

Mephedrone

(**2-methylamino-1-p-tolylpropan-1-one** which is also referred to as **4-methylmethcathinone**.)

What is Mephedrone? A stimulant drug with effects similar to MDMA producing euphoria, alertness, talkativeness and feelings of empathy. It can also cause anxiety and paranoid states and risk over stimulating the heart and nervous system to cause fits. Severe nosebleeds have been reported after snorting. A white or off-white powder usually sold on the internet as a legal high and described as a plant food or a research chemical not for human consumption. Sometimes mixed with other cathinones and caffeine. Reports say that it can be compulsive to use and can create a state of psychological dependence.

2010 drugs survey for 'Mixmag' clubbing magazine found that 41% of respondents had used the drug and 34% had used it in the last month. This makes mephedrone the fourth most popular recently used drug amongst clubbers.

The chemical name is often shortened to MMCA or 4-mmc. Other 'brand' or slang names includes Miaow/Meow, drone, 'Bubbles.'

Where does Mephedrone come from? Appears to be produced synthetically using ephedrine or pseudo-ephedrine as a starting point. Bulk of production is taking place in China. One suggested production method converts ephedrine in to methcathinone, and then in to MMCA.

History of Mephedrone First discussed on 'psychonaut' web forums back in 2004. The drug then appeared in 2007 in a pill called Neodoves, manufactured by a company in Israel. The drug was made illegal in Israel on 2008.

Started to become widely used in the UK, particularly at festivals, during 2009.

Purity of Mephedrone Many online suppliers boast that their products are 99.9% pure. The market is, however, completely unregulated.

Cost and dosage At present price is around £10 - £15 a gram. Bulk purchases can reduce the price per gram significantly. A gram should be enough for five and ten doses. A typical dose range would be between 75 and 200mg. It can be snorted or swallowed. Snorting hurts the nose and may taste unpleasant. With snorting the effects will come on quickly and effects are usually felt within 15 minutes and peak within half an hour. Effects fade after around an hour.

Many users report experiencing a mild stomach ache when the drug is swallowed. It would typically be put in a capsule or wrapped in cigarette paper. Some users are mixing the powder into their drinks. The effects tend to last longer than snorting. Users will usually take Mephedrone on an empty or near empty stomach as eating first seems to reduce the effects substantially. It will take longer to take effect when swallowed but then can last for up to three hours.

Problems linked to Mephedrone. There has been little scientific or medical investigation of mephedrone. Two A&E case reports from London confirmed the presence of mephedrone. In one, the patient presented with heart palpitations and blurred vision; body temperature was slightly below normal. The patient recovered approximately six hours after oral treatment with the benzodiazepine lorazepam. In the second case, mephedrone had been taken with other substances and the presentation was primarily due to ingestion of GHB.

Users on internet forums have reported the following problems:

Heart/circulatory problems: MMCA appears to cause significant vasoconstriction – where blood vessels in the body get narrower. This pushes up blood pressure and can reduce blood flow to parts of the body. Some users have reported coldness and numbness at extremities (hands/feet) suggesting reduced circulation. A small number of people have reported pallor and discoloration of knees, legs and feet, and blotches appearing on skin. This may be related to circulatory problems but the exact cause is not clear.

MMCA increases heart rate and blood pressure, putting increased strain on the heart. Some users have reported chest pains, palpitations, and irregular heart beats.



Convulsions: There have been a small number of reports of people having convulsions following use.

Mood/comedown: Some people have reported low mood, depression and irritability following use, especially extended periods of use.

Nose damage: irritation to lining of nose, burning sensation in nose, nose bleeds, scabbing of inside of nose.

GHB (Gamma hydroxybutyrate) and GBL (Gamma butyrolactone)

GHB is an anaesthetic with primarily sedating rather than painkilling properties. It is often sold as 'liquid ecstasy' because of its relaxant and euphoric effects, although it has no relation to ecstasy (MDMA).

GBL and 1,4-BD (1,4-butanediol) are chemicals that are closely related to GHB. Once GBL or 1,4-BD enter the body, they convert to GHB very quickly.

GHB, GBL and 1,4-BD are clear, odourless, oily liquids that taste slightly salty. Users often swallow them mixed with water or other soft drinks. When intended for illicit use, GHB, GBL and 1,4-BD are sold in small bottles or capsules. However, as solvents, GBL and 1,4-BD do have legitimate uses, for example in some paint strippers and stain removers.

Prevalence There is very little statistical evidence relating to the prevalence of GHB, GBL and 1,4-BD in the UK. The drugs do not feature in any of the major national surveys of recreational drug use, such as the British Crime Survey Drug Misuse Declared bulletin.

Anecdotal evidence suggests that use of the drugs is fairly widespread on the UK club scene, particularly in gay clubs, but have yet to become significant players among the general drug-taking population.

The law GHB, GBL and 1,4-BD are all Class C drugs under the Misuse of Drugs Act 1971. It is against the law to possess them or to sell them for human ingestion.

GHB was brought under the Misuse of Drugs Act as a Class C drug in 2003. Over time, it became apparent that dealers and users were switching to GBL and 1,4-BD as legal alternatives to GHB, so in 2009, GBL and 1,4-BD were also brought under the control of the Misuse of Drugs Act along with a number of other so-called 'legal highs'.

GBL and 1,4-BD both have legitimate industrial uses and are still available for these purposes to people with appropriate business registration. However, if someone sells or supplies them, either knowing or suspecting that they will be swallowed and ingested, then they are committing an offence.

Effects/risks Users of GHB/GBL and 1,4-BD report that the drugs make them feel euphoric, with a loss of inhibitions, increased confidence and higher libido. Some people liken the experience to taking ecstasy, although most users report that the experience is very similar to being drunk on alcohol.

GHB was developed in the USA as a pre-medication to help patients sleep before surgery. Some people who use the drug illicitly do so not for the euphoric effects, but rather use higher doses to help them sleep. As GHB/GBL and 1,4-BD help promote 'slow wave sleep', during which growth hormone is secreted, the substances have also been used by bodybuilders.

The sedative properties of GHB and its related compounds, as well as their neutral odour and taste have led some to link the drugs to instances of drug-facilitated sexual assault, although the extent of the drugs' use in these crimes remains unclear. A 2006 study by the Association of Chief Police Officers (ACPO) found that of 120 instances of alleged drug-facilitated sexual assault, only two victims had tested positive for GHB.

It is very easy to overdose on these drugs, both because the strength can vary from bottle to bottle and because the doses involved are measured in such small quantities – the difference between a recreational dose and overdose may only be a matter of millilitres.



Overdosing on GHB/GBL or 1,4-BD can be very dangerous. Nausea and vomiting, seizures, convulsions, disorientation and stiffening of muscles may occur; and coma and respiratory collapse may follow.

One south London hospital reported receiving at least 3 GBH or GBL overdose cases per week in 2009 and in 2008, reports from coroners suggest that at least 3 people died from overdoses of GHB, and it was implicated in 13 further deaths with other drugs. The risks are significantly increased if the drugs are used at the same time as alcohol or other depressant drugs.

Evidence is emerging that shows it is possible to become physically dependent on GHB and GBL/1,4-BD. While this does seem to be quite rare, when someone develops a dependency it can be severe, with a rapid onset of unpleasant withdrawal symptoms which may include delirium, psychosis, tremor, insomnia and severe anxiety.

Dependence can develop fairly quickly, for example after a weekend of severe bingeing on GHB and its related compounds, or may result from regular use over a longer period. Doctors are currently treating withdrawal from GHB-type drugs with benzodiazepines, although further research is needed into other treatments.

Salvia (Salvia divinorum)

Salvia is derived from the American plant *Salvia divinorum*, a member of the mint family. It is used by the Mazatecs and others in Meso America. It is marketed in the UK under many guises. In head and sex shops it is often sold as herbal ecstasy names such as Eclipse. It is also sold as a dried natural high, intended for smoking (in variable amounts) or as a herbal remedy under its botanical name, or as the matrix or 'hallucinogenic sage'.

"Salvinorin A" the active component of *Salvia Divinorum*, is most effective when vaporized and inhaled, but the most common way to take it is by swallowing or smoking.

Its effects are more hallucinatory than other legal highs - though high doses of the raw plant are usually needed to achieve these effects.

A dose of 200-500 mcg produces profound hallucinations that last from 30 minutes to an hour or two, while doses over 2mg are effective for much longer. According to the literature, doses greater than 500 mcg can cause the user to become completely unaware of their surroundings and enter a state of uncontrollable delirium during which they must be watched carefully.

Spice (synthetic cannabinoids)

spice gold, spice silver, spice diamond, spice yucatan fire, solar flare, space truckin'

What is it? Spice refers to a collection of herbs or plant material which has been sprayed with synthetic cannabinoid receptor agonists, often referred to as synthetic cannabinoids, producing a cannabis-like effect when smoked.

More than one type of synthetic cannabinoid has been identified, but they all mimic the psychoactive effects of THC (tetrahydrocannabinol), the active principle in cannabis. Most compounds come from the JWH chemical family, such as JWH-018.

Some of the base herbs themselves have a cannabis-like effect when smoked. These herbs include blue water lily (*Nymphaea caerulea*), dwarf skullcap (*Scutellaria nana*), Maconha brava (*Zornia latifolia* or *Z. diphylla*), Siberian motherwort (*Leonurus sibiricus*), Indian warrior (*Pedicularis densiflora*) and lion's tail (*Leonotis leonuru*). Large amounts of Vitamin E have also been found in some samples, possibly to mask detection of the cannabinoids.

Price Prior to the drug's classification under the Misuse of Drugs Act, Spice was being sold in 'headshops' or on the internet. It was more expensive than regular cannabis with a three gram packet (enough for about half a dozen joints) retailing for around £30. At the time of writing, it is not known what impact the change in legislation will have on either sales or price.

Spice is marketed under a variety of trade names that have 'spice' in the title, such as 'Spice Gold' or 'Spice Diamond', or under other names such as 'Yucatan Fire', 'Solar Flare', 'Space Truckin' and so on. China and the Far East appear to be the main areas for production.

Prevalence There are no figures for prevalence of the use of Spice. However, the number of sites that were selling Spice prior to the classification of the drug suggests a substantial user-base in the UK and elsewhere.

The law From 23 December 2009, synthetic cannabinoids were classified alongside cannabis as a Class B drug under the Misuse of Drugs Act 1971.

Enforcing this law may prove difficult. Only those samples containing controlled cannabinoids will be illegal; those just containing psychoactive herbs will not. Forensic testing will be the only way to determine the contents of any given sample.

Effects and risks Smoking Spice gives the user a similar experience to smoking cannabis and lead to feelings of relaxation or even euphoria. Other less pleasant effects may include a raised pulse rate, dry mouth, lowering of inhibitions, dizziness, agitation or paranoia.

After considering the limited evidence available, the ACMD concluded that with respect to classification under the Misuse of Drugs Act, the harms associated with the synthetic cannabinoids "are broadly commensurate with those of cannabis".

However, the ACMD also noted in its report that Spice products have the potential to be more harmful than cannabis, due to their method of manufacture and the fact that the compounds used and their strength varies between samples. Evidence indicates that synthetic cannabinoids can be anything up to ten times stronger than the THC found in cannabis plants. Given the product's inconsistency, the user has no idea what they are buying. Packets of Spice can contain anything between 0.2% and 3% cannabinoid.

At present there is not a significant body of clinical literature detailing the problems emanating from the use of Spice. One case, cited in a public health journal, described a patient from Germany who became dependent on Spice after eight months continuous daily use of 'Spice Gold'.

BZP (Benzylpiperazine)

BZP, benzylpiperazine, piperazines, PEP pills, Part-E pills, 'legal ecstasy', Frenzy, Smileys.

What are BZP pills? BZP (Benzylpiperazine) is a synthetic stimulant derived from piperazine, often seen as an alternative to ecstasy or amphetamine, although usually considered to be less potent than these drugs. It is sold as a tablet, capsule or as an off-white powder. BZP pills are marketed under a huge variety of names and the tablets come in many different shapes.

Prevalence It is not known how many people in the UK use BZP pills. Before BZP and related piperazines were brought under the Misuse of Drugs Act in December 2009, most sales were conducted on the internet. The number of UK websites that sold the drug or websites based abroad that shipped to the UK suggested that there was a fairly significant number of users in this country.

The law BZP and related piperazines are Class C drugs.

BZP and related piperazines were brought under the control of the Misuse of Drugs Act 1971 as Class C drugs on 23 December 2009. It is as yet unknown what the effect of the new legislation will be on sales or prevalence of the drug. Prior to its control under the Misuse of Drugs Act, the drug was sold online, with vendors labelling the drugs as plant feed or 'not for human consumption' to attempt to evade prosecution under the Medicines Act.

Effects/risks The use of BZP has similar effects to other synthetic stimulants such as ecstasy or amphetamines. Users report a sense of euphoria and increased alertness, enhanced senses and a raised heart rate. Depending on the dose taken, the effects of the drug can last for up to 6 – 8 hours.

It is not clear exactly what the risks are to health as large scale studies have not been carried out, but users report a number of adverse side effects. These include vomiting and nausea, headache, palpitations, anxiety, strange thoughts, mood swings, confusion and tremors. Some of these effects occurred in the comedown period while some were experienced for up to 24 hours after use. There are reports of users not being able to sleep for up to ten hours after taking BZP pills.

More severe adverse effects may include fits and potentially life-threatening seizures.

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