Definition of MDMA:

What is MDMA?

MDMA (3, 4-methylenedioxymethamphetamine), is most commonly known as “Ecstasy” or “Molly.” It is a synthetic psychoactive drug that alters mood and perception (awareness of surrounding objects and conditions). It is chemically similar to both stimulants and hallucinogens, producing feelings of increased energy, pleasure, emotional warmth, and distorted sensory and time perception.

Ecstasy exerts its primary effects in the brain on neurons that use the chemical serotonin to communicate with other neurons. The serotonin system plays an important role in regulating mood, aggression, sexual activity, sleep, and sensitivity to pain.

MDMA was initially popular in the nightclub scene and at all-night dance parties ("raves"), but the drug now affects a broader range of users who more commonly call the drug Ecstasy or Molly. MDMA was first synthesized by a German company in 1912, possibly to be used as an appetite suppressant. MDMA has been available as a street drug since the 1980s. Its use escalated in the 1990s among college students and young adults. It is most often distributed at late-night parties called "raves", nightclubs, and rock concerts. As the rave and club scene expanded to metropolitan and suburban areas across the country, MDMA use and distribution increased as well. MDMA is frequently used in combination with other drugs. However, it is rarely consumed with alcohol, as alcohol is believed to diminish its effects.

MDMA is considered by the U.S. Federal government to have no medical benefit and a high potential for abuse. However, researchers continue to investigate the possible medical benefits for patients with post-traumatic stress disorder (PTSD) and terminal cancer patients with anxiety.

How does MDMA work?

Your mood is closely related to the level of a chemical compound called ”serotonin” in your brain. It’s released in the synapses between neurons. Depressed people tend to have low levels of serotonin, happy people tend to have high levels. When a person takes Ecstasy (MDMA), a lot of serotonin is released, much more than under normal circumstances, which makes him or her extremely happy.

Serotonin pathways in the brain:

The nerve pathway that is predominantly affected by ecstasy is called the serotonin pathway. Serotonin is a neurotransmitter that is synthesized, stored, and released by specific neurons in this pathway. It is involved in the regulation of several processes within the brain, including mood, emotions, aggression, sleep, appetite, anxiety, memory, and perceptions. Tell the students that you will show them how a chemical like serotonin can regulate these processes. First, describe how serotonin pathways innervate

(connect to) different brain regions. Point to the cell bodies of the serotonin pathway that are located in the brainstem area "the Raphe nucleus" in pink). Show students how these neurons send long axons to higher centers in the brain including the neocortex (yellow) and the limbic system (e.g., the amygdala--red and hippocampus--blue). Point to a second pathway for serotonin neurons that descends down the spinal cord; these neurons control muscle activity; tell the students that you will talk about this in more detail in a few minutes. Indicate that the function of serotonin depends on the region of the brain into which it is released (it also depends on the type of serotonin receptor present in that region--see discussion in image 9). For example, the serotonin neurons in the neocortex in the front of the brain (frontal cortex) regulate cognition, memory, and perceptions. The serotonin neurons in the hippocampus regulate memory. The serotonin neurons in other limbic areas such as the amygdala also regulate mood.

The serotonin neuron: the major target of ecstasy:

In order to help students understand how ecstasy affects the function of serotonin neurons, it will be useful to review how neurotransmission takes place in a little more detail. You can explain serotonin neurotransmission as an example (serotonin is one of many neurotransmitters). This image shows the connection between two neurons (the "synapse"). Serotonin is stored in small vesicles within the nerve terminal of a neuron. Electrical impulses (arising in the Raphe nucleus, for example) traveling down the axon towards the terminal cause the release of serotonin from small vesicles into the synaptic space, point to the space between the terminal and the neighboring neuron. When in the synaptic space, the serotonin binds to special proteins, called receptors, on the membrane of a neighboring neuron (this is usually at a dendrite or cell body). When serotonin binds to serotonin receptors (there are actually at least 14 types of serotonin receptors), it causes a change in the electrical properties of the receiving neuron that generally results in a decrease in its firing rate.

Serotonin transporters:

Serotonin (in pink) is present in the synaptic space only for a limited amount of time. If it is not bound to the serotonin receptor, serotonin is removed from the synaptic space via special proteins called transporters (in green). The serotonin transporters are proteins located on the serotonin neuron terminals and they are in a unique position to transport serotonin from the synaptic space back into the neuron where it can be metabolized by enzymes. Serotonin transporters are the primary targets for ecstasy.

Ecstasy and serotonin transporters:

When ecstasy binds to the serotonin transporters, more serotonin ends up in the synaptic space. This occurs for two reasons. First, ecstasy can prevent the transporters from carrying serotonin back into the terminal. Second, ecstasy can cause the transporters to work in reverse mode-- they actually bring serotonin from the terminal into the synaptic space. So, more serotonin is present in the synaptic space and more serotonin receptors become activated. This is the major short-term effect of ecstasy that alters brain chemistry. Although the serotonin system is the primary target for ecstasy, ecstasy has

similar effects on the dopamine (another neurotranmsitter) system as well. ecstasy can inhibit dopamine transporters and cause an increase in dopamine levels in the synaptic space (not shown here).

MDMA does not act by directly releasing serotonin but, rather, by binding to, and thus blocking, the transporter involved in its reuptake. Typical effects of ecstasy in the body include:

• ataxia (loss of control of body movements)

• dilated pupils

• dry mouth

• involuntary jaw clenching

• mild visual disturbances (blurred or double vision, increased light sensitivity)

• muscle tension

• sweating

How does ecstasy affect the brain and nervous system?

MDMA works by increasing levels of the neurotransmitters norepinephrine and dopamine in the central nervous system. At the same time, MDMA destroys serotonin-producing neurons which play a direct role in regulating aggression, mood, sexual activity, sleep, and sensitivity to pain. While many users think that MDMA is not addictive, this is not true. While physical dependence on ecstasy is rare, psychological dependence is possible. And needing help with ecstasy addiction can be avoided by avoiding large or chronic dosing of MDMA.

Repeated or large doses of ecstasy may cause permanent harm and impairment. Ecstasy is also well known for its potential neurotoxicity (ability to damage neurons.) If neurotoxicity occurs, then the slow reversal of neuroadaptation isn't enough to fully restore the brain to its pre-use state. While related in structure and effect to methamphetamine, MDMA has significantly less central nervous system (CNS) stimulant properties than methamphetamine.

How quickly does it work and how long does it last?

How quickly ecstasy work, depend on how you define "work" The ecstasy-trip consists of at least three levels. First you have the "onset", then the "peek" and finally the period after the peek in which you are still buzzing but no longer peaking.

When you enter the different levels depend on several factors, including how potent the pill is, what you have been eating, how you consumed the pill and a wide array of less obvious reasons.

If you swallow the pill you normally start feeling some tingling after about twenty minutes. You then know that you are on your way, 40-60 minutes after you consume the pill it will usually kick in big time, taking you to the plateau as some refer to it as. You will now be peeking for about two hours, but the strength of the pill might prolong or reduce this time about an hour or so. When you come down from the plateau you will be able to enjoy a energy buzz that might last as long as four hours.

If you crash the pill and snort it, you will come up much quicker, but some people claim your total peaking time is reduced using this method.

How can I make it last longer?

You can of course eat more pills... but this is not recommendable, and it will also eventually stop itself as you can only trip as long as there is serotonin left in your brain cells. When the stock of serotonin is empty, you will need to wait until it builds up again (at least slightly) before rolling is even possible.

So-called preloading with 5-HTP is also popular with many, whilst others just emphasize on maintaining a healthy diet. The bottom line is that you need to get your levels of serotonin up to levels that are higher than the potential outflow that a pill can bring on.

How Long Does MDMA Stay in Your System?

Determining exactly how long MDMA is detectable in the body depends on many variables, including which kind drug test is being used. MDMA, also known as Adam, Ecstasy, STP, XTC,can be detected for a shorter time with some tests, but can be "visible" for up to three months in other tests.

The timetable for detecting MDMA in the system is also dependent upon each individual's metabolism, body mass, age, hydration level, physical activity, health conditions and other factors, making it almost impossible to determine an exact time MDMA will show up on a drug test.

The following is an estimated range of times, or detection windows, during which MDMA can be detected by various testing methods:

How Long Does MDMA Show Up in Urine?

MDMA is detectable in a urine test for 2-5 days.

How Long Does MDMA Stay in the Blood?

A blood test will detect MDMA for up to 24 hours.

How Long Will MDMA Show Up in a Saliva Test?

A saliva test will detect MDMA from 1-5 days.

How Long Does MDMA Remain in Hair?

MDMA, like many other drugs, can be detected with a hair follicle drug test for up to 90 days.

How Does MDMA Build Up in the System?

The effects of MDMA usually last about 3-5 hours, but the half-life of the drug is closer to 8-9 hours. Therefore, users of MDMA may try to take more of the drug as the "high" begins to wear off while the first dose is still in their system.

Although the "high" of MDMA use can deminish after 3-5 hours, the side-effects can last up to 24 hours including enhanced impulsivity and difficulty in maintaining attention during complex tasks.

With only a single dose (56 mg) MDMA users have been found to exhibit acceptance of higher levels of risk, acute changes in cognitive performance, and impaired information processing ability. Therefore, driving while using MDMA is considered impaired driving.

Where Does Ecstasy Come From

Ecstasy is a powerful drug that provides hallucinogenic effects. This drug also has the scientific name MethylenedioxyMethamphetamine or MDMA. Ecstasy is a psychoactive drug that can act as a stimulant as well as a mood changer. The drug changes the perception of the person about the world as well as increases the speed of the body system. MDMA brings chemical changes in the brain especially when it releases serotonin at an increased level. Serotonin plays a major role in balancing the mood, appetite and energy level of an individual.

Ecstasy History:

This drug is made chemically by Seize Ecstasy Cargo Clandestine laboratories functioning all over Western Europe, mainly in Belgium and Netherlands. The drug is manufactured in the form of capsules, powder and tablets. In Europe, the drug is consumed domestically, but very few labs of MDMA are operating in United States.

Ecstasy history starts with MDMA (the original name of ecstasy) being patented in 1913 (patent #274.350) by the German chemical company Merck. At that time it was supposed to be sold as a diet pill. However, the patent does not mention any intended use. The company decided against marketing the drug and had nothing more to do with it. Later in ecstasy history, the US army experimented with MDMA in 1953, possibly as truth serum but they have not revealed their reasons.

When it comes to ecstasy history, the man responsible for the modern research of MDMA is Alexander Shulgin. After he graduated from the University of California at Berkeley with a Ph.D. in biochemistry he

landed a job as a research chemist with Dow Chemicals. Among his many achievements for Dow Chemical was a profitable insecticide and several controversial patents for what were to become popular street drugs. Dow was happy with the insecticide but Shulgin's other projects created a parting of the way between the biochemist and the chemical company. An important not in ecstasy history is that Alexander Shulgin was the first reported human to use MDMA.

Shulgin continued his legal research of new compounds after leaving Dow, specializing in the phenethylamines family of drugs. MDMA is but one of 179 psychoactive drugs which he described in detail, but it is the one which he felt came closest to fulfilling his ambition of finding the perfect therapeutic drug.

Ecstasy history shows that because MDMA was already been patented in 1913, it held no profit potential for a drug company. This is because a drug cannot be patented twice and before marketing a new drug, a company has to show that the potential side effects are justified by the drug's benefits as a medicine, and this involves long and expensive trials. The only way of recouping that expense is by obtaining exclusive rights to sell the drug through holding its patent. At that time in ecstasy history only a few experimental therapists researched and tested the drug (between 1977 to 1985) for use during psychotherapy sessions.

Ecstasy history in 1985 notes that the drug received massive media attention when a group of people sued the US Drug Enforcement Agency (DEA) to try to prevent them from outlawing the drug by placing it on the list of Schedule 1 drugs. The US Congress had passed a new law allowing the DEA to put an emergency ban on any drug that it thought might be a danger to the public. On July 1st 1985, this right was used for the first time to ban MDMA.

A hearing was held to decide what permanent measures should be taken against the drug. One side argued that MDMA caused brain damage in rats, the other side claimed this might not be true for humans and that there was proof of the beneficial use of MDMA as a drug treatment in psychotherapy. The presiding judge after weighing the evidence, recommended that MDMA be placed on Schedule 3, which would have allowed it to be manufactured, used on prescription, and subject to further research. However, ecstasy history shows that the DEA decided to place MDMA permanently on the Schedule 1 list of drugs that have not therapeutic benefit.

Ecstasy Effects:

The short-term adverse ecstasy effects are sweating, chills, nausea, hallucinations, tremors, clenching, blurred vision, muscle cramping and clenching and increased body temperature. Some other ecstasy

effects are paranoia, depression and anxiety. Ecstasy effects caused by an overdose are seizures, panic attacks, faintness, high blood pressure, unconsciousness and drastic extreme body temperatures. Overdoses of this drug may become fatal because it may cause heart failure or heat stroke. Ecstasy effects such as high blood pressure, blurred vision, nausea, increased heart rate, faint, sweat, chills and psychological problems such as depression, craving, confusion, paranoia, anxiety, psychotic episodes and sleep problems are similar to the effects of cocaine and amphetamines.

Ecstasy Information:

Combining MDMA with other natural antidepressant is not recommended. There are different types of natural antidepressant available in the market and each of them has different effects on people. MDMA's unique effect as a psychotherapeutic drug can be impaired by the use of natural antidepressant. One of the major ecstasy information is that it may cause certain amount of addiction to people and the ecstasy effects will begin 20 minutes after consuming it and the effects of the drug will last for many hours. Important ecstasy information is that it will cause behavioral, health and social consequences other than the physical effects on the body.

MDMA is trafficked by many organizations through couriers, mail services or shipments from many European cities to the cities of United States. One of the major ecstasy information is that the bulk amount of drug is being sold in United States for $8 for one dosage unit. MDMA is being sold in many clubs of United States at a rate of $20 -$30 for each dosage unit. The traffickers of MDMA are using the logos and brand name for this drug as the tools of marketing so that their products can be differentiated from the competitors. Some of the famous logos of ecstasy are four-leaf clovers, lightning bolts and butterflies.

What it does for you:

How does MDMA affect the brain?

MDMA increases the activity of three brain chemicals:

• Dopamine: Causes a surge in euphoria and increased energy/activity

• Norepinephrine: Increases heart rate and blood pressure, which are particularly risky for people with heart and blood vessel problems

• Serotonin: Affects mood, appetite, sleep, and other functions. It also triggers hormones that affect sexual arousal and trust. The release of large amounts of serotonin likely causes the emotional closeness, elevated mood, and empathy felt by MDMA users.

Other health effects include:

• Nausea.

• Muscle cramping.

• Involuntary teeth clenching.

• Blurred vision.

• Chills.

• Sweating.

MDMA's effects last about 3 to 6 hours, although many users take a second dose as the effects of the first dose begin to fade. Over the course of the week following moderate use of the drug, users may experience:

• Irritability.

• Impulsiveness and aggression.

• Depression.

• Sleep problems.

• Anxiety.

• Memory and attention problems.

• Decreased appetite.

• Decreased interest in and pleasure from sex.

It's possible that some of these effects may be due to the combined use of MDMA with other drugs, especially marijuana.

What are other health effects of MDMA?

High doses of MDMA can affect the body’s ability to regulate temperature. This can lead to a spike in body temperature that can occasionally result in liver, kidney, or heart failure or even death.

In addition, because MDMA can promote trust and closeness, its use especially combined with sildenafil (Viagra®) may encourage unsafe sexual behavior. This increases users' risk of contracting or transmitting HIV/AIDS or hepatitis.

Effects of MDMA Use:

MDMA stimulates the release of the neurotransmitter serotonin from brain neurons, producing a high that lasts from several minutes to an hour. The drug's rewarding effects vary with the individual taking it, the dose and purity, and the environment in which it is taken. MDMA can produce stimulant effects such as an enhanced sense of pleasure and self-confidence and increased energy. Its psychedelic effects include feelings of peacefulness, acceptance, and empathy.

Health Hazards:

MDMA users may encounter problems similar to those experienced by amphetamine and cocaine users, including addiction. MDMA damages brain serotonin neurons. Serotonin is thought to play a role in regulating mood, memory, sleep, and appetite. Research indicates heavy MDMA may cause persistent memory problems in humans; however, a 2011 study has reported limited cognitive decline in users of MDMA.

Psychological effects can include confusion, depression, sleep problems, anxiety, and paranoia, sometimes lasting for weeks after taking the drug. Physical effects can include muscle tension, involuntary teeth-clenching, nausea, blurred vision, faintness, and chills or sweating. Increases in heart rate and blood pressure are a special risk for people with circulatory or heart disease.

Also, there is evidence that people who develop a rash that looks like acne after using MDMA may be risking severe side effects, including liver damage, if they continue to use the drug. Almost 60 percent of people who use Ecstasy report withdrawal symptoms, including fatigue, loss of appetite, depressed feelings, and trouble concentrating.

MDMA-related fatalities at raves have been reported. The stimulant effects of the drug, which enable the user to dance for extended periods, combined with the hot, crowded conditions usually found at raves can lead to dehydration, hyperthermia (dangerous increase in body temperature), and heart or kidney failure.

Other drugs chemically similar to Ecstasy, such as MDA (methylenedioxyamphetamine, the parent drug of Ecstasy) and PMA (paramethoxyamphetamine, associated with fatalities in the U.S. and Australia) are sometimes sold as Ecstasy. These drugs can be neurotoxic or create additional health risks to the user.

Additionally, the illicit sale of Ecstasy makes it prone to being “cut” with other illicit and potentially toxic or deadly chemicals. Ecstasy tablets may contain other substances in addition to MDMA, such as ephedrine (a stimulant); dextromethorphan (a cough suppressant that has PCP-like effects at high doses); ketamine (an anesthetic used mostly by veterinarians that also has PCP-like effects); caffeine; cocaine; and methamphetamine. While the combination of Ecstasy with one or more of these drugs may be inherently dangerous, users might also combine them with substances such as marijuana and alcohol, putting themselves at further physical risk.

Methods of Use

MDMA is most often available in tablet form and is usually ingested orally. Ecstasy traffickers consistently use brand names and logos as marketing tools and to distinguish their product from that of competitors. The logos are produced to coincide with holidays or special events. Among the more popular logos are butterflies, lightning bolts, and four-leaf clovers. It is also available as a powder and is sometimes snorted and occasionally smoked but rarely injected.

Extent of MDMA Use

The National Institute on Drug Abuse (NIDA) funds the Monitoring the Future survey (MTF), which is conducted by the University of Michigan's Institute for Social Research. In 2010, 4.6 percent of 12th-graders, 4.7 percent of 10th-graders, and 2.4 percent of 8th-graders reported they had used MDMA in the past year. In 2000, 8.2 percent of 12th-graders, 5.4 percent of 10th-graders and 3.1 percent of 8th-graders reported they had used MDMA. African American students showed considerably lower rates of Ecstasy use than white or Hispanic students in the 2010 MTF survey.

The NIDA-sponsored Community Epidemiology Work Group (CEWG), a network of researchers from 21 major U.S. metropolitan areas, also has reported increased MDMA use by young adults and adolescents in many areas of the country. MDMA, once used primarily at dance clubs, raves, and college scenes, is now being used in a number of other social settings. It is the most prominent stimulant used in many major metropolitan areas. In Miami in 1999, there were eight MDMA-related deaths, and five in Minneapolis/St. Paul. In Boston during the first three quarters of 2000, MDMA was the most frequently mentioned drug in telephone calls to the Poison Control Center. Ecstasy content varies widely, and it frequently consists of substances entirely different from MDMA, ranging from caffeine to dextromethorphan. Ecstasy tablets seized by the Drug Enforcement Administration increased from 13,342 in 1996 to 949,257 in 2000.

In 2010, the Substance Abuse and Mental Health Services Administration published the Results from the 2010 National Survey on Drug Use and Health. Among persons aged 12 to 49, the average age at first use for MDMA was 19.4 years. In 2010, an estimated 695,000 Americans aged 12 or older were current (past month) MDMA drug users, meaning they had used an Ecstasy-type drug during the month prior to the survey interview. The 2010 current use estimate is similar to that from 2009. The rate of current MDMA use among youths aged 12 to 17 declined to 0.3 percent in years 2004 through 2007, but increased to 0.5 percent in 2009 and 2010. To put overall MDMA use in perspective, in 2010 the illicit drug category with the largest number of current users among persons aged 12 or older was marijuana use (2.4 million), followed by abuse of pain relievers (2 million), tranquilizers (1.2 million), Ecstasy (0.9 million), inhalants (0.8 million), and cocaine and stimulants (0.6 million each).

Ecstasy Overdose:

An ecstasy overdose occurs when someone consumes more ecstasy than their body can tolerate. Ecstasy users are constantly flirting with the risk of a drug overdose. There is a fine line between the high they're seeking and serious injury or death. People who suffer an ecstasy overdose will experience overheating, panic attacks, faintness, severe dehydration and loss of consciousness. Ecstasy raises the user’s body temperature and makes them feel restless. These restless feelings often lead users to feel as though they have to keep moving, literally causing them to overheat and cook their insides. Some People who have had an ecstasy overdose and died have had body temps over 108 degrees.

Another way people die from an ecstasy overdose is by taking fake ecstasy pills. Because ecstasy is made on the black market, users never truly know what is in the pills they are taking. The drug dealers who are

making ecstasy do not really care if they use the right chemicals or not and how that will affect the people who they sell the drugs to.

While many who suffer from an ecstasy overdose recover without long term effects, there can be serious consequences. Some experience the failure of major organs such as their kidneys or liver, while others suffer from the failure of whole systems like the respiratory or circulatory systems. Patients who survive an ecstasy overdose may need kidney dialysis, a kidney or liver transplant, or ongoing care as a result of heart failure, stroke, or coma. Death can occur in an ecstasy overdose situation, particularly if treatment is not started immediately. Ecstasy-related emergency room incidents increased nationwide from 250 in 1994, to 637 in 1997, to 1,142 in 1998, to 2,850 in 1999. Between 1998 and 2001, the number of Ecstasy-related emergency room visits in San Diego County increased from 14 to 51, said John Redman, co-chairman of the county Club Drug Task Force. "I am very alarmed by the numbers," said Redman. "The kids that are taking it are unaware of the dangers."

Ecstasy is a Schedule I synthetic, psychoactive drug possessing stimulant and hallucinogenic properties. It possesses chemical variations of the stimulant amphetamine or methamphetamine and a hallucinogen, most often mescaline. Illicit use of ecstasy did not become popular until the late 1980s and early 1990s. Ecstasy is frequently used in combination with other drugs, which increases the user's risk of an ecstasy overdose. However, it is rarely consumed with alcohol, as alcohol is believed to diminish its effects. Ecstasy is most often distributed at late-night parties called "raves", nightclubs, and rock concerts.

Warning Signs of an Ecstasy Overdose:

• Becoming confused, not able to talk properly

• Fainting or collapsing

• Feeling hot or unwell

• Headache

• Loss of control over body movements

• Not Sweating

• Problems urinating

• Racing heart or pulse when resting

• Tremors

• Vomiting

An Ecstasy Overdose is Characterized by:

• Death in extreme cases

- Faintness
- High blood pressure
- Hypothermia
- Kidney and cardiovascular system failure
- Loss of consciousness
- Muscle breakdown
- Muscle cramping
- Panic attacks
- Permanent damage to sections of brain critical to thought and memory
- Rapid heartbeat
- Seizures
- Stroke

Ecstasy and Brain Damage:

Studies have shown that ecstasy and brain damage are serotonin related. Serotonin is a chemical in the brain that affects moods, so that after the initial high, the user may feel tired, depressed, or moody. Their body will eventually produce more serotonin, but ecstasy and brain damage will cause the serotonin to return normal levels. So, after a weekend of heavy partying, they may have trouble getting up and going to class or work, and once there, they may be irritable.

The first studies of ecstasy and brain damage show the popular club drug effects on the brain include impairment of memory and damage to brain mechanisms that regulate sleep, mood, and learning. The early results of the studies, presented at a scientific conference for the National Institute of Drug Abuse, found that ecstasy and brain damage in some cases may persist for years. "We are finding that even a single use can produce brain changes," Institute director Alan Leshner says. "Now we need to find out whether these changes are permanent or whether the brain will recover."

A study in England showed that ecstasy users had memory impairment due to ecstasy and brain damage that lasted on average 2½ years after they stopped taking the drug. Extended use of ecstasy causes the user to have difficulty differentiating reality and fantasy, and causes problems concentrating. Additional studies have also found that ecstasy and brain damage are caused by the destruction of certain cells in the brain. While the cells may re-connect after discontinued use of the drug, they do not re-connect normally. Like most illegal and dangerous drugs, ecstasy and brain damage impairs memory and can cause paranoia, anxiety, and confusion.

Valerie Curran, a researcher at University College London, studied current and former ecstasy users and compared them with people who smoked marijuana and drank alcohol. Curran found that those who took ecstasy on weekends in doses commonly sold on the street and at rave parties showed more memory impairment due to ecstasy and brain damage than the marijuana and alcohol users.

"Ex-users showed very marked impairments on the memory tests and more difficult tests requiring concentration. Their memory did not recover even after a year," Curran says. "Current users were very impaired in their ability to learn."

An ecstasy and brain damage scan study by scientists at the Brookhaven National Laboratory in New York found that people had decreased blood flow to their brains two weeks after taking a low dose of ecstasy. The results from the studies resemble findings from earlier animal studies.

The studies have not determined whether the human brain may recover from ecstasy and brain damage caused by intermittent and low-dose ecstasy use or whether the effects are so subtle the studies cannot detect them, says Linda Chang, a scientist at the Brookhaven laboratory.

Dangers of Ecstasy:

What are the dangers of ecstasy? Many of today's youth are unaware of any dangers associated with ecstasy use. With this lack of knowledge, numerous young people find themselves enveloped in frequent ecstasy use before they know it. Side effects of ecstasy vary greatly. Muscle cramping, teeth clenching, stomach discomfort, chills, and sweating are the most commonly reported short-term dangers of ecstasy use. The long term dangers of ecstasy that have been reported are anxiety, paranoia, and depression according to the U.S. Drug Enforcement Agency.

The dangers of ecstasy and its long-term damage are still being studied. Ecstasy, also known as MDMA, causes a rush of the brain chemical serotonin, which is responsible for regulating mood and memory at the most basic level. Because the serotonin is released in a flood, researchers fear neurons which aid in the transmitting of serotonin could be damaged due to overload. A 1999 National Institute on Drug Abuse study said brain scans revealed a significant decrease in serotonin transporters in heavy users compared to a control group.

The case of Lorna Spinks, a sociology undergraduate at Anglia Polytechnic University, who collapsed and died after taking ecstasy pills graphically illustrates the dangers of ecstasy use. It is clear that the drug has the potential to kill. Most deaths due to ecstasy use have been caused by dehydration. Ecstasy affects body temperature, and when combined with dancing for long periods in a hot place the dangers of ecstasy use greatly increase the user's chance of over-heating.

The dangers of ecstasy have sent a growing number of people to the emergency room. Between 1998 and 2001, the number of ecstasy-related emergency room visits in San Diego County increased from 14

to 51, said John Redman, co-chairman of the county Club Drug Task Force. "I am very alarmed by the numbers," said Redman. "The kids that are taking it are unaware of the dangers."

However, the medical profession is still unclear as to the exact dangers of ecstasy use the drug poses to the user's health. Part of the problem is that many tablets sold as ecstasy are not what purchasers think they are. The amount of ecstasy in a tablet can vary greatly. Tablets have been analyzed and some contained no ecstasy but other drugs such as amphetamine or ketamine. Others have been found to contain some ecstasy but mixed with other drugs or a range of adulterants. Some tablets have even been found to be fish tank cleaners or dog worming tablets.

Evidence is also mounting regarding the dangers of ecstasy abuse being linked to an increased risk of mental health problems, including chronic depression. Studies have already suggested that the drug is toxic to the neurones in the brain, and that it may kill cells which produce a vital mood chemical called serotonin. An autopsy of a 26-year-old long-term heavy user of Ecstasy revealed that he had up to 80% less serotonin in his brain than normal.

Research from University College London has also shown the dangers of ecstasy abuse may cause users to suffer memory impairment - even a year or more after giving up the drug. Serotonin carries messages between nerves and is thought to play a role in regulating sleep patterns in humans as well as their mood, memory, perception of pain, appetite and libido.

Ecstasy Side Effects:

Ecstasy side effects may range from minimal impact to potentially being fatal. When an user takes the drug, they begin to experience its effects within thirty minutes or so and continue to feel them for hours. While on ecstasy the user feels a "rush" followed by a sense of calmness and wellbeing. They also experience a heightened perception of color and sound.

While ecstasy is not as addictive as heroin or methamphetamine, ecstasy side effects can be just as intense. Many of the ecstasy side effects faced by users are similar to those found with the use of cocaine and amphetamines including nausea, hallucinations, chills, sweating, increases in body temperature, tremors, involuntary teeth clenching, muscle cramping, blurred vision, anxiety, paranoia, and depression. There is also risk for those people who develop a rash that looks like acne after using ecstasy. When this occurs, there is evidence that users may be risking severe ecstasy side effects, including liver damage, if they continue to use the drug.

Users report ecstasy side effects of bruxism (teeth grinding) and trisma (jaw clenching) as short-term effects from the drug. Many users attempt to alleviate this by using chewing gum. However, this can result in temporary mouth ulcers through inadvertent biting of the mouth lining. Temporary jaw ache often results from jaw clenching or excessive chewing. Some users even consume supplemental magnesium tablets to relax the jaw muscles and relieve clenching.

Research links ecstasy side effects to long-term damage in parts of the brain that are critical to thought and memory. One study, in primates, showed that exposure to ecstasy for a period of 4 days caused

brain damage that was evident 6 to 7 years later. Brain imaging research in humans indicates that ecstasy side effects cause injury to the brain, affecting neurons that use the chemical serotonin to communicate with other neurons. The serotonin system plays a direct role in regulating mood, aggression, sexual activity, sleep, and sensitivity to pain.

Ecstasy side effects from long-term use are just beginning to undergo scientific analysis. In 1998, the National Institute of Mental Health conducted a study on a small group of habitual ecstasy users who were abstaining from use. The study revealed that the abstinent users suffered ecstasy side effects that resulted in damage to the neurons in the brain that transmit serotonin, an important biochemical involved in a variety of critical functions including learning, sleep, and integration of emotion. The results of the study indicate that recreational ecstasy users may be at risk of developing permanent brain damage that may manifest itself in depression, anxiety, memory loss, and other neuropsychotic disorders.

SHORT-TERM EFFECTS OF ECSTASY:

• Impaired judgment

• False sense of affection

• Confusion

• Depression

• Sleep problems

• Severe anxiety

• Paranoia

• Drug cravings

• Muscle tension

• Faintness and chills or swelling

• Involuntary teeth clenching

• Blurred vision

• Nausea

Long-term effects of Ecstasy (MDMA)

• Long-lasting brain damage affecting thought and memory.

• Damage to portions of the brain that regulate critical functions such as learning, sleep and emotion.

• It is as if the brain switchboard was torn apart, then rewired backwards.

• Degenerated nerve branches and nerve endings.

• Depression, anxiety, memory loss.

• Kidney failure.

• Hemorrhaging.

• Psychosis.

• Cardiovascular collapse.

• Convulsions.

• Death.

What Are the Other Effects of MDMA (Ecstasy or Molly)?

The changes that take place in the brain with MDMA use affect the user in other ways as well. These include:

• Increases in heart rate and blood pressure

• Muscle tension

• Teeth clenching

• Nausea (feeling sick)

• Blurred vision

• Faintness

• Chills or sweating

• Higher body temperature (can lead to serious heart, liver, or kidney problems)

• Increased risk for unsafe sex

Because MDMA does not always break down in the body, it can interfere with its own metabolism. This can cause harmful levels of the drug to build up in the body if it is taken repeatedly within short periods of time. High levels of the drug in the bloodstream can increase the risk for seizures and affect the heart's ability to beat normally.

Chemical Process of MDMA:

The chemical process or synthesis has been divided into 6 parts:

1 Distillation of sassafras oil.

2 Isomerization of safrole.

3 Epoxidation reaction via peracetic acid.

4 Benzoquinone wacker oxidation (safrole --> MDP2P).

5 Al/nitromethane/HgCl2/MDP2P reductive amination.

6 Crystalizing MDMA.HCl out of MDMA freebase oil.

1. Distillation of sassafras oil:

First of all I'm going to tell you if you would want to make MDMA you would need a source of Safrole and you could get this from a chemical company or by distilling sassafras oil to get it.

In the picture below you can see a distillation setup, there is no vacuum used when distilling safrole this worked out just fine.

Pour the sassafras oil in the distillation flask, and put the flask in a heating mantle or another heating source.

Here below you can see a bottle of sassafras oil and a distillation setup which is distilling sassafras oil.

On the bottom left you can see the heating mantle. It is also covered on top with aluminum foil, to prevent a lot of heat to escape.

The whole vigreux column is also packed with aluminum foil on the outside, else the heat will

not propagate to the thermometer and the distilling head.

The thicker glass tube you see standing slope is the cooler, ICE cold water is floating through the double glass wall, and threw the glass spiral, this is to make the evaporated safrole condensate again.

The vigreux column is used to get a more pure product, and it also is nice to be there, because when distilling the oil, it will bump very hard in the flask.

It might even scare you the first time.

It needs to be 230^{o}C in the top of the distilling head, it is suggested to use boiling stones in the

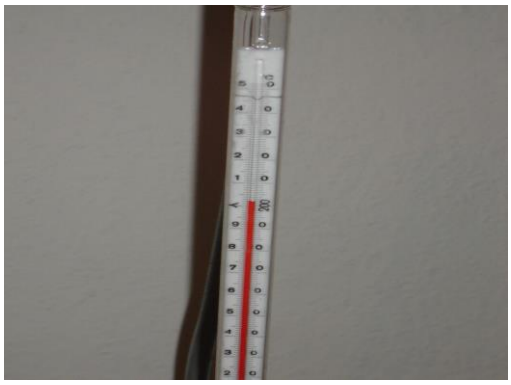
flask to calm the bumping down a bit.

Do not close the setup completely else there will be too much pressure inside, as you can see on

the right of the picture there is another flask and on top of that flask there is a piece of glass

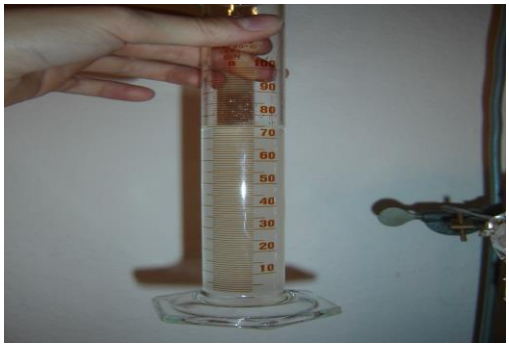
which is bent it is called an allonge it has an vacuum adapter piece to it.

If you do have a vacuum source you can connect your vacuum tube to that piece of glass. Now it functions as a pressure release opening.



Here you can see the temperature going over 200^{o}C.

Here you can see the pure safrole in the flask which came over, it is water-white oil.



Out of 90ml sassafras oil, 75ml of safrole is distilled out. On the right you see the tar and rest of the crap

that is left in the distillation flask, this stuff doesn t come over so apparently it will be a chemical that will

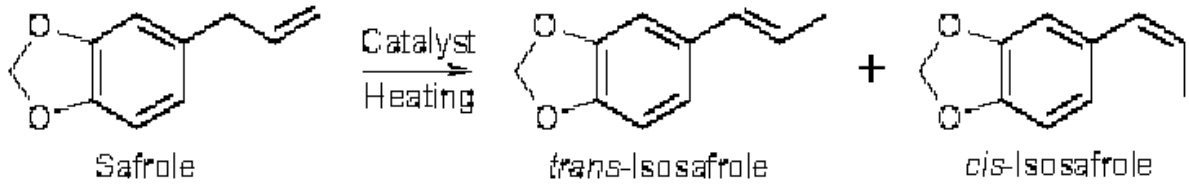
have a boiling point greater than 300^{o}C.

2. Isomerization

Now that we have the pure safrole, we can start with the next step.

Isomerizing the safrole to isosafrole.

Safrole itself looks like this:



Many ways of isomerizing safrole (3,4-Methylenedioxyallylbenzene) into isosafrole (3,4-

Methylenedioxy- propenylbenzene) can be found in the literature. The isomerizations, which in all reviewed cases are catalytic, often have high yields, but differ greatly in easiness and reaction times. The availability and costs of the catalysts also differ over a broad range.

The reaction, which is general for the conversion of nearly all allylbenzenes (like safrole, apiole,

dillapiole and elemicin) to their corresponding propenylbenzene isomer, is usually carried out by heating the allylbenzene together with an inorganic catalyst or catalyst mixture under reflux, with or without the use of a solvent. After the reaction is finished, the catalyst is removed by filtration, any solvent removed under vacuum, and the residue is distilled to purify the propenylbenzene from unreacted allylbenzene and polymerized material.

21,10 grams of KOH weighed down.

Glassware set up for reflux.

Reflux means that the cooler is put inside the flask upside down, and so when there are chemicals in the flask that can evaporate easily they would normally evaporate and be gone out of the reaction when you heat it to let them react.

If you would place a cooler on top of the flask the chemicals which evaporate will cool down again and fall back down in the reaction flask. That is in short the principle of refluxing.

75ml safrole is poured in the flask and 30ml 96% ethanol is added and 21,10g of KOH.

The solution is refluxed for 3-4 hours on a gentle reflux of 60^{o}C.

After adding the KOH to the safrole + ethanol the mixture turned brown.

1 minute

1,5 hour

4 hours.

This is what was left after refluxing it, on the bottom is a hard cake of KOH lying.

This mixture was filtrated to get rid of the solid KOH.

A KOH cake is seen on the bottom of the flask.

Toluene is poured into the sludge which remains and threw the filter to get all the isosafrole out of there. Toluene doesn't mix with water, it has a lower density (0,86g/ml) so it floats on top of water.

Drain of the water layer, and keep the toluene layer, add this to the filtrate and distill it to get rid of the red/brown

color, but before you distill it you need to neutralise the KOH with an acid, SWIM used H2SO4 diluted in water to

50% and checked it with pH paper to get it only a little bit basic.

This is what is left after distilling the isosafrole, the yield was 80% by weight. It was 66ml.

3. Epoxidation reaction via peracetic acid

First of all you need DCM (dichloromethane aka methylenechloride) it is sold as paint stripper and as brush de-hardener.

It contains: DCM, methanol, solvent-naphta, hydrogenated naptha.

Both the naptha's have a boiling point greater than 100^{o}C, the methanol 65^{o}C and the DCM 39-40^{o}C. So without a vigreux column he distilled the DCM and it came over at 39^{o}C until 41^{o}C.

The mixture itself was 55^{o}C and the gas temperature was 39^{o}C and at the end 41^{o}C the mixture contained 65% DCM. The addition funnel is to get the DCM in the 1 liter round bottom flask.

All the DCM is added to the flask (500ml) and it is ready for the heating, so the heat was turned on and started to distill of the DCM.

Quite some DCM came over quickly, at least enough to use as a solvent for the epoxidation reaction.

To do the peracetic acid epoxidation reaction, the isosafrole needs to be dissolved in a solvent to make it mix with the peracid, alcohol can be used but due to alcohol containing water easily it is not a good choice. Acetone is also quite a lot used but it wasn't used here because you need to distill the mixture after you are done with the MDP2P reaction. And acetone can form acetone peroxide with hydrogen peroxide and an acid (acts as an catalyst).

Acetoneperoxide is a high explosive, which detonates from heat. So guess what happens if you used a bit too much H2O2, and then you are going to distill that mixture Acetoneperoxide are white needle like crystals by the way.

Anyway to make the peracid one should do the following:

Pour:

- 55,8ml of 99-100% glacial acetic acid

- 55,2 ml hydrogenperoxide 35%

- 0,66 ml sulfuric acid 96%

H2O2 and acetic acid.

Sulfuric acid 96% with a 1,00ml pipette.

Everything mixed, set this aside for 4 days, and swirl every day a couple of times.

All together in a flask, let this react for 4 days, it doesn't heat up, just stink like acetic acid very badly.

And let it react for 4 days to get to it s equilibrium, and then it can be used.

Dissolve 33ml of isosafrole in 51ml DCM.

Add this slowly to the peracetic acid, and let the temperature not rise over 40*C.

You should place the flask on a magnetic stirrer in an ice bath while doing this.

After everything is added, let the ice-bath come to room temperature by itself, and leave it to stir overnight, with some foil over the top of the flask.

The color will go from yellow to orange to deep red, distill of the DCM and distill of the acetic acid. A dark thick syrup will remain.

Dissolve this syrup in 51ml methanol and add to this 250ml 15% H2SO4 solution.

Let this reflux mildly for 3 hours.

Then when it has come to room temperature drain off the acid layer, and keep the dark layer.

Pour the dark layer in 125ml of water and then extract the syrup again.

Then wash it with 125ml of NaOH solution of 5%, this last wash is difficult to see so use a flash light to see where the phases separate.

Now pour in 5g of MgSO4 (epsomsalt) which is completely dry, dried in oven at 300*C for 4 hours.

Filter of the MgSO4 again and wash the MgSO4 with DCM.

Distill the resulting liquid; this is your pure ketone.

Here are the pictures:

Here you can see 51ml of dichloromethane mixed with 33ml of safrole, it does not mix when just poured onto each other, SWIM sucked the mixture up with his pipette and blew it back in the rest of the liquid to mix it, until it was mixed well, it was quite easy to mix.

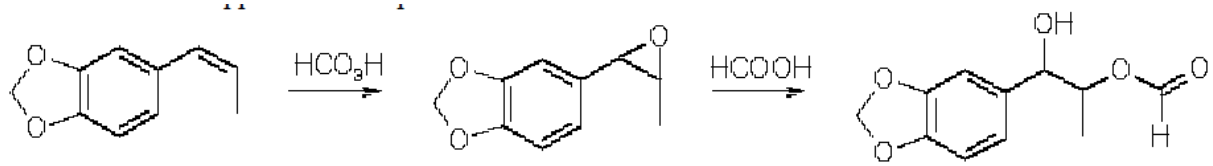
Here you can see the ice bath with the isosafrole and DCM mixed in there, while the peracetic acid is being added to it slowly.

As you can see it is in an ice bath as mentioned above, this is to prevent the liquid becoming too hot, and get to a boil.

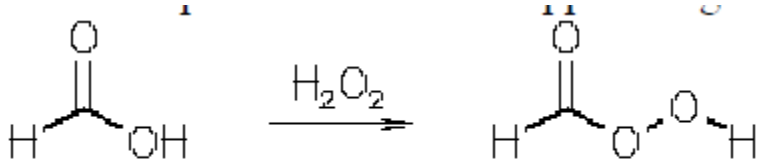
Although it should not exceed 40°C, DCM is used as a solvent so you also need not worry about explosives peroxides(since you need to distill this mixture). when using acetone make sure you do not add to much H2O2 if not everything is used up by the acid it will peroxidize your solvent if it is peroxidizable (such as ether and acetone).

When the time for it to be distilled is reached, the mixture is poured in another round bottom flask and set it up for distillation.

Well this is what happened in the epoxidation reaction.



When the peracid forms this happens in general.

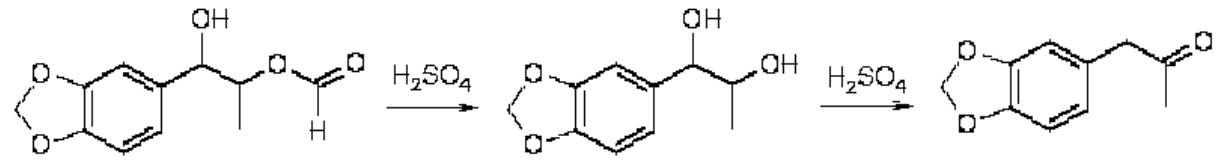


When the peracid forms this happens in general. Now it is time to get rid of the acid that is done by adding NaOH solution SWIM used around 3g of NaOH in 150ml water, and used it all to neutralize the peracetic acid he made.

Here it is separated by a separating funnel. The peracetic acid gets neutralized with NaOH so it forms water and sodium acetate.

The ether is distilled off at 39^{o}C, and pure isosafrole glycol is what you have in the flask then.

This needs to be turned into MDP2P you can see the reaction mechanism below.



Isosafrole Monoformyl Glycol Isosafrole Glycol MDP2P

You need to pour as much methanol together with the isosafrole glycol as you used solvent for the isosafrole. 51ml of methanol was used to dissolve the isosafrole glycol in, and 255ml (5 times as much as the methanol) of 15% H2SO4 was added to it.

If you take 99% sulfuric acid, that is the most common to buy as drain cleaner, one could also buy battery acid. That is 37,5% sulfuric acid, dilute it 2,5 times with water to get 15%.

When using 99% you need to dilute it 6,6 times.

When using 96% (also quite common instead of 99% as drain cleaner) you need to dilute 6,4 times.

The density of H2SO4 when concentrated is 1,84g/ml, so you need 1,84g with 6,4 times as much water.

1,84g*6,4g = 11,78g water. 11,78g/0,998g/ml = 11,80ml water.

1,84g = 1 ml

So for every milliliter H2SO4 you need 11,80ml water.

You need 255ml sulfuric acid, 255/11,80ml = 21,61

((19,92*11,80)/0,998)= 234,53 ml = 234,06g

((19,92* 1,84)/1,84) = 19,91 ml = 36,63g

234,06g / 36,63g = 6,4 times as much .

The next wash will be added to this, and then the ether is distilled of and the pure isosafrole glycol remains and then you should add the methanol and the sulfuric acid. (mix the sulfuric acid ahead with water).

Reflux this mixture for 3 hours and no longer else the yield will go down, now you have raw MDP2P.

Now let it cool down to room temperature. After cooling, pour off as much as water as possible, and pour new fresh water in there so the flask is filled half or 2/3th and mix well, and let the layers separate and decant off the water. Do this 4 times; this should be good enough to remove the last traces of sulfuric acid left in the oil. Now for the last time adding water decant off the water, and attach a distill head etc. onto the flask, and start to distill the MDP2P.

From another syntheses I read the MDP2P comes over as a yellow to brown oil at 115-170^{o}C with a aspirator vacuum, and then re-distillation gives yellow oil (MDP2P) at 140-150^{o}C.

But in this case, the MDP2P came over at 158°C with vacuum and 15g of MDP2P that is a yield of +/- 45% was collected which was yellow golden in color and when held against the sunlight it has a greenish look from some sides depends on how one looks at it.

Another method to collect your MDP2P would be (and also to test if it is real MDP2P) with

Sodium bisulfite.

One would make a saturated solution of sodium bisulfite, and drop a bit of what should be MDP2P into it, and if a preticipate forms, it is a ketone, and most likely MDP2P, since it just happens to be a ketone. It is a somewhat well known fact that sodium bisulfite will add to the carbonyl group of a ketone to form a crystalline addition product. If the parent ketone is of large enough molecular weight, the product will be insoluble in water. The parent ketone can then be recovered at a later time by decomposition with sodium hydroxide. This is a doubly good trick in that it gives us an excellent way to get pure ketone from an impure reaction matrix and it also allows the long term storage of an otherwise unstable ketone prior to its use.

Now, this doesn't *eliminate* the need for a proper (vacuum) distillation of the ketone, but it does make such a process much more pleasant in that when recovering from the bisulfite, there will be little tar and/or polymerized crap to deal with. This means greatly reduced cleaning for those precious flasks, and, possibly, higher yields. The bisulfite addition is a fairly general process, and may be adapted to many different ketones (keeping the molar ratios in proportion), however, there are going to be some ketones which will either not react or react to a low extent (mainly ones in which there is significant steric hindrance to the carbonyl carbon). In cases where the carbonyl carbon is on an aliphatic side chain to some other funky ring structure, there is little steric hindrance, and so the reaction proceeds quickly and nearly quantitatively. Finally, there is the limitation that that ketone (or ketone containing slop) be reasonably free of acidic or basic impurities, as these will interfere with the formation of the addition product.

1) Preparation of the bisulfite reagent:

(This must be prepared just prior to use, as it will auto oxidize within hours if left to its own devices.)

Add 52g sodium bisulfite (NaHSO3, .5moles) to approximately 90mL of distilled water at room

Temperature with vigorous stirring (slightly more water may be used to get it all into solution). Add a volume of denatured alcohol of about 70% of the solution's volume (ie - if you end up with 100mL of solution, add 70mL of alcohol) then add more water to just dissolve the precipitate (~60mL).

2) Reacting with the ketone:

Slowly drip .25moles of ketone into a beaker containing the bisulfite solution with vigorous magnetic stirring. The 2:1 molar ratio insures that all of the ketone will be converted. Let sit on the stirrer for an additional 30-45 minutes then filter on a vacuum Buchner funnel. Wash the crystals with 20-50mL of denatured alcohol. Dry in a vacuum dessicator or open tray then store in a stoppered glass bottle until needed. If adding an impure reaction matrix, add as much solution as you expect to contain .25moles of ketone.

3) Recovering the ketone:

Add the ~.25moles of bisulfite addition product to a separating funnel then slowly pour in 105mL of 10% Sodium Hydroxide solution (w/w). Separate out the aqueous layer (which may be on top or on bottom depending on the ketone), saturate with salt (NaCl), and extract with 50mL of ether (toluene or benzene ok if the ketone is of high enough bp). Combine the extract with the ketone layer and strip off the ketone by distillation (condense and reuse!). Distill the ketone residue, preferably under vacuum (if you're making what I think you're making), to yield up to 90%, depending on the purity of the starting ketone, of course. Refs to chase: A. Vogel, "Practical Organic Chemistry"

Now one has MDP2P if one wants to store it do so in the freezer it will become a very viscous liquid andwill be storable for LONG times.

Now will be outlined how MDP2P can be synthesized with the wacker oxidation and p-benzoquinone a laMethylman.

4. p-Benzoquinone Wacker oxidation.

To convert safrole to MDP2P one does the following:

- Distilled sassafras oil to yield safrole 18ml

- 40ml MeOH

- 0,2g $PdCl_2$

- 5ml dH_2O

- 15g p-benzoquinone

First let all the chemicals stir for an hour except for the safrole, the safrole has to be added later

On after everything has been mixed thoroughly for an hour.

Then start dripping in the safrole this should take at least an hour, when dripping is at 80% then

Start heating slowly and after everything has been added start a reflux for 8 hours.

After the 8 hours have passed, throw the whole reaction mixture threw an buchner filter to filter

out any residue like hydroquinone (degradation product of 1,4-benzoquinone) and $PdCl_2$ (don't try to recover this it is not worthwhile).

After filtration add 150ml 10% HCl to hydrolyze the reaction to MDP2P stir for 15 minutes and

now extract 3 times with 100ml DCM, 50ml and 25ml DCM.

Combine extracts and wash them 2 times with 50ml saturated sodiumbicarbonate solution, then 2 times with 50ml saturated NaCl solution.

Then wash the extracts which have now turned color a bit more greenish/yellow with 5-10%

NaOH solution and do this 3 times with a volume of 100ml per wash, now dry the ketone after

the NaOH solution has been drained off with $MgSO_4$ or Na_2SO_4 (anhydrous).

And after it has been dried distill of or rotavap off the DCM and be left with impure MDP2P.

This needs to be distilled and there are a few pictures of below:

This is the color of the MDP2P. It has a greenish hue on it.

This is the reduction setup, but the same is the wacker oxidation since there is the safrole on the right and on the left the condenser for reflux and an overhead stirrer in the middle a heating mantle in the middle too, and in the back a bucket with 10 liters of cooling water.

After the MDP2P has distilled one will have around 8ml MDP2P to 15ml.

SWIM got 8ml it was the first time doing this reaction but the yield will go up with more experience probably.

5. Reductive Amination MDP2P MDMA freebase:

First 4ml MDP2P was reduced in a 500ml round bottom flask with 8g of Al foil which has been

put in the coffee bean grinder before and overhead stirring used etc exactly like the picture above.

Enough MeOH was used to cover the Al and 60mg $HgCl_2$ was dissolved in 20ml MeOH and

added at once to the reaction threw the dropping funnel, then after 15-20 minutes the

amalgamation started, small bubbles occurred and then bigger ones which is the point where the

MDP2P needs to be added but since the MDP2P IF you will reduce it as it is will only yield

MDA (in acidic conditions) we want MDMA so we add nitromethane (which will be reduced to methylamine in situ) and that forms an imine which then will be reduced to MDMA.

This is an BASIC Al/Hg reduction (reductive amination), when reducing nitropropene s or styrene s then an acidic Al/Hg reduction is used with addition of example glacial acetic acid.

Methylamine is alkaline and will thus make the reaction basic.

Reduction going, make sure to add the MDP2P+MeNO2 at one drop per second if you will drop everything in there at once one will get a very vigorous reaction and you will get drained in boling MeOH and mercury etc not very pleasant.

So use 4ml MDP2P and 3,3ml MeNO2 and 8ml MeOH in the dropping funnel.

Look at the foam this is how heavy the reaction is, here the Al is dissolving in the MeOH due to the HgCl2 while it does this it reduces the N-Methyl-MDP2P imine to MDMA.

When the reaction will cool down again then add the MDP2P+MeNO2 faster if you ran out of MDP2P+MeNO2 then start heating and reflux until you reached 3 hours.

After 3 hours add NaOH solution (concentrated) and this is for the Al that hasn't dissolved so which is left in the flask, this will heat up too and make the MeOH boil, anyway don t add the NaOH too quick since then there it will also foam and then it could also come out of the condenser.

So after the addition of the NaOH let it stir for 1 hour to make sure everything dissolved.

Now you will have 2 layers a bottom layer with Al(OH)3 and probably black and an orange/yellow/red aqueous layer where you want filtrate off the Al(OH)3 in a buchner (needs to be vacuum), and then one will have something like this:

The filter, you might need to do the filtration in part since the filter will clog up pretty much and

even with strong vacuum you can't get it threw anymore.

Anyway first evaporate the MeOH from the reaction then extract the remaining liquid with DCM 3 times (or any other non-polar solvent) SWIM just loves DCM since it rotavaps off really quick.

Then evaporate the DCM, then do an a/b or distill the MDMA freebase, SWIM normally prefers

distillation but one needs a vacuum pump which can pull below 10mbar for this job else the

MDMA oil will decompose so aspirator won't do.

Use the acid/base extraction, if you don t know what that is you shouldn t be doing this

synthesis.

In short the MDMA oil can be oil or a salt, the salt is water soluble and the oil isn't.

You take advantage of this, right after the reaction when the oil is in the DCM, wash the DCM

with water and NaCl solution and $NaHCO_3$ solution, this takes out all the crap that does dissolve in water.

Then add H_2SO_4 to the oil after DCM evaporation (since then you see how much impure

MDMA freebase you have) then add twice as much molar H_2SO_4 solution like 5%-15%

solution, then add DCM and you can extract all the crap that does dissolve in non-polar solvents

once again here you can also use chloroform or toluene etc.

Now add NaOH to the water layer and do this with a NOT concentrated solution of NaOH.

Then you will see some white stuff when adding a bit of NaOH solution, this actually is the

MDMA freebase which if you leave it will settle to an oil layer on top of the water, but just do

this and shake until the white cloudiness persist (means it doesn't go away anymore) then add DCM and add more and shake every time after every addition of 1-3ml and then when no more white cloudiness forms add the rest of the NaOH solution at once until pH = 12-14.

Then drain off the DCM keep it and extract the now basic aqueous mixture with 2 times more DCM and combine, evaporate DCM and you have pure MDMA freebase.

6. Crystalization of MDMA freebase to MDMA.HCl

4,0ml MDP2P yields with this method 3,0ml exact MDMA freebase, which needs 1,95ml of 29% HCl solution or 0,566g HCl calculate your own amount for your concentration you have.

Just add the HCl solution while the freebase is dissolved in toluene (dry).

Now you will have an little aquous layer on the bottom of your little RBF, now put a dean and stark trap on top of the RBF or just attach it to a distillation setup, the point here is to distill of the water, the dean and stark trap breaks the azeotrope which normally is formed with water and thus drives off the water, anyway when the water evaporates the HCl salt of MDMA will then settle out as a brown paste or very viscous layer on the bottom, then after all the water and some toluene came over you add the double volume of acetone so for 3,0ml MDMA freebase you use 10ml toluene and 30ml acetone (anhydrous) this sucks up the water that still is in there, and then the paste will turn into nice white crystals(the acetone also takes up some crap).

Now put in freezer overnight or couple of hours and filtrate and wash with acetone (anhydrous and cold).

Some pictures:

Tadaa 3000mg MDMA.HCl

Can You Get Addicted to MDMA (Ecstasy or Molly)?

Researchers don't yet know. What is known is that MDMA targets the same neurotransmitters that are targeted by other addictive drugs. Researchers are still working to understand MDMA's addictive properties. But, some users experience:

• Dependence: Continued use despite understanding the harm it can cause

• Withdrawal: Symptoms that occur after regular use of the drug is reduced or stopped, such as fatigue, loss of appetite, depression, and trouble concentrating

• Tolerance: The need for more of the drug to get the same "high" feeling

Is MDMA addictive?

Research results vary on whether MDMA is addictive. Experiments have shown that animals will self-administer MDMA an important indicator of a drug's abuse potential although to a lesser degree than some other drugs such as cocaine.

Some users report signs of addiction, including the following withdrawal symptoms:

• fatigue

• loss of appetite

• depression

• trouble concentrating

Does MDMA Have Value in Therapy?

MDMA was first used in the 1970s as an aid in psychotherapy (mental disorder treatment using "talk therapy"). The drug didn't have the support of clinical trials (studies using humans) or approval from the U.S. Food and Drug Administration. In 1985, The U.S. Drug Enforcement Administration labeled MDMA as an illegal drug with no recognized medicinal use. Some researchers remain interested in its value in psychotherapy when given to patients under carefully controlled conditions. MDMA is currently in clinical trials as a possible treatment aid for post-traumatic stress disorder and anxiety in terminally ill patients.

How can people get treatment for addiction to MDMA?

There are no specific medical treatments for MDMA addiction. Some people seeking treatment for MDMA addiction have found behavioral therapy to be helpful. Scientists need more research to determine how effective this treatment option is for addiction to MDMA.

Added Risk of MDMA

Adding to MDMA's risks is that pills, capsules, or powders sold as Ecstasy and supposedly "pure" Molly may contain other drugs instead of or in addition to MDMA. Much of the Molly seized by the police contains additives such as cocaine, ketamine, methamphetamine, over-the-counter cough medicine, or synthetic cathinones ("bath salts"). These substances may be extremely dangerous if the user does not know what he or she is taking. They may also be dangerous when combined with MDMA. Users who purposely or unknowingly combine such a mixture with other substances, such as marijuana and alcohol, may be putting themselves at even higher risk for harmful health effects.