

Spice and K2 (Synthetic Marijuana)

What is spice?

The term "Spice" refers to a brand name of a range of smokable herbal mixtures that are sold on the Internet and in various specialized shops in some parts of the world. Since the Spice brand first appeared in the early 2000s, a large number of competing products made by other manufacturers have also become available ("K2" is another common brand name for synthetic marijuana).

These psychoactive herbal and chemical products typically include olive-colored herbs, combinations of herbs, or plant materials enhanced with a delta-9-tetrahydrocannabinol (THC) synthetic analog (mimicking the effects of THC, the active compound in real marijuana). These synthetic chemicals can be even more potent than THC, and because these products are unregulated, it is very difficult for users to know what the actual contents of each drug are. This is a large part of the potential danger in taking Spice, K2, or other synthetic marijuana products – not knowing what chemicals or drugs you are really taking or how strong they might be is.



Synthetic cannabinoid products are primarily produced internationally, but are also increasingly being made in the United States. These products are generally sold on Internet web sites; however, they have also been found for sale at "headshops" and similar locations. The products are often marketed as "natural herbal incense" and include warnings that they "are not for human consumption," an attempt to skirt legal regulations on consumables.

On December 15, 2008 it was announced by the German pharmaceutical company THCPHarm that the synthetic cannabinoid JWH-018 had been identified as one of the active components in at least three varieties of the Spice brand. JWH-018 is a synthetic cannabinoid first synthesized in 1995 for experimental purposes. It is a naphthoylindole, which belongs to the aminoalkylindole family, i.e. the chemical structure differs substantially from Δ^9 -tetrahydrocannabinol (THC), but it produces similar effects in animal experiments and has been reported to be more potent than THC. Since that time, numerous other synthetic cannabinoids have been identified.

Is spice legal?

Spice mixtures that contain synthetic cannabinoids were made illegal in the United States in 2012, with the passage of the Food and Drug Administration's "Synthetic Drug Abuse Prevention Act of 2012" (part of the FDA's broader "Safety and Innovation Act of 2012"). This law bans synthetic compounds commonly found in synthetic marijuana, synthetic stimulants ("bath salts"), and hallucinogens, by placing them under Schedule 1 of the Controlled Substances Act.

Spice and some of the synthetic cannabinoids contained in similar products are also banned in many European countries, including the UK, Switzerland, Ireland, Poland, France and Germany.

It is important to remember these ingredients are not disclosed by the manufacturers, do not feature in the product's information material, and may therefore be purchased and consumed unknowingly. Unfortunately, this could lead to significant problems for anyone who may attempt to purchase these products online. Some spice products have been found to contain a second controlled ingredient, such as a prescription sedative or designer opioid, and it is likely that any similar product imported under the name "Spice" would be subject to seizure on suspicion of being a prohibited import.

Is spice safe?

Synthetic cannabinoids or cannabinoidomimetics – substances mimicking cannabis – are often described as "research chemicals." Research chemicals are experimental substances created for laboratory research purposes that are not approved for human con-

sumption and in nearly all cases have never been tested on humans. The vast majority of these chemicals have only been recently synthesized and little, if any, data exists currently about their side effects, adverse reactions, long-term damage, or dependence potential. Most importantly, there are no officially published safety data and virtually nothing is known about their effects in humans. Results from animal experiments with these substances are very sparse.

There is currently no way to effectively estimate purity or safe dosage, with the risk of even very small doses causing acute neurotoxic effects. Not only can synthetic cannabinoids cause agitation, hallucination, high blood pressure, and rapid heartbeat, but studies have also found a connection between synthetics and hypokalaemia (dangerously low levels of potassium in the blood; Hermanns-Clausen M et al 2013), and damage to the kidneys (Thornton SL et al, 2013; Bhanushali GK et al, 2013). Studies have also suggested an association between synthetic cannabinoids and psychosis (Oluwabusi et al, 2012; Hurst et al, 2011; Every-Palmer 2011), and myocardial infarction (heart attacks) have been associated with the use of the synthetic cannabinoid K2 (Mir et al, 2011).

Based on the information available, it must be assumed that different amounts or combinations of synthetic cannabinoids are added to many of the Spice products currently available online at manufacture, without informing the buyers. It should be also noted there is evidence that identically named or packaged products have been known to change their composition from one batch to another. Manufacturers change the exact chemicals used as each specific formulation is banned, making it impossible to know exactly what you might be taking, how potent it is, or what its effects might be. Since the synthetic chemicals involved are very potent, even minor errors in their addition to herbal mixtures may lead to severe toxicity incidents.

In summary, products containing synthetic cannabinoids are illegal across the United States and importing them into the country could result in a fine or even imprisonment. Resale of Spice products may lead to drug supply (dealing) charges. In addition, we know little about the ingredients contained in these products and as a result the possible health consequences of using them via any route of administration remain unknown at this time.

References:

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