approximation of the laws, regulations and administrative provisions of the Member States relating to the implementation of good clinical practice in the conduct of clinical trials on medicinal products for human use (OJ L 121, 1.5.2001, p. 34).

positional isomers is done in many, but not all, forensic and toxicology laboratories. For the purposes of preparing this report, all detections where the positional isomer of 4-BMC has not been specified to the EUDA have been excluded from the data analysis of physical and biological samples. However, due to different reporting practices across Europe, it remains possible that some detections reported as 4-BMC but that are actually a different positional isomer have been included.

Complementary data sources have been used in the preparation of the Initial Report.

- For the period comprised between 1 January 2011 and 31 December 2024, annual aggregated data which is systematically reported to the EUDA has been used. Data for 2024 is preliminary. In addition, event-based data reported through the European Database on New Drugs between 1 January 2011 and 14 March 2025 has also been used.

- It is important to note that the data on seizures and imports from aggregated data may potentially include some instances of double-counting. Specifically, substances that are initially recorded as legal imports may later be seized by law enforcement. In such cases, the same physical material could be counted twice: first as an import and subsequently as a seizure. While the exact extent of this overlap cannot be determined from the available data, this limitation should be considered when interpreting the total quantities reported.

- Only serious adverse events reported through event-based data are discussed in detail in Section 4.1.2.

- For the period comprised between 1 January and 14 March 2025, data reported through a targeted request for information (a structured reporting form sent to the Reitox national focal points and responses to ad hoc information requests) have been used. These data are not comparable to aggregated seizure data.

- Open source information identified through routine monitoring has also been used throughout the report, when confirmed by Reitox national focal points.

4. Information required by Article 9(2) of the Regulation

The order and titles of subsections 4.1 to 4.9 below are as they appear in Article 9(2) of Regulation (EU) 2023/1322; sections 4.1 to 4.4 are cross-referenced with the headings of Article 9(2a) to Article 9(2d) of the Regulation.

4.1 Nature, number and scale of incidents showing health and social problems in which the new psychoactive substance may potentially be involved, and the patterns of use of the new psychoactive substance (Article 9(2a))

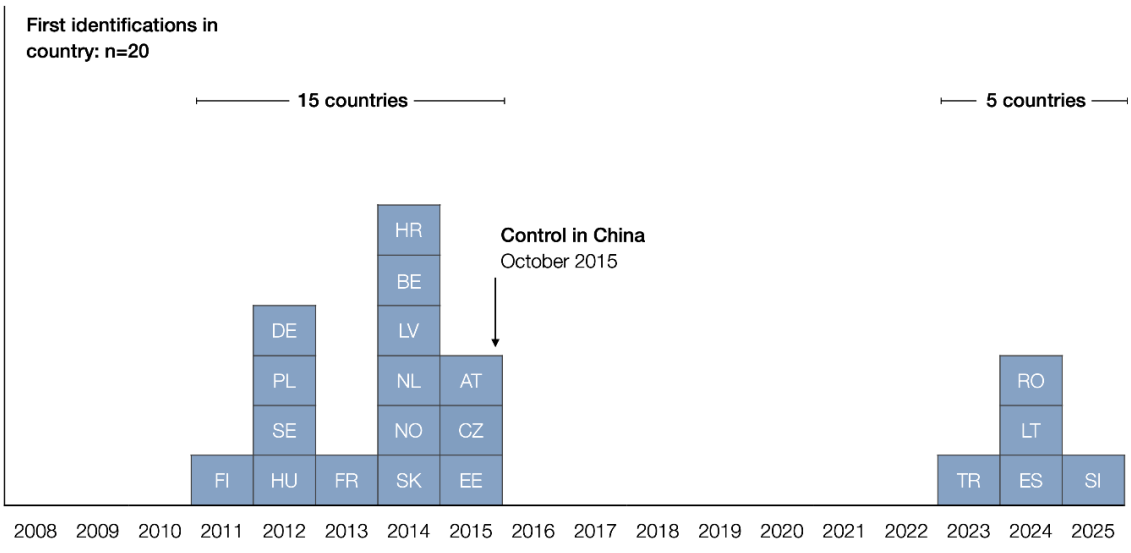
4.1.1 Information from seizures, collected samples and biological samples

First identifications in country

Between 1 January 2011 and 31 March 2025, a total of 18 Member States, Türkiye and Norway reported the identification of 4-BMC for the first time (Figure 1). The Member States are Austria, Belgium, Croatia, Czechia, Estonia, Finland, France, Germany, Hungary, Latvia, Lithuania, the Netherlands, Poland, Romania, Slovakia, Slovenia, Spain and Sweden.

Fifteen countries (51.7%) first identified 4-BMC between 2011 and 2015, while five (17.3%) made their first identifications between 2023 and 2025. Nine Member States (31.0%) have not reported the identification of 4-BMC in their country as of March 2025: Bulgaria, Cyprus, Denmark, Greece, Ireland, Italy, Luxembourg, Malta and Portugal.

Figure 1: Countries reporting the first identification of 4-BMC and year of identification, 2011-2025. Note: EU two-letter country codes are used to identify each country (e.g. AT=Austria, BE=Belgium)

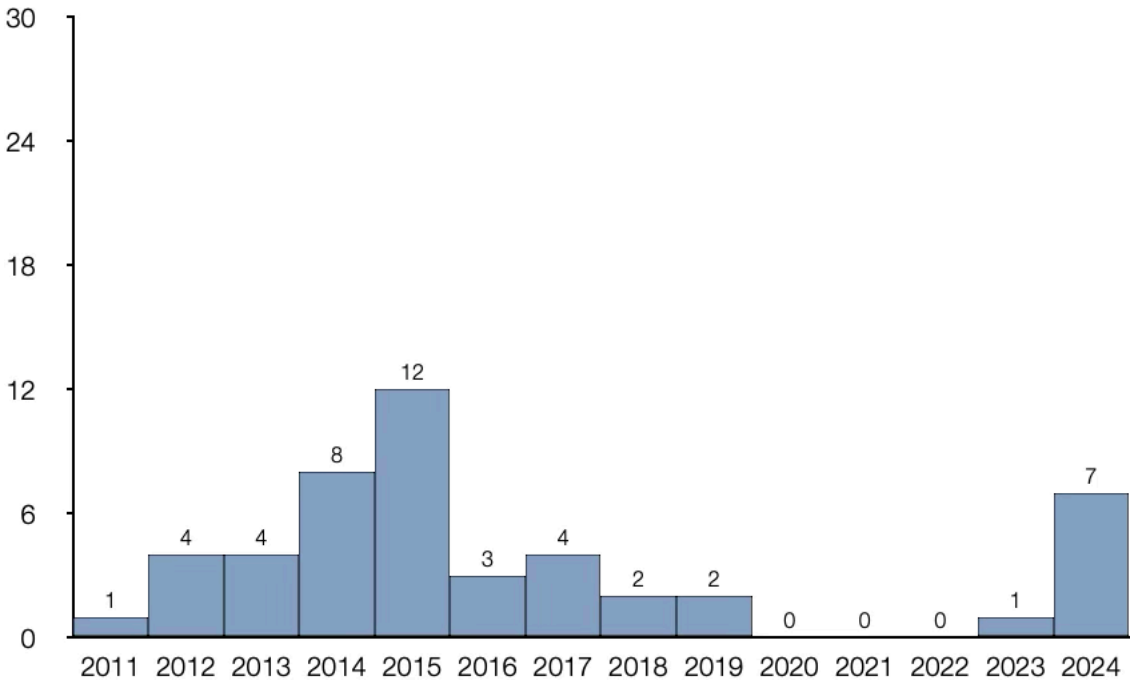


Information from seizures and imports

Between 1 January 2011 and 31 December 2024, a total of 754 seizures and imports (cases) containing 4-BMC across all physical forms were reported by law enforcement in 15 Member States, Türkiye and Norway. The Member States are Austria, Belgium, Croatia, Czechia, Estonia, Finland, France, Germany, Hungary, Latvia, Lithuania, the Netherlands, Poland, Slovakia and Sweden.

Powders constituted 739 (98.0%) of all cases. The remaining 15 cases (2.0%) comprised various other physical forms: six cases of tablets and capsules and nine cases reported as other or unknown. The number of countries reporting cases per year is presented in Figure 2.

Figure 2: Number of countries with 4-BMC seizures and imports reported by law enforcement by year, EU+2, 2011-2024



Given the predominance of cases involving powder, the analysis below focuses on this physical form.

Of 739 powder cases, 700 (94.7%) reported quantities in weight (kilograms) and were included in the analysis. The remaining 39 (5.3%) cases lacked information on weight and were excluded.

A total of 700 cases amounting to 1 069.734 kg (1.07 tonnes) of 4-BMC powder were reported between 2011 and 2024 (Figure 3 and Figure 4). Analysis reveals three distinct periods in the market:

1. **Emergence and first wave, 2011-2016**: 673 cases (96.2% of all cases) totalling 31.319 kg (2.9% of all quantity) were reported.
2. **Low-level presence, 2017-2023:** Only 10 cases (1.4% of all cases) amounting to just 0.118 kg (<0.1% of all quantity) were reported, with no cases between 2020 and 2023.
3. **Re-emergence and potential second wave, 2024:** 17 cases (2.4% of all cases) totalling 1 038.297 kg (97.1% of all quantity) were reported. The Netherlands reported seven imports from India amounting to 1 038.250 kg (approximately 1.0 tonnes) (97.0% of all 4-BMC quantity). In the remaining 10 cases, a total of 0.047 kg of powder was seized.

Figure 3: Number of 4-BMC powder seizures and imports reported by law enforcement in weight (kilograms), EU+2, 2011-2024

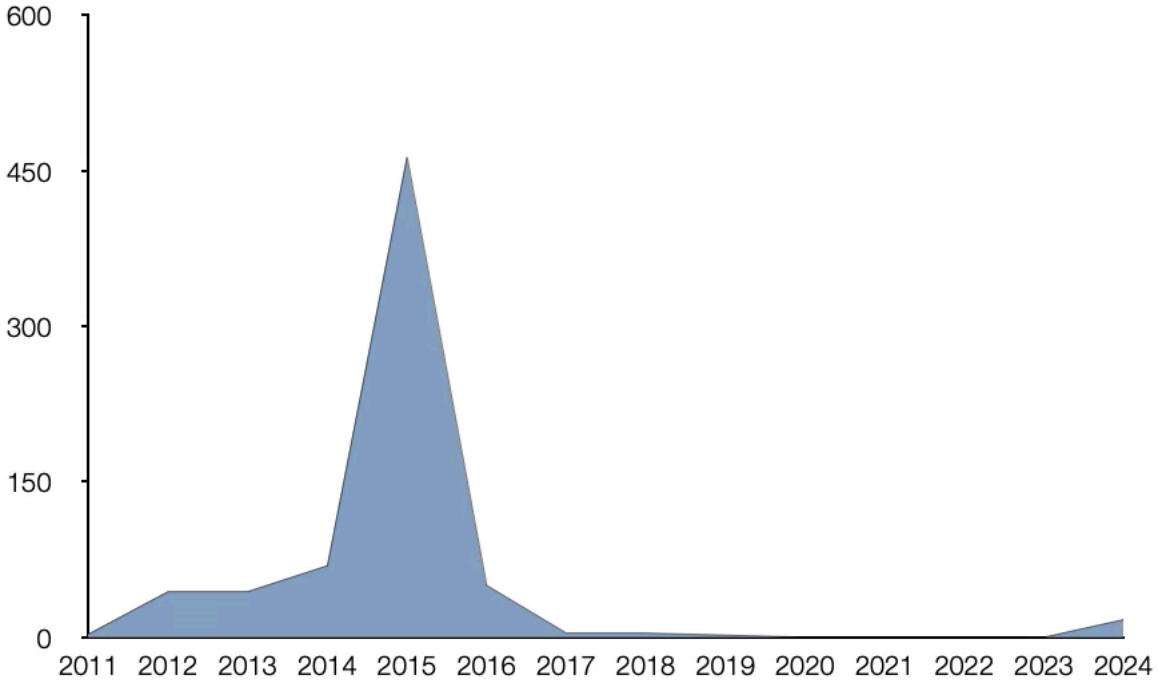
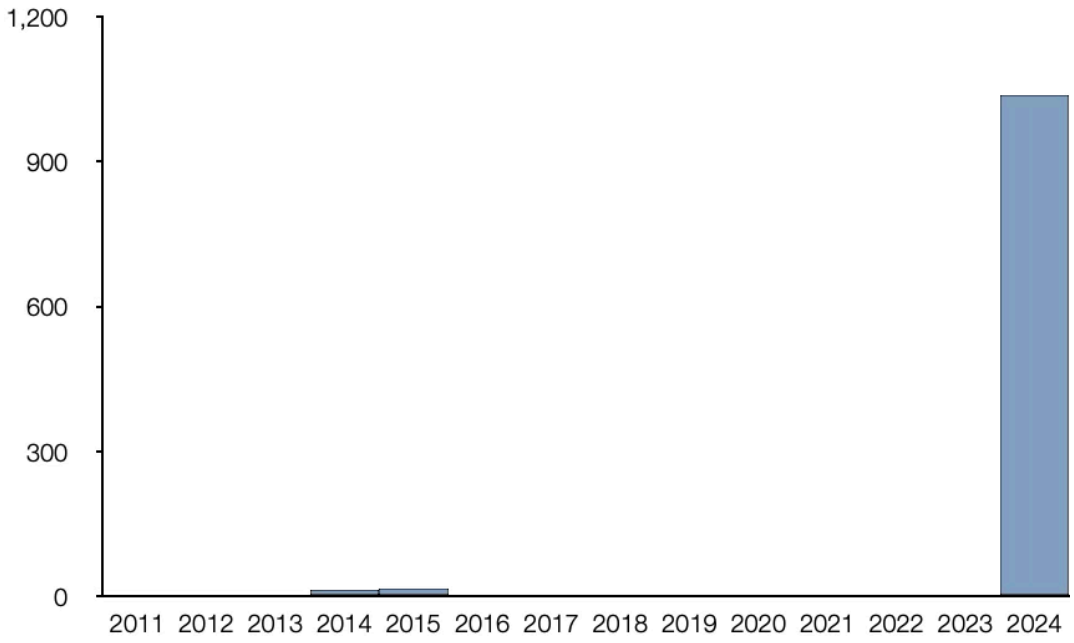


Figure 4: Quantities (kg) of 4-BMC powder seizures and imports reported by law enforcement, EU+2, 2011-2024



This pattern somewhat mirrors the situation with 2-MMC, which has re-emerged on the European drug market since 2022. 2-MMC is the subject of a concurrent initial report by the EUDA.

In one case, the powder was described as white. The purity of the powders was not reported.

In 630 cases (90%), 4-BMC was the only substance reported to be present. In the remaining 70 cases (10%), 4-BMC was found in combination with one or more other psychoactive substances, typically other cathinones. Notably, in four seizures totalling 0.021 g reported in 2024, 2-MMC was also present.

Additionally, between 1 January and 14 March 2025, a total of 17 4-BMC cases were reported by three Member States: Hungary, Lithuania and Spain. Of these, 11 cases (64.7%) were powders, amounting to 0.028 kg. In two cases, the powders were described as a white crystalline powdery substance. In a further three cases, the powders were described as yellow. The purity of the powders was not reported.

Information from collected samples

Between 1 January 2011 and 31 December 2024, a total of 18 collected samples containing 4-BMC from drug checking services were reported by five Member States: Austria, France,

the Netherlands, Poland and Spain. Seven of the cases (38.9%) were reported by Poland and were collected between 2012 and 2015. The remaining 11 cases were all collected in 2024. The analysis below only uses the samples collected in 2024.

Of the 11 samples, France reported five cases (45.4%), followed by Spain with four cases (36.4%), Austria with one case (9.1%), and the Netherlands with one case (9.1%).

All 11 samples were powders. In nine of the cases (81.8%), 4-BMC was the only substance reported to be present. In the remaining two cases (18.2%), 4-BMC was found in combination with 2-MMC, NEP and 2-CMC in one case, and MDMA in the second case.

The route of administration was reported in five of the 11 cases as insufflation (snorting).

Information on the purchase intent was reported in 10 of the 11 cases. In 8 cases (80%), 4-BMC was mis-sold as 3-MMC. In two cases (20%) it was mis-sold as 4-MMC. Information on the purity of 4-BMC was not reported.

Additionally, between 1 January and 14 March 2025, a total of three collected samples containing 4-BMC were reported by two Member States: the Netherlands and Slovenia. All samples were reported as powders. In one case the sample was mis-sold as 3-MMC.

Information from biological samples

A total of 15 detections where 4-BMC was analytically confirmed in biological samples were reported in aggregated datasets ([9]) by two Member States: Hungary (10) and Sweden (5).

The biological samples were reported between 2014 and 2024 as follows:

- between 2014 and 2015: five samples, reported in 2014 (1) and 2015 (4);
- in 2024: 10 samples.

These samples related to drug consumption (9 samples), unspecified forensic case work (5) and cases of driving under the influence of drugs (1).

([9]) These data were reported in aggregated datasets. It is important to note that the number of samples may not correspond directly to the number of cases, as multiple biological samples may be collected from a single case. It is therefore not possible to determine the exact number of unique cases represented.

4.1.2 Health problems

Acute poisonings

Confirmed exposure

No cases of acute poisoning with confirmed exposure to 4-BMC were reported.

Suspected exposure ([10])

A total of three cases of acute poisoning with suspected exposure to 4-BMC were reported by two Member States: Sweden (2) and the Netherlands (1). The cases occurred between 2014 and 2025: in 2014 (1), 2024 (1) and 2025 (1). One of the reported cases was classified as life-threatening (required admission to an intensive care unit or involved a life-threatening condition such as respiratory arrest or coma).

Deaths

No cases of deaths involving 4-BMC were reported.

ECDC reported that they do not have any information on 4-BMC.

4.1.3 Social problems

While specific information on the social risks of 4-BMC is limited, they may parallel those documented for similar synthetic cathinones, such as 4-MMC and 4-CMC, and stimulants generally. For related substances, these risks include negative impacts on socioeconomic status, family dynamics, academic/employment performance, and increased vulnerability depending on the user population (Brookman et al., 2016; de Jonge et al., 2021; Nijkamp et al., 2021).

Limited evidence suggests there is 4-BMC use among vulnerable populations, including high-risk drug users and those engaging in chemsex. However, as 4-BMC appears to be at

([10]) Suspected exposure means that the information on exposure to the substance is limited to the name of the substance that the case or someone else linked to the event believes that the case has consumed and/or from packages containing the drugs that the case is thought to have consumed.

an early stage of re-emergence, evidence of social harms remains anecdotal at this early stage.

4.1.4 Patterns of use

The limited information suggests that 4-BMC is sold both as a substance in its own right and mis-sold as other drugs, particularly 3-MMC (Grifell et al., 2017). Usage patterns of 4-BMC likely resemble those of other similar synthetic cathinones, especially when users are unaware they are consuming 4-BMC. Similar to other cathinones such as 3-CMC and 4-CMC, 4-BMC is typically administered by insufflation (snorting) or orally, with some cases of intravenous injection.

4-BMC appears to be used primarily by existing stimulant users, including those who use cathinones, amphetamines and ecstasy, who either use it in addition to substances they already use or as a replacement.

This includes both recreational use and, in some cases, high-risk behaviours such as injection as part of chemsex. Additionally, vulnerable groups, particularly young people, may be attracted to 4-BMC because of its availability, legal status in some countries, and relatively low cost. This pattern mirrors the early stages of the re-emergence observed with other cathinones like 2-MMC in recent years.

4-BMC may be used in domestic settings (homes and private parties), recreational venues (nightclubs, bars, music festivals), and chemsex contexts.

4.2 Chemical and physical description of the new psychoactive substance and the methods and precursors used for its manufacture or extraction (Article 9 2(b))

4.2.1 Chemical description and names

4-BMC is a synthetic derivative of the naturally occurring substance cathinone which is internationally controlled ([11]) and one of the psychoactive principles in khat (*Catha edulis* Forsk). 4-BMC was described in the scientific literature prior to its first detection on the drug market in Europe in September 2011 (Foley and Cozzi, 2003).

([11]) Listed in Schedule I of the 1971 United Nations Convention on Psychotropic Substances.

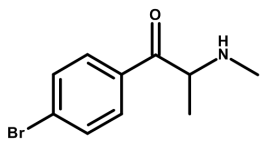
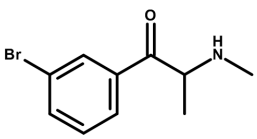
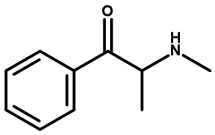
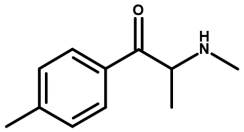
As with many other synthetic cathinone derivatives monitored by the EUDA through the EU Early Warning System, 4-BMC is an *N*-alkylated and ring-substituted cathinone.

The common name 4-BMC is derived from 4-bromomethcathinone ([12]). 4-BMC is the 4-bromo derivative of methcathinone ([13]) and a positional isomer ([14]) of 3-bromomethcathinone (3-BMC) ([15]) and 2-bromomethcathinone (2-BMC) ([16]). 4-BMC is a structural isomer ([17]) of iso-4-BMC ([18]). 4-BMC is structurally related to 4-MMC (mephedrone) ([19]), differing on the substituent present at the 4-position of the phenyl ring. 4-BEC (4-bromoethcathinone) ([20]) is a higher homologue of 4-BMC.

The molecular structure, molecular formula and molecular mass of 4-BMC are provided in Figure 5.

([12]) The origin for the abbreviated common name is indicated by underlining the relevant letters in the common name.
([13]) 2-(Methylamino)-1-phenyl-propan-1-one; listed in Schedule I of the 1971 United Nations Convention on Psychotropic Substances.
([14]) Positional isomers (also known as regioisomers) have the same molecular formula and molecular weight, differing only in the position of a functional group or substituent.
([15]) 1-(3-Bromophenyl)-2-(methylamino)propan-1-one; formally notified by the EUDA in October 2017.
([16]) 1-(2-Bromophenyl)-2-(methylamino)propan-1-one; not currently monitored by the EUDA.
([17]) Structural isomers have the same molecular formula and molecular weight, differing only in the structural arrangement in space.
([18]) 1-(4-Bromophenyl)-1-(methylamino)propan-2-one; not currently monitored by the EUDA.
([19]) 2-(Methylamino)-1-(4-methylphenyl)-1-propanone; formally notified by the EUDA in March 2008; listed in Schedule II of the 1971 United Nations Convention on Psychotropic Substances.
([20]) 1-(4-Bromophenyl)-2-(ethylamino)propan-1-one; formally notified by the EUDA in February 2014.

Figure 5: Molecular structure, molecular formula and molecular mass of 4-BMC. Information on methcathinone, 3-BMC and 4-MMC is provided for comparison

				
	4-BMC (brephedrone)	3-BMC	Methcathinone	4-MMC (mephedrone)
Molecular formula	$C_{10}H_{12}BrNO$	$C_{10}H_{12}BrNO$	$C_{10}H_{13}NO$	$C_{11}H_{15}NO$
Molecular mass	242.11	242.11	163.22	177.24

Common name(s):

4-BMC

4-Bromomethcathinone

Systematic (IUPAC) name:

1-(4-Bromophenyl)-2-(methylamino)propan-1-one

(*RS*)- 1-(4-bromophenyl)-2-(methylamino)propan-1-one

Other chemical names:

1-(4-Bromophenyl)-2-(methylamino)-1-propanone

4′-Bromo-2-(methylamino)propanophenone

2-(Methylaminol-l-(4-bromophenyl)propan-l-one

Other names:

Brephedrone

4-BMAP

p-BMC

para-BMC

p-Bromomethcathinone

para-Bromomethcathinone

4-Bromo-methcathinone

4-Br-methcathinone

4-Bromo-*N*-methylcathinone

4-Br-MCAT

4-Bromo MC

EUDA framework name (Pulver et al., 2024):

4Br-MC

Chemical Abstracts Service (CAS) registry numbers:

486459-03-4 (base)

135333-27-6 (hydrochloride salt)

1388142-13-9 (*R*-isomer)

1388142-14-0 (*S*-isomer)

IUPAC International Chemical Identifier Key (InChI Key):

OOJXMFNDUXHDOV-UHFFFAOYSA-N (base)

TYWLEEFTZLMGNE-UHFFFAOYSA-N (hydrochloride salt)

OOJXMFNDUXHDOV-SSDOTTSWSA-N (*R*-isomer)

OOJXMFNDUXHDOV-ZETCQYMHSA-N (*S*-isomer)

IUPAC International Chemical Identifier String (InChI string):

InChI=1S/C10H12BrNO/c1-7(12-2)10(13)8-3-5-9(11)6-4-8/h3-7,12H,1-2H3 (base)

InChI=1S/C10H12BrNO.ClH/c1-7(12-2)10(13)8-3-5-9(11)6-4-8;/h3-7,12H,1-2H3;1H (hydrochloride salt)

InChI=1S/C10H12BrNO/c1-7(12-2)10(13)8-3-5-9(11)6-4-8/h3-7,12H,1-2H3/t7-/m1/s1 (*R*-isomer)

InChI=1S/C10H12BrNO/c1-7(12-2)10(13)8-3-5-9(11)6-4-8/h3-7,12H,1-2H3/t7-/m0/s1 (*S*-isomer)

Simplified Molecular-Input Line-Entry System (SMILES):

CNC(C)C(=O)c1ccc(Br)cc1 (base)

Cl.CNC(C)C(=O)c1ccc(Br)cc1 (hydrochloride salt)

CN[C@H](C)C(=O)c1ccc(Br)cc1 (*R*-isomer)

CN[C@@H](C)C(=O)c1ccc(Br)cc1 (*S*-isomer)

4.2.2 Physical description

The hydrochloride salt of 4-BMC is a solid, reported to be soluble in dimethylformamide (DMF) (5 mg/ml), dimethyl sulfoxide (DMSO) (10 mg/ml), ethanol (5 mg/ml) and phosphate-buffered saline (PBS) (pH 7.2) (5 mg/ml) (Cayman Chemical, 2024). 4-BMC has a λmax (ultraviolet wavelength of maximum absorbance) of 264 nm (Cayman Chemical, 2020). A melting point of 97.6˚C (SWGDRUG, 2015) and a melting point range of 186-189 ˚C (Foley and Cozzi, 2003) have been reported for the hydrochloride salt of 4-BMC.

To date, seizures and collected samples containing 4-BMC reported to the EUDA have been mostly in powder form and, to a lesser extent, in the form of tablets and capsules.

4-BMC has been identified in combination with other cathinones, including but not limited to 3-MMC ([21]), 3-CMC ([22]), pentedrone ([23]), *N*-ethylbuphedrone (NEB) ([24]) and buphedrone ([25]). 4-BMC has also been identified in combination with the internationally controlled substance methamphetamine.

There is no information available on whether the free base form and/or the salt form of 4-BMC was identified in detections within the European Union.

([21]) 2-(Methylamino)-1-(3-methylphenyl)propan-1-one
([22]) 1-(3-Chlorophenyl)-2-(methylamino)propan-1-one
([23]) 2-(Methylamino)-1-phenylpentan-1-one
([24]) 2-(Ethylamino)-1-phenylbutan-1-one
([25]) 2-(Methylamino)-1-phenylbutan-1-one

4.2.3 Methods and chemical precursors used for the manufacture or extraction

Limited information is available about the chemical precursors or manufacturing methods used to make the 4-BMC which has been identified within Europe. General methods for the synthesis of cathinones, including 4-BMC, are described below.

General methods for the synthesis of cathinones, including 4-BMC

Cathinones may be prepared using several approaches. For ring-substituted cathinones, such as 4-BMC, the simplest approach involves a 2-step bromination-amination procedure which is a relatively straightforward process, using equipment and knowledge similar to those required for the synthesis of other synthetic drugs such as MDMA and amphetamine (EMCDDA, 2011).

The first step of the process consists in the α-bromination of a suitable aryl ketone (commonly called a 'propiophenone'), for example 4'-bromopropiophenone (1-(4-bromophenyl)propan-1-one) or 2-bromo-4'-bromopropiophenone (2-bromo-1-(4-bromophenyl)propan-1-one), to produce an α-bromoketone under acidic or basic conditions. The bromine for this step can be commercially obtained as a liquid or prepared from a bromide salt (e.g. KBr), an acid (e.g. H_2SO_4) and an oxidiser (e.g. H_2O_2). Importantly, bromine is toxic by inhalation, accelerates the burning of combustible material, is very corrosive to tissue and to metals and is dangerous for the environment.

After the preparation of the α-bromoketone, the product is reacted with an amine (for ring substituted cathinones, the amine is typically methylamine hydrochloride and triethylamine in an acidic scavenger). This step promotes the nucleophilic substitution of the bromine to obtain a free cathinone base (EMCDDA, 2022; Wrzesień, 2018). Due to the instability of the free base, the product is converted into suitable salts (hydrochlorides or hydrobromides) which are then recrystallised (EMCDDA, 2022; Wrzesień, 2018). Unless steps are taken to resolve the reaction products, the synthesis produces racemic mixtures.

The synthesis of the hydrochloride salt of 4-BMC has been described in the literature. 4-BMC was synthesised through the reaction of 2,4'-dibromopropiophenone with methylamine (Foley and Cozzi, 2003).

‘Designer’ precursors

Other than standard organic synthesis methods using known precursors, cathinones can be prepared using so-called ’designer precursors’. These are ‘purpose-made, close chemical relatives of controlled precursors and can easily be converted into a controlled precursor and usually have no legitimate use’ (CND, 2020). They can be, for example, stable chemical intermediates, masked derivatives of controlled precursors, or masked derivatives of controlled drugs (CND, 2020). Amine compounds, including cathinones, are especially suited for the latter approach, in that ‘masking’ or ‘protecting’ groups (such as acetyl protecting groups, ‘Boc’ groups, CBZ groups and/or ‘Tosyl’ groups) can be easily introduced into the molecule (making it a different chemical entity) and then easily cleaved off, often in quantitative yields to produce the controlled amine of choice.

Illicit production of 4-BMC

Information on the synthetic pathways used to produce the 4-BMC seized in Europe can come from impurity profiling of seized or collected samples, from seizures of cathinone precursors and from law enforcement intelligence collected in seizures of illicit cathinone production sites.

No information exists on the synthetic impurities present in 4-BMC samples (synthetic impurity profiling). There are no reports on precursors related to 4-BMC reported to the European Union’s Drug Precursors Database (EDPD) or to the International Narcotics Control Board (INCB) Precursors Incident Communication System (PICS).

There are no reports on 4-BMC illicit production sites through the European Reporting on Illicit Synthetic Substance Production Sites (ERISSP) database.

Slovakia reported to Europol a seizure of 4-BMC on 22 December 2024, where the substance was produced in Slovakia by a criminal group from Poland, with the intention of distributing it further to Poland.

4.2.4 Detection and analysis

Identification and quantification of 4-BMC in physical samples can be carried out according to the general procedure described by the United Nations Office on Drugs and Crime (UNODC, 2020).

Machado et al. described the use of attenuated total reflectance-Fourier transform infrared spectroscopy (ATR-FTIR), gas chromatography-mass spectrometry (GC-MS), liquid chromatography-mass spectrometry (LC-MS), and 1H, 13C and 2D nuclear magnetic resonance (NMR) for the identification of 4-BMC in seized samples (Machado et al., 2017).

Identification of 4-BMC in blood by liquid chromatography-tandem mass spectrometry (LC-MS/MS) has been described by Adamowicz and Tokarcyk (Adamowicz and Tokarcyk et al., 2015). Chen et al. developed a validated liquid chromatography tandem mass spectrometry (LC-MS/MS) method capable of simultaneously determining 219 new psychoactive substances (NPS) (including 4-BMC) and 65 other substances in urine samples (Chen et al., 2022). A method for the identification of 4-BMC alongside other substances in hair samples using LC-MS/MS is described by Niebel et al. (Niebel et al., 2022). A limitation of the method as highlighted by the authors is the limited stability of the substances in the hair matrix (Niebel. et al., 2022).

The current methods outlined in the literature for detecting cathinones in wastewater do not target the identification of 4-BMC.

Discrimination of 4-BMC from its positional isomers

4-BMC has two positional isomers, 3-BMC and 2-BMC, differing only in the position of the bromine on the phenyl ring. Reference standards of the hydrochloride salt of 4-BMC (Cayman Chemical, 2020), 3-BMC (Cayman Chemical, 2023) and 2-BMC (LGC Standards, 2025) are commercially available. Reference standards are also commercially available for the base form and the *S*-isomer of 4-BMC (Aurora Fine Chemicals, 2025a; Aurora Fine Chemicals, 2025b).

Positional and structural isomers have the same molecular formula and molecular mass, therefore the discrimination of these isomers of 4-BMC poses analytical challenges, as techniques solely relying on mass will not allow an unequivocal identification. The positional isomers of 4-BMC, 3-BMC and 2-BMC can be discriminated for in many, but not all, forensic and toxicology laboratories in Europe. The discrimination of positional isomers can be achieved through the use of analytical reference standards and/or analytical methods in addition to GC-MS, such as FTIR or NMR. The discrimination of these isomers is described in further detail below.

Analysis of 4-BMC and its positional isomers by GC-MS will result in very similar mass spectrometry fragmentation patterns (Muramaki et al., 2020). The ability to distinguish between cathinone isomers requires the use of analytical reference standards and/or additional analytical methods, such as FTIR or NMR.

Muramaki et al. achieved the unambiguous identification of the positional isomers of 4-BMC using a gas chromatography-electron ionisation-triple quadrupole energy-resolved mass spectrometry (GC-EI-QqQ-MS) method that can be applied to all ring-halogenated synthetic cathinones (Muramaki et al., 2020).

Differentiation of enantiomers

Cathinones such as 4-BMC contain a stereogenic centre thus allowing for the existence of a pair of enantiomers, (*R*)- and (*S*)-4-BMC. There is no information on the enantiomeric composition of the samples of 4-BMC detected within the European Union, which in part may reflect the fact that stereochemical analysis is not routinely undertaken in forensic laboratories.

Differentiation of enantiomers is possible using the following techniques: chiral chromatography, vibrational circular dichroism (VCD) spectroscopy and/or electronic circular dichroism (ECD) spectroscopy.

The separation of 4-BMC enantiomers by ultra-performance supercritical fluid chromatography (SFC) has been described by Geryk et al. (Geryk et al., 2016). The use of an isocratic high-performance liquid chromatography-ultraviolet (HPLC-UV) method with specific chiral stationary phases (CSP) to successfully separate enantiomers of a range of synthetic cathinones, including 4-BMC, has also been described (Kadkhodaei et al., 2020; Mohr et al., 2012a; Taschwer et al., 2017). The separation of 4-BMC enantiomers by GC-MS using a chiral derivatisation agent (Mohr et al., 2012b) and by capillary electrochromatography (CEC) (Albarls et al., 2016) have also been described in the literature.

4.3 Pharmacological and toxicological description of the new psychoactive substance (Article 9 2(c))

4-BMC is a ring-substituted synthetic cathinone. Similar to closely related cathinones such as 4-methylmethcathinone (4-MMC), 4-BMC has been shown to interact with the monoamine transporter system in a number of *in vitro* studies, which suggest that 4-BMC acts as a psychostimulant. For example, 4-BMC was reported to inhibit the reuptake of dopamine (DA), noradrenaline (NA), and serotonin (5-HT) at their respective transporters DAT, NAT and SERT in human transporter stably transfected in human embryonic kidney (HEK) 293 cells (Rickli et al., 2015). Furthermore, it was also shown that 4-BMC was able to act as a substrate-type releaser (Bonano et al., 2015), a feature also found in synthetic cathinones such as 4-MMC and methcathinone (Bonano et al., 2015, Walther et al. 2019). In the

receptor binding and functional activation studies, 4-BMC bound to the 5-HT2A receptor (Rickli et al., 2015) as previously shown for 4-MMC and MDMA (Eshleman et al., 2013; Simmler et al., 2013) and typically for serotonergic hallucinogens (Eshleman et al., 2014; Nichols, 2016).

The acute effects of 4-BMC are likely to share similarities with related synthetic cathinones like 4-MMC, including general stimulation and increased energy, elevated mood and euphoria, and increased sociability (Abdulrahim and Bowden-Jones, 2015).

Poisoning from synthetic cathinones, reflecting a sympathomimetic toxidrome, includes hyperactivity, mydriasis (dilated pupils), anxiety, agitation, hallucinations, hyperthermia, cardiovascular toxicity (tachycardia, hypertension, chest pain, cardiac arrest), respiratory effects and seizures. In addition, psychotic episodes may occur (Baumann, et al., 2018).

Synthetic cathinones have abuse liability and dependence potential. While information specifically on 4-BMC is limited, the chronic health risks may include dependence, similar to other synthetic cathinones like 4-MMC (Bajaj et al., 2010; Batisse et al., 2014; Bonano et al., 2015; Dolengevich-Segal et al., 2016).

The concomitant use of 4-BMC with other central nervous system stimulants or other psychoactive substances (polysubstance use) may increase the risk of poisoning.

4.4 Involvement of criminal groups in the manufacture or distribution of the new psychoactive substance (Article 9 2(d))

Europol received replies from 14 Member States: Austria, Croatia, Cyprus, Denmark, Estonia, France, Greece, Italy, Latvia, Lithuania, Luxembourg, Slovakia, Slovenia and Spain.

Replies were also received from Iceland ([26]), Moldova ([27]), Switzerland ([28]) and the United Kingdom (UK) ([29]).

([26]) Iceland reported that they had no information on 4-BMC.
([27]) Moldova reported that they had no information on 4-BMC.
([28]) Switzerland reported that they had no information on the involvement of criminal groups in the manufacture, distribution and trafficking of NEP. Based on information gathered from forensic laboratories, Switzerland reported that there is no record of seizures of 4-BMC. In February 2025, a drug checking service has reported one pill containing 4-BMC.
([29]) The UK reported that detections of synthetic cathinones are low and there is limited known use of these substances.

Involvement of criminal groups in the manufacture or distribution of 4-BMC

Most countries reported to Europol that they had no information on the involvement of criminal groups in the manufacture or distribution of 4-BMC.

Slovakia reported a seizure of 4-BMC on 22 December 2024. The seized 4-BMC was produced in Slovakia by a criminal group from Poland for the purpose of further distribution to Poland.

Information on seizures of 4-BMC

Generally, seizures of 4-BMC were reported to Europol by Austria, Estonia, France, Lithuania and Slovakia, and had occurred in 2024, where the date was reported.

Croatia, Cyprus, Denmark, Greece, Italy, Latvia, Luxembourg, Slovenia and Spain reported that no information was available.

4.5 Information on the human and veterinary medical use of the new psychoactive substance, including as an active substance in a medicinal product for human use or in a veterinary medicinal product

In accordance with Article 9(5) of Regulation (EU) 2023/1322, the EMA requested that the national competent authorities responsible for human and veterinary medicinal products in the Member States, Norway and Iceland provide information on whether 4-BMC is an active substance in:

a. a medicinal product for human use or in a veterinary medicinal product that has obtained a marketing authorisation in accordance with Directive 2001/83/EC of the European Parliament and of the Council (20), Regulation (EC) No 726/2004 or Regulation (EU) 2019/6 of the European Parliament and of the Council (21);

b. a medicinal product for human use or in a veterinary medicinal product that is the subject of an application for a marketing authorisation;

c. a medicinal product for human use or in a veterinary medicinal product whose marketing authorisation has been suspended by the competent authority;

d. an unauthorised medicinal product for human use as referred to in Article 5(1) and (2) of Directive 2001/83/EC or in a veterinary medicinal product prepared extemporaneously in accordance with Article 112(1), point (c), of Regulation (EU) 2019/6;

e. an investigational medicinal product as defined in Article 2, point (d), of Directive 2001/20/EC of the European Parliament and of the Council (22).

The following information was received:

- twelve Member States ([30]) as well as Norway and Iceland reported that 4-BMC is not an active substance in medicinal products for human use;
- twenty-one Member States ([31]) as well as Norway and Iceland reported that 4-BMC is not an active substance in medicinal products for veterinary use ([32]);
- the EMA reported that 4-BMC is not an active substance in a centrally authorised human or veterinary medicinal product.

Based on the available information, it appears that 4-BMC is not an active substance in any medicinal product for human use or in any veterinary medicinal product in Europe. However, the information for both human and veterinary medicines at national level is incomplete, particularly regarding human medicines. In addition, the use of 4-BMC as an active substance in medicinal products prepared extemporaneously or in investigational medicinal products cannot be excluded in some Member States due to a lack of information.

4.6 Information on the commercial and industrial use of the new psychoactive substance, the extent of such use, as well as its use for scientific research and development purposes

4-BMC is available as an analytical reference material for use in clinical and forensic case work and scientific research. There is currently no information that suggests 4-BMC is used for other legitimate purposes.

The ECHA, ECDC and EFSA reported that they do not hold any relevant data or information on 4-BMC.

([30]) Austria, Croatia, Cyprus, Czechia, Denmark, France, Germany, Ireland, the Netherlands, Portugal, Spain and Sweden.
([31]) Austria, Belgium, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, Germany, Ireland, Italy, Latvia, Luxembourg, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain and Sweden.
([32]) Regarding extemporaneous veterinary products, Croatia, Denmark, Germany and Slovenia reported that they have no information available.

4.7 Information on whether the new psychoactive substance is subject to any restrictive measures in the Member States

Twenty Member States, Türkiye and Norway reported that 4-BMC is subjected to restrictive measures at national level, as detailed below.

Seven Member States (Bulgaria, Greece, Luxembourg, the Netherlands, Romania, Slovakia and Spain) reported that 4-BMC is not subject to restrictive measures at national level. The Netherlands reported that 4-BMC will be covered by a generic definition of cathinones, as of 1 July 2025.

When reporting whether 4-BMC is subjected to restrictive measures, 10 Member States (Austria, Belgium, Denmark, Estonia, Germany, Hungary, Italy, Latvia, Lithuania and Malta) and Türkiye mentioned that this substance is covered by the generic definition of cathinones ([33]). Malta reported that 4-BMC is controlled as a derivative of 4-MEC.

Drug control legislation

Fourteen Member States (Belgium, Croatia, Cyprus, Czechia, Finland, France, Ireland, Italy, Latvia, Lithuania, Malta, Poland, Sweden, Slovenia) and Norway reported that 4-BMC is controlled under drug control legislation:

- Belgium reported that 4-BMC is covered by the generic definition of cathinones as of 26 September 2017;
- Croatia reported that 4-BMC is controlled since 23 December 2024;
- Cyprus reported that 4-BMC is controlled since 14 November 2011;
- Czechia reported that 4-BMC is controlled since 1 March 2017;
- Finland reported that 4-BMC is scheduled under the law concerning psychoactive substances banned from the consumer market since 19 December 2014;
- France reported that 4-BMC is controlled under drug control legislation since 2 August 2012;

[33] Two Member States (Denmark and Estonia) reported that 4-BMC is controlled by 'generic classification', with no additional indication of dates or type of legislation.

- Ireland reported that 4-BMC is classed as a Schedule 1 controlled drug under the Misuse of Drugs Regulations 2017 since 4 May 2017;
- Italy reported that 4-BMC is covered by the generic definition of cathinones and is scheduled in Table I of the Presidential Decree 309/90 since 16 May 2014;
- Latvia reported that 4-BMC is covered by the generic definition of cathinones in the legislation On the Procedures for the Coming into Force and Application of the Criminal Law since 2013;
- Lithuania reported that 4-BMC is regulated as a derivative of cathinone since 10 August 2011;
- Malta reported that 4-BMC is considered a derivative of 4-MEC, and covered by the Medical and Kindred Professions Ordinance;
- Poland reported that 4-BMC is controlled by the Act of 24 April 2015 amending the Act on Counteracting Drug Addiction and certain other acts since 15 July 2015;
- Sweden reported that 4-BMC is regulated as a good dangerous to health since 18 August 2015;
- Slovenia reported that 4-BMC is controlled by Regulations on the classification of illicit drugs since 20 June 2014;
- Norway reported that 4-BMC is classified as a narcotic drug.

New psychoactive substance legislation

Four Member States (Austria, Germany, Hungary, Portugal) and Türkiye reported that 4-BMC is controlled under new psychoactive substance legislation:

- Austria reported that 4-BMC is covered under the generic definition of cathinones;
- Germany reported that 4-BMC is covered by the generic definition of cathinones in the New Psychoactive Substances Act (NpSG) since 26 November 2016;
- Hungary reported that 4-BMC is covered by the definition of cathinones in Annex III of Decree no. 78/2022 of the Ministry of Interior since 3 April 2012;
- Portugal reported that 4-BMC is controlled by Administrative Rule 154/2013 since 18 March 2013;

- Türkiye reported that 4-BMC is covered by the generic definition of cathinones since 2015.

Other countries

4-BMC has been controlled in China since October 2015. The available information suggests 4-BMC is not controlled in India.

4.8 Information on whether the new psychoactive substance is currently or has been under assessment within the United Nations system

The World Health Organization is the specialised United Nations agency designated for the evaluation of the medical, scientific and public health aspects of psychoactive substances under the Single Convention on Narcotic Drugs, 1961, and the Convention on Psychotropic Substances, 1971.

On 20 March 2025, the World Health Organization informed the EUDA that 4-BMC is not currently under assessment nor has it been under assessment by the United Nations system.

5. Analysis and assessment

1-(4-Bromophenyl)-2-(methylamino)propan-1-one (4-bromomethcathinone, 4-BMC) is a synthetic cathinone with stimulant effects that is monitored as a new psychoactive substance by the EUDA in accordance with Regulation (EU) 2023/1322.

The substance is an *N*-alkylated and ring-substituted cathinone and contains a chiral centre so two enantiomers may exist: (*R*)-4-BMC and (*S*)-4-BMC. It is a derivative of cathinone, the naturally occurring stimulant and main psychoactive substance in the khat plant *Catha edulis*. 4-BMC is also closely related to and likely shares similar stimulant effects with methcathinone, 4-methylmethcathinone (4-MMC) and 4-chloromethcathinone (4-CMC). Cathinone, methcathinone, 4-MMC and 4-CMC are controlled under the 1971 United Nations Convention on Psychotropic Substances because of the public health and social risks that they pose.

4-BMC was first identified in Europe in 2011 based on a customs seizure made in Finland. As of 31 March 2025, the substance has been identified in 18 Member States, as well as Türkiye and Norway.

Initially, 4-BMC was sourced from chemical companies in China. However, following China's control of the substance in October 2015, its availability in Europe declined. Between 2017 and 2023, there was only low-level availability and presence of the substance.

Since 2024, European suppliers began importing large quantities of 4-BMC from chemical companies in India, apparently primarily through the Netherlands. This shift coincided with the Netherlands' control of 3-CMC in September 2023.

This new supply route suggests that 4-BMC is re-emerging on the European drug market, with law enforcement reporting significant increases in seizures and imports since 2024. This includes approximately 1 tonne of 4-BMC that was imported from India into Europe during 2024. This represents approximately 97.0% of all 4-BMC quantity seized between 2011 and 2024.

In addition, since 2024, drug checking services from four Member States have reported a small increase in samples collected from users containing 4-BMC. Analysis revealed that 4-BMC was primarily mis-sold as 3-MMC.

The limited information suggests that 4-BMC is sold both as a substance in its own right and mis-sold as other drugs, particularly 3-MMC. Usage patterns of 4-BMC likely resemble those of other similar synthetic cathinones, such as 3-MMC and 4-MMC. Similar to other

cathinones such as 3-MMC and 4-MMC, it is likely that 4-BMC is typically administered by insufflation (snorting), orally, and in some cases by intravenous injection.

4-BMC appears to be used primarily by existing stimulant users, including those who use cathinones, amphetamines and ecstasy, who either use it in addition to substances they already use or as a replacement. This includes both recreational use and, in some cases, high-risk behaviours such as injection as part of chemsex. Additionally, vulnerable groups, particularly young people, may be attracted to 4-BMC because of its availability, legal status in some countries, and relatively low cost. 4-BMC is used in domestic settings, recreational venues and chemsex contexts.

Since 2024, two acute poisonings with suspected exposure to 4-BMC have been reported by two Member States: Sweden and the Netherlands. No deaths involving the substance have been reported.

Currently, there is limited information on the involvement of criminal groups in the manufacture, trafficking and distribution of 4-BMC within Europe. However, based on information reported to the EUDA, there is evidence of criminal acts, such as trafficking and supply offences, involving 4-BMC.

Based on the available information, it appears that 4-BMC is not an active substance in any medicinal product for human use or in any veterinary medicinal product in Europe. However, the information for both human and veterinary medicines from national level is incomplete, particularly regarding human medicines. In addition, the use of 4-BMC as an active substance in medicinal products prepared extemporaneously or in investigational medicinal products cannot be excluded in some Member States due to a lack of information. Aside from limited use as an analytical reference standard and in scientific research, there is currently no information that suggests that 4-BMC is used for other legitimate purposes.

4-BMC is subject to restrictive measures in 20 Member States, Türkiye and Norway, sometimes covered by a generic definition of cathinones. However, it is not subject to restrictive measures in seven Member States. The substance has been controlled in China since October 2015, while available information suggests it is not controlled in India.

4-BMC has not been subject to assessment nor is it currently under assessment by the United Nations system.

The EUDA will continue to intensively monitor 4-BMC to ensure that new information is provided to the Member States, Europol, the Commission and the EMA through the EU Early Warning System in a timely manner. This monitoring will enhance awareness and inform

effective preparedness and response measures at both national and EU levels to protect public health.

The analysis of available data suggests that 4-BMC is re-emerging on the drug market with the potential for significantly increased availability and harms in the European Union. The EUDA considers that these findings indicate potential health and social risks at Union level. We conclude that the potential health and social risks posed by the use, manufacture, distribution and involvement of criminal groups could be comprehensively assessed through a risk assessment procedure as specified in Article 10 of Regulation (EU) 2023/1322.

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The European Union Drugs Agency (EUDA) is the leading authority on illicit drugs in Europe. Based in Lisbon, Portugal, we provide independent scientific evidence and analysis on all aspects of this constantly changing threat to individual lives and wider society. Our work contributes to EU and national policies to protect Europe's citizens from drug-related harms. We are an agency of the European Union.

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- EUDA Early Warning System on NPS
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EUDA, Praça Europa 1, Cais do Sodré, 1249-289 Lisbon, Portugal
Tel. (351) 211 21 02 00 | euda.europa.eu | info@euda.europa.eu