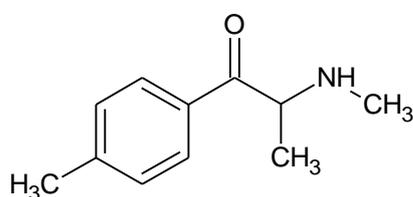


## Synthetic cathinones

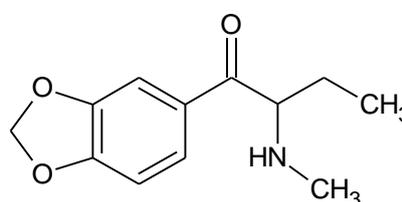
Synthetic cathinones are structural analogs of cathinone (a psychoactive molecule present in the Khat plant) and are marketed as tablets of various colors/shapes, capsules, powder/crystals; are generally marketed as "bath salts" or "plant fertilizers". In such products, often are present more than one cathinones and/or are associated with other psychoactive substances. Among those recorded by the National Early Warning System since 2010, mephedrone (14 records), methylethcathinones 4-(4-MEC) (11), butylone (5), methylone (5), 3,4-methylenedioxypropylone (MDPV) (4), pentedrone (4), 3-fluoromethcathinone (3) and buphedrone (2).

### Description

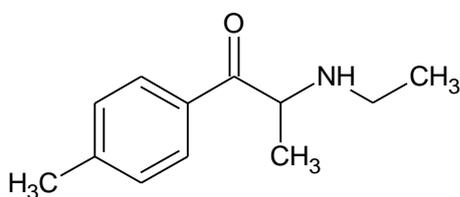
**Chemical structures of the main synthetic cathinones registered by the National Early Warning System.**



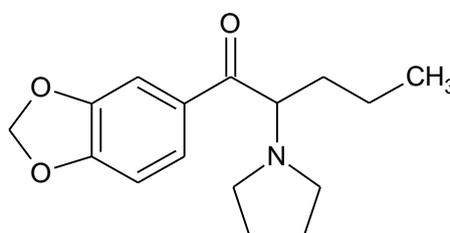
**Mephedrone**



**Methylone**



**4-Methylethcathinone(4-MEC)**



**3,4-Methylenedioxypropylone (MDPV)**

Many synthetic cathinones are characterized by sympathomimetic effects, predominantly due to release of pre-synaptic catecholamines and inhibition of monoamine neurotransmitters reuptake. They are able to simulate the effects of cocaine.

### Potency

In relation to the availability of various forms and formulations, cathinones can be swallowed, snorted/smoked or assumed by injection or rectally. The clinical effects most commonly reported are: anxiety, impaired concentration and short-term memory, irritation of the nasal mucosa, headache, tachycardia, hypertension, hyperhidrosis, mydriasis, trismus, bruxism, hallucinations, severe agitation and

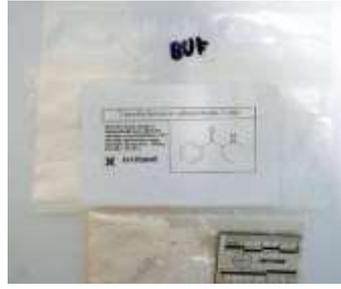
### Assumption and effects

aggression, seizures. For many of the synthetic cathinones identified also on the Italian territory are not available complete data regarding the pharmacological and toxicological properties, the precise mechanism of action and possible toxic effects. However, the clinical presentation is indistinguishable from the effects of acute MDMA or cocaine.

**Geolocation of intoxication cases related to synthetic cathinones consumptions that needed the access to emergency unit, registered by the national early Warning System starting from 2012 and synthetic cathinones identified in the analyzed samples.**



**Photos of some products notified to the National Early Warning System and resulted to contain synthetic cathinones**



In Italy, as a result of acute intoxications, including deaths, related to the consumption of the synthetic cathinone mephedrone, registered in Northern Europe followed by cases of seizure of the substance in Italy, the molecule was placed under the regulatory control in June 2010 (Table I of the law on the regulation of narcotic drugs and psychotropic substances, prevention, treatment and rehabilitation of drug addiction Presidential Decree 309/90 as amended). Subsequently entered into force new decrees that have placed under control synthetic cathinone 3,4-methylenedioxypropylvalerone (MDPV) and structure analogues derived from 2-amino-1-phenyl-1-propanone, for one or more substitutions on the aromatic ring and/or on the nitrogen and/or on the terminal carbon. These molecules are not easily detectable to the normal screening tests on urine but are subsequently detected through blood tests and urine tests conducted in specialized laboratories. In case of positivity to synthetic cannabinoids driving a car, motorcycle or scooter, the law enforcement may withdraw the license, impound the vehicle, impose fines, make report to the Prefecture, pick up your passport.

#### **Legal status**