

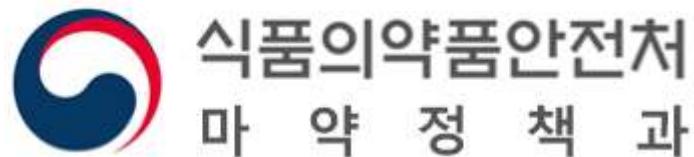


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# 2022년 신종마약류 유해성 정보지

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2022. 6.





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**I****2022년 유엔(UN) 마약류 지정 정보**

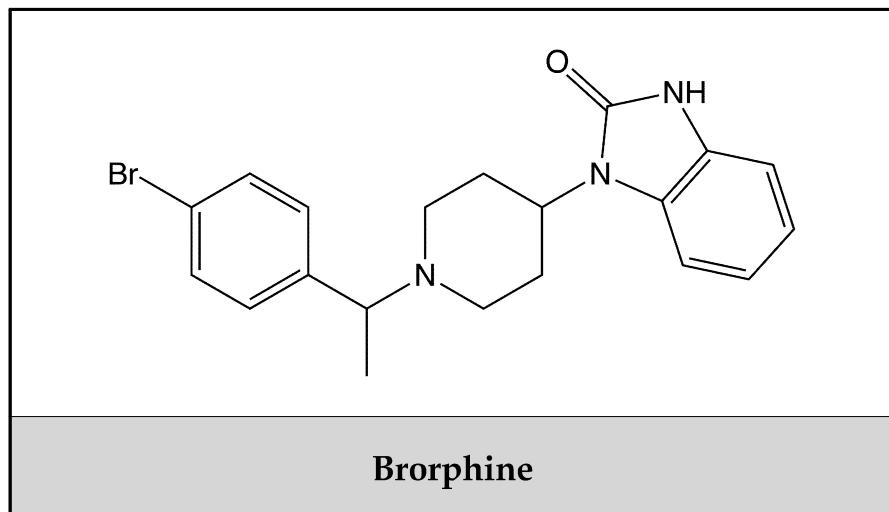
2022년 3월 개최된 유엔 마약위원회(CND) 연례회의에서 표결을 통해 다음의 신종마약류 3종이 유엔(UN) 통제물질로 지정 의결되었다.

연번	물질명	UN 통제 비록	국내 규제 현황
1	브로르핀 Brorphine	1961년 마약에 관한 단일협약 Schedule I	임시마약류 1군 * 마목 마약 지정 추진 중
2	메토니타젠 Metonitazene	1961년 마약에 관한 단일협약 Schedule I	임시마약류 1군 * 마목 마약 지정 추진 중
3	유틸론 Eutylone	1971년 향정신성 물질에 관한 협약 Schedule II	가목 향정신성의약품

# 브로르핀 (Brorphine)

## 1. 화학구조 및 물리화학적 특성

### □ 화학구조



- 분류 : (구조) arylaminopiperidine (효과) opioid
- 화학식 : C<sub>20</sub>H<sub>22</sub>BrN<sub>3</sub>O
- IUPAC 이름  
: 1-{1-[1-(4-Bromophenyl)ethyl]piperidin-4-yl}-1,3-dihydro-2H-benzimidazol-2-one
- 이명 또는 속칭 : purple heroin

### □ 물리화학적 특성

- 성상 : 흰색, 노란색, 회색, 보라색의 분말 또는 결정 형태
- 화학적 특성
  - (녹는점) 보고된 바 없음, (끓는점) 보고된 바 없음
  - (용해도) 디클로로메테인이나 메탄올에 부분 용해되며, 물에 대한 용해도는 거의 없음

○ 불법제조법 및 용이성

- 시중에 유통되는 브로르핀 제품에 대한 구체적인 제조 방법은 알려지지 않았지만, 전구체 없이 진행할 수 있는 간단한 합성법이 아래와 같이 보고된 바 있음

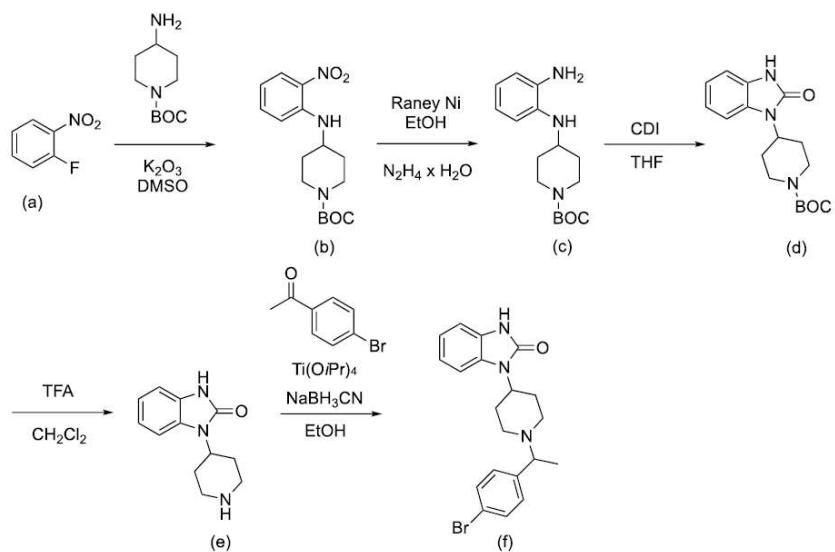


Figure 1. Synthesis of brorphine (modified from Kennedy et al. 2018).

○ 분석법

- 분석기술 : HPLC, UV, NMR, LC-MS 등

## 2. 약리작용

### □ 투여경로 및 용량

○ 투여경로

- (사람) 경구, 흡연

○ 용량

- (사람) 1 - 13 mg(구강), 1 - 6 mg(흡연)

## □ 약동학 정보

- (대사) 인간 간 마이크로솜 대사체 분석 결과, 총 6종의 대사체\*가 확인됨

\*N-debenzylation, hydroxylated N-debenzylation, hydroxylated the benzimidazol-2-one and piperidine rings, O-methylation of the hydroxylated benzimidazol-2-one metabolite, and oxidation of the piperidine moiety to the 1,2,3,4-tetrahydropyridine analog of brorphine

- 특히 N-debenzylation은 소변과 혈액에서 검출되었으며, hydroxylated benzimidazol-2-one 대사체는 소변, 혈액 및 혈청에서 검출됨

- (분포) 경구 투여 후 3~8시간 또는 그 이상 시간 동안 효과가 지속됨

- 응급실에 입원한 후 60시간이 지난 혈청 시료에서도 검출된 사례가 있음

## □ 약력학 정보

- (in vitro)  $\mu$ -오피오이드 수용체(MOR)에 작용함

- GTP $\gamma$ S 결합 시험에서 DAMGO의 약 7배, 모르핀의 약 13배 효과가 강력한 것으로 나타남

- $\beta$ -arrestin2 평가 시험에서는 브로르핀과 DAMGO가 동등하고, 모르핀보다는 두 배 더 강력한 것으로 나타남

- $\beta$ -arrestin2 또는 mini-G<sub>i</sub> 시험 결과, 브로르핀이 히드로모르פון, 펜타닐, 이소토니타젠과 같은 다른 합성 오피오이드와 유사한 MOR 활성화를 유도한다는 것이 확인됨

- 미국 마약단속국(DEA)에서도 브로르핀이 MOR에 결합하여 활성화되는 것으로 보고됨\*

\* [ $^{35}$ S]GTP $\gamma$ S 결합 시험 결과: 브로르핀(EC<sub>50</sub> = 16.3nM, DAMGO 대비 E<sub>max</sub> = 117.6%), 펜타닐(EC<sub>50</sub> = 19nM, DAMGO 대비 E<sub>max</sub> = 88.5%)로 브로르핀의 효력이 펜타닐보다 약간 더 높은 것으로 나타남.

### 3. 독성 및 부작용

#### □ 동물 대상 독성 정보

- 보고된 바 없음

#### □ 인체 부작용

- 만성 세로토닌성 치료와 함께 사용될 시, 독성을 유발하여 급성 신부전과 함께 의식불명 및 심각한 횡문근융해증을 발생시킬 수 있음
- (사용자 보고) 혼란, 서맥, 전신 쇠약 및 경련, 가슴, 복부, 근육 등의 전신 통증
- (사망) 벤조디아제핀 및 암페타민 약물과 혼합 사용으로 인한 사망 사례 1건
- (유럽 마약·마약중독감시센터, EMCDDA) 브로르핀이 함유된 가짜 옥시코돈 정제를 인터넷으로 구입 및 복용한 사례가 있으며, 이로 인해 중독과 심각한 부작용이 발생할 수 있음이 보고됨

### 4. 의존성 및 남용 가능성

#### □ 동물 대상 정보

- 의존성

- 보고된 바 없음

- 남용 가능성

- 약물구별시험 결과, 남용 가능성이 모르핀보다 9배 더 높다고 보고됨
  - warm-water tail flick assay 결과, 브로르핀의 ED<sub>50</sub>(중간유효용량)은 0.11 mg/kg으로 산출되었으며, 브로르핀은 모르핀보다 12배, 펜타닐은 브로르핀보다 1.3배 더 강하다고 보고됨

## □ 사람 대상 정보

### ○ 의존성

- 금단 증상 및 신체적 의존성에 관한 임상 연구 정보는 보고된 바가 없으나, 사용자가 내성 및 금단 증상을 보고한 바 있음

### ○ 남용 가능성

- 보고된 바 없음

## 5. 치료목적을 포함한 합법적(산업적 용도 등) 사용 현황

### ○ 치료목적으로 승인된 국가나 산업 목적으로 사용된 보고 없음

## 6. 불법 제조 및 유통 관련 정보

- 2020년 6월 4일, EMCDDA에 의해 EU 조기경보시스템 네트워크에 공식적으로 보고됨.
- 2020년 3월부터 유럽의 의약품 시장에서 판매됨
- 2021년 7월 15일 기준, EU 조기경보시스템 네트워크의 총 3개국이 총 5건의 브로르핀 검출건을 EMCDDA에 보고함
- 2021년 1월, 분말, 캡슐 및 정제 등에서 검출된 사례가 EMCDDA에 보고됨
- 옥소코돈 정제로 잘못 판매된 사례가 있음
- 2021년 7월 25일 기준, UNDOC에 브로르핀이 검출되었다고 보고한 국가는 2019년 2개국, 2020년 2개국, 2021년 2개국임
- 미국 국립과학수사연구소 정보시스템(NFLIS)은 마약 사건 수집에 전념하고 있으며 브로르핀의 검출과 관련된 보고서를 등록함
- 2020년 8월, 미국 마약단속국(DEA)의 발표에 따르면 20건의 브로르핀 보고서가 접수되었으며, 이 중 1건은 12.533 g의 브로르핀이 검출됨
- 헤로인, 펜타닐, 플루알프라졸람 및 디펜히드라민 등과 함께 검출된 사례가 있음

- 브로르핀은 미국 마약단속국(DEA)의 2020년 연례보고서에 2번 보고되었으며, 2020년에 처음으로 보고됨

## 7. 각국 규제 정보

국가명	우리나라	미국	영국	독일	일본
규제현황	임시마약류 (1군) * 마목미약 지정 추진 중	Schedule I	미규제	미규제	지정약물

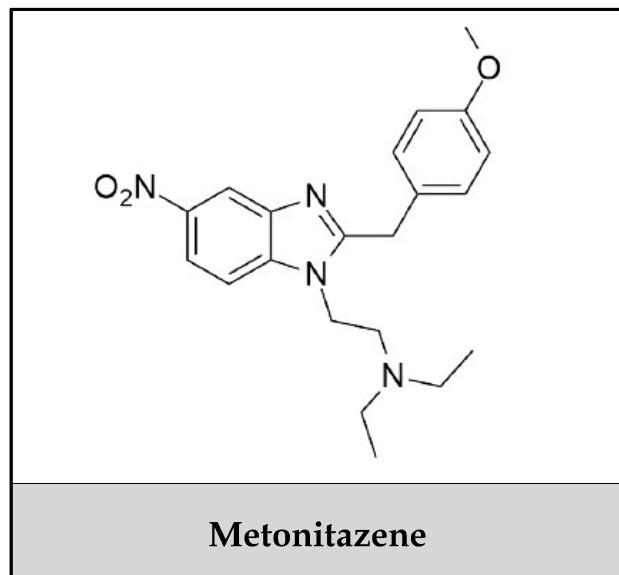
## 8. 참고문헌

- WHO 제44차 약물 의존성 전문가 위원회 기술보고서(2021)

# 메토니타젠 (Metonitazene)

## 1. 화학구조 및 물리화학적 특성

### □ 화학구조



- 분류 : (구조) benzimidazole, (효과) opioid
- 화학식 :  $\text{C}_{21}\text{H}_{26}\text{N}_4\text{O}_3$
- IUPAC 이름  
: N,N-diethyl-2-{2-[4-methoxyphenyl]methyl}-5-nitro-1H-benzimidazol-1-yl}ethan-1-amine
- 이명 및 속칭 : Benzimidazole, NIH 7606

### □ 물리화학적 특성

- 성상 : 백색 또는 황색의 가루
- 화학적 특성
  - (녹는점)  $76\sim78^\circ\text{C}$ , (끓는점) 보고된 바 없음
  - (용해도) 디메틸포름아마이드 (25 mg/mL), 디메틸설폭사이드 (20 mg/mL)

○ 불법제조법 및 용이성

- 보고된 바 없음

○ 분석법

- 분석기술 : NMR, HPLC-DAD, GC-MS, LC-QTOF-MS, IR, IC, LC-MS 등

## 2. 약리작용

### □ 투여경로 및 용량

○ 투여경로

- (사람) 피하 및 근육 주사, 비강, 정맥, 흡연

○ 용량

- (사람) 10~40 mg(비강), 5~100 mg(정맥), 30 mg(흡연)

### □ 약동학 정보

○ N-dealkylation 및 O-dealkylation 등의 반응을 통해 다양하게 대사됨

○ N-데스에틸메토니타젠(M1, C<sub>19</sub>H<sub>22</sub>N<sub>4</sub>O<sub>3</sub>)은 N-deethylation을 통해 생성되며 소변 등에서 발견됨. 또한 M1은 추가로 N-deethylation 반응을 하여 N,N-디데스에틸 메토니타젠(M2, C<sub>17</sub>H<sub>18</sub>N<sub>4</sub>O<sub>3</sub>) 대사체를 형성함

○ 4'-하이드록시니타젠(M3, C<sub>20</sub>H<sub>24</sub>N<sub>4</sub>O<sub>3</sub>)은 O-demethylation에 의해 생성되며, 5-아미노메토니타젠(M4, C<sub>21</sub>H<sub>28</sub>N<sub>4</sub>O)은 질소 잔기의 환원을 통해 생성됨

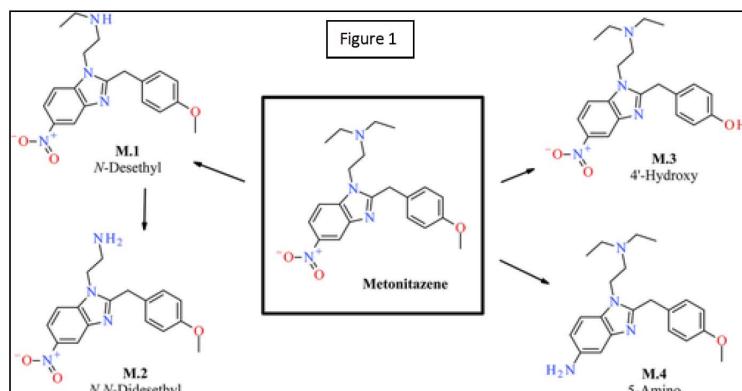


Figure 1: Reproduced with permission from publisher

## □ 약력학 정보

- (in vitro) 메토니타젠의 효력( $EC_{50}$ )과 효능( $E_{max}$ )을 계산한 결과,  $\mu$ -오피오이드 수용체에 대한 활성은 펜타닐보다 약간 크고, 하이드로모르핀보다 훨씬 큼
- (ex vivo) 용량 의존적으로 기니피크 장과 쥐 혈관 장벽의 수축을 억제하는 효과가 있음. 기니피그 장에서의 효과는 모르핀보다 50배, 쥐 혈관에서는 모르핀보다 100배 더 높음
- 전임상 시험(마우스, 랫드, 토끼)에서 메토니타젠의 효력은 투여경로에 따라 모르핀의 30~100배(피하), 15배(경구), 200배(정맥)로 확인됨
- 임상 시험에서는 피하 또는 근육 투여 시 1mg의 용량에서 진통 효과나 나타났고, 진정, 졸음, 현기증, 혼란, 메스꺼움, 구토 등을 동반함
- 메토니타젠을 투여한 환자의 5분의 1에서 청색증을 동반한 호흡 저하가 관찰됨
- 모르핀의 10배 정도의 진통 효과를 가지지만, 부작용의 위험이 커 추가적인 임상 연구는 진행되지 않음

## 3. 독성 및 부작용

### □ 동물 대상 독성 정보

- 토끼에게 강력한 호흡억제제로 작용함. 10  $\mu$ g/kg 용량으로 정맥 투여 시, 호흡 빈도가 50% 감소함
- 쥐에서 메토니타젠의 반수치사량( $LD_{50}$ )은 50 mg/kg(정맥), 100 mg/kg(경구)로 확인됨

### □ 인체 부작용

- 2021년 미국에서 20건의 사망 사건과 관련된 8개의 혈액 시료에서 메토니타젠이 처음 확인됨
- 메토니타젠은 펜타닐과 함께 검출된 사례가 많음

- 사례의 30%에서 메토니타젠이 단독으로 검출되었고, 이 중 15%는 사망원인으로 확인됨
- 부검 보고서에는 전형적인 오피오이드 과다 중독 사건과 증상이 유사하다고 보고됨

#### 4. 의존성 및 남용 가능성

##### □ 동물 대상 정보

- 의존성
  - 모르핀 의존성의 레서스 원숭이에서 메토니타젠은 황산모르핀보다 오피오이드 금단 증상을 억제하는데 100배 더 강력함
- 남용 가능성
  - 보고된 바 없음

##### □ 사람 대상 정보

- 의존성
  - 생리적 의존성에 대한 임상 연구는 수행되지 않았으나, 대부분의 오피오이드류에서 확인되는 생리적 의존성이 유사할 가능성이 있다고 보고됨
- 남용 가능성
  - 남용 가능성에 관련된 연구는 수행되지 않았으나, 약동학적으로 더 빠르게 흡수되는 경로(흡연, 흡입 및 주사 등)으로 투여할 수 있어 다른 오피오이드류와 비슷한 남용 가능성이 나타날 수 있음

#### 5. 치료목적을 포함한 합법적(산업적 용도 등) 사용 현황

- 치료목적으로 승인된 국가나 산업 목적으로 사용된 보고 없음

## 6. 불법 제조 및 유통 관련 정보

- 2019년 3월, 캐나다 앨버타주와 온타리오주에서 압수된 시료에서 메토니타젠이 검출됨
- 유럽에서는 2020년 독일에서 처음 등장했다고 2020년 UNDOC에서 보고됨
- 미국에서는 2020년 7월, 압수한 약물 분말에서 처음 검출되었고 NPS Discovery에 의해 보고됨
- 2021년 1월 1일부터 2021년 3월 31일 동안 미국 연방 주 및 지역 연구소에서 23건의 사례가 발생했다고 국립과학수사연구소 정보시스템(NFLIS)에서 보고됨

## 7. 각국 규제 정보

국가명	우리나라	미국	영국	독일	일본
규제현황	임시마약류 (1군) * 미독미약 지정 추진 중	Schedule I	미규제	규제 (NpSG*)	지정약물

\* Neue-Psychoaktive-Stoffe-Gesetz (New-Psycoactive-Substance-Law)

※ 기타 스웨덴 등에서도 규제하고 있음

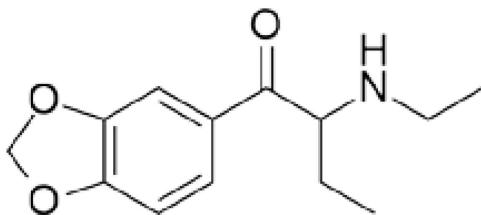
## 8. 참고문헌

- WHO 제44차 약물 의존성 전문가 위원회 기술보고서(2021)

# Eutylone (유틸론)

## 1. 화학구조 및 물리화학적 특성

### □ 화학구조



유틸론(Eutylone)

- 분류: 펜에틸아민(Phenethylamine) 계열의 합성 케치논(Synthetic cathinone)
- 화학식: C<sub>13</sub>H<sub>17</sub>NO<sub>3</sub>
- IUPAC 이름
  - : 1-(1,3-benzodioxol-5-yl)-2-(ethylamino)butan-1-one
- 이명 또는 속칭 : bk-EBDB, MDEBP, β-Keto-ethylbenzodioxolylbutanamine, N-Ethylbutylone

### □ 물리화학적 특성

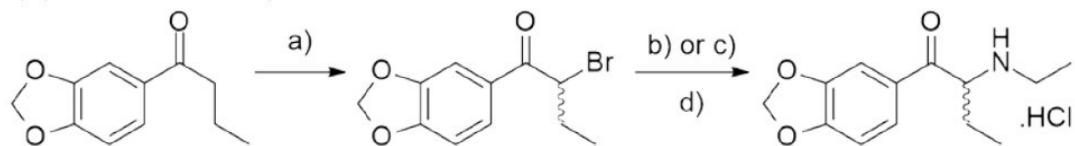
- 성상 : 분홍색, 노란색 또는 파란색 결정질 고체
- 화학적 특성
  - (녹는점) 238 - 239°C (염산염), (끓는점) 보고된 바 없음
  - (용해도) 물, 메탄올, 에탄올, DMF 및 DMSO에 용해됨

○ 불법제조법 및 용이성

- 시장에서 유통되는 유틸론 제품의 합성 경로에 대한 구체적인 정보는 없음

그러나 케치논의 화학적 합성은 쉽고 일반적으로 두단계\* 과정을 따름

\* 아릴케톤으로부터  $\alpha$ -브로모케톤의 합성, 이어서 적절한 아민으로 친핵적 치환을 통해 카티논의 상응하는 유리염기 제공



- a) 1-(2H-1,3-벤조디옥솔-5-일)부탄-1-온 전구체의 브롬화
- b) 1-(2H-1,3-벤조디옥솔-5-일)-2-브로모부탄-1-온 중간체의 형성
- c) N-에틸아민과의 반응으로 유틸론 생성
- d) 염산염으로 전환될 수 있음

○ 분석법

- 분석기술 : LC-MS, GC-MS, IR, IC 등

## 2. 약리작용

### □ 투여경로 및 용량

○ 투여경로

- (사람) 경구, 비강

○ 용량

- (사람) 평균 60~100 mg(경구 100~200 mg, 비강 50 mg)

## □ 약동학 정보

- 유틸론의 약동학에 대한 자세한 정보는 확인되지 않으나, 펜틸론과의 구조적 유사성을 고려하면 케톤 작용기가 먼저 환원되어 수산기(hydroxyl) 대사산물을 형성할 것으로 예상됨
  - 수산기 대사산물은 일반적으로 II상 대사에 의해 대사됨

- 부틸론과 공통된 1개의 대사산물을 포함하여 3개의 대사산물이 존재함

## □ 약력학 정보

- (in vitro) 도파민 수용체에 대해 높은 친화력을 나타내며, 세로토닌 흡수를 억제함
- (in vivo) 마우스 피하투여 후 용량 의존적 방식으로 운동을 자극함
  - 유틸론 투여 후 10분 이내에 각성 효과가 발생하여 70분 동안 지속됨

## 3. 독성 및 부작용

### □ 동물 대상 독성 정보

- 보고된 바 없음

### □ 인체 부작용

- 모든 환자는 뚜렷한 교감신경 효과를 나타냄
  - 모든 환자는 빈맥(맥박수>100/분)을 보였으며, 그 외 임상증상으로는 고열(체온 38°C 이상), 고혈압(수축기혈압>140 mmHg), 섬망, 불안, 환각 등 발생함
- 일부 환자에서 백혈구 증가증(백혈구수>11 K/IL)이 발생했으며, 1명의 환자에서 횡문근융해증이 나타남
- 검증되지 않은 부작용으로 불면증, 불안, 편집증 및 발작 등이 있음.
  - 유틸렌에 의해 유도된 효과의 대부분은 투여 직후에 발생하고, 몇 시간 내에 사라짐
- 2020년에는 급성 유틸론 중독이 우발적인 약물 과다 복용에 따른 사망원인으로 밝혀짐

## 4. 의존성 및 남용 가능성

### □ 동물 대상 정보

#### ○ 의존성 및 남용 가능성

- 보고된 바 없으나 메트암페타민과 동등한 효능이 있음

### □ 사람 대상 정보

#### ○ 의존성 및 남용 가능성

- 유틸론은 MDMA(ecstasy), 메페드론, 메틸론, 알프라졸람 등의 제품에서도 자주 검출되어, 유틸론을 복용하고 있다고 인지 못하는 경우가 많음. 테스트한 일부 제품에서 매우 높은 용량(300~350 mg)이 포함되어 있었음

## 5. 치료목적을 포함한 합법적(산업적 용도 등) 사용 현황

#### ○ 치료목적으로 승인된 국가나 산업 목적으로 사용된 보고 없음

#### ○ 과학 연구를 위한 표준물질로 사용되며, “연구용”으로만 사용 가능함

## 6. 불법 제조 및 유통 관련 정보

- 2014년 3월 폴란드에서 처음 검출되었으며, 2021년 3월 23일에 EMCDDA에서 신종 정신활성 물질(NPS)로 지정하여 관리하고 있음
- NFLIS의 보고에 따르면 미국에서는 2014년에 불법 마약 시작에 유틸론이 등장했으며, 2017년에 29건, 2018년 182건, 2019년에 3,958건이 검출되었음
- 2017년 10월부터 2018년 6월, 2019년 10월부터 2020년 2월 두 기간에 수집한 호주의 폐수에서 유틸론이 검출됨
- 2021년 뉴질랜드 전역의 축제에서 유틸론이 등장했으며 분석한 샘플 중 약 40%에서 유틸론이 검출됨. 또한 이 중 45%는 MDMA(엑스터시)로 판매됨

## 7. 각국 규제 정보

국가명	우리나라	미국	캐나다	영국	독일
규제현황	가목 향정	Schedule I	Schedule I	Class B	규제 (NpSG*)

\* Neue-Psychoaktive-Stoffe-Gesetz (New-Psycoactive-Substance-Law)

※ “MDMA(ecstasy)”로 판매되는 제품에서 잠재적으로 유해한 양의 유틸론이 포함되어 있으므로, 유틸론 관련 중독의 유병률이 과소 보고될 수 있다고 예상됨

## 8. 참고문헌

- WHO 제44차 약물 의존성 전문가 위원회 기술보고서(2021)

## II

## UN 마약류 목록 (2022.6.)

## 1. 마약(Yellow List)

## □ Schedule I

연번	물질명	화학명
1	ACETORPHINE	3-O-Acetyltetrahydro-7 $\alpha$ -(1-hydroxy-1-methylbutyl)-6,14-endo-etheno oripavine (derivative of thebaine)
2	ACETYL-ALPHA-METHYLFENTANYL	N-[1-( $\alpha$ -Methylphenethyl)-4-piperidyl]acetanilide
3	ACETYLFENTANYL	N-Phenyl-N-[1-(2-phenylethyl)-4-piperidinyl]acetamide
4	ACETYL METHADOL	3-Acetoxy-6-dimethylamino-4,4-diphenylheptane
5	ACRYLOYLFENTANYL (ACRYLFENTANYL)	N-Phenyl-N-[1-(2-phenylethyl)piperidin-4-yl]prop-2-enamide
6	ALFENTANIL	N-[1-[2-(4-Ethyl-4,5-dihydro-5-oxo-1H-tetrazol-1-yl)ethyl]-4-(methoxy methyl)-4-piperidinyl]-N-phenylpropanamide
7	AH-7921	3,4-Dichloro-N-[1-(dimethylamino)cyclohexyl]methyl benzamide
8	ALLYLPRODINE	3-Allyl-1-methyl-4-phenyl-4-propionoxypiperidine
9	ALPHACETYL METHADOL	$\alpha$ -3-Acetoxy-6-dimethylamino-4,4-diphenylheptane
10	ALPHAMEPRODINE	$\alpha$ -3-Ethyl-1-methyl-4-phenyl-4-propionoxypiperidine
11	ALPHAMETHADOL	$\alpha$ -6-Dimethylamino-4,4-diphenyl-3-heptanol
12	ALPHA-METHYLFENTANYL	N-[1-( $\alpha$ -Methylphenethyl)-4-piperidyl]propionanilide
13	ALPHA-METHYLTHIOFENTANYL	N-[1-[1-Methyl-2-(2-thienyl)ethyl]-4-piperidyl]propionanilide
14	ALPHAPRODINE	$\alpha$ -1,3-Dimethyl-4-phenyl-4-propionoxypiperidine
15	ANILERIDINE	1- $\rho$ -Aminophenethyl-4-phenylpiperidine-4-carboxylic acid ethyl ester
16	BENZETHIDINE	1-(2-Benzyloxyethyl)-4-phenylpiperidine-4-carboxylic acid ethyl ester
17	BENZYL MORPHINE	3-Benzylmorphine
18	BETACETYL METHADOL	$\beta$ -3-Acetoxy-6-dimethylamino-4,4-diphenylheptane
19	BETA-HYDROXYFENTANYL	N-[1-( $\beta$ -Hydroxyphenethyl)-4-piperidyl]propionanilide
20	BETA-HYDROXY-3-METHYLFENTANYL	N-[1-( $\beta$ -Hydroxyphenethyl)-3-methyl-4-piperidyl]propionanilide
21	BETAMEPRODINE	$\beta$ -3-Ethyl-1-methyl-4-phenyl-4-propionoxypiperidine
22	BETAMETHADOL	$\beta$ -6-Dimethylamino-4,4-diphenyl-3-heptanol
23	BETAPRODINE	$\beta$ -1,3-Dimethyl-4-phenyl-4-propionoxypiperidine
24	BEZITRAMIDE	1-(3-Cyano-3,3-diphenylpropyl)-4-(2-oxo-3-propionyl-1-benzimidazolyl)piperidine
25	BUTYRFENTANYL	N-Phenyl-N-[1-(2-phenylethyl)-4-piperidinyl]butanamide
26	CANNABIS	The flowering or fruiting tops of the cannabis plant (resin not extracted)
27	CANNABIS RESIN, EXTRACTS and TINCTURES	The separated resin, crude or purified, obtained from the cannabis plant
28	CARFENTANIL	Methyl 1-(2-phenylethyl)-4-[phenyl(propanoyl)amino]piperidine-4-carboxylate

연번	물질명	화학명
29	CLONITAZENE	2-( <i>p</i> -Chlorobenzyl)-1-diethylaminoethyl-5-nitrobenzimidazole
30	Coca leaf	The leaf of the coca bush (plant material), except a leaf from which all ecgonine, cocaine and any other ecgonine alkaloids have been removed
31	COCAINE	Methyl ester of benzoylecgonine (an alkaloid found in coca leaves or prepared by synthesis from ecgonine)
32	CODOXIME	Dihydrocodeinone-6-carboxymethyloxime (derivate of morphine)
33	CONCENTRATE OF POPPY STRAW	Refer to Section entitled "Intermediate Opiate Raw Materials"
34	CROTONYLFENTANYL	(E)- <i>N</i> -(1-Phenethylpiperidin-4-yl)- <i>N</i> -phenylbut-2-enamide
35	CYCLOPROPYLFENTANYL	<i>N</i> -Phenyl- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]cyclopropanecarboxamide
36	DESOMORPHINE	Dihydrodesoxymorphine (derivative of morphine)
37	DEXTROMORAMIDE	(+)-4-[2-Methyl-4-oxo-3,3-diphenyl-4-(1-pyrrolidinyl)butyl]morpholine (dextro-rotatory isomer of moramide)
38	DIAMPROMIDE	<i>N</i> -[2-(Methylphenethylamino)-propyl]propionanilide
39	DIETHYLTHIAMBUTENE	3-Diethylamino-1,1-di-(2'-thienyl)-1-butene
40	DIFENOXIN	1-(3-Cyano-3,3-diphenylpropyl)-4-phenylisonipecotic acid
41	DIHYDROETORPHINE	7,8-Dihydro-7 $\alpha$ -[1-(R)-hydroxy-1-methylbutyl]-6,14-endo-ethanotetrahydororipavine (derivative of etorphine)
42	DIHYDROMORPHINE	(Derivative of morphine)
43	DIMENOXAOL	2-Dimethylaminoethyl-1-ethoxy-1,1-diphenylacetate
44	DIMEPHEPTANOL	6-Dimethylamino-4,4-diphenyl-3-heptanol
45	DIMETHYLTHIAMBUTENE	3-Dimethylamino-1,1-di-(2'-thienyl)-1-butene
46	DIOXAPHETYL BUTYRATE	Ethyl-4-morpholino-2,2-diphenylbutyrate
47	DIPHENOXYLATE	1-(3-Cyano-3,3-diphenylpropyl)-4-phenylpiperidine-4-carboxylic acid ethyl ester
48	DIPIPANONE	4,4-Diphenyl-6-piperidine-3-heptanone
49	DROTEBANOL	3,4-Dimethoxy-17-methylmorphinan-6 $\beta$ ,14-diol
50	ECGONINE	Its esters and derivatives which are convertible to ecgonine and cocaine
51	ETHYLMETHYLTHIAMBUTENE	3-Ethylmethylamino-1,1-di-(2'-thienyl)-1-butene
52	ETONITAZENE	1-Diethylaminoethyl-2- <i>p</i> -ethoxybenzyl-5-nitrobenzimidazole
53	ETORPHINE	Tetrahydro-7 $\alpha$ -(1-hydroxy-1-methylbutyl)-6,14-endo-ethenooripavine (derivative of thebaine)
54	ETOXERIDINE	1-[2-(2-Hydroxyethoxy)-ethyl]-4-phenylpiperidine-4-carboxylic acid ethyl ester
55	FENTANYL	1-Phenethyl-4- <i>N</i> -propionylanilinopiperidine
56	4-FLUOROISOBUTYRFENTANYL (4-FIBF, pFIBF)	<i>N</i> -(4-Fluorophenyl)- <i>N</i> -(1-phenetyl)piperidin-4-yl)isobutyramide
57	FURANYLFENTANYL	<i>N</i> -Phenyl- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]furan-2-carboxamide
58	FURETHIDINE	1-(2-Tetrahydrofurfuryloxyethyl)-4-phenylpiperidine-4-carboxylic acid ethyl ester
59	HEROIN	Diacetylmorphine (derivative of morphine)
60	HYDROCODONE	Dihydrocodeinone (derivative of morphine)
61	HYDROMORPHINOL	14-Hydroxydihydromorphine (derivative of morphine)

연번	물질명	화학명
62	HYDROMORPHONE	Dihydromorphinone (derivative of morphine)
63	HYDROXYPETHIDINE	4- <i>m</i> -Hydroxyphenyl-1-methylpiperidine-4-carboxylic acid ethyl ester
64	ISOMETHADONE	6-Dimethylamino-5-methyl-4,4-diphenyl-3-hexanone
65	ISOTONITAZENE	<i>N,N</i> -diethyl-2-[2-[(4-isopropoxyphenyl)methyl]-5-nitro-benzimidazol-1-yl]ethanamine
66	KETOBEMIDONE	4- <i>m</i> -Hydroxyphenyl-1-methyl-4-propionylpiperidine
67	LEVOMETHORPHAN	(-)3-Methoxy- <i>N</i> -methylmorphinan
68	LEVOMORAMIDE	(-)4-[2-Methyl-4-oxo-3,3-diphenyl-4-(1-pyrrolidinyl)butyl]morpholine
69	LEVOPHENACYLMORPHAN	(-)3-Hydroxy- <i>N</i> -phenacylmorphinan
70	LEVORPHANOL	(-)3-Hydroxy- <i>N</i> -methylmorphinan
71	METAZOCINE	2-Hydroxy-2,5,9-trimethyl-6,7-benzomorphan
72	METHADONE	6-Dimethylamino-4,4-diphenyl-3-heptanone
73	METHADONE INTERMEDIATE	4-Cyano-2-dimethylamino-4,4-diphenylbutane
74	METHOXYACETYLFENTANYL	2-Methoxy- <i>N</i> -phenyl- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]acetamide
75	METHYLDERORPHINE	6-Methyl-Δ6-deoxymorphine (derivative of morphine)
76	METHYLDIHYDROMORPHINE	6-Methyldihydromorphine (derivative of morphine)
77	3-METHYLFENTANYL	<i>N</i> -(3-methyl-1-phenethyl-4-piperidyl)propionanilide
78	3-METHYLTHIOFENTANYL	<i>N</i> -[3-methyl-1-[2-(2-thienyl)ethyl]-4-piperidyl]propionanilide
79	METOPON	5-Methyldihydromorphinone (derivative of morphine)
80	MORAMIDE INTERMEDIATE	2-Methyl-3-morpholino-1,1-diphenylpropane carboxylic acid
81	MORPHERIDINE	1-(2-Morpholinoethyl)-4-phenylpiperidine-4-carboxylic acid ethyl ester
82	MORPHINE	The principal alkaloid of opium and of opium poppy
83	MORPHINE METHOBROMIDE	AND OTHER PENTAVALENT NITROGEN MORPHINE DERIVATIVES including in particular the morphine-N-oxide derivatives, one of which is codeine-N-oxide
84	MORPHINE- <i>N</i> -OXIDE	(Derivate of morphine)
85	MPPP	1-Methyl-4-phenyl-4-piperidinol propionate (ester)
86	MT-45	1-Cyclohexyl-4-(1,2-diphenylethyl)piperazine
87	MYROPHINE	Myristylbenzylmorphine (derivate of morphine)
88	NICOMORPHINE	3,6-Dinicotinylmorphine (derivate of morphine)
89	NORACYMETHADOL	(±)- $\alpha$ -3-Acetoxy-6-methylamino-4,4-diphenylheptane
90	NORLEVORPHANOL	(-)3-Hydroxymorphinan
91	NORMETHADONE	6-Dimethylamino-4,4-diphenyl-3-hexanone
92	NORMORPHINE	Demethylmorphine (derivate of morphine)
93	NORPIPANONE	4,4-Diphenyl-6-piperidino-3-hexanone
94	OCFENTANIL	<i>N</i> -(2-Fluorophenyl)-2-methoxy- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]acet amide
95	OPIUM	The coagulated juice of the opium poppy (plant species Papaver somniferum L.)
96	ORIPAVINE	3- <i>O</i> -demethylthebaine
97	ORTHOFLUOROFENTANYL	N-(2-Fluorophenyl)- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl] propanamide
98	OXYCODONE	14-Hydroxydihydrocodeinone (derivate of morphine)

연번	물질명	화학명
99	OXYMORPHONE	14-Hydroxydihydromorphinone (derivate of morphine)
100	PARAFLUOROBUTYRYLFENTANYL	<i>N</i> -(4-Fluorophenyl)- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]butanamide
101	<i>para</i> -FLUOROFENTANYL	4'-Fluoro- <i>N</i> (1-phenethyl-4-piperidyl)propionanilide
102	PEPAP	1-Phenethyl-4-phenyl-4-piperidinol acetate (ester)
103	PETHIDINE	1-Methyl-4-phenylpiperidine-4-carboxylic acid ethyl ester
104	PETHIDINE INTERMEDIATE A	4-Cyano-1-methyl-4-phenylpiperidine
105	PETHIDINE INTERMEDIATE B	4-Phenylpiperidine-4-carboxylic acid ethyl ester
106	PETHIDINE INTERMEDIATE C	1-Methyl-4-phenylpiperidine-4-carboxylic acid
107	PHENADOXONE	6-Morpholino-4,4-diphenyl-3-heptanone
108	PHENAMPROMIDE	<i>N</i> -(1-methyl-2-piperidinoethyl)propionanilide
109	PHENAZOCINE	2'-Hydroxy-5,9-dimethyl-2-phenethyl-6,7-benzomorphan
110	PHENOMORPHAN	3-Hydroxy- <i>N</i> -phenethylmorphinan
111	PHENOPERIDINE	1-(3-Hydroxy-3-phenylpropyl)-4-phenylpiperidine-4-carboxylic acid ethyl ester
112	PIMINODINE	4-Phenyl-1-(3-phenylaminopropyl)piperidine-4-carboxylic acid ethyl ester
113	PIRITRAMIDE	1-(3-Cyano-3,3-diphenylpropyl)-4-(1-piperidino)piperidine-4-carboxylic acid amide
114	PROHEPTAZINE	1,3-Dimethyl-4-phenyl-4-propionoxyazacycloheptane
115	PROPERIDINE	1-Methyl-4-phenylpiperidine-4-carboxylic acid isopropyl ester
116	RACEMETHORPHAN	(±)-3-Methoxy- <i>N</i> -methylmorphinan
117	RACEMORAMIDE	(±)-4-[2-Methyl-4-oxo-3,3-diphenyl-4-(1-pyrrolidinyl)butyl]morpholine
118	RACEMORPHAN	(±)-3-Hydroxy- <i>N</i> -methylmorphinan
119	REMIFENTANIL	1-(2-Methoxycarbonylethyl)-4-(phenylpropionylamino)-piperidine-4-carboxylic acid methyl ester
120	SUFENTANIL	<i>N</i> -[4-(Methoxymethyl)-1-[2-(2-thienyl)ethyl]-4-piperidyl]propionanilide
121	TETRAHYDROFURANYLFENTANYL (THF-F)	<i>N</i> -Phenyl- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]tetrahydrofuran-2-carboxamide
122	THEBACON	Acetyl dihydrocodeinone (acetylated enol form of hydrocodone)
123	THEBAINE	(An alkaloid of opium; also found in Papaver bracteatum)
124	THIOFENTANYL	<i>N</i> -[1-[2-(2-Thienyl)ethyl]-4-piperidyl]propionanilide
125	TIOLIDINE	(±)-Ethyl- <i>trans</i> -2-(dimethylamino)-1-phenyl-3-cyclohexene-1-carboxylate
126	TRIMEPERIDINE	1,2,5-Trimethyl-4-phenyl-4-propionoxypiperidine
127	U-47700	3,4-Dichloro-N-(2-dimethylamino-cyclohexyl)- <i>N</i> -methyl-benzamide
128	VALERYLFENTANYL	<i>N</i> -(1-phenehtylpiperidin-4-yl)- <i>N</i> -phenylpentanamide
129	BRORPHINE	1-{1-[1-(4-Bromophenyl)ethyl]piperidin-4-yl}-1,3-dihydro-2H-benzimidazol-2-one
130	METONITAZENE	N,N-diethyl-2-{2-[(4-methoxyphenyl)methyl]-5-nitro-1H-benzimidazol-1-yl}ethan-1-amine

## □ Schedule II

연번	물질명	화학명
1	ACETYLDIHYDROCODEINE	(Derivative of codeine)
2	CODEINE	3-Methylmorphine (derivate of morphine, alkaloid contained in opium and poppy straw)
3	DEXTROPROPOXYPHENE	$\alpha$ (+)-4-Dimethylamino-1,2-diphenyl-3-methyl-2-butanol propionate (Dextro-rotary isomer of propoxyphene)
4	DIHYDROCODEINE	(Derivative of morphine)
5	ETHYLMORPHINE	3-Ethylmorphine (derivative of morphine)
6	NICOCODINE	6-Nicotinylcodeine (derivative of morphine)
7	NICODICODINE	6-Nicotinyldihydrocodeine (derivative of morphine)
8	NORCODEINE	$N$ -Demethylcodeine (derivative of morphine)
9	PHOLCODINE	Morpholinylethylmorphine (derivative of morphine)
10	PROPIRAM	$N$ -(1-Methyl-2-piperidinoethyl)- $N$ -2-pyridylpropionamide

## □ Schedule III

연번	물질명	화학명
1	ACETYLDIHYDROCODEINE, CODEINE, DIHYDROCODEINE, ETHYLMORPHINE, NICOCODINE, NICODICODINE, NORCODEINE, PHOLCODINE	(When compounded with one or more other ingredients and containing not more than 100 milligrams of the drug per dosage unit and with a concentration of not more than 2.5 per cent in undivided preparations.
2	PROPIRAM	Containing not more than 100 milligrams of PROPIRAM per dosage unit and compounded with at least the same amount of methylcellulose.
3	DEXTROPROPOXYPHENE	For oral use containing not more than 135 milligrams of DEXTROPROPOXYPHENE base per dosage unit or with a concentration of not more than 2.5 per cent in undivided preparations, provided that such preparations do not contain any substance controlled under the 1971 Convention on Psychotropic Substances.
4	COCAINE	Containing not more than 0.1 per cent of cocaine calculated as COCAINE base; and
	OPIUM or MORPHINE	Containing not more than 0.2 per cent of MORPHINE calculated as anhydrous MORPHINE base and compounded with one or more other ingredients and in such a way that the drug cannot be recovered by readily applicable means or in a yield which would constitute a risk to public health.
5	DIFENOXIN	Containing, per dosage unit, not more than 0.5 milligrams of DIFENOXIN and a quantity of atropine sulfate equivalent to at least 5 per cent of the dose of DIFENOXIN.
6	DIPHENOXYLATE	Containing, per dosage unit, not more than 2.5 milligrams of DIPHENOXYLATE calculated as base and a quantity of atropine sulfate equivalent to at least 1 per cent of the dose of DIPHENOXYLATE.
7	Pulvis ipecacuanhae et opii compositus	10 per cent OPIUM in powder; 10 per cent ipecacuanha root, in powder well mixed with 80 per cent of any other powdered ingredient containing no drug.
8	Preparations conforming to any of the formulas listed in this Schedule and mixtures of such preparations with any material which contains no drug.	

## □ Schedule IV

연번	물질명	화학명
1	ACETORPHINE	3- <i>O</i> -Acetyltetrahydro-7 $\alpha$ -(1-hydroxy-1-methylbutyl)-6,14-endo-etheno oripavine (derivative of thebaine)
2	ACETYL- <i>ALPHA</i> -METHYLFENTANYL	<i>N</i> -[1-( $\alpha$ -methylphenethyl)-4-piperidyl]acetanilide
3	ACETYLFENTANYL	<i>N</i> -Phenyl- <i>N</i> -[1-(2-phenylethyl)-4-piperidinyl]acetamide
4	<i>ALPHA</i> -METHYLFENTANYL	<i>N</i> -[1-( $\alpha$ -Methylphenethyl)-4-piperidyl]propionanilide
5	<i>ALPHA</i> -METHYLTHIOFENTANYL	<i>N</i> -[1-[1-Methyl-2-(2-thienyl)ethyl]-4-piperidyl]propionanilide
6	<i>BETA</i> -HYDROXYFENTANYL	<i>N</i> -[1-( $\beta$ -Hydroxyphenethyl)-4-piperidyl]propionanilide
7	<i>BETA</i> -HYDROXY-3-METHYLFENTANYL	<i>N</i> -[1-( $\beta$ -Hydroxyphenethyl)-3-methyl-4-piperidyl]propionanilide
8	CARFENTANIL	Methyl 1-(2-phenylethyl)-4-[phenyl(propanoyl)amino]piperidine-4-carboxylate
9	DESOMORPHINE	Dihydrodesoxymorphine (derivative of morphine)
10	ETORPHINE	Tetrahydro-7 $\alpha$ -(1-hydroxy-1-methylbutyl)-6,14-endo-etheno oripavine (derivative of thebaine)
11	HEROIN	Diacetylmorphine (derivative of morphine)
12	KETOBEMIDONE	4- <i>m</i> -Hydroxyphenyl-1-methyl-4-propionylpiperidine
13	3-METHYLFENTANYL	<i>N</i> -(3-Methyl-1-phenethyl-4-piperidyl)propionanilide
14	3-METHYLTHIOFENTANYL	<i>N</i> -[3-Methyl-1-[2-(2-thienyl)ethyl]-4-piperidyl]propionanilide
15	MPPP	1-Methyl-4-phenyl-4-piperidinol propionate (ester)
16	<i>PARA</i> -FLUOROFENTANYL	4'-Fluoro- <i>N</i> -(1-phenethyl-4-piperidyl)propionanilide
17	PEPAP	1-Phenethyl-4-phenyl-4-piperidinol acetate (ester)
18	THIOFENTANYL	<i>N</i> -[1-[2-(Thienyl)ethyl]-4-piperidyl]propionanilide

## 2. 향정신성 물질(Green List)

### □ Schedule I

연번	물질명	화학명
1	CATHINONE	(-)-(S)-2-Aminopropiophenone
2	DET	3-[2-(Diethylamino)ethyl]indole
3	DMHP	3-(1,2-Dimethylheptyl)-7,8,9,10-tetrahydro-6,6,9-trimethyl-6H-dibenzo[ <i>b,d</i> ]pyran-1-ol
4	DMT	3-[2-(Dimethylamino)ethyl]indole
5	DMA	( $\pm$ )-2,5-Dimethoxy- $\alpha$ -methylphenethylamine
6	DOET	( $\pm$ )-4-Ethyl-2,5-dimethoxy- $\alpha$ -methylphenethylamine
7	BROLAMFETAMINE (DOB)	( $\pm$ )-4-Bromo-2,5-dimethoxy- $\alpha$ -methylphenethylamine
8	DOC	4-Chloro-2,5-dimethoxyamphetamine
9	ETICYCLIDINE (PCE)	<i>N</i> -Ethyl-1-phenylcyclohexylamine
10	ETRYPTAMINE	3-(2-Aminobutyl)indole
11	(+)-LYSERGIDE (LSD, LSD-25)	9,10-Didehydro- <i>N,N</i> -diethyl-6-methylergoline-8 $\beta$ -carboxamide
12	<i>N</i> -hydroxy MDA	( $\pm$ )- <i>N</i> -[ $\alpha$ -Methyl-3,4-(methylenedioxy)phenethyl]hydroxylamine
13	MDEA, <i>N</i> -ethyl MDA	( $\pm$ )- <i>N</i> , $\alpha$ -Dimethyl-3,4-(methylenedioxy)phenethylamine
14	MDMA	( $\pm$ )- <i>N</i> , $\alpha$ -Dimethyl-3,4-(methylenedioxy)phenethylamine
15	mescaline	3,4,5-Trimethoxyphenethylamine
16	methcathinone	2-(Methylamino)-1-phenylpropan-1-one
17	4-methylaminorex	( $\pm$ )- <i>cis</i> -2-Amino-4-methyl-5-phenyl-2-oxazoline
18	MMDA	5-Methoxy- $\alpha$ -methyl-3,4-(methylenedioxy)phenethylamine
19	4-MTA	$\alpha$ -Methyl-4-methylthiophenethylamine
20	25B-NBOMe (2C-B-NBOMe)	2-(4-Bromo-2,5-dimethoxyphenyl)- <i>N</i> -(2-methoxybenzyl)ethanamine
21	25C-NBOMe (2C-C-NBOMe)	2-(4-Chloro-2,5-dimethoxyphenyl)- <i>N</i> -(2-methoxybenzyl)ethanamine
22	25I-NBOMe (2C-I-NBOMe)	2-(4-Iodo-2,5-dimethoxyphenyl)- <i>N</i> -(2-methoxybenzyl)ethanamine
23	Parahexyl	3-Hexyl-7,8,9,10-tetrahydro-6,6,9-trimethyl-6H-dibenzo[ <i>b,d</i> ]pyran-1-ol
24	PMA	Methoxy- $\alpha$ -methylphenethylamine
25	PMMA	Methoxymethylamphetamine
26	psilocine, psilotsin	3-[2-(Dimethylamino)ethyl]indol-4-ol
27	PSILOCYBINE	3-[2-(Dimethylamino)ethyl]indol-4-yl dihydrogen phosphate
28	ROLICYCLIDINE (PHP, PCPY)	1-(1-Phenylcyclohexyl)pyrrolidine
29	STP, DOM	2,5-Dimethoxy- $\alpha$ ,4-dimethylphenethylamine
30	TENAMFETAMINE (MDA)	$\alpha$ -Methyl-3,4-(methylenedioxy)phenethylamine
31	TENOCYCLIDINE (TCP)	1-[1-(2-Thienyl)cyclohexyl]piperidine
32	TETRAHYDRO-CANNABINOL	Tetrahydrocannabinol, the following isomers and their stereochemical variants:
	<i>Delta</i> -6 <i>a</i> (10 <i>a</i> )-THC	7,8,9,10-Tetrahydro-6,6,9-trimethyl-3-pentyl-6H-dibenzo[ <i>b,d</i> ]pyran-1-ol
	<i>Delta</i> -6 <i>a</i> (7)-THC	(9 <i>R</i> ,10 <i>aR</i> )-8,9,10,10 <i>a</i> -Tetrahydro-6,6,9-trimethyl-3-pentyl-6H-dibenzo[ <i>b,d</i> ]pyran-1-ol
	<i>Delta</i> -7-THC	(6 <i>aR</i> ,9 <i>R</i> ,10 <i>aR</i> )-6 <i>a</i> ,9,10,10 <i>a</i> -Tetrahydro-6,6,9-trimethyl-3-pentyl-6H-dibenzo[ <i>b,d</i> ]pyran-1-ol
	<i>Delta</i> -8-THC	(6 <i>aR</i> ,10 <i>aR</i> )-6 <i>a</i> ,7,10,10 <i>a</i> -Tetrahydro-6,6,9-trimethyl-3-pentyl-6H-dibenzo[ <i>b,d</i> ]pyran-1-ol
	<i>Delta</i> -10-THC	6 <i>a</i> ,7,8,9-tetrahydro-6,6,9-Trimethyl-3-pentyl-6H-dibenzo[ <i>b,d</i> ]pyran-1-ol
33	<i>Delta</i> -9(11)-THC	(6 <i>aR</i> ,10 <i>aR</i> )-6 <i>a</i> ,7,8,9,10,10 <i>a</i> -Hexahydro-6,6-dimethyl-9-methylene3-pentyl-6H-dibenzo[ <i>b,d</i> ]pyran-1-ol
33	TMA	( $\pm$ )-3,4,5-Trimethoxy- $\alpha$ -methylphenethylamine

## □ Schedule II

연번	물질명	화학명
1	AMFETAMINE (amphetamine)	(±)- $\alpha$ -Methylphenethylamine
2	AMINEPTINE	7-[((10,11-Dihydro-5H-dibenzo[ <i>a,d</i> ]cyclohepten-5-yl)amino]heptanoic acid
3	AM-2201 (JWH-2201)	[1-(5-Fluoropentyl)-1H-indol-3-yl](naphthalen-1-yl)methanone
4	5F-APINACA (5F-AKB-48)	N-(Adamantan-1-yl)-1-(5-fluoropentyl)-1H-indazole-3-carboxamide
5	5F-AMB, 5F-AMB-PINACA	Methyl 2-((1-(5-fluoropentyl)-1H-indazol-3-yl)carbonyl)amino)-3-methylbutanoate
6	2C-B	4-Nromo-2,5-dimethoxyphenethylamine
7	AB-CHMINACA	N-[(2S)-1-Amino-3-methyl-oxobutan-2-yl]-1-(cyclohexylmethyl)-1H-indazole-3-carboxamide
8	CUMYL-4CN-BINACA	1-(4-Cyanobutyl)-N-(2-phenylpropan-2-yl)-1H-indazole-3-carboxamide
9	ADB-CHMINACA (MAB-CHMINACA)	N-[(2S)-1-Amino-3,3-dimethyl-1-oxobutan-2-yl]-1-(cyclohexylmethyl)-1H-indazole-3-carboxamide
10	4-CMC (4-Chloromethcathinone, clephedrone), clephedrone	1-(4-Chlorophenyl)-2-(methylamino)-1-propanone
11	CUMYL-PEGACLONE	5-Pentyl-2-(2-phenylpropan-2-yl)pyrido[4,3-b]indol-1-one
12	DEXAMFETAMINE (Dexamphetamine)	(+)- $\alpha$ -Methylphenethylamine
13	DRONABINOL ( <i>Delta</i> -9-tetrahydro-cannabinol and its stereochemical variants)	(6 <i>aR</i> ,10 <i>aR</i> )-6 <i>a</i> ,7,8,10 <i>a</i> -Tetrahydro-6,6,9-trimethyl-3-pentyl-6H-dibenzo[ <i>b,d</i> ]pyran-1-ol
14	diphenidine	(±)-1-(1,2-Diphenylethyl)piperidine
15	ethylone	(RS)-1-(1,3-Benzodioxol-5-yl)-2-(ethylamino)propan-1-one
16	ethylphenidate	Ethyl-2-phenyl-2-piperidin-2-ylacetate
17	FENETYLLINE	7-[2-[( $\alpha$ -Methylphenethyl)amino]ethyl]theophylline
18	4-FLUOROAMPHETAMINE (4-FA)	1-(4-Fluorophenyl)propan-2-amine
19	FUB-AMB (MMB-FUBINACA, AMB-FUBINACA)	Methyl(2S)-2-(1-[4-fluorophenyl]methyl-1H-indazole-3-carbonyl amino)-3-methylbutanoate
20	ADB-FUBINACA	N-[(2S)-1-Amino-3,3-dimethyl-1-oxobutan-2-yl]-1-[(4-fluorophenyl)methyl]-1H-indazole-3-carboxamide
21	AB-FUBINACA	N-[(2S)-1-Amino-3-dimethyl-1-oxobutan-2-yl]-1-[(4-fluorophenyl)methyl]indazole-3-carboxamide
22	<i>gamma</i> -HYDROXYBUTIRIC ACID (GHB)	$\gamma$ -Hydroxybutyric acid
23	JWH-018 (AM-678)	Naphthalene-1-yl(1-pentyl-1H-indol-3-yl)methanone
24	LEVAMFETAMINE (Levamphetamine)	(-)-(R)- $\alpha$ -Methylphenethylamine(amphetamine (-)isomer
25	LEVMETAMFETAMINE (Levomethamphetamine)	(-)-N, $\alpha$ -Dimethylphenethylamine
26	MECLOQUALONE	3-( <i>o</i> -Chlorophenyl)-2-methyl-4(3H)-quinazolinone
27	METAMFETAMINE (Methamphetamine)	(+)-(S)-N, $\alpha$ -Dimethylphenethylamine
28	METHAQUALONE	2-Methyl-3- <i>o</i> -tolyl-4(3H)-quinazolinone
29	METHYLPHENIDATE	Methyl $\alpha$ -phenyl-2-piperidine acetate

30	METAMFETAMINE RACEMATE (Methamphetamine racemate)	$(\pm)$ - <i>N</i> , $\alpha$ -Dimethylphenethylamine
31	MDPV (3,4-Methylenedioxypyrovalerone)	(R/S)-1-(Benzo[ <i>d</i> ][1,3]dioxol-5-yl)-2-(pyrrolidin-1-yl)pentan-1-one
32	mephedrone (4-Methylmethcathinone)	(RS)-2-Methylamino-1-(4-methylphenyl)propan-1-one
33	methylone ( <i>Beta</i> -keto-MDMA)	(RS)-2-Methylamino-1- (3,4-methylenedioxophenyl)propan-1-one
34	methoxetamine (MXE)	2-(3-Methoxyphenyl)-2-(ethylamino)-cyclohexanone
35	MDMB-CHMICA	Methyl 2-[1-(cyclohexylmethyl)indole-3-carbonyl]amino]-3,3-dimethylbutanate
36	METHIOPROPAMINE (MPA)	1-(Thiophen-2-yl)-2-methylaminopropane
37	4-METHYLETHCATHINONE (4-MEC)	2-(Ethylamino)-1-(4-methylphenyl)propan-1-one
38	5F-MDMB-PICA	Methyl(S)-2-(1-(5-fluoropentyl)-1 <i>H</i> -indole-3-carboxamido)-3,3-dimethylbutanoate
39	4F-MDMB-BINACA	Methyl(S)-2-(1-(5-fluorobutyl)-1 <i>H</i> -indazole-3-carboxamido)-3,3-dimethylbutanoate
40	MDMB-4en-PINACA	Methyl (S)-3,3-dimethyl-2-(1-(pent-4-en-1-yl)-1 <i>H</i> -indazole-3-carboxamido)butanoate
41	3-MEO-PCP (3-methoxyphencycline)	1-[1-(3-Methoxyphenyl)cyclohexyl]piperidine
42	<i>N</i> -BENZYLPIPERAZINE (BZP)	1-Benzylpiperazine
43	<i>N</i> -ETHYLNORPENTYLONE	1-(2 <i>H</i> -1,3-Benzodioxol-5-yl)-2-(ethylamino)pentan-1-one
44	<i>N</i> -ETHYLHEXEDRONE	2-(Ethylamino)-1-phenyl-1-hexanone
45	PHENCYCLIDINE (PCP)	1-(1-Phenylcyclohexyl)piperidine
46	PHENMETRAZINE	3-Methyl-2-phenylmorpholine
47	5F-ADB, 5F-MDMB-PINACA	Methyl(2 <i>S</i> )-2-[1-(fluoropentyl)-1 <i>H</i> -indazole-3-carbonyl]amino-3,3-dimethylbutanoate
48	AB-PINACA	<i>N</i> [(2 <i>S</i> )-1-Amino-3-methyl-1-oxobutan-2-yl]-1-pentyl-1 <i>H</i> -indazole-3-carboxamide
49	<i>alpha</i> -PVP	$\alpha$ -Pyrrolidinovalerophenone
50	4,4'-DMAR (4,4'Dimethylaminorex)	<i>p</i> -Methyl-4-methylaminorex
51	PENTEDRONE	$(\pm)$ -2-(Methylamino)-1-phenylpentan-1-one
52	5F-PB-22	Quinolin-8-yl 1-(5-fluoropentyl)-1 <i>H</i> -indole-3-carboxylate
53	<i>alpha</i> -PHP	(RS)-1-Phenyl-2-(pyrrolidine-1-yl)hexan-1-one
54	SECOBARBITAL	5-Allyl-5-(1-methylbutyl)barbituric acid
55	UR-144	(1-Pentyl-1 <i>H</i> -indol-3-yl)(2,2,3,3-tetramethylcyclopropyl)methanone
56	XLR-11	[1-(5-Fluoropentyl)-1 <i>H</i> -indol-3-yl](2,2,3,3-tetramethylcyclopropyl)methanone
57	ZIPEPROL	$\alpha$ -( $\alpha$ -Methoxybenzyl)-4-( $\beta$ -methoxyphenethyl)-1-piperazineethanol
58	Eutylone	1-(1,3-benzodioxol-5-yl)-2-(ethylamino)butan-1-one

## □ Schedule III

연번	물질명	화학명
1	AMOBARBITAL	5-Ethyl-5-isopentylbarbituric acid
2	BUTALBITAL	5-Allyl-5-isobutylbarbituric acid
3	BUPRENORPHINE	2I-Cyclopropyl-7- $\alpha$ -[(S)-1-hydroxy-1,2,2-trimethylpropyl]-6,14-endo-ethano-6,7,8,14-tetrahydrooripavine
4	CYCLOBARBITAL	5-(1-Cyclohexen-1-yl)-5-ethylbarbituric acid
5	CATHINE [(+)-Norpseudoephedrine]	(+)-(S)- $\alpha$ -[(S)-1-Aminoethyl]benzyl alcohol
6	FLUNITRAZEPAM	5-( <i>o</i> -Fluorophenyl)-1,3-dihydro-1-methyl-7-nitro-2 <i>H</i> -1,4-benzodiazepin-2-one
7	GLUTETHIMIDE	2-Ethyl-2-phenylglutarimide
8	PENTOBARBITAL	5-Ethyl-5-(1-methylbutyl)barbituric acid
9	PENTAZOCINE	(2R*,6R*,11R*)-1,2,3,4,5,6-Hexahydro-6,11-dimethyl-3-(3-methyl-2-butyl)-2,6-methano-3-benzazocin-8-ol

## □ Schedule IV

연번	물질명	화학명
1	AMFEPRAMONE (Diethylpropion)	2-(Diethylamino)propiophenone
2	ALPRAZOLAM	8-Chloro-1-methyl-6-phenyl-4 <i>H</i> -5-triazolo[4,3- <i>a</i> ][1,4]benzodiazepine
3	ALLOBARBITAL	5,5-Diallylbarbituric acid
4	AMINOREX	2-Amino-5-phenyl-2-oxazoline
5	BARBITAL	5,5-Diethylbarbituric acid
6	BENZFETAMINE (Benzphetamine)	<i>N</i> -Benzyl- <i>N</i> , $\alpha$ -dimethylphenethylamine
7	BROMAZEPAM	7-Bromo-1,3-dihydro-5-(2-pyridyl)-2 <i>H</i> -1,4-benzodiazepin-2-one
8	butobarbital	5-Butyl-5-ethylbarbituricacid
9	BROTIZOLAM	2-Bromo-4-( <i>o</i> -chlorophenyl)-9-methyl-6 <i>H</i> -thieno[3,2- <i>f</i> ]-5-triazolo[4,3- <i>a</i> ][1,4]diazepine
10	CAMAZEPAM	7-Chloro-1,3-dihydro-3-hydroxy-1-methyl-5-phenyl-2 <i>H</i> -1,4-benzodiazepin-2-one dimethylcarbamate (ester)
11	CHLORDIAZEPOXIDE	7-Chloro-2-(methylamino)-5-phenyl-3 <i>H</i> -1,4-benzodiazepine-4-oxide
12	CLOBAZAM	7-Chloro-1-methyl-5-phenyl-1 <i>H</i> -1,5-benzodiazepine-2,4(3 <i>H</i> /5 <i>H</i> )-dione
13	CLONAZEPAM	5-( <i>o</i> -Chlorophenyl)-1,3-dihydro-7-nitro-2 <i>H</i> -1,4-benzodiazepin-2-one
14	CLORAZEPATE	7-Chloro-2,3-dihydro-2-oxo-5-phenyl-1 <i>H</i> -1,4-benzodiazepine-3-carboxylic acid
15	CLOTIAZEPAM	5-( <i>o</i> -Chlorophenyl)-7-ethyl-1,3-dihydro-1-methyl-2 <i>H</i> -thieno[2,3- <i>a</i> ]-1,4-diazepin-2-one
16	CLOXAZOLAM	10-Chloro-11b-( <i>o</i> -chlorophenyl)-2,3,7,11b-tetrahydro-oxazolo-[3,2- <i>d</i> ][1,4]benzodiazepin-6(5 <i>H</i> )-one
17	CLONAZOLAM	6-(2-Chlorophenyl)-1-methyl-8-nitro-4 <i>H</i> -[1,2,4]triazolo[4,3-a][1,4]benzodiazepine
18	DELORAZEPAM	7-Chloro-5-( <i>o</i> -chlorophenyl)-1,3-dihydro-2 <i>H</i> -1,4-benzodiazepin-2-one
19	DIAZEPAM	7-Chloro-1,3-dihydro-1-methyl-5-phenyl-2 <i>H</i> -1,4-benzodiazepin-2-one
20	DICLAZEPAM	7-Chloro-5-(2-chlorophenyl)-1-methyl-1,3-dihydro-2 <i>H</i> -1,4-benzodiazepin-2-one
21	ETHCHLORVYNOL	1-Chloro-3-ethyl-1-penten-4-yn-3-ol

22	ETHINAMATE	1-Ethynylcyclohexanolcarbamate
23	ESTAZOLAM	8-Chloro-6-phenyl-4 <i>H</i> - <i>s</i> -triazolo[4,3- <i>a</i> ][1,4]benzodiazepine
24	ETHYL LOFLAZEPATE	Ethyl 7-chloro-5-( <i>o</i> -fluorophenyl)-2,3-dihydro-2-oxo-1 <i>H</i> -1,4-benzodiazepine-3-carboxylate
25	ETILAMFETAMINE ( <i>N</i> -Ethylamphetamine)	<i>N</i> -Ethyl- $\alpha$ -methylphenethylamine
26	ETIZOLAM	4-(2-Chlorophenyl)-2-ethyl-9-methyl-6 <i>H</i> -thieno[3,2- <i>f</i> ][1,2,4]triazolo[4,3- <i>a</i> ][1,4]diazepine
27	FLUDIAZEPAM	7-Chloro-5-( <i>o</i> -fluorophenyl)-1,3-dihydro-1-methyl-2 <i>H</i> -1,4-benzodiazepin-2-one
28	FLURAZEPAM	7-Chloro-1-[2-(diethylamino)ethyl]-5-( <i>o</i> -fluorophenyl)-1,3-dihydro-2 <i>H</i> -1,4-benzodiazepin-2-one
29	FENCAMFAMIN	<i>N</i> -Ethyl-3-phenyl-2-norbornanamine
30	FENPROPOREX	( $\pm$ )-3-[( $\alpha$ -Methylphenylethyl)amino]propionitrile
31	FLUALPRAZOLAM	8-Chloro-6-(2-fluoro-phenyl)-1-methyl-4 <i>H</i> -benzo[ <i>f</i> ][1,2,4]triazolo[4,3- <i>a</i> ][1,4]diazepine
32	FLUBROMAZOLAM	8-Bromo-6-(2-fluorophenyl)-1-methyl-4 <i>H</i> -(1,2,4)triazolo(4,3- <i>a</i> )(1,4)benzodiazepine
33	HALAZEPAM	7-Chloro-1,3-dihydro-5-phenyl-1-(2,2,2-trifluoroethyl)-2 <i>H</i> -1,4-benzodiazepin-2-one
34	HALOXAZOLAM	10-Bromo-11 <i>b</i> -( <i>o</i> -fluorophenyl)-2,3,7,11 <i>b</i> -tetrahydrooxazolo[3,2- <i>d</i> ][1,4]benzodiazepin-6( <i>5H</i> )-one
35	KETAZOLAM	11-Chloro-8,12 <i>b</i> -dihydro-2,8-dimethyl-12 <i>b</i> -phenyl-4 <i>H</i> -[1,3]oxazino[3,2- <i>d</i> ][1,4]benzodiazepin-4,7( <i>6H</i> )-dione
36	LEFETAMINE (SPA)	( $-$ )- <i>N,N</i> -Dimethyl-1,2-diphenylethylamine
37	LOPRAZOLAM	6-( <i>o</i> -Chlorophenyl)-2,4-dihydro-2-[(4-methyl-1-piperazinyl)methylene]-8-nitro-1 <i>H</i> -imidazo[1,2- <i>a</i> ][1,4]benzodiazepin-1-one
38	LORAZEPAM	7-Chloro-5-( <i>o</i> -chlorophenyl)-1,3-dihydro-3-hydroxy-2 <i>H</i> -1,4-benzodiazepin-2-one
39	LORMETAZEPAM	7-Chloro-5-( <i>o</i> -chlorophenyl)-1,3-dihydro-3-hydroxy-1-methyl-2 <i>H</i> -1,4-benzodiazepin-2-one
40	MAZINDOL	5-( <i>p</i> -Chlorophenyl)-2,5-dihydro-3 <i>H</i> -imidazo[2,1- <i>a</i> ]isoindol-5-ol
41	MEPROBAMATE	2-Methyl-2-propyl-1,3-propanedioldicarbamate
42	METHYLPHENOBARBITAL	5-Ethyl-1-methyl-5-phenylbarbituric acid
43	METHYPRYLON	3,3-Diethyl-5-methyl-2,4-piperidine-dione
44	MEDAZEPAM	7-Chloro-2,3-dihydro-1-methyl-5-phenyl-1 <i>H</i> -1,4-benzodiazepine
45	MEFENOREX	<i>N</i> -(3-Chloropropyl)- $\alpha$ -methylphenethylamine
46	MIDAZOLAM	8-Chloro-6-( <i>o</i> -fluorophenyl)-1-methyl-4 <i>H</i> -imidazo[1,5- <i>a</i> ][1,4]benzodiazepine
47	MESOCARB	3-( $\alpha$ -Methylphenethyl)- <i>N</i> -(phenylcarbamoyl)sydnoneimine
48	NIMETAZEPAM	1,3-Dihydro-1-methyl-7-nitro-5-phenyl-2 <i>H</i> -1,4-benzodiazepin-2-one
49	NITRAZEPAM	1,3-Dihydro-7-nitro-5-phenyl-2 <i>H</i> -1,4-benzodiazepin-2-one
50	NORDAZEPAM	7-Chloro-1,3-dihydro-5-phenyl-2 <i>H</i> -1,4-benzodiazepin-2-one
51	OXAZEPAM	7-Chloro-1,3-dihydro-3-hydroxy-5-phenyl-2 <i>H</i> -1,4-benzodiazepin-2-one
52	OXAZOLAM	10-Chloro-2,3,7,11 <i>b</i> -tetrahydro-2-methyl-11 <i>b</i> -phenyloxazolo[3,2- <i>d</i> ][1,4]benzodiazepin-6( <i>5H</i> )-one
53	PHENDIMETRAZINE	(+)-(2 <i>S</i> ,3 <i>S</i> )-3,4-Dimethyl-2-phenylmorpholine
54	PHENOBARBITAL	5-Ethyl-5-phenylbarbituric acid
55	PHENTERMINE	$\alpha,\alpha$ -Dimethylphenethylamine

56	PIPRADROL	1,1-Diphenyl-1-(2-piperidyl)methanol
57	PINAZEPAM	7-Chloro-1,3-dihydro-5-phenyl-1-(2-propynyl)-2H-1,4-benzodiazepin-2-one
58	PRAZEPAM	7-Chloro-1-(cyclopropylmethyl)-1,3-dihydro-5-phenyl-2H-1,4-benzodiazepin-2-one
59	PYROVALERONE	4'-Methyl-2-(1-pyrrolidinyl)valerophenone
60	PEMOLINE	2-Amino-5-phenyl-2-oxazolin-4-one
61	phenazepam, fenazepam	7-Bromo-5-(2-chlorophenyl)-1,3-dihydro-2H-1,4-benzodiazepin-2-one
62	SECBUTABARBITAL	5-sec-Butyl-5-ethylbarbituric acid
63	TEMAZEPAM	7-Chloro-1,3-dihydro-3-hydroxy-1-methyl-5-phenyl-2H-1,4-benzodiazepin-2-one
64	TETRAZEPAM	7-Chloro-5-(1-cyclohexen-1-yl)-1,3-dihydro-1-methyl-2H-1,4-benzodiazepin-2-one
65	TRIAZOLAM	8-Chloro-6-( <i>o</i> -chlorophenyl)-1-methyl-4 <i>H</i> -5-triazolo[4,3- <i>a</i> ][1,4]benzodiazepine
66	VINYLBITAL	5-(1-Methylbutyl)-5-vinylbarbituric acid
67	ZOLPIDEM	<i>N,N</i> -6-Trimethyl-2- <i>p</i> -tolylimidazo[1,2- <i>a</i> ]pyridine-3-acetamide



## **2022년 신종마약류 유해성 정보지**

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발 행 일 : 2022년 6월

발 행처 : 식품의약품안전처

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