

Synthetic Cannabinoids & Cathinones and Other Lesser Known Drugs of Abuse

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Jay Jaffee

Minnesota Department of Health

What is a Drug?

A drug, broadly speaking, is any substance that, when absorbed into the body of a living organism, alters normal bodily function.

– World Health Organization

There is no single, precise definition, as there are different meanings in drug control law, government regulations, medicine, and colloquial usage

– Random House Online Dictionary

Synthetic Drugs

Have gotten a lot of attention in the past few years.

- They mimic/said to mimic other drugs.
 - Chemical analogs
- “Herbal incense” and “bath salts” among the most often mentioned.
 - Touted as legal alternatives to marijuana, cocaine, amphetamine, ecstasy, LSD and other controlled substances.

Obtaining Synthetic Drugs

Were and may still be sold openly in gas stations, record stores, head shops and online.

- Minnesota ban - July 1, 2011.

- Federal ban on five synthetic cannabinoids – March 1, 2011, extended six months March 2012

- Federal ban on mephedrone, methylone and methylenedioxypropylone – October 21, 2011

Some retailers have challenged the state law.

- Synthetic marijuana sales estimated at \$5 billion in 2010 by the Retail Compliance Association (formed to challenge the bans).

Minnesota Law

There have been enforcement problems with the Minnesota law:

- Cannabinoids are gross misdemeanors, prosecutors have been reluctant to bring charges (stimulants/hallucinogens are felonies).
- Difficult to prove some variations are illegal.

A bill has been introduced to correct it.

Poison Control Calls

In 2011, over 13,000 calls made to Poison Control Centers about synthetic drugs.

-60% of the cases involved people 25 and younger.

In comparison, about 1.3 million people went to emergency rooms because of prescription drugs in 2009.

Buyer Beware!

Packages don't always contain what buyers expect.

- The Star Tribune had 30 synthetic drugs tested that they purchased on the internet.
 - Most of the substances were mislabeled.
 - Packages did not disclose their chemical content.
 - The packages contained an array of psychoactive stimulants, hallucinogens and cannabinoids.
 - Concentration levels varied so much that a dose of one was many times more potent than the same dose of another -- even when the products carried the same name.

Star Tribune, September 4, 2011

Buyer Beware!

A British group purchased seven synthetic stimulant products and performed chemical analyses on them.

- Only one contained the advertised product.
- The rest contained large amounts of caffeine and also Piperazine compounds which have a stimulant effect.
- Piperazines are used to treat people with worms.

Drug Testing and Analysis, February 2011

Synthetic Cannabinoid Products K2/Spice, etc.



Synthetic Cannabinoid Products K2/Spice, etc.



What Are They?

Generally an unregulated mixture of dried herbs sprayed with psychotropic drugs
-JWH-018, JWH-073, JWH-081, JWH-200, JWH-250, CP 47 497, HU-210, AM-2201 or similar synthetic substances, similar to THC.

Usually sold as incense or potpourri

- labeled as unfit for human consumption.
- also being sold as other products.

AM-2201

AM-2201 – developed by Alexandros Makriyannis in 2004.

It is the primary ingredient in many of the products being sold today because it is not specifically listed on the federal and state lists of banned substances.

Originally created as a research chemical .

Due to it's potency small doses are recommended. Many users are not aware of this leading to many reports of panic attacks and vomiting by users.

CP 47 497

CP 47 497 - developed by Pfizer in the 1980s.

Said to be main active ingredient in Spice.

Was developed for scientific research, has analgesic affects.

HU-210

HU-210 - first developed in 1988 by Professor Raphael Mechoulam at Hebrew University.

Said to be 100-800 times more potent than THC.

It is an analgesic.

Fatal overdoses of this substance are possible.

Illegal in the U.S. – Schedule I substance.

JWH Mixtures

JWH-018, JWH-073 JWH-081, JWH-200 and JWH-250 - developed in laboratory of Clemson University chemist, John Huffman (JWH).

-Hoped to stimulate appetites of people having trouble eating, e.g., patients undergoing chemotherapy.

-Efforts abandoned early in the process, never tested by the Food and Drug Administration or approved for human use.

-Little is known about its long-term health effects or toxicity.

Unknown Effects

Huffman said the chemicals not intended for human use and "their effects in humans have not been studied and they could very well have toxic effects."

-His research indicates synthesized cannabinoids may potentially break down into carcinogens in the human body and it was important the effects be studied before people use it.

-Mice used in testing were euthanized at the end of the experiment, so scientists don't even know how it affects mice long-term.

-Like THC, the compounds bind to CB1 receptors, which primarily affect the central nervous system and to the peripheral brain (CB2) receptors, which are involved with the immune system.

Potency

He said:

- "You can get very high on it. It's about 10 times more active than THC."

- "It is like Russian roulette to use these drugs. We don't know a darn thing about them for real."

Potency

Affinity constants (K_i) of cannabinoid agonists are one measure of potency.

- Agonists are chemicals that bind to a cell and trigger a response which mimics that of a naturally occurring substance.

The lower the value the higher the expected potency.

Affinity Constants (CB-1 Receptors)

Tetrahydrocannabinol (THC) = 16

AM-2201 = 1.0

HU-210 = 0.06

CP-47,497 = 9.54

JWH-018 = 2.9

JWH-073 = 8.9

JWH-081 = 1.2

JWH-200 = 42

JWH-250 = 11

How Popular Are They? Why?

2011 Monitoring the Future Report - 11.4% of U.S. 12th graders past year use of synthetic cannabinoids (Marijuana - 36.4%).

Why popular:

- They were legal in much of the country,
- Purported to give a “legal” high similar to marijuana,
- Didn’t show up on drug tests,
- Media attention!

Similarity to Marijuana

Active ingredients are synthetic cannabinoids -- research-grade chemicals created for therapeutic purposes.

- Can mimic the narcotic effects of tetrahydrocannabinol, or THC, the active ingredient in marijuana.

The effects are said to be similar to marijuana, with some significant differences.

- Produces less of a mental high and a much more notable “body” high than smoking marijuana.

- Some say similar to high from eating marijuana.

Effects

Peak effect when smoked are in a matter of minutes.

The “high” is reported to have a duration of 3-5 hours.

May affect cardiovascular and central nervous systems

Among the effects: fast heart beat, dangerously elevated blood pressure, agitation, anxiety, pale skin, vomiting, numbness/tingling and in some cases severe paranoia, hallucinations, unconsciousness and seizures.

Recent reports from Wyoming identify “Blueberry Spice” related to three instances of kidney failure and several other young people getting sick.

Variation in Products

The active ingredients are produced in many countries including the United States.

Easy to overdose on because of lack of regulation and variation in potency and products.

Because it has been unregulated, no one knows what else is in the packages.

There is anecdotal information that they may be addictive and that users may experience withdrawal symptoms, but no research yet.

From the “Official” K2 Website



The advertisement features a black and white close-up of a woman's face as she smells a green plant. To the right, three circular logos for K2 incense are displayed: a blue one labeled 'ONLINE ONLY K2 Sky', a red one labeled 'K2 Sex Solid', and an orange one labeled 'K2 Thai Dream'. At the bottom, a dark banner contains the text 'The strongest K2 Incense ever produced.'

From the Official K2 Website

How can K2 Herbal Incense assist me in meditation?

Our K2 Incense can help promote, through aromatherapy, an atmosphere that indulges the senses in comfort and relaxation. K2 Incense delivers a wonderful scent that we believe can help support the meditation process. Meditation is an ancient art that can envelope your mind and body into a relaxed and mellow state.

From the Official K2 Website

Is K2 incense legal?

Most of the K2 product line are completely legal everywhere. The only [K2 incense](#) products that may be restricted in very few areas are:

K2 Blonde
K2 Summit
K2 Ultra

There is also a new generation of K2 products that are **completely legal everywhere**. Not covered by any ban, restriction or regulation! These are:

K2 Sky
K2 Solid Sex
K2 Thai Dream

All of these products can be purchased or resold without concern that they may be restricted and test negative for any known chemicals.

Legal everywhere including Michigan, Kansas, Russia..... **everywhere!!!**



Sky 3 Grams, Just \$19.95/g

\$59.95 (Not available in stores)

3g. This Legal Everywhere blend is our amazing new K2 Blend and is quickly becoming far more popular than ANY other blend! Tested negative for ANY known chemical!

From the “Official K2 Website”

Conditions of Use

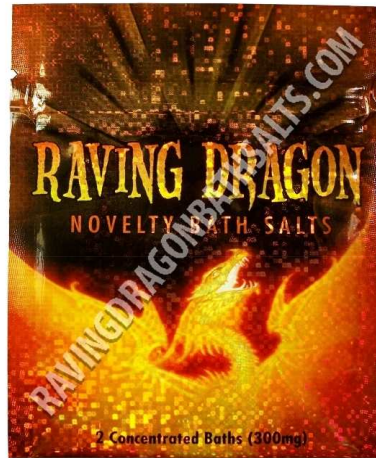
I agree that I am at least 18 years of age as of the date of purchase. I understand that K2 is not for human consumption. **Under no circumstances should K2 incense be ingested, consumed or smoked.** I take full liability for any damages, lost profit or revenues, loss of use of product or equipment and any loss of property that may result from the purchase or use of products purchased from this website. **I state that I am not nor am I associated or affiliated with any government agency, nor am I ordering under the instruction of any government agent or agency.** I understand that it is my responsibility to abide by local laws and regulations. I agree to abide by all local, state/province and government regulations in accordance with the use of any products purchased from this website. I understand that all sales are final.

K2 Incense is strictly for incense purposes only and is not for human consumption.

You must be 18 years of age to purchase this product.

Neither the payment processor, nor the website owners, nor the K2 manufacturer are responsible in any way for the content found on affiliate websites linking to this website.

“Bath Salts”



Synthetic Cathinones

Several products sold as bath salts, foot bath, plant food, insect repellent, etc.

Promoted as legal cocaine, methamphetamine, amphetamine, Ecstasy, LSD, etc.

Products are inhaled, smoked, eaten and injected.

Cathinone is the active ingredient in khat.

Synthetic Cathinones

Believed to be manufactured domestically as well as in other countries.

Generally sold in individual bags -- on the Internet, in convenience stores and on the street.

Branded names like Ivory Wave, Vanilla Sky, Ocean, Charge +, White Lightning, Scarface, Hurricane Charlie, Red Dove, Cloud-9 and White Dove, etc.

Legal Synthetic Cathinones

Not to be confused with legal synthetic cathinones like:

Bupropion (Wellbutrin) – treat depression

Diethylpropion (Tenulite) – decrease appetite

Pyrovalerone (Centrolon) – treat fatigue or decrease appetite

Mephedrone

Sellers describe the drug's high as falling somewhere between that of ecstasy and cocaine.

AKA: meow meow, miaow and M-Cat

Mephedrone is now a Schedule 1 substance in the U.S.

- The DEA implemented a temporary ban October 21, 2011.

- Banned in Minnesota in July 1, 2011.

Banned in several European countries.

Methylenedioxypropylamphetamine

A psychoactive drug with stimulant properties

Also known as MDPV, MDPK, Magic, Super Coke and PV.

Said to be four times as potent as Ritalin.

Now a Schedule 1 substance in the U.S.

- The DEA implemented a temporary ban October 21, 2011.

- Banned in Minnesota in July 1, 2011.

Other Known Ingredients

- Methylone – chemically similar to Ecstasy – covered by DEA temporary ban
- Naphyrone – stimulant effects
- 4-Fluoromethcathinone – stimulant effects
- 3-Fluoromethcathinone – stimulant effects
- Methedrone – similar to mephedrone
- Butylone – similar to Ecstasy

United Kingdom

These chemicals banned in the United Kingdom following fatalities of users.

According to the U.K. Central Alerting System:

Users face risks including - overstimulation of the cardiovascular system, with risk of heart and circulatory problems; and overstimulation of the nervous system, with risk of agitation, hallucinations and fits. Dangerously raised body temperature, risk of renal failure and altered blood pressure may also occur.

Harmful Effects

Causes intense cravings for more in spite of side effects.

There have been several reports of violent behavior.

One report of a woman injecting bath salts and having arm amputated because of flesh-eating bacteria.

Effects

The long-term effects of the drug are still unknown:

- no testing has ever been done on humans
- but unlike cocaine or crystal methamphetamine, they do not metabolize in just a few hours.
- There have been some reports of people experiencing effects months after use.

Effects

New research shows that mephedrone and methylenedioxypropylamphetamine act on the dopamine system in opposite ways.

-Mephedrone causes the brain to release more dopamine (like methamphetamine).

-Methylenedioxypropylamphetamine is a dopamine reuptake inhibitor, increase concentrations and neurotransmission (like cocaine).

Rather than cancel each other they exacerbate the effect of either drug applied alone

Dr. Louis J. De Felice, Virginia Commonwealth University's School of Medicine at February 2012 Meeting of the Biophysical Society

Vanilla Sky



Vanilla Sky

- Have you ever had a feeling that you are in heaven? What would you say if this heaven would be a vanilla sky? Do you like it? Do you want to be there? Everything is possible with **vanilla Sky legal snuff!**
- This product is really perfect for a pleasant pastime and the magic product that can provide you with amazing mood and energetic wave. You can easily experience unforgettable feelings with Vanilla Sky salt. Find yourself in the fantastic world.
This herbal powder is really effective. It can serve as a perfect charging for an energetic kaif. The splendid emotional outburst that is provided by **Vanilla Sky** is a source of pleasure and delight. The product is specially designed for helping you to reach a state of pure bliss. This legal stimulating powder acts in a pleasant way by activating of brain activity for quite a long period.
- Storage: keep **Vanilla Sky powder** in a dry and cool sealed place. It is recommended to let too much air get to the product.
- Warning: do not use it during pregnancy, mental illness, any defects of the thyroid gland, or high blood pressure. Before use, always consult a doctor. Avoid excess alcohol. Do not mix with drugs. Do not use if you are under 18 years. Our shop is not responsible for noncompliance with rules.

Vanilla Sky

VANILLA SKY concentrated bath salts (new formula in a siviler pack) Great new product exclusive to spice gold direct - - said to be twice as satisfying as herbal highs "charge", Snow blow and the rest.. Ivory is unbelievably close to the real deal. you won't be disappointed.

Soothing bath Salts - Relax and soak away VANILLA SKY, Concentrated bath salts, please only use as advised, **PLEASE do not use this as SNUFF!!!** Add the contents to a hot bath to naturally soften the water which will leave you feeling very soothed and relaxed. This is used to mimic the natural hot springs of the greek sea.

Contains:

Epsom Salts, Sodium Barcarbonate, Sodium Chloride, minerals, trace elements and naturally occurring amino acids.

NOT FOR HUMAN CONSUMPTION

200 mg. \$24.46 Buy One One Get Free (sic)

500 mg. \$36.31 Buy One One Get Free (sic)

Tranquility Bath Salts



Tranquility Bath Salts

1/2 gram Tranquility Bath salt is perfect for a very invigorating, energizing, & truly scensual bathing experience.

100% Piperazine free

500 mg. Retail Price \$50.00 On sale: \$24.00

Tranquility Bath Salt is NOT FOR HUMAN OR ANIMAL CONSUMPTION

Must be at least 18 to purchase.

M-Shine "Scratch Remover"

M-Shine new, extremely potent scratch remover 1g with freezing effect.



DEA compliant product, doesn't contain PV or M1.

...Buzz-wholesale offers a simple solution for this widespread customer problem. With this new type of special polishing powder, end users have for the first time the possibility of eliminating the scratches in their displays quickly and cost-effectively in a do-it-yourself process....

Does NOT contain: LSD; COCAINE; MDMA; AMPHETAMINE; BZP; 3,4-Methylenedioxymethcathinone (Methylone), 3,4-Methylenedioxypropylvalerone (MDPV), 4-Methylmethcathinone (Mephedrone), 4-methoxymethcathinone (Methedrone), 4-Fluoromethcathinone (4-FMC) and 3-Fluoromethcathinone (3-FMC) and any other banned substances.

Fully legal in: Alabama, Alaska, American Samoa, Arizona...Wisconsin, Wyoming.

M-Shine Continued

5-9 packs \$29.00, 10-24 packs \$21.00... 50-99 packs \$13.00, 500-999 packs \$6.00

Comments:

-Hmm This s--- is GOODDDDDDDDDDDDDDDDDDD!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!

-DRUG TESTING???? Anyone have any idea if this will have any symptoms on a drug screen? Hate the thought of failing a test I study so much for?? Is this cheat sheet reliable? Completely????

-lemme know??? Looking for details!!! What does it look like? What effects? How long? Smokin', lines, bullets, or what? Does a little go a long way??? Hmmmmmmm....

Prevention Strategies

- Primary prevention – A drug is a drug is a drug!
- Use a comprehensive approach
 - Educate everyone
 - Youth, families, older adults, educators, law enforcement, health care providers, coaches...
 - Use consistent and persistent messages
 - Examine norms
 - Implement and enforce policies
 - Make substances less accessible
 - Enforce laws about use and possession.

Other Drugs...or not!

2C-B

2C-B or 2,5-dimethoxy-4-bromophenethylamine is a synthetic psychedelic that first gained popularity as a legal Ecstasy replacement in the mid 1980s.

AKA: Bees; Venus; Bromo Mescaline; BDMPEA

Often in powder or pill form.

Known for having a strong physical component to its effects and a moderate duration.

A Schedule I substance in the U.S.

2C-E

2C-E or 2,5-dimethoxy-4-ethylphenethylamine is a synthetic psychedelic drug.

Generally taken orally, but may be inhaled.

Users report hallucinations similar to those experienced with LSD.

The effects may last 8-12 hours.

2C-E use was responsible for the death of 19-year-old in Blaine this year.

It is illegal in Minnesota as of July 1, 2011.

2C-I

2C-I or 2,5-dimethoxy-4-iodophenethylamine is a synthetic psychedelic drug.

Commonly sold as a fluffy salt, powder or tablet.

Similar to 2C-E it is usually taken orally, but may be inhaled, smoked or vaporized.

Users report hallucinogenic and stimulant effects which are reported to last 4-12 hours.

It is illegal in Minnesota as of July 1, 2011.

Bufotenine – Toad Licking

Bufotenine - hallucinogen found in the venom of some toads, also found in some mushrooms, plants and other animals.

Venom is excreted on the toads' backs when frightened.

Some users lick the venom off of the toads.

Some extract the bufotenine, dry it and smoke it.

A Schedule I substance in the U.S.

Bupe (buprenorphine)

Buprenorphine (Suboxone) - developed as an alternative to methadone that would be equally effective in treating opiate addiction but less likely to be abused.

Sometimes called subbies or stop signs.

Contains naloxone, which makes users sick if they ingest it -- but some users are crushing the pills and snorting or injecting the drug to get high, either filtering out the naloxone or putting up with its ill effects.

Now being implanted to reduce abuse.

Catnip

Catnip is not intoxicating for humans.

- Generally smoked or used to make tea.
- Often smoked with tobacco.
- It can cause minor sedation or stimulation.
 - Some speculate that it may be more the effect of the tobacco.

GBL

GBL (gamma-butyrolactone) - clear and odorless liquid and a date rape drug similar to GHB.

When taken orally the body converts it into GHB.

Sold in liquid and powder form and is found in some supplements.

Sometimes called liquid ecstasy.

When mixed with alcohol or other drugs a fatal seizure is possible.

GHB

GHB (gamma-hydroxybutyrate) - depressant considered a date rape drug.

A sedative, described as an odorless, nearly tasteless drug.

Sold in either white powder form or clear liquid.

Especially dangerous when mixed with alcohol as both are depressants.

Ketamine

Ketamine - rapidly acting anesthetic generally used in veterinary medicine.

Known as "Special K" - is considered a date rape drug.

Can cause hallucinations, memory loss and pain relief.

Users report feeling detached or disconnected from their pain & environment.

Has been shown to cause bladder damage.

New research on use as an anti-depressant.

Khat

Khat - narcotic popular in East Africa and on the Arabian Peninsula

A shrub with leaves and twigs that provide a euphoric feeling to those who chew them.

Fresh khat leaves contain cathine (Schedule I drug), the leaves break down after about 36 hours and then contain cathinone (Schedule IV).

Both substances are stimulants which cause euphoria, excitement and loss of appetite.

Kratom

A legal, natural and addictive substance from the leaf of a Southeast Asian tree.

Some make tea from it, others chew the leaves.

Produces both stimulant and sedative affects.

May cause nausea, itching, sweating, dry mouth, constipation, increased urination and appetite loss.

“Magic Mushrooms”

There are two psychoactive chemicals in "magic mushrooms" – psilocybin and psilocin.

Work on some of the same neural pathways as antidepressants like Prozac.

Affect similar to LSD.

Users report hallucinations, an altered perception of time, and an inability to discern fantasy from reality.

Panic reactions and psychosis may occur, particularly if a user ingests a large dose.

Mothballs

Mothballs contain paradichlorobenzene, also found in air fresheners and insect repellents, can cause anemia and liver and kidney failure.

Some users place mothballs in a bag and inhale from it for about 10 minutes, called “bagging.”

Some users chew mothballs.

Mental impairment, loss of coordination, and scaly skin may be symptoms of mothball abuse.

PCP

Phencyclidine (PCP) - synthetic hallucinogen.

AKA: angel dust, embalming fluid, rocket fuel, etc.

Developed as an anesthetic, but discontinued for use in humans because of side effects.

PCP is a “dissociative drug,” it distorts perceptions of sight and sound and produces feelings of detachment (dissociation) from the environment and self.

Peyote

Mescaline - active hallucinogenic ingredient in peyote.

Tops of the peyote cactus, the crown, consist of disc-shaped buttons that are cut and dried.

Buttons are generally chewed or soaked in water to produce an intoxicating liquid.

U.S. Supreme Court has ruled that it is legal for members of the Native American Church to use peyote.

Salvia divinorum

Salvia divinorum - hallucinogenic plant related to the common sage.

Users can experience uncontrolled laughter, a temporary inability to speak, dramatic visual and auditory hallucinations, uncoordinated movement, out-of-body feelings, and other unsettling affects.

Usually smoked or eaten.

Became illegal in Minnesota August 1, 2010.

Snurf Pills

Snurf pills made a media splash in the fall of 2008. Reportedly capsules containing dextromethorphan. Were sold online and four teens in Pennsylvania were hospitalized after use.

There was a flurry of articles, some calling them the new drug of choice of youth.

Warnings sent to parents.

No reports since then.

Miscellaneous Plants

Morning Glory seeds - contain lysergic acid amide, they can be chewed or brewed into a tea to release the substance that produces hallucinations.

Jimson weed - a common roadside plant with seeds that can be chewed or boiled to make a tea that produces hallucinations.

- Overdose can be fatal.

- AKA: stinkweed, locoweed, or moonflower

Poppy seeds and pods - a Colorado college student died from a morphine overdose in 2009 after drinking two cups of tea made from poppy seeds and pods.

i-dosing

Some websites are marketing “doses” music developers claim can produce a drug-like high.

Tunes are based on the 19th-century discovery of "binaural beats" -- paired tones played at different frequency that have long been used to research hearing and sleep and treat anxiety.

Some claim that the sounds also can increase dopamine and beta-endorphins, like drugs.

-There is no research to prove this claim.

i-dosing is reported to be popular among young people looking to alter there moods without using drugs.

Drug Myths

Blue Star Tattoos

Every few years some school gets word that temporary tattoos laced with LSD are being given to children. Often leading to panic and someone sending warnings to parents causing more panic.

No actual cases of LSD distribution to children in this manner have ever been documented.

Drug Myths

Jenkem

Reported to be a hallucinogen composed of noxious gas formed from fermented sewage. Users reportedly inhaled the gas.

First reported in Africa in the 1990s.

In 2007 the Collier County (Florida) Sheriff's Office reported it was the new drug of choice among high school students.

Would produce hydrogen sulfide and ammonia (which are toxic), as well as methane, carbon dioxide, sulfur dioxide and nitrogen oxides.
-Methane and hydrogen sulfide are both lethal and flammable.

There are no reports of anyone using any such substance to get high.

Prevention Strategies

- Primary prevention – A drug is a drug is a drug!
- Use a comprehensive approach
 - Educate everyone
 - Youth, families, older adults, educators, law enforcement, health care providers, coaches...
 - Use consistent and persistent messages
 - Examine norms
 - Implement and enforce policies
 - Make substances less accessible
 - Enforce laws about use and possession including operating vehicles under the influence.

Persistent and Consistent Messaging



Prevention Strategies

Address issues like mental health, obesity, stress and performance in healthy, appropriate ways:

- Treatment and therapy
- Healthy choices

Contact Information

Jay Jaffee

jay.jaffee@state.mn.us

651-201-5496

www.health.state.mn.us/alcohol