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I-TREND Substance briefing: Ethcathinone

This technical folder provides information on Ethcathinone. The information provided is based on a number of existing data sources and work undertaken as part of the I-TREND project. Research informing the folder includes an analysis of user discussions on popular Polish drug forums, an analysis of marketing on popular Polish web shops selling the substance, and scientific laboratory analysis of the compound through test purchasing of the substance from Polish web shops.

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1. Substance name(s)

1.1. Chemical name

(RS)-2-ethylamino-1-phenylpropan-1-one

1.2. Other names (e.g. popular/street/slangname(s))

N-ethylcathinone, Eth-cat 2-ethylaminopropiophenone, ethylpropion

1.3. Branded products containing the compound

Lack of information

2. Classification and effect

2.1. EMCDDA substance group classification

Cathinones

2.2. Substance analysis results

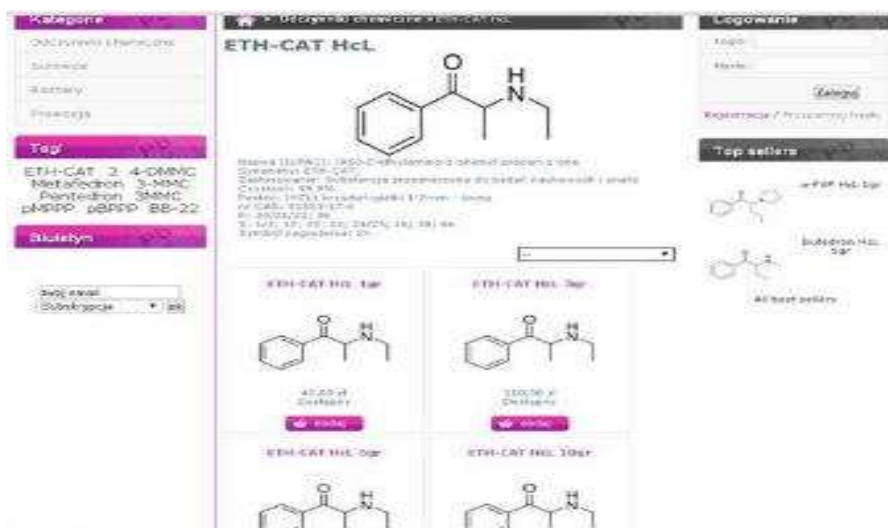
Ethcathinone 37%; Ethcathinone 99%, Pentedrone 99%, Pentedrone 45%

2.3. Polish drug forum monitoring

alpha-aminoketones (beta-ketones)

2.4. Polish web shops marketing:

The specific marketing for *Ethcathinone* substance was provided by three web shops. Two web shops offered sale, sale was available for all packages of *Ethcathinone*, but difference in prices was not marked. One shop advertised *Ethcathinone* as a 'new product' (see picture below).



3. Legal status and identification of the substance

3.1. Legal status/acts/laws in Poland

Not controlled as a narcotic drugs or psychotropic substances by Polish law. As such, it is not listed in the schedules of drugs of act of counteracting drug addiction (the main drug law). The possession and trafficking is not punishable by criminal sanctions.

But the substance, as all NPS is controlled as substitute drug (*środek zastępczy*). Its manufacturing and introducing to trade is forbidden in territory of Poland under punishment of fine ranging from 20000 PLN (~4600 euro) to 1000000 PLN (~230.000 euro).

3.2. EMCDDA Notifications of ethcathinone

Ethcathinone was first reported to EMCDDA by Finland in 2008. In December 2010 the substance was identified for the first time in Poland. The substance has been reported to the EMCDDA by the following EU countries:

Country	Date
Finland	March 2008
Denmark	May 2008
Sweden	2008
Austria	2009
Bulgaria	June 2010

Poland	December 2010
Slovakia	January 2011
Hungary	March 2011
Italy	December 2011
France	February 2013
United Kingdom	February 2013
Slovenia	August 2014

4. Photographs of the substance

4.1. Images used in the marketing of the product on the web shops the compound was purchased:

4.2. Photograph of the substance purchased for laboratory analysis:



5. Chemistry

5.1. Chemical Abstracts Service (CAS) registry number

51553-17-4

5.2.Molecular formula:

C₁₁H₁₅NO

5.3.Molecular weight

177,3 g/mol

5.4.Structural comparison with a related substance

6. Analytical composition: results of substance analysis carried out on samples purchased online

(PL IPIP address web shops)

Web shop	Date of purchase	Form	Substance named on package/web shop	Confirmed substances
Research Chemical shop 1	23.03.14	powder	ETH-CAT	Ethcathinone 37%
Research Chemical shop 1	24.03.14	powder	ETH-CAT	Ethcathinone 99%
Research Chemical shop 2	24.03.14	powder	ETH-CAT	Pentedrone 99%
Research Chemical shop 3	20.03.14	powder	ETH-CAT	Pentedrone 45%

7. Price and marketing strategies on Polish web shops selling • Ethcathinone:

7.1.Compound Prices: Powder

	Polish zloty	Quantity
Minimum price		
• Retail	PLN 25	1 gram
• Wholesale	PLN 1300	100 grams
Maximum price (retail)	PLN 45	1 gram

7.2. Description of availability and marketing strategies on Polish web shops selling the

Ethcathinone

7.3. Number of Polish based web shops selling (4 out of 5 top Polish on-line shops)

The *Ethcathinone* was available to purchase (1.6.2015) in 4 shops of 5 unique shops where substance was found¹¹. Polish web shop marketing analysis indicated two shops which offered discount for orders. First shop offered discount for customers who met several condition only. The shop did not specified level of discount. Second shop offered discount for customers who choose pay their orders by Bitcoins. The level of discount was 10%. Free gift was promoted by one web shop. Shop provided gift for each order above 350 zł. As a gift was added 0.2gr AM2201. Free shipping was provided.

7.4. Type of Polish websites selling the product

The number of webshops selling Ethcathinone between the 23/03/2014 and the 27/10/2014 decreased. Two research chemical shops remained, and one webshop, classified as “other” was still available.

8. Law enforcement and health data

8.1. Number of law enforcement seizures in Poland in 2013/2014

77 in 2013 and 155 in 2014.

8.2. EMCDDA health alerts in Poland

0

8.3. Confirmed deaths and acute cases reported in Poland

0

¹ The total number of web shops selling new synthetic drugs for Poland (16.3.2015) was 74. (For detail information about methodology of monitoring and selecting the web shops see methodology on <http://www.i-trend.eu/>). For the marketing analysis we chose 15% of the most popular web shops from Polish list of shops. The shops operating on platform otwarte24.pl and shops which provide just bulk/wholesale order were removed from our selection. In addition another 6 web shops, previously chosen for the purchase of substances, were added to the marketing analysis. The final number of web shops used for analysis was 15. For latter analysis, we use only shops where product was available by no web shop. The guarantee of “free reship” for orders was provided by any web shop. The same day dispatch was supported by three web shops. Information about ‘new’ products or ‘bestsellers’ was mentioned on three web shops. Loyalty program or Reward Point program for customers was available on one web shop.

9. User experiences of the substance: results from an analysis of discussions in two Polish Drug Forums

(100 posts by 33 users)

There was one topic affiliated exclusively to Ethcathinone. It was created on 15th June 2007 and is still active as of end of December 2014. The topic chosen for analysis came from forum <http://hyperreal.info/talk/>. The first 100 posts of this topic were taken under analysis. The topic contained 1047 posts in September 2013. During the monitoring period of the number of posts increased from 1047 in September to 1140 in December 2014, number of views had increased from 88539 to 107368, respectively.

9.1. Dosage specified by drug forum users (n = 162 references by 16 users)

Forum users reported dosing between ranges of: 20mg-500 mg. Users also reported a strong desire to redose on Ethcathinone - during a single session. Some exceptional cases, users claim to have applied much higher doses (up to 1 g) . Total dosing in a single session was reported to be up to 2g, which users described as extreme.

9.1.1. Light (3 references by 1 users)

50 - 90 mg

9.1.2. Common (3 references by 3 users)

80-150 mg

9.1.3. Strong (3 references by 2 users)

225-600mg+ (these amounts are extremely strong and not recommended by users)

9.1.4. Initial (14 references by 4 users)

20 mg (smoking); 40-150 mg (sniffing)

Many users report dosing Ethcathinone several times in a single episode; although users' dosing patterns were noticeably irregular. Some forum participants report applying higher doses later in the session, others repeat the same initial dosing. Commonly, users reported repeating dosing between 70-100 mg, whilst the majority of users discuss taking several doses, without counting them.

9.1.5. Boosting (14 references by 4 users)

200 mg-450mg

9.1.6. Threshold (10 references by 8 users)

70-200 mg; however users usually reported 70-100 mg as minimum doses for any stimulation to occur. On some occasions users discuss 200 mg is given as the threshold to feel euphoria. However, other users give much higher values (350 – 400 mg), perhaps because of higher tolerance.

Ethcathinone can be bought in the form of white powder (which can be dry or sticky) or crystals

(sometimes described as needles). According to some users, the white powder is much stronger, which implies administering smaller doses.

Route of administration influences dosing. Dosing is reported to be higher if the substance is swallowed or snorted and reported lower if Ethcatinone is injected intravenously or inhaled. However, for all routes of administration the suggested doses vary a lot. Most commonly dosing in the range 80-100 mg is described as an appropriate amount for users without high tolerance, but there are reports of outlying (much higher) amounts.

9.2.Duration (n = 98 references by 10 users)

9.2.1.Onset (2 references by 2 users)

20 - 40 minutes (usually much sooner)

9.2.2.Coming up (1 references by 1 users)

30 minutes - 1 hour (increasing euphoria with a little stimulation, the moment is hard to define as the onset effects are smooth and slow).

9.2.3.Plateau/peak (5 posts by 5 users)

1-3 hours after the substance is taken.

9.2.4.Coming down (9 posts by 9 users)

3h – 3 days after the substance is taken.

Some users claim experiencing no come down or negative consequences once the substance effects have subsided. Several users report a short-time period being able to sleep (4 hours) after stimulation recedes, whilst other reports discuss users experiencing longer periods of sleep. Differences in reports probably result from variation in the total amount taken. Moreover, Ethcatinone is frequently mixed with other substances therefore the “net effect” of this substance can be difficult to separate.

9.2.5.After effects (13 references by 6 users)

Some users describe after-effects and next day hangovers as being relatively easy compared with other substances. Several users discuss experiencing practically no after effects; others report a sleepless night. Although users have reported different experiences, administering large doses have been reported to result in long-term consequences: one user reported physical and psychological after-effects for 4 days after using 2g of Ethcatinone during one episode.

9.2.6.Hangover (3 references by 2 users)

Users report experiencing hangover effects up to 4 days after administering. Such effects include: hallucination, exhaustion and sleepiness and problems in focusing attention.

9.3.Effects of Ethcathinone reported by forum users (n = 223 references by 17 users)

9.3.1.Physical (n=45 references by 14 users)

- *Desired*

- Physical stimulation, which users describe as “**speed**”.
- Users report increased alertness, they are capable of sustained physical effort. Forum participants advise that the substance can be used to stimulate productivity, both **for physical activities** and sedentary work. Reported effects include ease of registering information and writing.
- Users describe using the substance if a user needs “**to work through the night**”.
- Opinions about the strength of stimulation differ. Some forum participants feel that it is a potent substance with a long-lasting impact. Others describe it as “*nothing more than strong coffee*”.
- Several users discussed that consumption of this substance leaves **no visible trace**: it is not obvious that a person is under its influence; for instance, “*pupils react normally*”. Other users, however, claim that pupils are visibly larger.

- *Undesired*

- Jittery and mild heart thumping
- Flare of red blotches (particular affecting women). One user purposes this is due to elevated body temperature.
- Fluctuation of temperature and difficulty identifying hot and cold.
- Burning sensation through nasal insufflations.
- Nausea.
- Many users mention heart problems during and after using this compound. The pulse rate rises, there can be **heart pain**.
- They are few user reports of **respiratory problems** during use, when the substance effects are at the strongest. Forum participants report feeling of suffocation.
- Using Ethcathinone results in **sleeplessness**. Several users report being unable to sleep the night after using the substance.
- Some forum participants experienced nausea and **digestive problems**. Problems of this kind can occur during administration: a user reported **vomiting** during i.v. injection.
- Several participants had **kidney problems**: “*urine smelled of ammonia*”.
- Many users report profuse **sweating** during and after using the substance.
- A few forum participants report **skin problems**: spots, rash, strong dandruff.

- Users also discussed using this substance is strongly **detrimental to sexual activity**.
- If the substance is snorted, users report the compound is very **painful for the nose** after a short time. It has been reported to cause bleeding and inflammation, therefore it is not possible to snort it for prolonged period of time.
- Several participants report neurological problems after prolonged use. They describe the effect as **muscle trembling** and **lack of coordination**.

9.3.2. Psychological (16 posts by 11 users)

- *Desired*

- The compound offers two kinds of psychological stimulation: general mood **improvement** (sometimes described as euphoria).
- **Empathy** and increased **sociability**, users report an urge to meet people and talk to them; the strength of empathic consequences of Ethcatinone is commonly discussed. Some users claim that this is the most desirable reason to use this substance. Participants like talking, chatting online and writing under the influence.
- **Euphoria** is reported by some users and described as *"I had super happiness in my head"*. Other users described euphoria as a feeling of strong self-confidence for example, *"I felt the future is in my hands"*. However, others fail to notice such effect, or describe it as weak.
- Feeling of **being in control** of the high
- Pleasant **rushing sensation**.
- **Users also describe the effects as an „easy going experience“**

- *Undesired*

- **Insomnia**/difficulty sleeping
- **Sadness** and **depression**. Some users reported a week of recovering from psychological imbalance.
- A frequently reported psychological effect is compulsion to use: several users claim it is difficult to stop using it, even though desired effects do not occur. Others, however, deny such compulsion.
- There are isolated reports of psychotic effects (**hallucinations**). However users do not describe these in detail.
- Sought (n=0 reference by 0 user)

9.3.3. Tolerance (n=27 references by 12 users)

According to most user reports, Ethcatinone is prone to fast tolerance development. Several users

report increasing doses on the second day of taking it. For that reason, some participants claim it is not a good substance to take several days in a row. Users reported that desirable effects decrease rapidly in continual and or experienced users.

9.4.Route of administration (n = 146 references by 30 users)

This substance is can be snorted, swallowed, injected or inhaled. Users commonly advise snorting or injecting as most effective routes of administration.

The most commonly **(31 posts by 23 users)** reported RoA is **snorting** (sniffing) a line of Ethcathinone. Users described this as the most effective way to administer it. Many users reported problems with nasal inflammation and advise switching to oral or intravenous administration in such case.

Many users advise **injecting Ethcathinone intravenously (19 posts by 12 users)** the effects are reported strongest via this RoA.

A few forum participants attempted **inhaling (6 posts 4 users)** the substance by heating it on foil

however this method appears to be less commonly discussed.

One user attempted applying it **per rectum (2 posts by 2 users)** however the effects reported were not satisfactory.

9.5.Other substances referred to when discussing (n =195 posts by 30 users)

9.5.1.Comparable effects (25 posts by 11 users)

- This substance has been commonly compared with other stimulants by forum users.
 - Users often compared the effects to those of Mephedrone (4-MMC), for which it is supposed to be a substitute. Ethcathinone is usually described as much weaker and less satisfactory (*"it is 5% of Mephedrone"*).
- User reported Ethcathinone to be a lot less potent and cause less acute symptoms than alpha-PVP. Sometimes users described it as a weaker (worse, milder) version of Amphetamine.
- Some users compared effects to Methcathinone however, the comparison tends to be unfavourable, as Ethcathinone is reported to have much less psychoactive effects.
- Users reported the emphatic effects of this substance to be similar to Ethylphenidat (ethyl 2-phenyl-2-piperidin-2-ylacetate).

9.5.2. Other substances in the same session (13 posts by 10 users)

- As forum users reported Ethcatinone as being a relatively weak substance, users often mixed it with many other substances, both to enhance stimulation and to experience complementary effects. Most commonly, users mixed it **with alcohol**.
- Forum participants reported combining Ethcathinone with such substances as:
 - **Ephedrine,**
 - **Methiopropamine,**
 - **6-APB, Buphedrone,**
 - **MeOPP, GBL,**
 - **Ethylophenidat, Mephedrone,**
 - **4-MEC.**

9.5.3. Substances used to enhance effects (23 posts by 11 users)

- Users consume Ethcathinone in combination with other substances, usually with the aim of improving mood. The most commonly discussed combination is Ethcathinone and Alcohol. **Users reported consuming** Ethcathinone for physical stimulation however, some users discourage combining Alcohol as Ethcathinone *“makes it harder to get drunk”* and it also increases risk of overdosing on alcohol.
- This substance has been reported to be taken in combination with **Methiopropamine.**
- Users also frequently discussed combining: **6-APB, Benzofuran** or **Buphedrone.**

9.5.4. Substances used to manage negative effects (14 posts by 11 users)

- Users did not often discuss experiencing strong come downs or hangover effects.

Many users reported taking minerals and vitamins and drinking lots of water to be effective in managing any negative effects. However users did advise that coffee should be avoided.
- Some users advise taking a small dose of Ethcathinone the next day to relieve the effects.
- One user reported consuming **Codeine to manage the negative effects.**
- Another reported consuming **Marijuana to manage the effects.**

9.5.5. Antagonists (4 posts by 2 users)

- Users warned against mixing this substance with **3,4 DMMC, Amphetamine** and

AM-

2201 due to the negative effects on the heart and respiratory system.

- While many users reported drinking **alcohol** with Ethcathinone, others discourage such practice, because the effects are mutually exclusive. Alcohol was reported to have a much less psychoactive effect in this combination.. Moreover, some participants claim that after-effects are more severe if this substance is mixed with alcohol, therefore suggests that negative effects can be linked with combining alcohol.
- **N-ethylbuphedrone (NEB)** should not be taken after using Ethcathinone, according to one user, as it is not effective.

9.6.Appearance and preparation

9.6.1.APPERANCE OF THE SUBSTANCE (40 posts by 24 users)



- Color: white
- Structure: a powder, fluff or crystals; the powder is dry; the fluffy substance is wet.
Users described the compound as similar to snow in appearance, and shimmery. The crystal is sometimes described as small needles.
Users reported that different forms, have different effects for example, the crystal is reported to increase euphoria, while the powder increase physically stimulation to a greater extent.

9.6.2.PREPARATION (6 references by 3 users)

Users reported three main ways Ethcathinone can be prepared to use:

- injection
- inhalation
- orally

Users discussed preparing Ethcathinone for IV injection, by dissolving the substance in water. The proportions given were described as: 1g/3 sq. cm. of water; 0.125 g/0.5 sq. cm. of water. If taken orally, users reported consuming the substance mixed with a glass of drink (water, alcohol, soft drink).

For inhalation, users prepared and burned the substance on foil and inhaled.

9.7. Patterns/Frequency of use (n= 8 references by 5 users)

There are both regular and occasional users of Ethcathinone. Some users reported consuming the substances 3-5 days in a row.

In regards to **frequency of use during one event**, the most common pattern reported suggested users consume Ethcathinone several times, repeating the administration after the effects recede. Participants discussed administering up to 8 doses of the substance in one episode. Some users also report using it many times without counting.

9.8. User's views and experiences on the online market use- online survey (n= 78)

9.8.1. Pattern/frequency

Did you use any of the following new psychoactive substances?

Etkatynon (ETH-CAT)	78	5,6%
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What was the new psychoactive substance you used last time?

Etkatynon (ETH-CAT)	9	,8%
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The population is too small to conduct further analysis.

9.8.2. Harm reduction advice provided by online peers (n= .. discussions)

- **Warning (n=3 references; by 3 users)**
 - Users warned that new or novel users consuming Ethcathinone in excess of 1 g, increased risk of death
 - There are also user warnings of overdose, which can cause heart failure and death
- **Advice (n=1 references; by 1 user)**
 - Users advised to keep the body cool, sometimes in a bath of cold water when in hot or stuffy environments.
 - Users also advise to drink plenty of water.

10. Relevant literature

1. Camilleri A. et al.. Forensic Sci Int. 197(1-3) (2010) 59-66.

2. Wikipedia, the free encyclopedia

3. Karty Charakterystyki substancji zidentyfikowanych w „dopalaczach” badanych w Narodowym

4. Instytucie Leków w 2010 r., Warszawa 2011