EUDA
EUROPEAN UNION DRUGS AGENCY

INITIAL REPORTS

Spirochlorphine

EUDA initial report on the new psychoactive substance: 8-[1-(4-chlorophenyl)ethyl]-1-phenyl-1,3,8-triazaspiro[4.5]decan-4-one (spirochlorphine)

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

Contents

Acknowledgements

The European Union Drugs Agency (EUDA), acknowledge 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 sharing expertise. We also thank the following partners for their contributions: Europol and its National Units, the European Medicines Agency (EMA) and national competent 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.

1. Introduction

8-[1-(4-Chlorophenyl)ethyl]-1-phenyl-1,3,8-triazaspiro[4.5]decan-4-one, commonly known as spirochlorphine, is a spirotriazole and a synthetic opioid belonging to the orphine opioids, a group of related new synthetic opioids. Spirochlorphine is structurally related to brorphine and bezitramide, both of which are controlled under Schedule I of the United Nations 1961 Single Convention on Narcotic Drugs because of the public health and social risks they pose.

Spirochlorphine is monitored by the EUDA as a new psychoactive substance through the European Union Early Warning System (EWS), in accordance with Regulation (EU) 2023/1322 ([1]).

Since 2024, a marked increase has been observed in the number of orphine opioids identified on the European drug market, with nine new substances reported, including spirochlorphine.

Spirochlorphine was formally notified as a new psychoactive substance by the EUDA on behalf of Sweden on 15 April 2025 ([2,3]). The notification was based on the identification of the substance in 0.80 grams of white powder that was seized by police on 3 January 2025. The substance was analytically confirmed using GC-MS and NMR.

On 13 February 2026, the EUDA placed spirochlorphine under intensive monitoring due to concerns about potential public health risks. This requires the Member States to expedite reporting of any events involving the substance to the EUDA.

On 10 March 2026, the EUDA issued an advisory to the Member States on the increased availability of orphine opioids and associated harms in the European Union (EU). It noted that reports from the EU indicate an increase in availability and harms from 2025 onwards, particularly involving cychlorphine and, to a lesser degree, spirochlorphine. This trend was also consistent with reports from the United Kingdom, the United States, and Canada. The increase may be linked in part to the generic control of nitazene opioids in China in July 2025, a measure that may have contributed to reduced nitazene availability and the emergence of orphine opioids as substitute substances.

([1]) 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
([2]) EMCDDA (2020), EMCDDA operating guidelines for the European Union Early Warning System on new psychoactive substances, p. 15–6. http://www.euda.europa.eu/publications/guidelines/operating-guidelines-for-the-european-union-early-warning-system-on-new-psychoactive-substances_en
([3]) EMCDDA (2020), EMCDDA operating guidelines for the European Union Early Warning System on new psychoactive substances, Guidance note 2. Formal notification of a new psychoactive substance. https://www.euda.europa.eu/system/files/publications/12213/downloads/Guidance%20Note%202-%20Formal%20notification%20of%20a%20new%20psychoactive%20substance.pdf

Article 9(1) 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 to provide it with the evidence needed to decide whether to request a risk assessment on a new psychoactive substance under Article 10 of the Regulation.

On 13 April 2026, based on information reported by the Member States through the EWS, the EUDA assessed the available information on spirochlorphine against the following criteria:

1. reports of health problems;
2. reports of social problems;
3. reports of seized material;
4. pharmacological and toxicological properties and analogy with better-studied substances; and
5. potential for further spread.

Based on its assessment, the EUDA determined that the available information on spirochlorphine met criteria 3, 4, and 5. The EUDA concluded that spirochlorphine may pose health or social risks at Union level and consequently determined that an initial report should be produced.

In parallel, the EUDA also assessed the available information on the related orphine opioid cychlorphine and determined that an initial report should also be prepared (EUDA, 2026a).

2. Information collection process

In accordance with Article 9 of Regulation (EU) 2023/1322, on 15 April 2026 the EUDA launched a procedure to collect further information on spirochlorphine in order to prepare this initial report.

The EUDA collected information through:

- A data collection exercise distributed to the Reitox national focal points in the Member States, Türkiye, and Norway (Article 9(4));
- An open-source search covering scientific and medical literature, official reports, grey literature, 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) to determine if spirochlorphine 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) to determine if spirochlorphine 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 spirochlorphine is an active substance in:
    - 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 ([4]), Regulation (EC) No 726/2004 ([5]) or Regulation (EU) 2019/6 of the European Parliament and of the Council ([6]);
    - a medicinal product for human use or in a veterinary medicinal product that is the subject of an application for a marketing authorisation;
    - a medicinal product for human use or in a veterinary medicinal product whose marketing authorisation has been suspended by the competent authority;
    - 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;

([4]) 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). https://eur-lex.europa.eu/eli/dir/2001/83
([5]) Directive 2001/82/EC of the European Parliament and of the Council of 6 November 2001 on the Community code relating to veterinary medicinal products (OJ L 311, 28.11.2001, p. 1).
([6]) Regulation (EC) No 726/2004 of the European Parliament and of the Council of 31 March 2004 laying down Community procedures for the authorisation and supervision of medicinal products for human and veterinary use and establishing a European Medicines Agency (OJ L 136, 30.4.2004, p. 1).

- 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 ([7]).

- Europol, to provide information on the involvement of criminal groups in the manufacture, distribution and distribution methods and trafficking of spirochlorphine, and on any use of the new psychoactive substance (Article 9(6)).

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

The information collection process was largely concluded on 18 May 2026. The EUDA received responses from the 27 Member States, Türkiye, and Norway. In addition, the EUDA received responses from EMA, Europol, ECHA, ECDC, EFSA and WHO.

3. Methodological note

The following complementary data sources have been used in the preparation of this initial report. Further details on the definitions and terminology used are provided in the EWS operating guidelines ([8]).

Routine data: For the period from 1 January 2024 to 31 December 2025, the report draws on annual aggregated data submitted to the EUDA. The 2025 data remain preliminary and may be subject to revision. Event-based data reported through the European Database on New Drugs (EDND) have also been used.

Data collected for this report: Data reported by the Reitox national focal points in the Member States for the purposes of this initial report, as well as responses to ad hoc information requests, have also been used.

Open-source information: Open-source information identified through routine monitoring was also used and, where the source or content required confirmation, verified with the Reitox national focal points.

([7]) 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. https://eur-lex.europa.eu/eli/dir/2001/20
([8]) EMCDDA (2020), EMCDDA operating guidelines for the European Union Early Warning System on new psychoactive substances. http://www.euda.europa.eu/publications/guidelines/operating-guidelines-for-the-european-union-early-warning-system-on-new-psychoactive-substances_en

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

Subsections 4.1 to 4.9 follow the structure of Article 9(2) of Regulation (EU) 2023/1322, with corresponding provisions noted in each heading.

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 identification in Europe

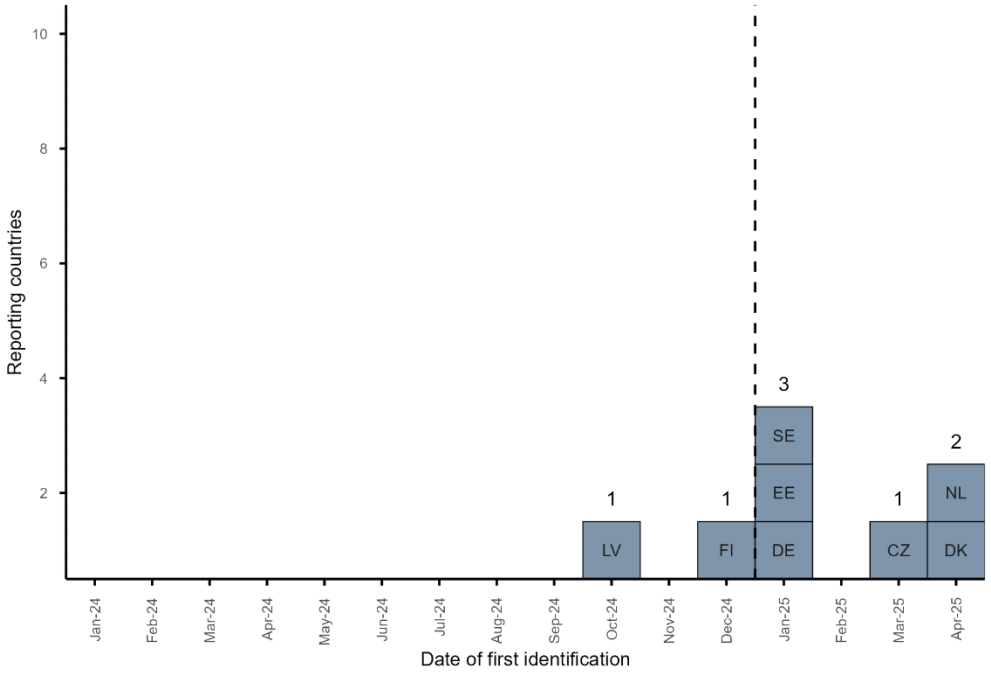
The first identification of spirochlorphine in Europe was reported by Sweden based on its identification in a seizure made by police on 3 January 2025. Spirochlorphine was identified in 0.80 g white powder. The substance was analytically confirmed by GC-MS and NMR.

However, subsequent information reported to EUDA, relating to a case submitted by Latvia, indicates that spirochlorphine may have been present on the European drug market as early as October 2024.

First identifications in country

Eight Member States reported the first identification of spirochlorphine in their territory between October 2024 and April 2025: Czechia, Denmark, Estonia, Finland, Germany, Latvia, the Netherlands, and Sweden (Figure 1).

Figure 1. Countries reporting the first identification of spirochlorphine in their territory, by month of identification, 2024–2026



Note: EU two-letter country codes are used to identify each country.

Information from seizures

Between October 2024 and September 2025, seven Member States reported a total of 19 seizures of spirochlorphine: Czechia (n=1), Denmark (n=2), Estonia (n=2), Finland (n=1), Germany (n=1), Latvia (n=10), and Sweden (n=2) (Figure 2) ([9]).

The number of spirochlorphine seizures increased from 4 cases in 2024 to 15 cases in 2025. So far in 2026 (through March), no seizures have been reported.

Of the 19 seizure cases reported between 2024 and 2025, 17 (89%) reported quantities in weight (kg) and volume (mL) and were included in the analysis. The remaining 2 cases (11%) lacked information on weight and volume and were excluded.

([9]) Norway reported one customs seizure in May 2025 totalling 40.9 g of a material seized. The sample was reported as a clear and transparent liquid contained in a plastic bottle. The case was reported as originating from Greece, and spirochlorphine was seized alongside other substances. As this case was not analytically confirmed, it was not included in the analysis.

During the 2024–2025 period, 16 cases of seizures of material containing spirochlorphine were reported, amounting to a total of 7.31 kg: 5.57 kg in 4 cases in 2024 and 1.73 kg in 12 cases in 2025. Most of the seized material was reported by Latvia (7.30 kg; >99%). Powders accounted for 6 cases (35%); in the remaining 10 cases (65%), the physical form was reported as either other or unknown. Where colour was reported, powders were described as white. The purity of the powders was not reported. In one case, spirochlorphine was reported as a crystalline substance, and was seized with the nitazene opioid, isotonitazepyne; both substances were reportedly sourced from the darknet.

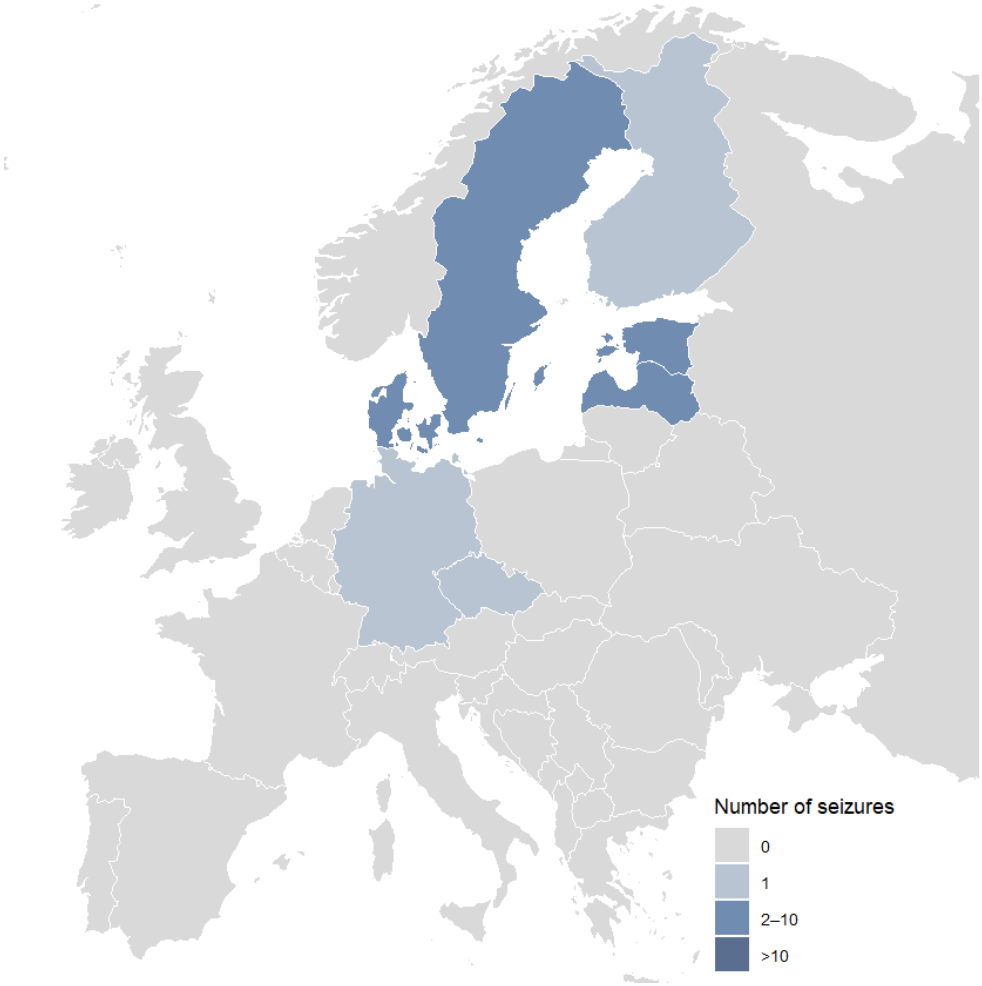
In 2025, a total of 0.28 mL of spirochlorphine was seized in a single case reported by Latvia.

In January 2025 and in May 2025, spirochlorphine was detected in two cases involving syringe residues in Estonia. In one case, spirochlorphine was detected alongside diphenhydramine.

Among the 19 cases reported between 2024 and 2025, spirochlorphine was the only substance reported to be present in 9 cases (47%). In seven cases (37%), it was found in combination with one or more other substances, including other opioids. In the remaining three cases, information on the presence of other substances was not available (16%).

In three cases reported by Latvia, spirochlorphine was detected in combination with cychlorphine. These included 3 cases totalling 0.9 kg of seized material and one case totalling 0.28 mL. The physical form was reported as unknown in all three cases. In a further three cases, spirochlorphine was detected in combination with the nitazene opioid *N*-desethyl protonitazene; together, these cases involved 4.7 g of seized material of unknown physical form.

Figure 2. Geographical distribution of seizure of spirochlorphine



Note: Countries are classified according to the total number of seizures (0, 1, 2–10, >10). EU+2, 2024–2025.

Information from collected samples

Two Member States reported a total of 5 collected samples between March 2025 and September 2025: Estonia (4) and Germany (1).

In the four cases reported by Estonia, spirochlorphine was detected in syringe residues together with carfentanil, diphenhydramine, methadone and xylazine. In the remaining case, reported by Germany, the sample was a white powder, and spirochlorphine was the only substance reported to be present.

Information from biological samples

Two Member States reported a total of 3 biological samples in which exposure to spirochlorphine was confirmed between January and December 2025: Czechia (n=2), Germany (n=1). They were all associated with non-fatal poisonings and a death discussed below.

4.1.2 Health problems

Acute poisonings

Czechia reported two acute poisonings that occurred in March and December 2025 and in which exposure to spirochlorphine was confirmed. Both poisonings concerned the same individual, involved polysubstance exposure, and were classified as life-threatening.

In addition, the Netherlands reported one acute poisoning that occurred in April 2025 and involved suspected exposure to spirochlorphine.

Deaths

Germany reported one death that occurred in January 2025 and in which exposure to spirochlorphine was confirmed; the causal role of spirochlorphine in the death was not reported.

Other

In at least two Member States (Estonia and Latvia), information, including findings from syringe residue analysis, indicates that spirochlorphine is used by people who inject opioids. Injection as a route of administration is associated with additional harms, including transmission of blood-borne viruses, such as HIV and hepatitis B and C; bacterial and fungal infections; venous damage; and an elevated risk of non-fatal and fatal poisoning.

4.1.3 Social problems

No specific information is available on the social risks associated with the use of spirochlorphine. Social harms are likely to resemble those associated with other opioids, such as heroin and fentanyl. Available information suggests that in at least two Member

States (Estonia and Latvia) use of spirochlorphine is occurring within populations already affected by opioid dependence and its associated social harm (see Section 4.1.4).

4.1.4 Patterns of use

Detailed information on patterns of use of spirochlorphine is limited. Further data are needed to characterise frequency of use, typical doses, and polysubstance use patterns.

In at least two Member States (Estonia and Latvia), information, including findings from syringe residue analysis, indicates that spirochlorphine is used by people who inject opioids. In Latvia, spirochlorphine was identified in 13 of 181 syringes (7%) collected between November and December 2024. In Estonia, spirochlorphine was identified in 5 of 30 used syringes (17%) collected in May 2025 and in an additional four syringes collected in September 2025.

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

Spirochlorphine, also known as R-6890, is a synthetic opioid, structurally related to the internationally controlled substances bezitramide ([10]) and brorphine ([11]).

Spirochlorphine is classified as an ‘orphine’ opioid, however it differs from other orphines by the substitution of the benzimidazolone core by a triaza-spirodecanone core linked to a piperidine ring.

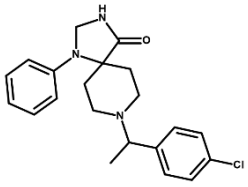
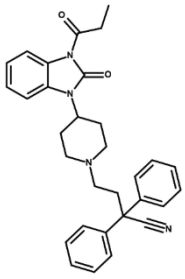
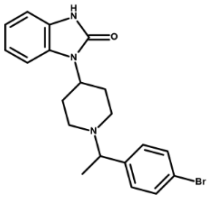
Benzimidazolone (‘orphine’) opioids differ from benzimidazole (‘nitazene’) opioids by a ketone moiety present in the 2-position of the benzimidazole group. Orphines also contain a piperidine ring linked to the benzimidazolone core, while nitazenes contain a benzyl group attached to the benzimidazole core.

([10]) Listed in Schedule I of the 1961 Single Convention on Narcotic Drugs (1969).
([11]) Listed in Schedule I of the 1961 Single Convention on Narcotic Drugs (2022).

Spirochlorphine contains a stereogenic centre and therefore two possible enantiomers may exist.

The molecular structure, molecular formula and molecular mass of spirochlorphine are provided in Figure 3. Information on bezitramide and brorphine is provided for comparison.

Figure 3. Molecular structure, molecular formula, and molecular mass of spirochlorphine, bezitramide, and brorphine

			
Common name	spirochlorphine	bezitramide	brorphine
Molecular Formula	$C_{21}H_{24}ClN_3O$	$C_{31}H_{32}N_4O_2$	$C_{20}H_{22}BrN_3O$
Molecular mass (g/mol)	369.89	492.61	400.31

Systematic (IUPAC) names:

8-[1-(4-chlorophenyl)ethyl]-1-phenyl-1,3,8-triazaspiro[4.5]decan-4-one

8-[1-(*RS*)(4-chlorophenyl)ethyl]-1-phenyl-1,3,8-triazaspiro[4.5]decan-4-one

Common name(s):

Spirochlorphine

Other chemical names:

8-(*p*-chloro-α-methylbenzyl)-1-phenyl-1,3,8-triazaspiro[4.5]decan-4-one

1-phenyl-4-oxo-8-[1-(4-chloro-phenyl)-ethyl]-1,3,8-triaza-spiro(4.5)decane

8- [1-'(4-chlorophenyl)-ethyl]-4-oxo-l-phenyl-l,3,8-triazaspiro [4.5]decane

1-phenyl-4-oxo-8-[1-(4-chlorophenyl)ethyl]-1,3,8-triazaspiro(4.5)decane

1-phenyl-8-[1-(p -chlorophenyl)ethyl]-1,3,8-triazaspiro[4.5]decan-4-one

Other names:

R-6890

R6890

Chemical Abstracts Service (CAS) registry numbers:

3222-88-6 (base)

IUPAC International Chemical Identifier Key (InChI Key):

KFEYPBZJPJJRFX-UHFFFAOYSA-N (base)

JQFOIWRYMOKZQC-UHFFFAOYSA-N (hydrochloride salt)

KFEYPBZJPJJRFX-INIZCTEOSA-N (*S*-isomer)

KFEYPBZJPJJRFX-MRXNPFEDSA-N (*R*-isomer)

IUPAC International Chemical Identifier String (InChI string):

InChI=1S/C21H24ClN3O/c1-16(17-7-9-18(22)10-8-17)24-13-11-21(12-14-24)20(26)23-15-25(21)19-5-3-2-4-6-19/h2-10,16H,11-15H2,1H3,(H,23,26) (base)

InChI=1S/C21H24ClN3O.ClH/c1-16(17-7-9-18(22)10-8-17)24-13-11-21(12-14-24)20(26)23-15-25(21)19-5-3-2-4-6-19;/h2-10,16H,11-15H2,1H3,(H,23,26);1H (hydrochloride salt)

InChI=1S/C21H24ClN3O/c1-16(17-7-9-18(22)10-8-17)24-13-11-21(12-14-24)20(26)23-15-25(21)19-5-3-2-4-6-19/h2-10,16H,11-15H2,1H3,(H,23,26)/t16-/m0/s1 (S-isomer)

InChI=1S/C21H24ClN3O/c1-16(17-7-9-18(22)10-8-17)24-13-11-21(12-14-24)20(26)23-15-25(21)19-5-3-2-4-6-19/h2-10,16H,11-15H2,1H3,(H,23,26)/t16-/m1/s1(*R*-isomer)

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

CC(N1CCC2(CC1)N(CNC2=O)c3ccccc3)c4ccc(Cl)cc4 (base)

Cl.CC(N1CCC2(CC1)N(CNC2=O)c3ccccc3)c4ccc(Cl)cc4 (hydrochloride salt)

C[C@H](N1CCC2(CC1)N(CNC2=O)c3ccccc3)c4ccc(Cl)cc4 (*S*-isomer)

C[C@@H](N1CCC2(CC1)N(CNC2=O)c3ccccc3)c4ccc(Cl)cc4 (*R*-isomer)

4.2.2 Physical description

The free base of spirochlorphine is a solid, reported to be soluble (≥10 mg/ml) in acetone and DMSO (Cayman Chemical, 2025).

The measured melting point for spirochlorphine is 206.5-208.5 °C (Janssen,1964).

A predicted octanol/water partition coefficient logP= 3.406±0.00 was determined ([12]) for spirochlorphine.

To date, seizures and collected samples of spirochlorphine reported to the EUDA have been white powders and liquids. However, the packaging of one seizure may indicate that spirochlorphine is available on the market not only as powder of different concentrations, but also as blotters and vegetable glycerine or propylene glycol based liquids intended for vaping (e-liquid).

([12]) Octanol/water calculated using Advanced Chemistry Development (ACD/Labs) software (https://www.acdlabs.com/products/percepta-platform/physchem-suite/logp/)

Most identifications of spirochlorphine reported to the EUDA do not specify whether the substance was detected as the free base or a salt form. In one case it was reported that the hydrochloride salt form of spirochlorphine was identified in a powder sample.

4.2.3 Methods and chemical precursors used for the manufacture or extraction

No information on the chemical precursors or manufacturing methods used to produce spirochlorphine identified in Europe was reported by the Member States, Norway, or Türkiye. In addition, there is no information available on the chemical precursors or manufacturing methods used to produce spirochlorphine identified on the European drug market.

Spirodecanone ([13]) and 4'-chloroacetophenone ([14]) can be used as precursors for the synthesis of spirochlorphine (Galzi *et al.*, 1990). The process is similar to that used for the synthesis of carfentanil (Galzi *et al.*, 1990).

General synthetic routes and precursors for triaza-spirodecanones are described in a patent from Janssen pharmaceutica (Janssen, 1964). The spiro ring system can be prepared by the conversion of a benzylpiperidinone to the anilinocyanohydrin derivative followed by cyclisation.

4.2.4 Identification and analysis

Analytical methods reported for the identification of spirochlorphine in physical samples include: gas chromatography-mass spectrometry (GC-MS) and liquid chromatography-quadrupole time-of flight-mass spectrometry (LC-QTOF-MS) (CFSRE, 2025).

A method for the separation and identification of 13 orphine opioids, including spirochlorphine, using high-performance liquid chromatography with diode-array detection (HPLC-DAD), has been described (Gregerson, 2026).

No published methods for the identification and quantification of spirochlorphine in biological samples were identified. However, analytical techniques established for brorphine may be applicable or adaptable. These include: liquid chromatography-quadrupole time-of flight-mass spectrometry (LC-QTOF-MS) and liquid chromatography-tandem mass spectrometry (LC-MS/MS) (Krotulski *et al.*, 2021; Grafinger *et al.*, 2021).

([13]) 1-phenyl-1,3,8-triazaspiro[4.5]decan-4-one
([14]) 1-(4-chlorophenyl)ethanone

Based on observations for brorphine and other benzimidazolone opioids, spirochlorphine concentrations in biological samples may fall in the nanogram to sub-nanogram range, requiring highly sensitive analytical instrumentation and low limits of detection (Krotulski *et al.*, 2021; Vandeputte *et al.*,2024).

Spirochlorphine is commercially available as an analytical reference material.

A reference standard for spirochlorphine was included in the EUDA Analytical reference standards kit and were provided to the majority of national laboratories in the EUDA Network of Forensic and Toxicological Laboratories starting in October 2025. Supporting analytical data are also available on the European Database on New Drugs (EDND).

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

Spirochlorphine acts as a mu-opioid receptor (MOR) agonist (EUDA, 2026b; Galzi *et al.*,1990; Leysen *et al.*, 1983; Stahl *et al.*, 1977). Recent *in vitro* and animal data suggest that spirochlorphine has a similar potency to fentanyl (EUDA, 2026b). Like other MOR agonists, spirochlorphine produces dose-dependent acute effects in mice, including antinociception, bradycardia, and respiratory depression (EUDA, 2026b).

Pharmacological information remains limited. However, based on its mechanism of action, spirochlorphine is expected to produce effects qualitatively similar to those of morphine, heroin, and fentanyl, with respiratory depression representing the main poisoning risk (Kieffer, 1999; Romberg *et al.*, 2003; Pasternak and Pan, 2013; Pattinson, 2008; White and Irvine,1999). As with other opioid poisonings, respiratory depression is expected to be responsive to naloxone, although there is currently no spirochlorphine-specific clinical data (Blundell *et al.*, 2024; Kim and Nelson, 2015; Stolbach *et al.*, 2026). Spirochlorphine is also likely to have abuse liability and dependence potential (Herz, 1993).

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

Fifteen Member States ([15]) and Norway responded to Europol's request for information.

([15]) Austria, Belgium, Bulgaria, Cyprus, Czechia, Denmark, Estonia, Finland, Greece, Italy, Luxembourg, Netherlands, Romania, Slovakia, and Sweden.

For some countries, no additional information on spirochlorphine was available for inclusion in this report at the time of preparation.

A summary of the responses is provided below. Information corresponding to that reported separately by Reitox National Focal Points to EUDA is presented in the relevant sections of this report.

Czechia reported one case of detection of spirochlorphine in May 2025.

Denmark reported one seizure of 0.5 g of spirochlorphine powder in January 2025 in a postal package shipped from Greece. The package also contained several blotters impregnated with new synthetic opioids and benzodiazepines, which were purchased on an unknown website (section 4.1.1).

Estonia reported that no severe adverse events related to spirochlorphine have been identified in the country. The results from a syringe residue study in 2025 indicate that spirochlorphine is present on the Estonian drug market, particularly in Ida-Viru County, mainly as part of multi-substance mixtures and together with sedatives such as xylazine.

Norway reported one seizure of 40.9 grams of material suspected to be spirochlorphine by customs in May 2025. The presence of spirochlorphine in the sample was not analytically confirmed (section 4.1.1).

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 (Article 9(5))

The EMA reported that according to their searches, spirochlorphine is not an active substance in:

- 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 ([16]), Regulation (EC) No 726/2004 ([17]) or Regulation (EU) 2019/6 of the European Parliament and of the Council ([18]);

- a medicinal product for human use or in a veterinary medicinal product that is the subject of an application for a marketing authorisation;
- a medicinal product for human use or in a veterinary medicinal product whose marketing authorisation has been suspended by the competent authority;
- 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;
- 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 ([19]).

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

ECHA, ECDC, and EFSA reported to the EUDA that they do not hold any data or information on spirochlorphine relevant to their mandates. The only known legitimate use of spirochlorphine is as analytical reference material for clinical and forensic casework and scientific research. No information currently suggests that it is used for any other legitimate purpose.

([16]) 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). https://eur-lex.europa.eu/eli/dir/2001/83
([17]) Directive 2001/82/EC of the European Parliament and of the Council of 6 November 2001 on the Community code relating to veterinary medicinal products (OJ L 311, 28.11.2001, p. 1).
([18]) Regulation (EC) No 726/2004 of the European Parliament and of the Council of 31 March 2004 laying down Community procedures for the authorisation and supervision of medicinal products for human and veterinary use and establishing a European Medicines Agency (OJ L 136, 30.4.2004, p. 1).
([19]) 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. https://eur-lex.europa.eu/eli/dir/2001/20

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

Fifteen Member States reported that spirochlorphine is not subject to restrictive measures at national level: Austria, Belgium, Bulgaria, Croatia, Cyprus, France, Greece, Luxembourg, Malta, Netherlands, Portugal, Romania, Slovakia, Slovenia, and Spain.

Norway also reported that spirochlorphine is not subject to restrictive measures at national level.

Twelve Member States reported that spirochlorphine is subjected to restrictive measures at national level: Czechia, Denmark, Estonia, Finland, Germany, Hungary, Ireland, Italy, Latvia, Lithuania, Poland, and Sweden.

Türkiye also reported that spirochlorphine is subject to restrictive measures at national level.

Drug control legislation

Seven Member States reported that spirochlorphine is controlled under drug control legislation: Czechia ([20]), Denmark, Estonia ([21]), Italy ([22]), Latvia ([23]), Lithuania ([24]), and Sweden ([25]).

New psychoactive substance legislation

Five Member States reported that spirochlorphine is controlled under new psychoactive substance legislation: Finland ([26]), Germany ([27]), Hungary ([28]), Ireland ([29]), and Poland ([30]).

([20]) https://e-sbirka.gov.cz/sb/2024/419?zalozka=text
([21]) Spirochlorphine is controlled in Estonia under drug law since 23/02/2026. No additional information was provided.
([22]) https://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.del.presidente.della.repubblica:1990-10-09;309!vig= ; https://www.trovanorme.salute.gov.it/norme/dettaglioAtto?id=109213, as of 13 January 2026.
([23]) https://likumi.lv/ta/en/en/id/50539-on-the-procedures-for-the-coming-into-force-and-application-of-the-criminal-law , as of 2025.
([24]) https://www.e-tar.lt/portal/en/legalAct/TAR.7B3B40DCD13A/JDbXNjONfc, as of 17 June 2025.
([25]) https://www.riksdagen.se/sv/dokument-och-lagar/dokument/svensk-forfattningssamling/forordning-19921554-om-kontroll-av-narkotika_sfs-1992-1554/, as of 15 July 2025.
([26]) https://www.finlex.fi/fi/lainsaadanto/2014/1130#OT2, as of 29 December 2025.
([27]) https://dserver.bundestag.de/brd/2025/0534-25.pdf, as of 9 October 2025.
([28]) https://njt.hu/jogszabaly/2022-78-20-0A, as of 25 July 2025.
([29]) https://www.irishstatutebook.ie/eli/2010/act/22/enacted/en/pdf
([30]) https://isap.sejm.gov.pl/isap.nsf/download.xsp/WDU20051791485/U/D20051485Lj.pdf, as of 27 November 2025.

Türkiye also reported that spirochlorphine is controlled under New Psychoactive Substance control legislation ([31]).

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

On 4 May 2026, the World Health Organization informed the EUDA that spirochlorphine is not currently under assessment, nor has it previously been assessed within the United Nations system.

5. Analysis and assessment

8-[1-(4-Chlorophenyl)ethyl]-1-phenyl-1,3,8-triazaspiro[4.5]decan-4-one, commonly known as spirochlorphine, is a spirotriazole and a synthetic opioid belonging to the orphine opioids, a group of related new synthetic opioids that includes bezitramide and brorphine. Spirochlorphine is monitored by the EUDA as a new psychoactive substance through the European Union Early Warning System (EWS), in accordance with Regulation (EU) 2023/1322.

Spirochlorphine is structurally related to bezitramide and brorphine, both of which are controlled under Schedule I of the United Nations 1961 Single Convention on Narcotic Drugs because of the public health and social risks they pose. Given this structural relationship and its opioid activity, including indications of potency similar to fentanyl, spirochlorphine may be expected to produce similar opioid effects and associated harms. Among these, respiratory depression is the main acute poisoning risk. As with other opioids, spirochlorphine-related respiratory depression is expected to be responsive to naloxone, although there is currently no spirochlorphine-specific clinical data.

Spirochlorphine was formally notified as a new psychoactive substance by the EUDA in April 2025, following a seizure in Sweden in January 2025. However, the substance may have been on the market in Europe since at least October 2024. As of May 2026, it has been identified in eight Member States.

([31]) Law No. 2313 on the Control of Narcotic Substances, as of 10 January 2026.

It is important to note that spirochlorphine may be under-detected on the drug market and in serious adverse events in Europe, as the substance is not routinely screened for in some laboratories.

Although distribution patterns remain poorly characterised, the limited available information suggests that spirochlorphine is sold under its own name as a ‘legal’ substitute for controlled opioids, and it may also be mis-sold as — or mixed with — controlled opioids themselves.

Available information indicates that spirochlorphine is used by people who inject opioids, and injecting use has been reported in two Member States. Where spirochlorphine is injected, additional harms may occur, including risks from transmission of blood-borne viruses such as HIV.

In total, 19 seizures were reported by seven Member States between 2024 and 2025. The seizures involved several physical forms, with the main reported quantities comprising approximately 7.3 kg of material. Approximately 0.9 kg of the material seized consisted of a mixture containing spirochlorphine and another orphine opioid, cychlorphine, which is being assessed in a parallel initial report.

One Member State has reported two cases of acute poisoning with confirmed exposure to spirochlorphine. In addition, a Member State has reported one death with confirmed exposure to spirochlorphine; the role of spirochlorphine in this death has not been reported.

Since 2024, a marked increase has been observed in the number of orphine opioids identified on the European drug market, with nine new substances reported, including spirochlorphine. The increased availability of orphines may partly reflect the introduction of China's generic control of nitazene opioids in July 2025. This measure appears to have reduced nitazene availability, with spirochlorphine and other orphines, such as cychlorphine, emerging as replacements.

Based on information reported to the EUDA, there is evidence of criminal acts involving spirochlorphine in Europe, including trafficking and supply offences. However, there is currently limited information on the involvement of organised criminal groups in its manufacture, trafficking, and distribution.

Based on the available information, spirochlorphine is not used as an active substance in any authorised medicinal product for human or veterinary use in Europe, nor is it used in any extemporaneously prepared medicinal product or investigational medicinal product.

Aside from limited use as an analytical reference standard and in scientific research, there is currently no information suggesting that spirochlorphine is used for other legitimate purposes.

Spirochlorphine is subject to restrictive measures in 12 Member States, as well as Türkiye, and is not subject to restrictive measures in the remaining 15 Member States and Norway.

Spirochlorphine has not been assessed, nor is it currently under assessment, by the United Nations system.

The available information shows that spirochlorphine availability and reported harms have increased in the European Union since 2024. The EUDA considers that these findings indicate potential health and social risks at Union level and therefore concludes that the risks posed by the use, manufacture and distribution of the substance, and the involvement of criminal groups, could be assessed through a risk assessment procedure as specified in Article 10 of Regulation (EU) 2023/1322.

The EUDA will continue to intensively monitor spirochlorphine and will ensure that new information is provided to the Member States, Europol, the Commission, and the EMA through the European Union Early Warning System (EWS) in a timely manner.

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About the EUDA

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.

More information

- EUDA Early Warning System on NPS
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