

## **Legal Highs in Spain**

by Energy Control

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In recent years, consumption of a group of substances not subject to drug control regulations and sold in different forms (powder, tablets, capsules...) over the Internet has become popular in different parts of the world. In the vast majority of cases, the full composition of these products is not described (especially the presence of psychoactive substances), but they include cautions that they are not suitable for human consumption. This avoids the obligation to submit these products to health and safety control.

The consumption of so-called "legal highs" is not new. Prior to 2006, it was limited to a small number of consumers and, in most cases, the products were combinations of herbal products, usually stimulants, intended to mimic the effect of illegal substances such as cocaine, amphetamine or ecstasy. However, since that year, the European Monitoring Centre for Drugs and Drug Addiction has called attention to the synthetic cannabinoids marketed as "legal highs", and has accumulated evidence of a whole range of psychoactive compounds that are well received by recreational users who want to test new substances or who want to replace their favorite one, as may have been the case with mephedrone in the United Kingdom (Measham, Moore, Newcombe and Welch, 2010).

The risks associated with consuming these substances are largely unknown. However, evidence of certain problems that the people who consume tend to experience has slowly accumulated. In this regard, a potential source of problems is the knowledge that these people have in relation to the exact composition of the products they buy, as well as dosage regimens to be taken to

lower consumption and the risk of potential interactions or interactions that would discourage use. Instead, many of these products are called by different names, some which refer to the effects of illegal drugs like MDMA, cocaine or amphetamine (K Powder, Sextacy, X4 Ecstasy, Speed Rush Super E. Skunk).

At the end of 2010, the analysis service ABD-Energy Control began to receive a series of products with names such as Ivory Wave, Vanilla Sky, Mojo, Charge +, Freedom, Skunk, etc. sold as bath salts, incense, bong cleaners or as collector's items. In all them a warning that they are not for human consumption appears, but buyers know they are sold to be consumed by snorting, taken orally or smoked to achieve psychoactive effects. In most cases, a description of the full composition is not given, nor is there a warning of the presence of one or more psychoactive substances, or the amount thereof, or recommended dosage, contraindications, risks, and so on.

We were able to analyze 30 samples, coming from all over Spanish, with thin layer chromatography (TLC), gas chromatography-mass spectrometry (GC / MS) and resonance nuclear magnetic resonance (NMR). Analysis has sought to reveal psychoactive substances and has not considered the analysis of any other substances such as minerals, vitamins, sugars, salts, etc.

The following table provides the results grouped according to product name. One aspect that deserves special attention is the variability in the composition of the same product sold under different times. This is the case, for example, of samples with the name Charge + or Ivory Wave. In the first case, samples tested in February 2011 contained 4-FMC and lidocaine (one of them also contained caffeine); in April they contained MDPV and lidocaine. In the second, the three samples contained three different compositions: 1,1-diphenylprolinol and MDPV, MDPV alone, and MDPV and caffeine.

**Table 1. Trade name, appearance and composition of the samples  
(Source: Energy Control)**

<b>Commercial name</b>	<b>Presentation</b>	<b>Composition</b>
Ivory Wave	Powder	D2PM, MDPV MDPV Caffeine, MDPV
Charge +	Powder	4-FMC, lidocaine 4-FMC, caffeine, lidocaine Caffeine, MDPV
Pink Champagnes	Capsule	Caffeine, 2-AI Caffeine, unknown compound, TFMPP
Love Up	Capsule	Unknown compound, TFMPP, Caffeine, unknown compound, lumiflavine
Benzo Fury	Powder	D2PM
Shrooms	Capsule	BZP, unknown substance, TFMPP
NRG Natural	Powder	Caffeine
Mitseez	Capsule	Butylone, caffeine, unknown compound
Doves Red	Pill	Unknown compound, MDPPP, PMMA, 4-FMC
Vanilla Sky	Powder	MDPV, synthesis sub-products
Ocean Snow	Powder	Butylone, lidocaine, methylone
Sextacy	Powder	MDPV
Head Trip	Dried Herbs	JWH-018, JWH-073
Freedom	Dried Herbs	JWH-210, JWH-359
Skunk	Dried Herbs	JWH-081 JWH-081
Mojo	Powder	3,4-DMMC, caffeine
Yayo Hard	Powder	2-piperidine-1-phenylbutan-1-one, 4-FMC, procaine, unknown compound
Coco Pollo	Powder	4-MEC
Euforia	Powder	4-MEC, caffeine, lidocaine
Unknown	Powder	4-FMC, caffeine, lidocaine, MDPV
	Powder	Caffeine, 2 unknown compounds
	Powder	Caffeine, dimethylcathinone
	Powder	Caffeine, methylone
	Powder	MDAI

## Conclusions

- ❏ "Legal Highs" consumed in Spain are substances with psychoactive chemicals that have some very powerful effects, both in intensity and duration. The vast majority of the compounds detected are substances that have not been tested or seen human trials, adverse effects are unknown and/or toxic in the short, medium and long term.
- ❏ It is very common to find mixtures of several psychoactive compounds. This situation makes it more difficult to predict the occurrence of adverse effects.
- ❏ At no time in the packaging of these substances do active ingredients, dosage ranges, cautions and contraindications appear.
- ❏ Powder form of these substances tries to imitate powdered stimulants such as speed or cocaine. The addition of local anesthetics (lidocaine, procaine...) seeks to emulate the effects of numbness in the mouth or nostrils that is produced by cocaine hydrochloride.
- ❏ Capsule or tablet forms are trying to imitate ecstasy and other drugs that are used orally in recreational settings. As with the powdered form, various substances are mixed.
- ❏ Dried herb (herbal incense) forms attempt to mimic cannabis. The herbs are infused with synthetic cannabinoid compounds that are potent synthetic chemicals that usually lead to more powerful and lasting effects than that of cannabis. Dried herb products have also been shown to produce greater adverse effects and even some emergencies have occurred after administration of these products.

☐ A brand is not indicative of a particular composition, which changes over time. Thus, prior consumption of a product does not serve as a reference to predict its effects.

☐ ABD-Energy Control Since work on risk reduction and responsible consumption. We believe that both factors can not occur with the use of substances for which no human research data exists and stress the risk of substance use without having the necessary information.

For more information please see:

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