

## Drug Facts

### Synthetic Cannabinoids

**AKA:** Product Names include: Spice, Aztec Gold, Doob, Blue Cheese, Black Mamba, Cobra, Annihilation and many others. Many of the names are similar to strains or forms of cannabis.

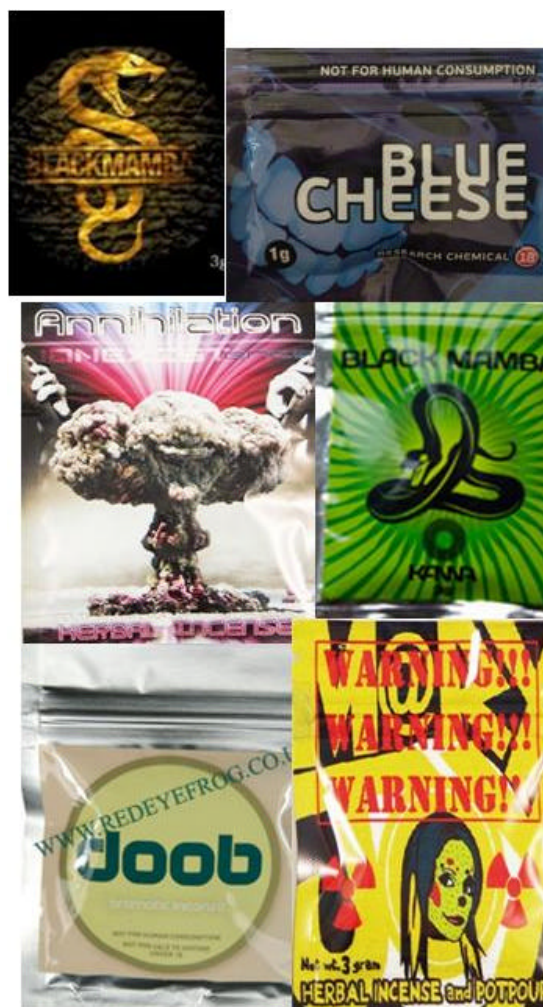
Also referred to as: synthetic canna, Incense, Smoking Mixture, Pot Pourri

Drug Families include: **naphthoylindoles:** JWH-018, JWH-019, JWH-073, JWH-08, JWH-122, JWH-200, AM-1221, AM-2201, **phenylacetylindoles:** JWH-250, JWH-251, JWH-203, RCS-8, Benzoylindoles: AM-694, AM-1241, AM-2233, RCS-4, **Cyclopropanoylindoles:** UR-144, 5F-UR-144, A-834,735, A-796,260, **Naphthoylpyrroles:** JWH-307, JWH-147, JWH-030 and other compounds such as: Win-55,212-2, AB-001, CP-47,497, CP-55-940, HU-210, HU-211, HU-331, Q-1812

**Overview:** Synthetic cannabinoids have been on the market for several years, but for a fair while their presence wasn't widely reported. "herbal smoking mixtures" were on the market such as Spice, or Aztec Gold, and offered by head-shops and on-line sellers as an alternative to cannabis. This, in turn was nothing new. Head-shops had, for years been selling "smoking mixtures," usually a mixture of plant material with loosely psychoactive properties. Such mixtures had generally resulted in a headache, sore throat and a house that smelt like an autumnal bonfire. The newer compounds like Spice were different – they actually worked and so interest and use started to increase.

Analysis of samples of Spice revealed that, rather than being a blend of herbal smoking mixture, the products were actually some inert plant material, which had been sprayed with a **synthetic cannabinoid** – a chemical which mimicked the action of THC at cannabinoid receptors in the brain.

THC is one of the naturally-occurring chemicals present in herbal cannabis and cannabis resin. It is involved in the euphoria associated with cannabis use, but may also be involved in less pleasant effects such as panic, paranoia and mental health problems. In 'traditional' strains of cannabis, THC is joined by other compounds including CBD, which is believed to play an important role in the anxiety-reducing, relaxing effects of cannabis.



THC and CBD bind to and activate **cannabinoid receptors** in the brain. Synthetic cannabinoids occupy the same receptors. However, they may be far more potent than “natural” THC – with some synthetics believed to be 100 x the strength of THC. They may also have different affinities – binding more selectively to receptors in one part of the brain rather than others.

These synthetic cannabinoids were originally being used in research settings. They were synthesized by researchers in different settings – such as compounds developed in the mid eighties by John Huffman. These “Huffman compounds” were named with the prefix JWH- and it was a couple of these, including JWH-018 which cropped up in the Spice and K2 smoking mixtures.

Since then many more synthetic cannabinoids have reached the market.

**SOURCE:** Produced in laboratories for non-scientific use. Blended in to smoking mixtures and then sold on via on-line suppliers and ‘head shops.’ Synthetic cannabinoids are now also being sold on market stalls and even normal commercial outlets such as petrol stations.

**APPEARANCE:** Synthetic cannabinoids are sometimes available in a ‘raw state’ as crystalline white powder though this is not the most common form. This would be very potent and would in turn be mixed with tobacco or another smoking mixture for consumption. More common is for the cannabinoids to be mixed and blended with an organic herbal material for sale. These will generally be greenish-brown in colour. Some resinous forms may also be available, looking more like cannabis resin.

Most of the packaged drugs are then sold in printed foil, ziplock packages. Examples of these are pictured above. There are many more designs and product brands available.

Few of the products list or specify the actual synthetic compounds that they contain. Some will mention other herbal products but analysis routinely confirms the presence of the synthetics, and, more often than not an absence of the herbal compounds.

Some shops are reputed to sell pre-rolled joints containing synthetic cannabinoids – making it impossible to gauge which compounds are being used or the strength of the joints.

**COSTS:** This varies between websites, products and quantity. Prices of around £10/g are typical.

**QUALITY, STRENGTH and DOSES:** With synthetic cannabinoids the actual composition and strength of any product is an unknown. Some products have been analyzed by professional laboratories, and appear on databases such as TicTac. But as these resources are not accessible to end users, most people using synthetic cannabinoids cannot be certain what they are actually using.

Having said this, even if people knew which products they were specifically using, the lack of detailed information about differences between specific products would mean that additional,

substance-specific harm reduction information would be thin on the ground. We can really only talk in general terms about synthetic cannabinoids at this stage.

- Synthetic cannabinoids are often much much stronger than their natural counterparts. Starting doses need to be much smaller. Many of the reported unpleasant experiences of synthetic cannabinoids relate to people putting amounts of synthetic material similar to a users “normal” cannabis dose. At such levels, are more likely to experience unpleasant side effects.

Starter doses to assay strength and for those unfamiliar with synthetics should be no bigger than the head of a match. This should be mixed in with smoking material but NOT herbal cannabis. If being smoked in a pipe or bong, even smaller quantities may be indicated.

Potency may increase as people get to the bottom of the bag. If the psychoactive material is not firmly bonded to the smoking mixture, it is liable to shake off and become concentrated in the bottom of the bag, leading to so-called “bottom of the bag” syndrome, where unexpectedly potent material is encountered at the bottom of the bag.

**METHODS OF USE:** Most user reports indicate that synthetic cannabinoids are being smoked in the same way as spliffs – mixed in with tobacco and smoked. Due to the very small quantities of synthetic material required to achieve intoxication, smoking “straight spliffs” of smoking mixture alone without tobacco is not recommended.

They can and are also used in pipes and bongs. Given their relative potency and small quantities needed to achieve intoxication, care is needed when using pipes or bongs to avoid unpleasant overdose experiences.

**EFFECTS:** The effects of synthetic cannabinoids seem to be very variable, and will depend on the user, their state of mind, the type of product used, dose and other substances involved.

For some people, the effect is akin to strong cannabis. This could include euphoria, altered perception, hilarity and a subsequent “stoned” feeling of relaxation and calm.

However, a significant number of users don’t report such symptoms and instead report anxiety, feelings of panic, disorientation and dysphoria – the opposite of sought-after euphoric feelings.

While these negative effects could happen to anyone, it seems to be more prevalent amongst people using high doses, or redosing, or people mixing their synthetics with alcohol or cannabis.

**Unpleasant effects/risks:** A number of users report distinctly unpleasant side-effects, above and beyond the panic or anxiety described above. This can include very severe panic, accompanied by racing heart, palpitations, shakes and sweats. Some people have reported respiratory distress following use including tightness of chest and, in a couple of cases, tightening of the airways requiring hospitalization. Other reported side effects include loss of feeling and numbness in limbs, and reported episodes of loss of consciousness .

Some reports indicate a noticeable “comedown” after use, leaving the user feeling depressed and lethargic, sometimes for several days after use.

Some users have experienced severe psychiatric symptoms after use, and these have been sufficient to warrant admission on to acute wards for treatment. These episodes may have been linked to adverse reactions to a substance, higher doses, or prolonged periods of use, a previously-present mental illness or use alongside another drug.

As most of the synthetic cannabinoids are relatively new and untested, we do not yet know if they will cause long term problems. It is reasonable to think that they are likely at least to cause some of the same problems that strong cannabis does, including short term memory problems, lethargy, depression and demotivation.

We do not yet know if use amongst young people will increase the risk of psychotic-type illness, as heavy use of strong cannabis appears to. However, it would not be unreasonable to assume such a correlation will be a risk.

**REDUCING HARM:** At present, without much more detailed information about specific synthetic cannabinoids it is not possible to suggest if any of the various substances on the market are more or less safe than others. Likewise we can't speak with any certainty as to how safe or unsafe products may prove to be in the medium to long term

In lieu of more detailed information only the broadest of harm reduction messages can be offered. Including the following:

- Be aware that the description of contents on the package of any compound may bear no resemblance to the actual contents. Although described as “herbal” compounds the actual psychoactive material is typically synthetic, not herbal;
- Although sold on-line and via ‘head-shops,’ some of the products sold as “legal” may in fact be controlled drugs; often neither the manufacturer nor the retailer are certain as to the identity and legality of the product they are selling.
- Potency is hugely variable: start with a very small dose (match-head size or less) and only escalate dose cautiously, giving time for previous doses to wear off;
- If sourcing pure powder synthetic cannabinoids, only use very small doses, calculated using scales and thoroughly mixed in to smoking material;
- Don't use in conjunction with other drugs, especially other forms of cannabis, alcohol or stimulants.
- As synthetic cannabinoids may exacerbate anxiety and paranoia only use in an environment in which you feel safe, with people who you trust. Avoid using if prone to anxiety or have existing mental health problems.
- In the event of panic or anxiety, often treating as for panic attack will help resolve symptoms – sitting down, head down, regular breathing and reassurance. However more serious symptoms, including delusional behaviour or respiratory distress may require medical assistance.
- Use can cause a comedown, development of tolerance, dependence and withdrawal symptoms. If using these compounds, don't use constantly and take breaks from use.

- Don't drive or operate machinery when using these compounds.

**LEGAL STATUS:** In 2009 Home Office Circular 21/2009 made a number of synthetic cannabinoids were made Class B controlled drugs.

The specific wording of the amendment is here:

<http://www.legislation.gov.uk/uksi/2009/3209/article/2/made>

This made key groups of synthetic cannabinoids controlled drugs straight away. However some compounds fall outside of the current legal controls and so are still legally available. However, there are likely to be further changes where these remaining compounds are brought under legal control.

Compounds believed legal as at October 2012 include AM1220, AM2201, AM2233, AB-001, UR-144, RCS-4, AM694, MAM2201, AM1248, 5-F UR144.

**OTHER INFORMATION:** Synthetic cannabinoids are widely available at present and, despite some controls, introduced in 2009 their use has escalated over the past three years.

According to the BCS 2010/2011 only 0.4% of 16-24 year olds reported use of Spice or other cannabinoids in the previous year. This is probably an underestimate.

For further information on Synthetic Cannabinoids the following sources will be useful:

<http://www.drugs-forum.com/index.php#>

<http://www.bluelight.ru>

<http://lifelinepublications.org/>

<http://portal.crewknowledge.com/FactsheetSynopses/pdf/3/maindrugid:34/maindrugname:Synthetic%20Cannabinoids>