

# NARCOTIC EDUCATIONAL FOUNDATION OF AMERICA

Drug Abuse Education Provider of the:

California Narcotic Officers' Association

## K2/SPICE—SYNTHETIC CANNABINOID

### QUICK FACTS:

K2/Spice products are a mixture of herbal/spice plant products sprayed with potent psychotropic drugs, often contaminated with unidentified toxic substances which contribute to various adverse health effects, also cause hallucinogenic effects similar to effects of PCP. Marketed under variety of slang names including K2, Spice, Pep Spice, Spice Silver, Spice Gold, Spice Diamond, Smoke, Sence, Skunk, Yucatan Fire, Genie & Zohai. Sold in variety of colors/flavors-usually sold in foil packaging a plant from the cannabis family, is illegal and highly psychoactive.

Dried herbs laced with synthetic cannabinoids like JWH-018 & HU-210 have been found in "Spice." JWH-018 is likely to have similar effects in humans as Delta9-tetrahydrocannabinol (9-THC) the main active ingredient of marijuana. Some "Spice" has been reported to contain HU-210 a Schedule I controlled substance. There are several other brand names of this product being sold. "Spice" has been known to be sold at smoke shops, "head shops" and online.

### HISTORY OF DRUG

Synthetic cannabis products, sold under the brand name Spice first appeared in Europe in 2004. The brand "Spice" was released in 2004 by the now dormant company "The Psyche Deli" in London, UK. In 2006 the brand gained popularity. According to the [Financial Times](#) the assets of The Psyche Deli rose in 2007. In 2009 'Spice' products were identified in 21 of the 30 participating countries. Because 'Spice' was the dominant brand until 2009, the competing brands that started to appear from 2008 on, were also dubbed 'Spice'. Spice can therefore relate to both the brand 'Spice', as to all herbal blends with synthetic cannabinoids added. A survey the UK in 2009, found that one in eight respondents had used synthetic cannabis, compared to 85% who had used cannabis.

Synthetic cannabis is a [psychoactive](#) herbal and chemical product which, when consumed mimics the effects of [cannabis](#). It is best known by the brand names K2 and Spice, both of which have largely become [generalized trademarks](#) used to refer to any synthetic cannabis product. (It is also for this reason that synthetic cannabis is often referred to as spice product.)

When synthetic cannabis blends first went on sale in the early [2000s](#) it was thought that they achieved an effect through a mixture of legal herbs. Laboratory analysis in 2008 showed this was not the case and that they in fact contained synthetic [cannabinoids](#) which act on the body in a similar way to cannabinoids are naturally found in

(continued column 3, this page)

SOLD AS "INCENSE" MARKED  
"NOT FOR HUMAN  
CONSUMPTION"

### Symptoms/Side-Effects:

- ◆ Delusions
- ◆ Hallucinations
- ◆ Loss of consciousness
- ◆ Paranoia
- ◆ Increased aggravation
- ◆ Panic attacks
- ◆ Dilated pupils
- ◆ Elevated blood pressure
- ◆ Elevated heart rate
- ◆ Vomiting
- ◆ Seizures/tremors
- ◆ Numbness/tingling



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cannabis, such as [THC](#). A large and complex variety of synthetic cannabinoids, most often [cannabicyclohexanol](#), [JWH-018](#), [JWH-073](#), or [HU-210](#), are used in an attempt to avoid the laws which make cannabis illegal, making synthetic cannabis a [designer drug](#). It has been sold under various brand names, online, in [head shops](#) and at some gas stations.

It is often marketed as "herbal [incense](#)", however some brands market their products as "herbal smoking blends". In either case the products are usually smoked by users. Although synthetic cannabis does not produce positive results in [drug tests](#) for cannabis, it is possible to detect its metabolites in human urine. The synthetic cannabinoids contained in synthetic cannabis products have been made illegal in many European countries.

On 24 November 2010, the U.S. Drug Enforcement Agency announced it would make five synthetic cannabinoids Schedule I drugs within a month using emergency powers. Prior to the announcement, several US states had already made them illegal under state law. As of March 1st, 2011, five cannabinoids, [JWH-018](#), [JWH-073](#), [CP-47,497](#), [JWH-200](#), and [cannabicyclohexanol](#) are now illegal in the US.



## INGREDIANTS

Synthetic cannabis is claimed by the manufacturers to contain a mixture of traditionally used medicinal herbs, each of which supposedly produces mild effects, with the overall blend resulting in the cannabis-like intoxication. Herbs listed on the packaging of Spice include [Canavalia maritima](#), [Nymphaea caerulea](#), [Scutellaria nana](#), [Pedicularis densiflora](#), [Leonotis leonurus](#), [Zornia latifolia](#), [Nelumbo nucifera](#) and [Leonurus sibiricus](#). However, when the product was analyzed by laboratories it was found that many of the characteristic "fingerprint" molecules expected to be present from the claimed plant ingredients were not. There were also large amounts of synthetic tocopherol present. This suggested that the actual ingredients might not be the same as what was listed on the packet. A government risk assessment of the product conducted in November 2008 concluded; it was unclear what the actual plant ingredients were, where the synthetic tocopherol had come from, and whether the subjective cannabis-like effects were actually produced by any of the claimed plant ingredients. It suggested the high might be caused by a synthetic cannabinoid drug.



## SUMMARY OF EFFECTS WITH SPICE

- ◆ Redness eyes(Conjunctiva)
- ◆ Dilated Pupils
- ◆ Non-convergence
- ◆ Droopy eyelids
- ◆ Failure to estimate time & distance

## SAFETY

No official studies have been conducted on its effects on humans. Though its effects are not well documented, extremely large doses may cause negative effects that are generally not noted in marijuana users, such as increased agitation and vomiting. Professor [John W. Huffman](#) who first synthesized many of the cannabinoids used in synthetic cannabis is quoted as saying, "People who use it are idiots." "You don't know what it's going to do to you." A user who consumed 3 g of Spice Gold every day for several months showed withdrawal symptoms, similar to those associated with withdrawing from the use of narcotics. Doctors treating a user also noted that his use of the product showed signs associated with [addiction](#). One case has been reported where a user, who had previously suffered from cannabis induced recurrent [psychotic episodes](#), suffered reactivation of his symptoms after using Spice. Psychiatrists treating him have suggested that the lack of an antipsychotic chemical, similar to [cannabidiol](#) found in natural cannabis, it is more likely to induce psychosis.



## INGREDIENTS SYNTHETIC CANNABINOID

Researchers at the University of Freiburg in Germany announced an active substance in Spice was an undisclosed analogue of the synthetic cannabinoid CP 47,497.

Along with its dimethylhexyl, dimethyloctyl and dimethylnonyl homologues, they were added to the German controlled drug schedules. The analogue of CP 47,497 was named cannabicyclohexanol. JWH-018. It is one of the active components in at least three versions of Spice, sold in a number of countries around the world since 2002 as incense.

After the German prohibition of JWH-018 took place, it was found that the compound had been replaced with JWH-073. Different ratios of JWH-018 and CP 47,497 and their analogues have been found in different brands of synthetic cannabis and manufacturers constantly change the composition of their products. The amount of JWH-018 in Spice has been found to vary from 0.2% to 3%. Another potent synthetic cannabinoid, HU-210, has been reported to have been found in Spice seized by U.S. Customs and Border Protection.

