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DRUG ANALYSIS REPORT ON

DESIGNER DRUGS

SEIZED IN QUEBEC

METHAMPHETAMINE MDMA MDA AMPHETAMINE AMPHETAMINE/AMPHETAMINE SALTS
DROPERIDOL EPHE- DRINE/PSEUDOEPHEDRINE LORAZEPAM METHYLPHENIDATE CITALOPRAM NITRAZEPAM
QUETIAPINE SILDENAFIL CELECOXIB CODEINE DOMPERIDONE FLURAZEPAM METOPROLOLOL
TRIMEPRAZINE METHYLAMINOREX NEXUS N,N-DIMETHYLAMPHETAMINE OXYCODONE
PENICILLIN V POTASSIUM PHENYLPROPANOLAMINE PIPERONAL PSILOCYBIN TADALAFIL

JUNE 2007 to JULY 2008

Canada

With the participation of



Montréal 



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FOREWORD

In 2004, in response to a serious need expressed by substance abuse stakeholders, Health Canada, working closely with the Royal Canadian Mounted Police, carried out the Rave Project.

Due to the hugely positive response of stakeholders and police forces to the publication of the study report and the accompanying posters, it was thus decided in June 2007 to continue the work. However, given that raves are becoming less and less popular, the second part of the study was extended to a broader clientele, thus enabling us not only to draw a Quebec portrait of the specific use of tablets sold as ecstasy or speed but also to focus on the key information connected to drug composition, on the various trends, and on regional market prices.

Finally, I sincerely thank the people and the organizations that worked with us to make this second report a reality. I am grateful for the remarkable work of the Health Canada Drug Analysis Service for analyzing substances, compiling results, and producing the report. This second study was also made possible thanks to the sampling carried out by Sûreté du Québec and the police forces of Montreal, Laval, Longueuil, and Quebec City, as well as the contribution of the Royal Canadian Mounted Police. I especially want to point out the excellent contribution of Dr. Claude Rouillard, Professor, Faculty of Medicine, Université Laval, Quebec.

Good reading!

Marie-France Bérard
Regional Director General
Health Canada, Quebec Region



PREFACE

For a number of years, we have observed a constant increase in the popularity of designer drugs, often called recreational drugs, in reference to their stimulating effects and to the festive context associated with their use. In this report, we discuss designer drugs sold in tablet form—such as methamphetamine (often called speed or peanut in the streets), MDMA (called ecstasy), or any other derivative presented in this report. The trivialization of the use of these drugs in tablet form, their attractive and falsely reassuring appearance with stylish logos and colours, and their low cost promote the emergence of the phenomenon and expand the clientele who have accessibility to these drugs. Illicit drugs such as these are now widespread in all social environments including bars, schools, private parties, and this without regard to the social strata of users. Exchanges between the police and their partners in various intervention, prevention, health, and education sectors led us to conclude that there was an interest in developing a new study in collaboration with Health Canada. It became blatantly obvious in the face of this multisectoral challenge that we are confronted by a user clientele that believes it has taken a drug that is different from the one it has become intoxicated with—with resulting difficulties in the subsequent intervention or treatment.

Health Canada and the Sûreté du Québec concluded that they should combine forces to produce this report. The proximity of the police to the various living environments promoted access to the supply sources of drug samples (dealers and users). This proximity also provided them with information regarding the supposed nature of the substance. All of these factors, together with the scientific contribution of the chemists who analyzed the tablets, were essential in attaining the objective of the study. The chemists had to respect the exact study parameters to be able to assert the existence of the disparity observed by the police between the tablets sold illicitly in Quebec and their actual composition. This while validating many observations of the previous studies conducted by Health Canada to the effect that neither the format, the logo, or the colour enable identification of the type of drugs in the tablet. It has often occurred that two identical tablets had different compositions. This study required greater police support in that the police had to select samples and submit them, based on their ability to confirm not only their source but also the supposed tablet composition. To do so, they completed a questionnaire that was submitted with the sample tablets to Health Canada specifically for this study. Therefore, we called on various partners to obtain this rigorous sampling from all areas of Quebec, namely, the Service de police de la Ville de Montréal for the Montreal region; the Service de police de la Ville de Longueuil for Longueuil; the Service de police de la Ville de Laval for Laval; and the

Service de police de la Ville de Québec for the Quebec City region. As for the Sûreté du Québec, they called on specialized units for the districts in their territory. Furthermore, the RCMP maintained its support throughout the study. We should also mention the participation of many other Quebec municipal police forces who worked in partnership with the Sûreté du Québec on the present study.

The purpose of this report is to portray the current situation in Quebec with regard to designer drug tablets. We are convinced that this study will mobilize the stakeholders committed to the fight against drugs, and to user treatment, as are all stakeholders in Quebec emergency and health services, as set forth in the substance abuse plan of the Ministère de la Santé et des Services sociaux. At the same time, we will help to inform the public about the illicit tablets circulating in their communities. We must make them aware of the disparity between what they believe they are buying and what they are taking, and we must make the drug traffickers accountable for the social consequences of their criminal activity, seeking financial gain while unscrupulously destroying lives.

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Sûreté du Québec*



DESIGNER DRUGS SOLD IN TABLET FORM

By Dr. Claude Rouillard

INTRODUCTION

Use of illicit designer drugs sold in tablet form is becoming increasingly more common and widespread. These drugs, including in particular ecstasy [3,4-methylenedioxy-methamphetamine (MDMA)] and speed (methamphetamine) are primarily but not exclusively associated with the phenomena of raves and afterhours. They are also part of the numerous club drugs that also include MDA (3,4 methylamphetamine), ketamine, and GHB (gamma-hydroxybutyrate). These drugs have continued to grow in popularity in the past 10 years and are now found throughout Quebec, from the metropolitan areas to all rural regions. In fact, while the initial consumer profile much resembled that of people who attended gatherings such as raves, this profile has now extended to include all levels of substance abusers. These drugs are readily available on the black market and their use is now widespread among youth. The annual prevalence of amphetamine use by young people in secondary schools in Quebec has been on the rise for a few years and is now at close to 10%.

At the same time, there has been a reversal in the intrinsic popularity of ecstasy and speed. While at the outset, ecstasy was the most sought-after drug with only a low proportion of users knowing and looking for methamphetamine, it is now methamphetamine that is the most popular. The synthesis of these drugs is relatively accessible from more-or-less available ingredients and recipes made popular over the Internet. Increasingly numerous clandestine laboratories have resulted in increases in the production of these drugs and consequently in problems for public health, the law, and the environment. Some of the laboratories are small-scale or home-based but others are sophisticated and able to produce large quantities of drugs.



AMPHETAMINERGIC DRUGS

The great majority of illicit designer drugs belong to the family of amphetaminergic drugs. Among them are, of course, amphetamine but also methamphetamine, MDMA, and MDA. These drugs are part of the group of major psychostimulants of the central nervous system (CNS). Amphetamine is the parent drug of this large family; that is, its chemical structure is at the core of all molecules and the various transformations of this chemical structure will only modify its strength, toxicity, and the multitude of desired and undesired effects caused by taking this molecule. Although from a chemical and pharmacological standpoint, amphetamine is considered as the family leader, methamphetamine (speed) and MDMA (ecstasy) are the most sought-after derivatives for illicit abusive use.

The chemical structure of amphetamines resembles that of catecholamines, which include adrenaline, noradrenaline, and dopamine. These three substances are important neurotransmitters involved in a multitude of physiological and biochemical processes in the central nervous system and the peripheral nervous system. It is therefore logical to assume that the prolonged use of amphetaminergic drugs seriously disrupts the normal activity of the central nervous system and the peripheral nervous system. These disruptions are the source of many undesirable effects of these drugs on a physiological, neurological, and psychiatric level.

AMPHETAMINE

Amphetamine has two enantiomers: *d*-amphetamine and *l*-amphetamine. Enantiomers or isomers are molecules that have the same chemical composition but a different three-dimensional chemical structure. Also known as dextroamphetamine or (+) amphetamine, *d*-amphetamine is three to four times more potent than *l*-amphetamine in terms of stimulating the central nervous system. On the other hand, the latter is more potent in terms of cardiovascular effects. Medical preparations may contain only *d*-amphetamine or a combination of both enantiomers (*dl*-amphetamine). The composition of illicitly sold amphetamine may also vary depending on the method used to produce the drug.



Because amphetamine is a psychostimulant, the main effect is a feeling of physical and intellectual power. In normal therapeutic dosages there would thus be an increase in vigilance and motivation, an increase in the ability to perform simple tasks normally affected by fatigue, and a decrease in hunger, fatigue, and drowsiness. These effects are accompanied by excitement and agitation, which may sometimes lead to panic or psychotic episodes. These abnormal states are more frequent with chronic use or with high dosages. By the same token, chronic use will result in drug tolerance leading users to take higher dosages to obtain the initial effect. At the same time, users may develop a physical dependency that will cause withdrawal symptoms when they suddenly stop taking the drug. Among the withdrawal symptoms are fatigue, highly altered sleep, irritability, uncontrolled hunger, and more or less severe symptoms of depression.

The therapeutic dosage for amphetamine may vary from 2.5–25 mg. A dosage of 50 mg would usually cause major undesirable effects. On the other hand, given that repeated consumption results in significant tolerance, dosages taken and tolerated may also vary widely. A drug abuser could take daily dosages of 250–1000 mg.

METHAMPHETAMINE

Amphetamine and methamphetamine are drugs with essentially psychostimulating properties. Methamphetamine is a slightly different molecule from amphetamine. The main transformation is the addition of a methyl group to one of the molecule's extremities. This modification is important because it has a major influence on the strength and neurotoxicity of the molecule. Methamphetamine is at least twice as potent as amphetamine because it crosses the blood-brain barrier more readily. The duration of its effect is also longer. Methamphetamine is characterized by a highly addictive potential, which is to say that taking this drug can quickly lead to problems of drug abuse and addiction.

In Quebec, methamphetamine is usually sold as a pill. Taking it produces effects similar to those of taking amphetamine but usually of higher intensity. The main effects are psychotropic and cardiovascular. In addition to the effects described for amphetamine are a decrease in appetite and dilation of the pupils, and sometimes



headaches and tremors. Methamphetamine produces changes in heart rate and an increase in breathing rate and depth. The effects of methamphetamine obviously depend on the concentration of this substance in each tablet. Given that the drug is produced in clandestine laboratories, the concentration of the drug in each tablet can vary widely. At very high dosages, the previously mentioned effects are more intense and accompanied by a quick succession of ideas and sometimes irritability, panic and psychotic episodes. The effects of the drug also vary depending on individual tolerance. As is the case for amphetamine, repeated and chronic use leads to the development of significant tolerance. It is interesting to note that the development of this tolerance varies depending on the category of effects; tolerance to euphoristic effects develops more rapidly than tolerance to anorexigenic and cardiovascular effects.

For a normal individual, a dosage of 5–30 mg taken orally is sufficient to induce the sought-after sensations of physical and intellectual power. The desired effects will appear in 20–60 minutes. Larger dosages of 20–60 mg are required to induce a pronounced state of euphoria. A regular substance abuser may take individual dosages of up to 150 mg and a daily dosage of up to 1 gram. Some experienced users will take the drug over an uninterrupted period of several days (binges). They take several dosages a few hours apart to stay “high.” They stop taking the drug when they are totally exhausted or when they run out of the drug.

Despite the drug’s significant potential for being highly addictive, it is the drug’s possible long-term health consequences that hold interest for the scientific community. Methamphetamine use has, to date, been associated with various medical, neurological, and psychiatric problems. Research on animal models and on humans has revealed complex mechanisms of neurotoxicity induced by chronic use of methamphetamine.

The harmful effects of methamphetamine are present from the time of fetal development. If a mother takes methamphetamine during her pregnancy it can lead to multiple prenatal complications such as intraventricular hemorrhages, growth retardation, lower birth weight, a high risk of cleft palate, and abnormal behaviour of the newborn. Swedish studies also have shown that exposure to amphetaminergic drugs during pregnancy correlated with later-appearing developmental problems in the child.



There is relatively abundant literature suggesting co-morbidity between amphetamine drug abuse and vascular/cardiac problems. Retrospective studies in humans among methamphetamine users have shown the presence of pulmonary edema, cerebral hemorrhage, and various cardiac pathologies.

Many pre-clinical and clinical studies have also shown that methamphetamine induces cerebral damage that may be associated with a variety of cognitive problems such as a deterioration in memory and learning capacity, psychomotor slowdown, and problems in processing information. Current studies, including both animal models and human neuroimaging, have confirmed the neurotoxicity of this drug. This neurotoxicity is well documented in animals and in humans and primarily affects the dopaminergic systems. In animals, neurotoxicity is expressed more specifically by a 25–60% decrease in dopaminergic nerve endings in certain cerebral structures. In humans, the same type of degeneration is noted among chronic methamphetamine users at autopsy. These results have been corroborated *in vivo* by studies using sophisticated neuroimaging techniques. One must be aware, however, that certain factors inherent to studies of humans limits the scope of the conclusions of these studies. The most important limitation is definitely the fact that it is impossible to know the status of these individuals before they took these drugs.

Chronic methamphetamine use can result in adverse psychiatric effects. Among these is sensitization to the effects of the drug. These can manifest through problems of paranoia, hallucinations, mood disorders, behavioural disinhibition, highly altered judgment, delusions of grandeur, extreme psychomotor agitation, and a bizarre behaviour known as *punding*. Some of these psychiatric symptoms are similar to those of schizophrenia. It is suggested that these symptoms are a result of: 1) chronic methamphetamine use, 2) a selective decrease in the various dopaminergic markers in various cerebral structures, and 3) major changes in cerebral blood flow.

MDMA AND MDA

Ecstasy (MDMA) is another derivative of amphetamine. Nevertheless, it belongs to both the psychostimulants and hallucinogens categories. Use of ecstasy as a recreational drug began on American campuses in the 1960s. Ecstasy users are looking for



a sensation of energy and performance (psychostimulant properties) and major changes in sensorial properties (sometimes referred to as hallucinogenic properties). To these effects are added a number of other specific properties—by decreasing psychic inhibitions, they make it easier to express emotions, create a sense of empathy with others, and give a feeling of freedom in inter-personal relations. In principle, these properties of ecstasy go well with a night of wild dancing to techno music with strong lighting.

MDA (3,4-methylenedioxyamphetamine) is a molecule that is very close to MDMA. Its effects are also very similar. What drug users are looking for is MDMA. Nevertheless, it is practically impossible for users to tell the difference between MDA and MDMA. The only characteristic that differentiates these two drugs is that MDMA has primarily psychostimulant properties (about 60% psychostimulant and 40% hallucinogenic) while, conversely, MDA has primarily hallucinogenic properties (about 70% hallucinogenic and 30% psychostimulant). However, MDA is a slightly more potent drug than MDMA.

For a novice user, a dose of 75–125 mg of MDMA is needed to produce the desired effect. On the other hand, the effects begin to appear at around 30 mg and the sought-after effect could be reached with dosages of 50–75 mg among a certain percentage of users, especially among those with low body weight. The sought-after dosages for MDMA usually vary from 75–200 mg. The latter dosage (200 mg) applies to regular users who have developed some tolerance. A more potent drug than MDMA, MDA has a typical sought-after dosage of 60–120 mg. The initial effects will also be felt at around 30 mg. It should nevertheless be taken into account that like all amphetaminergic drugs, there are notable individual differences and significant tolerance.

The psychological effects of MDMA or MDA can be divided into two categories: The first can be qualified as positive, the second as negative. It should be noted that the negative effects are present when the drug is taken as well as in the days or weeks that follow. Briefly, the positive effects include an altering of the perception of time, compassion, self-confidence and trusting others, cognitive changes, a decrease in aggressiveness, in fear, in impulsiveness, altered vision, empathy, forgetting about day-to-day worries, euphoria, excitement, hallucinations, an impression of power and energy, sexual arousal, and an improved perception of colour, sound, and touch. With



regard to the psychological effects said to be negative are agitation, anxiety, nervousness, blurred vision, cognitive deficits, confusion, decreased libido, depersonalization, depressive mood, rapid and major mood swings, fatigue that may be extreme, flashbacks, aggressiveness, obsessive behaviours, irritability, lack of motivation, panic attacks, paranoia, dizzy spells, and a decrease in appetite accompanied by significant weight loss.

There is a great amount of literature on the short-, medium- and long-term hazards of using MDMA. It has been shown beyond any doubt that, when taken, MDMA may cause in the days or weeks that follow a multitude of psychological problems such as agitation, anxiety, cognitive deficits, confusion, depression, rapid and major mood swings, insomnia, irritability, panic attacks, paranoia, dizzy spells, and a decrease in appetite accompanied by significant weight loss. It is important to note that some studies suggest that these psychological and sometimes psychiatric problems persist for a period of up to two years after drug use has stopped. MDA is not actually the drug that users are looking for but rather a drug that is substituted by traffickers, yet no study has investigated the long-term effects of MDA on the physical and psychological health of consumers. However, some studies have compared the effects of MDA and MDMA in animals and the main conclusions are that the effects of consumption are of the same kind and sometimes of a greater magnitude.



SOURCE AND COMPOSITION OF TABLETS



SOURCE OF TABLETS

In order to draw a provincial portrait of the composition of drugs sold in tablet form, 365 samples were collected from various regions of Quebec from June 2007 to July 2008. The geographical distribution of the tablets analyzed in the context of this project are presented in **TABLE 1**.

TABLE 1

GEOGRAPHICAL SOURCE OF TABLETS

REGION	NUMBER OF TABLETS	PERCENTAGE
Abitibi-Témiscamingue	18	4.9%
Lower St. Lawrence and Gaspé Peninsula	35	9.6%
North Shore	36	9.9%
Eastern Townships	32	8.8%
Mauricie-Centre-du-Québec	24	6.6%
Outaouais	18	4.9%
Montreal region*	124	34.0%
Quebec City region	37	10.1%
Saguenay-Lac-St-Jean	41	11.2%
TOTAL	365	100.0%

* Includes Montreal, Laval, and Longueuil



The tablets analyzed in this study were provided by various police forces. Most of the drugs came from seizures carried out in residences (42%), on the street (10%), or made by undercover agents (9%). The breakdown of these sources is presented in **TABLE 2.**

TABLE 2

SOURCE OF TABLETS

SOURCE	NUMBER OF TABLETS	PERCENTAGE
Residence	153	41.9%
Street	36	9.9%
Undercover agent	34	9.3%
Road (Highway Safety Code)	31	8.5%
Arrest	18	4.9%
Vehicle	14	3.8%
Penitentiary	13	3.6%
Search	11	3.0%
Parking	10	2.7%
Stash	9	2.5%
Afterhours	8	2.2%
School	7	1.9%
Bar	3	0.8%
Hotel room	3	0.8%
Hospital	3	0.8%
Driving accident	2	0.5%
Youth centre	1	0.3%
Blind pig party	1	0.3%
Festival	1	0.3%
Rave	1	0.3%



TABLET COMPOSITION

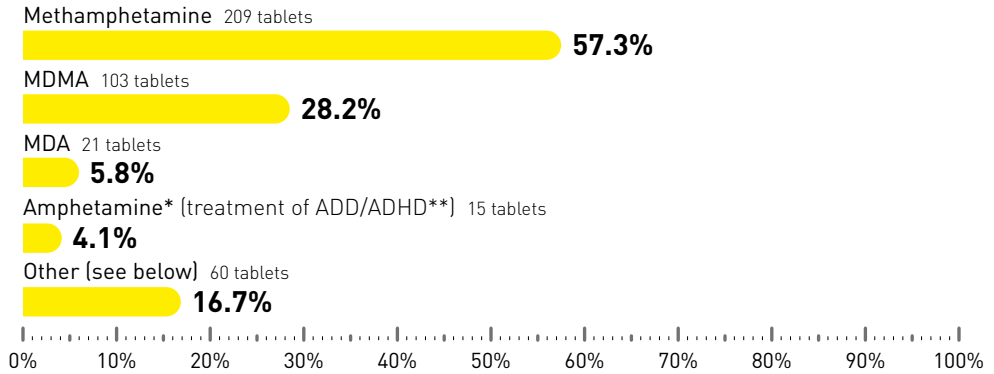
Within the framework of this study, 44 different and, for the most part, regulated substances were identified in the tablets analyzed. **CHART 1** highlights those listed in the Controlled Drugs and Substances Act (CDSA)¹ as well as those listed in Appendix F of the Food and Drugs Act², while **TABLE 3** lists all the substances identified. A complete list of the composition of the tablets is presented in **APPENDIX 1**.

Of all the drugs found across Quebec, methamphetamine, commonly known as speed, is by far the most frequently used drug in tablet form. It was identified in 57% of the samples. MDMA, commonly called ecstasy, was identified in 28% of the tablets, and is the second leading drug followed by MDA and amphetamine. These are, however, present in clearly smaller proportions. They were identified in 6% and 4% of tablets respectively. In the previous study, the *Drug Analysis Report on Designer Drugs Seized in Quebec*³, conducted from October 2002 to April 2004, the prevalence of methamphetamine over MDMA and MDA was not as pronounced. What's more, no presence of amphetamine was identified during the study.



CHART 1

SUBSTANCES IDENTIFIED LISTED IN THE CDSA OR IN APPENDIX F OF THE FOOD AND DRUGS ACT **PROVINCE OF QUEBEC**



SUBSTANCES	NUMBER OF TABLETS	PERCENTAGE OF TABLETS
Ketamine* (general anesthetic)	9	2.5%
Phenylacetic acid	8	2.2%
Clonazepam* (anticonvulsant)	7	1.9%
Ephedrine and/or Pseudoephedrine	7	1.9%
Lorazepam* (anxiolytic/sedative)	3	0.8%
Methylphenidate* (treatment of ADD/ADHD**)	3	0.8%
Citalopram* (antidepressant)	2	0.5%
Nitrazepam* (hypnotic/anticonvulsant)	2	0.5%
Quetiapine* (antipsychotic)	2	0.5%
Celecoxib* (anti-inflammatory/analgesic)	1	0.3%
Codeine* (opiate, analgesic/antitussif)	1	0.3%
Domperidone* (treatment of nausea/vomiting)	1	0.3%
Flurazepam* (hypnotic)	1	0.3%
Methotrimeprazine* (neuroleptic/antipsychotic)	1	0.3%
Methylaminorex	1	0.3%
Nexus	1	0.3%
N,N-Dimethylamphetamine	1	0.3%
Oxycodone* (opiate, analgesic)	1	0.3%
Penicillin V Potassium* (antibiotic)	1	0.3%
Phenylpropanolamine	1	0.3%
Piperonal	1	0.3%
Psilocybin	1	0.3%
Sildenafil* (treatment of erectile dysfunction)	1	0.3%
Tadalafil* (treatment of erectile dysfunction)	1	0.3%
Vardenafil* (treatment of erectile dysfunction)	1	0.3%
Zopiclone* (hypnotic)	1	0.3%

* Prescription drugs in Canada ** Attention deficit/hyperactivity disorder
Therapeutic indications of prescription drugs presented in parentheses.⁴

Although amphetamine is a prescription drug in Canada, the tablets in this study containing this substance did not come from pharmaceutical companies but rather from illicit laboratories.

TABLE 3**SUBSTANCES IDENTIFIED IN TABLETS ANALYZED FOR THE STUDY
PROVINCE OF QUEBEC**

SUBSTANCES	NUMBER OF TABLETS	PERCENTAGE OF TABLETS
Caffeine	223	61.1%
Methamphetamine	209	57.3%
MDMA	103	28.2%
Diphenhydramine	39	10.7%
Procaine	31	8.5%
Dimethyl sulfone	21	5.8%
MDA	21	5.8%
Amphetamine	15	4.1%
Ketamine	9	2.5%
Phenylacetic acid	8	2.2%
Clonazepam	7	1.9%
Ephedrine and/or Pseudoephedrine	7	1.9%
Lidocaine	5	1.4%
Lorazepam	3	0.8%
Methylphenidate	3	0.8%
Citalopram	2	0.5%
Nitrazepam	2	0.5%
Quetiapine	2	0.5%
5-Methoxy-N,N-diisopropyltryptamine	1	0.3%
5-Methoxymethylisopropyltryptamine	1	0.3%
Acetaminophen	1	0.3%
Benzylpiperazine	1	0.3%
Celecoxib	1	0.3%
Codeine	1	0.3%
(Dextro and/or Levo)methorphan	1	0.3%
Domperidone	1	0.3%
Flurazepam	1	0.3%
Glucosamine	1	0.3%
Methotrimeprazine	1	0.3%
Methylaminorex	1	0.3%
N,N-Dimethylamphetamine	1	0.3%
Nexus	1	0.3%
Niacinamide	1	0.3%
Niacin	1	0.3%
Oxycodone	1	0.3%
Penicillin V Potassium	1	0.3%
Phenylpropanolamine	1	0.3%
Piperonal	1	0.3%
Psilocybin	1	0.3%
Sildenafil	1	0.3%
Tadalafil	1	0.3%
Trifluoromethylphenylpiperazine	1	0.3%
Vardenafil	1	0.3%
Zopiclone	1	0.3%



As indicated in the results presented in **CHARTS 2 TO 10**, methamphetamine and MDMA have been identified in all regions of Quebec. Methamphetamine is the drug most present in all regions except in Mauricie, the Lower St. Lawrence (Bas-St-Laurent), and Abitibi. In these regions, methamphetamine and MDMA were found in comparable proportions. MDMA was usually the second leading drug found in each region, but it was not often found in the Outaouais or on the North Shore (Côte-Nord). With regard to MDA, it was observed only in Saguenay, Mauricie, and the Eastern Townships (Estrie), as well as on the North Shore and in the Montreal region. Amphetamine was identified only in Saguenay, Mauricie, the Eastern Townships, and in the Quebec City and Montreal regions. Detailed information on these tablets, compiled by region is presented in **APPENDICES 2-10**.

CHART 2*

DRUGS IDENTIFIED LISTED IN THE CDSA OR IN APPENDIX F OF THE FOOD AND DRUGS ACT FROM **ABITIBI-TÉMISCAMINGUE**

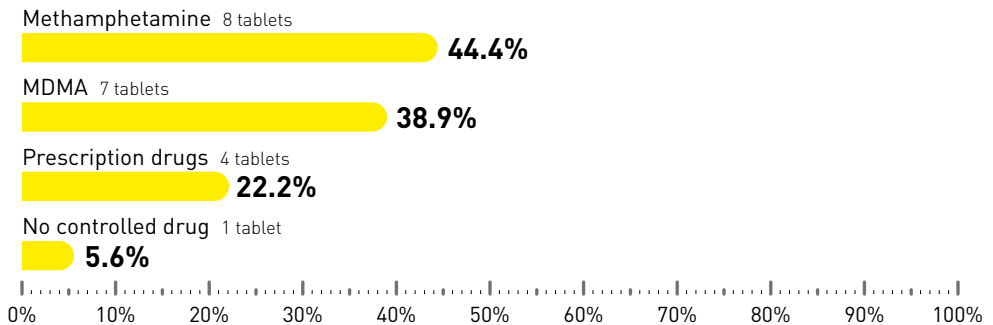
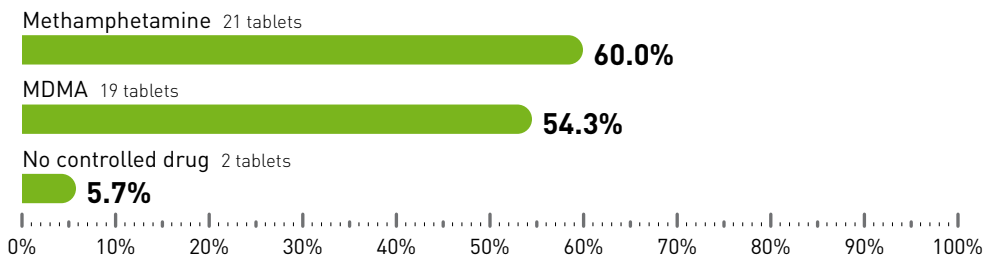


CHART 3*

DRUGS IDENTIFIED LISTED IN THE CDSA OR IN APPENDIX F OF THE FOOD AND DRUGS ACT FROM THE LOWER **ST. LAWRENCE AND GASPÉ PENINSULA**



* It should be noted that regional data should in some cases be interpreted with caution, given the limited number of samples from some regions.

CHART 4*

DRUGS IDENTIFIED LISTED IN THE CDSA OR IN APPENDIX F OF THE FOOD AND DRUGS ACT FROM THE **NORTH SHORE**

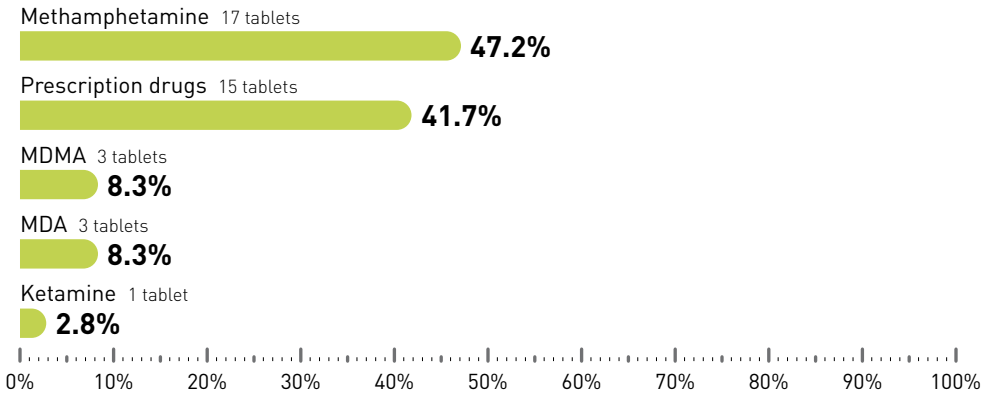


CHART 5*

DRUGS IDENTIFIED LISTED IN THE CDSA OR IN APPENDIX F OF THE FOOD AND DRUGS ACT FROM THE **EASTERN TOWNSHIPS**

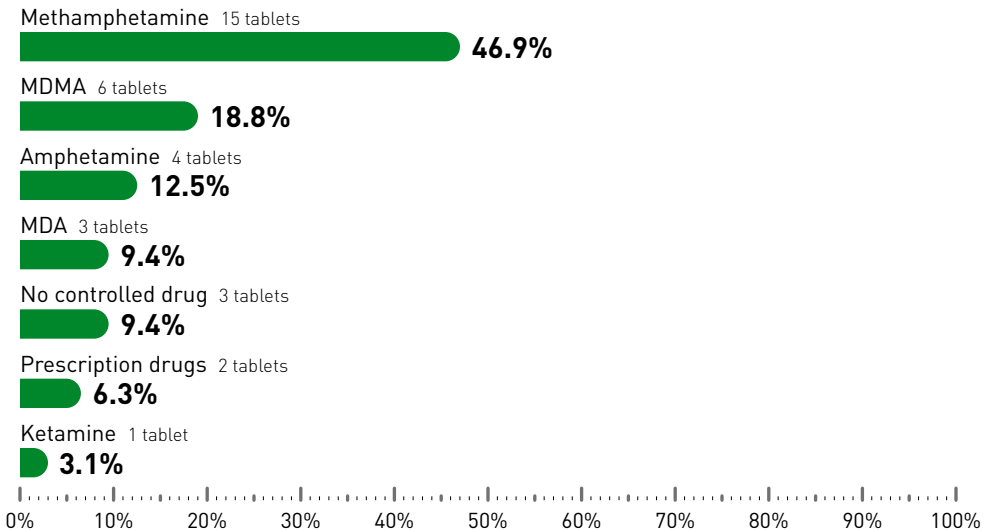


CHART 6*

DRUGS IDENTIFIED LISTED IN THE CDSA OR IN APPENDIX F OF THE FOOD AND DRUGS ACT FROM MAURICIE-CENTRE-DU-QUÉBEC

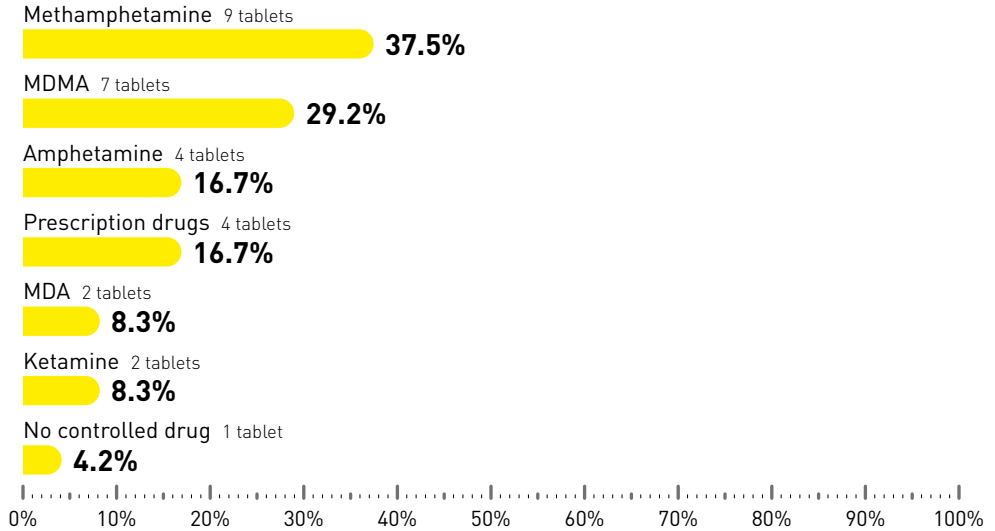


CHART 7*

DRUGS IDENTIFIED LISTED IN THE CDSA OR IN APPENDIX F OF THE FOOD AND DRUGS ACT FROM OUTAOUAIS

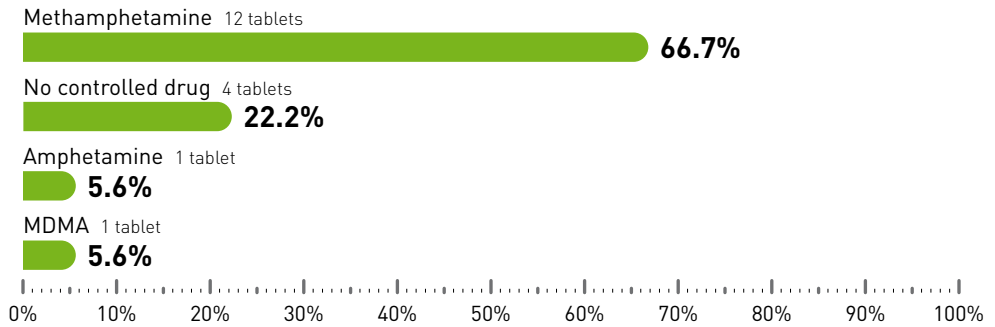


CHART 8*

DRUGS IDENTIFIED LISTED IN THE CDSA OR IN APPENDIX F OF THE FOOD AND DRUGS ACT FROM THE **MONTREAL REGION**

Methamphetamine 74 tablets



MDMA 39 tablets



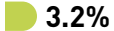
MDA 12 tablets



No controlled drug 8 tablets



Ketamine 4 tablets



Prescription drugs 3 tablets



Amphetamine 2 tablets



Methylaminorex 1 tablet



CHART 9*

DRUGS IDENTIFIED LISTED IN THE CDSA OR IN APPENDIX F OF THE FOOD AND DRUGS ACT FROM THE **QUEBEC CITY REGION**

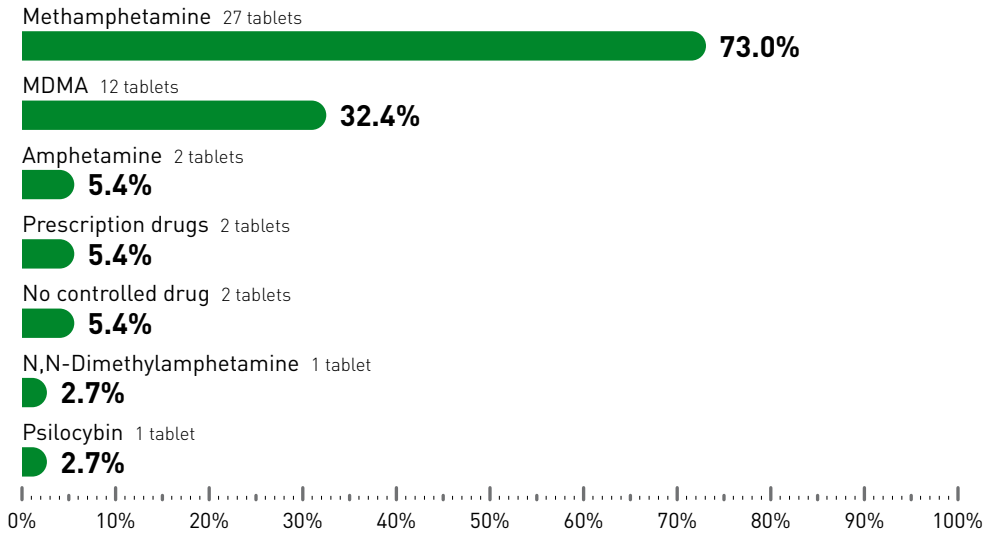
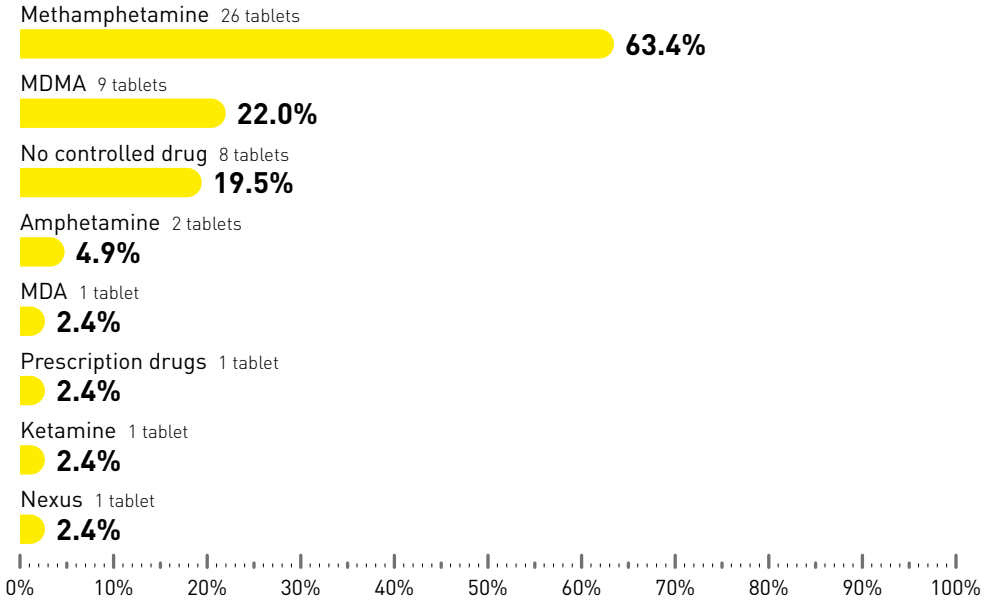


CHART 10*

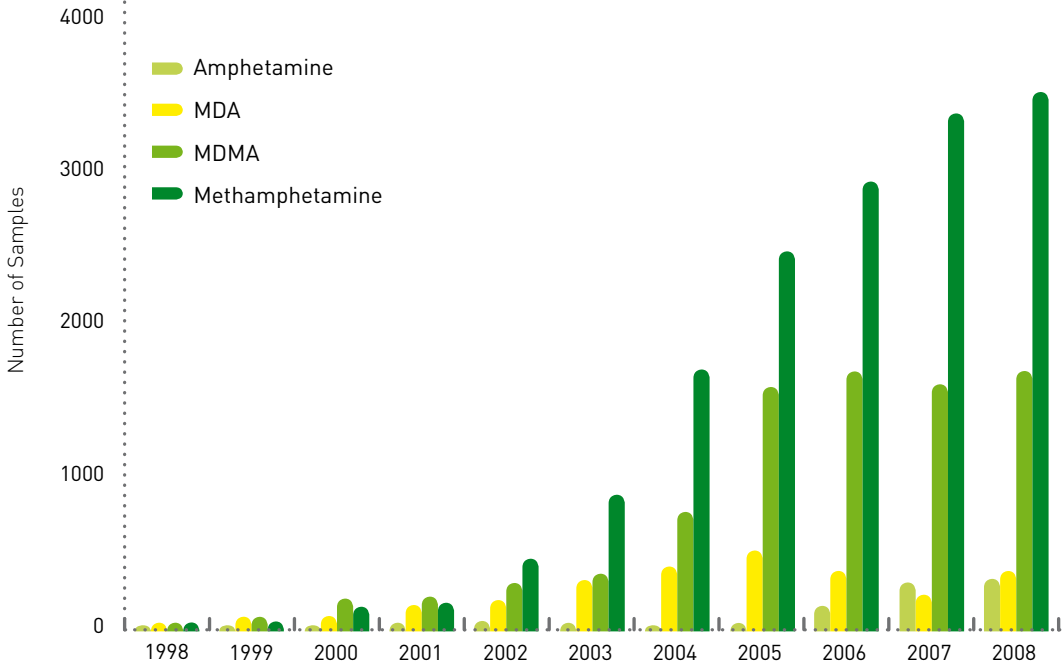
DRUGS IDENTIFIED LISTED IN THE CDSA OR IN APPENDIX F OF THE FOOD AND DRUGS ACT FROM SAGUENAY-LAC-ST-JEAN



As the results indicate, 83% of tablets contained one or more amphetaminergic drug, either methamphetamine, MDMA, MDA, or amphetamine. Over the past few years, amphetaminergic drugs have increased in popularity. **CHART 11** shows the increase in the number of samples received by the Drug Analysis Service in Montreal containing one or more amphetaminergic drugs.

CHART 11

SAMPLES RECEIVED BY THE DRUG ANALYSIS SERVICE IN MONTREAL CONTAINING ONE OR MORE AMPHETAMINERGIC DRUGS



The samples containing more than one drug are recorded for each drug they contain. For example: a sample containing MDMA and methamphetamine is recorded in both categories.

In addition to amphetaminergic drugs, other types of drugs were found in the study but in clearly smaller proportions. Ketamine, primarily used in veterinary medicine, was identified in 3% of cases, each time in combination with an amphetaminergic drug. It should be noted that ketamine is not usually found in tablet form. In the usual samples analyzed by the Drug Analysis Service, ketamine is most often in a powder or fine crystal form and not in combination with other drugs. Ketamine has increased in popularity in the past few years. Nevertheless, this increase is less pronounced than that of amphetaminergic drugs.

Methylaminorex (0.3%), which is a stimulant, and 4-bromo-2,5-dimethoxybenzeneethanamine (nexus) (0.3%), which is a hallucinogen, have also been identified. Unlike ketamine, these substances were not in combination with amphetaminergic drugs. Also unusual in this study was that psilocybin, the active ingredient in hallucinogenic mushrooms, was identified in one tablet. The mushrooms are usually dried and presented as such, although occasionally they occur in capsule form. In this case, it seems the mushrooms were pressed into tablet form.

Also found in some tablets were 5-methoxy-N,N-diisopropyltryptamine (5-MeO-DiPT), also called foxy, 5-methoxymethylisopropyltryptamine (5-MeO-MiPT), and a combination of benzylpiperazine (BZP) and trifluoromethylphenylpiperazine (TFMPP). During the past few months, the number of tablets received by the Drug Analysis Service in Montreal containing these substances has increased significantly.

During the study, prescription drugs such as benzodiazepines, stimulants, and antidepressants were also identified. For Quebec as a whole, 8% of the tablets submitted were prescription drugs delivered by a pharmaceutical company, or they were counterfeit drugs. This phenomenon is especially pronounced in the North Shore (42%) and Mauricie (17%) regions. As for the other regions, the percentage of pharmaceutical drugs varies from 0 to 6%. These data, by region, must be considered with caution due to limited sampling in some cases.

In addition to drugs, various substances enter into tablet composition. Such is the case for caffeine, identified in 61% of the tablets. Other substances, namely, diphenhydramine (11%), procaine (9%), dimethyl sulfone (6%), and lidocaine (1%) were also identified but in clearly lower proportions.

Phenylacetic acid, a precursor under the provisions of the CDSA, was identified in 2% of tablets. Tablets containing this substance often give off a particular odour. Other precursors including ephedrine and/or pseudoephedrine (2%), phenylpropranolamine (0.3%), and piperonal (0.3%) were also identified. In comparison with the previous study³, caffeine is clearly more present in tablets today while ephedrine and/or pseudoephedrine are much less present.





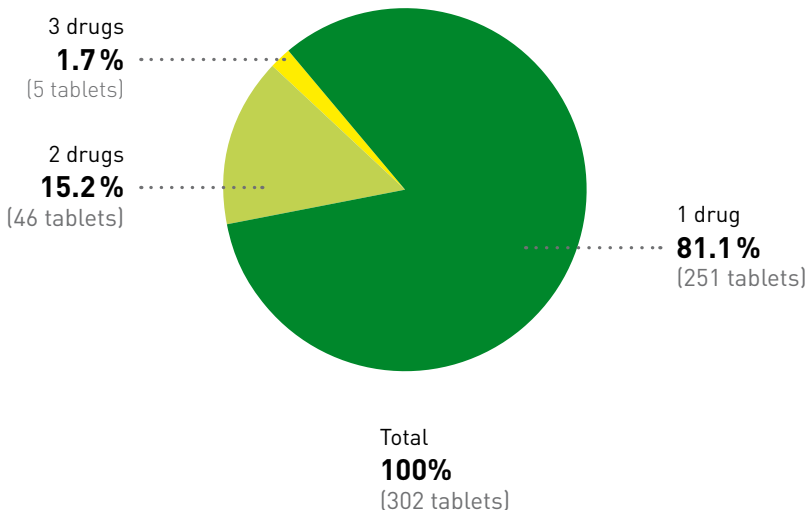
COMPOSITION OF TABLETS
CONTAINING AMPHETAMINERGIC DRUGS

COMPOSITION OF TABLETS CONTAINING AMPHETAMINERGIC DRUGS

In order to focus on the composition of tablets containing amphetaminergic drugs, prescription drugs and negative samples or samples containing only another type of drug were not considered in this section. Amphetaminergic drugs—methamphetamine, MDMA, MDA, and amphetamine—were identified in 83% of the 365 tablets analyzed, representing 302 samples. Of these, 70% contained methamphetamine, 35% contained MDMA, 7% contained MDA, and 5% contained amphetamine.

As presented in **CHART 12**, 83% or most of the 302 tablets contained a single amphetaminergic drug, whereas 17% of the samples contained combinations of two or three drugs.

CHART 12
NUMBER OF DRUGS IDENTIFIED IN TABLETS CONTAINING
AMPHETAMINERGIC DRUGS PROVINCE OF QUEBEC



The specific tablet compositions, considering only the drug substances, are presented in **TABLE 4**. In 54% of these cases, methamphetamine is the only drug contained in the tablets, in 18% of cases it is MDMA, in 7% it is MDA and in 5% it is amphetamine. In 14% of cases it is a combination of MDMA and methamphetamine.

TABLE 4

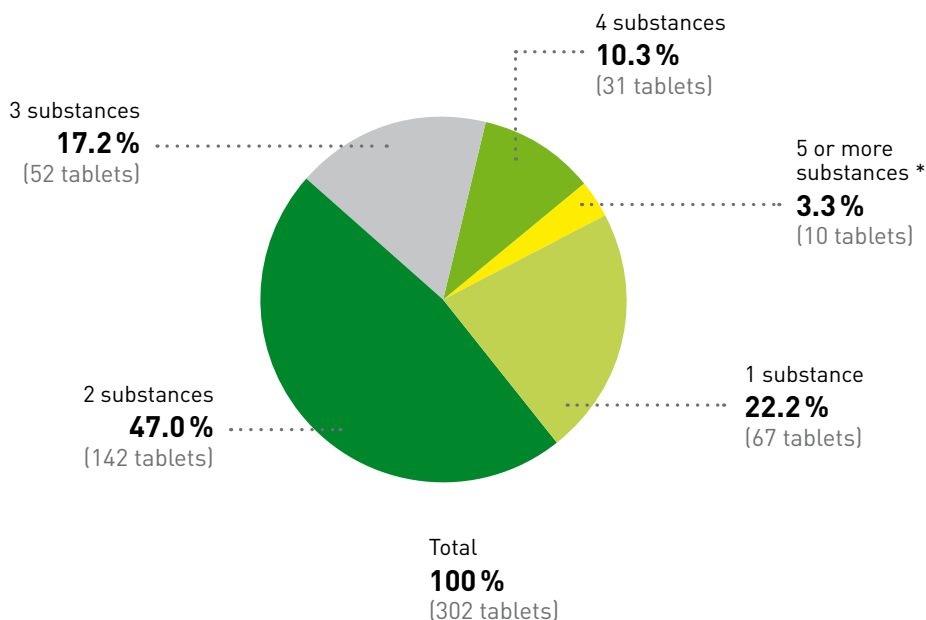
COMPOSITION OF TABLETS CONTAINING AMPHETAMINERGIC DRUGS_ PROVINCE OF QUEBEC

DRUGS IDENTIFIED	NUMBER OF TABLETS	PERCENTAGE OF TABLETS
Methamphetamine	162	53.6%
MDMA	54	17.9%
Methamphetamine + MDMA	41	13.6%
MDA	21	7.0%
Amphetamine	14	4.6%
MDMA + Ketamine	4	1.3%
Methamphetamine + MDMA + Ketamine	4	1.3%
Methamphetamine + Ketamine	1	0.3%
Methamphetamine + Amphetamine + N,N-Dimethylamphetamine	1	0.3%
TOTAL	302	100.0%

As for ketamine, it was identified only in combination, primarily with MDMA. As previously mentioned, ketamine is not commonly found in tablet form but rather in powder or fine crystal form, and not in combination with other drugs.

When considering cutting agents such as caffeine and diphenhydramine, 46 different compositions were found in the tablets containing amphetaminergic drugs. These compositions as well as those of the other tablets are presented in **APPENDIX 1**. The most common composition was methamphetamine and caffeine. **CHART 13** presents the number of substances identified in the tablets containing amphetaminergic drugs. As was the case in the previous study published in 2004, as many as seven different substances were found. However, the proportion of tablets containing more than one substance increased from 46% to 78%.

CHART 13
 NUMBER OF SUBSTANCES IDENTIFIED IN THE TABLETS CONTAINING
 AMPHETAMINERGIC DRUGS PROVINCE OF QUEBEC



* 5 substances: 2.6% (8 tablets)
 6 substances: 0.3% (1 tablet)
 7 substances: 0.3% (1 tablet)

Other substances such as cellulose and magnesium stearate are also used in tablet production. These inactive substances are used to bulk up the volume of the tablets after the mixture is compressed. In this study, these substances were not analysed.



DRUG SOLD VERSUS ACTUAL TABLET CONTENT

DRUG SOLD VERSUS ACTUAL TABLET CONTENT

For Quebec as a whole, 66% of the tablets analyzed in this study were sold as speed, 25% as ecstasy, although in 10% of cases this information was not available. This prevalence of tablets being sold as speed was observed in all regions in Quebec except Abitibi and the Eastern Townships. In Abitibi, most tablets were sold as ecstasy, while in the Eastern Townships the tablets were sold equally as speed and ecstasy. It should be noted that speed is, in fact, methamphetamine and ecstasy is MDMA.

TABLES 5 AND 6 present, respectively, the actual composition of tablets sold as speed and those sold as ecstasy. Results show that in a number of cases there was a disparity between the drug sold and the drug or drugs the tablet actually contained.

Throughout Quebec, in 54% of cases, the tablets sold as speed contained only the alleged drug. In 20% of cases, the tablets, in fact, contained another amphetaminergic drug, that is MDMA (13%), MDA (4%), or amphetamine (3%). In 9% of cases, tablets sold as speed contained a combination of methamphetamine and MDMA. In most of the tablets, the drug that was present in sufficient concentration to produce an effect was not the drug it was alleged to be. When considered by region, we note a significant difference in the data. For tablets sold as speed, the percentage of tablets containing only the alleged drug varies from 29–83%. The lowest percentages were observed in Mauricie, on the North Shore, and the Lower St. Lawrence while the highest percentages were observed in Montreal and Abitibi.



TABLE 5

COMPOSITION OF TABLETS SOLD AS SPEED PROVINCE OF QUEBEC

CONTAINING A SINGLE DRUG*	NUMBER OF TABLETS	PERCENTAGE OF TABLETS
Methamphetamine	132	54.3%
MDMA	32	13.2%
MDA	10	4.1%
Amphetamine	7	2.9%
Nexus	1	0.4%
CONTAINING 2 DRUGS OR MORE*		
Methamphetamine and MDMA	22	9.1%
Methamphetamine and ketamine	1	0.4%
Methamphetamine, MDMA, and ketamine	1	0.4%
Methamphetamine, MDMA, and N,N-Dimethylamphetamine	1	0.4%
PRESCRIPTION DRUGS		
Clonazepam	3	1.2%
Nitrazepam	2	0.8%
Quetiapine	2	0.8%
Celecoxib	1	0.4%
Codeine and Acetaminophen	1	0.4%
Diazepam	1	0.4%
Flurazepam	1	0.4%
Lorazepam	1	0.4%
Methotrimeprazine	1	0.4%
Methylphenidate	1	0.4%
Oxycodone	1	0.4%
Penicillin V Potassium	1	0.4%
Sildenafil	1	0.4%
Tadalafil	1	0.4%
Zopiclone	1	0.4%
OTHER		
Ephedrine and/or Pseudoephedrine	4	1.6%
Caffeine	2	0.8%
Caffeine, Diphenhydramine	1	0.4%
Caffeine, Diphenhydramine, and Dimethyl sulfone	1	0.4%
Diphenhydramine	1	0.4%
Niacin	1	0.4%
Piperonal	1	0.4%
Negative	6	2.5%
TOTAL	243	100.0%

* Substances not regulated by the CDSA were not recorded in composition



As for tablets sold as ecstasy, there is an even greater disparity between the drug sold and actual tablet content. The study revealed that only 23% of tablets contained only the alleged drug, that is, MDMA. In a comparable proportion, 21% of tablets contained methamphetamine. In 9% of cases, these tablets contained MDA and in 6% of cases, they contained amphetamine. The study also showed that tablets sold as ecstasy contained a combination of drugs in what was not a negligible proportion. In fact, 18% of tablets sold as ecstasy contained a combination of methamphetamine and MDMA, 2% contained a combination of MDMA and ketamine, and 2% contained a combination of methamphetamine, MDMA, and ketamine. In close to 30% of the tablets containing a combination of methamphetamine and MDMA and sold as ecstasy, only methamphetamine was the drug present in a sufficient concentration to produce an effect. Therefore, according to this study, in nearly 80% of cases, the user who believed he or she was taking ecstasy was, in fact, taking another substance or a combination of drugs. With regard to the results compiled by region, the limited data for some regions calls for caution. A larger sampling would have been necessary to establish trends.

The study also brought to light another phenomenon. Prescription drugs such as benzodiazepines, stimulants, and antidepressants were diverted from their medical use and sold as amphetaminergic drugs. In 8% of cases, tablets sold as speed were, in fact, prescription drugs delivered by a pharmaceutical company, or they were counterfeit drugs. With regard to tablets sold as ecstasy, this proportion was 10%. The drugs sold as speed or ecstasy did not have the sought-after effect and could even have the reverse effect on the user. For example, benzodiazepines, which are central nervous system depressors, were sold as methamphetamine, a major stimulant.

In 7% of cases, tablets sold as speed contained no controlled drug. A comparable percentage (8%) was observed for tablets sold as ecstasy. In these situations, the tablets contained, for example, caffeine or diphenhydramine, alone or in combination. Other tablets contained niacin or glucosamine.



TABLE 6

COMPOSITION OF TABLETS SOLD AS ECSTASY PROVINCE OF QUEBEC

	NUMBER OF TABLETS	PERCENTAGE OF TABLETS
CONTAINING A SINGLE DRUG*		
MDMA	20	22.5%
Methamphetamine	19	21.3%
MDA	8	9.0%
Amphetamine	5	5.6%
Methylaminorex	1	1.1%
CONTAINING 2 DRUGS OR MORE*		
MDMA and Methamphetamine	16	18.0%
MDMA and Ketamine	2	2.2%
MDMA, Methamphetamine, and Ketamine	2	2.2%
PRESCRIPTION DRUGS		
Citalopram	2	2.2%
Lorazepam	2	2.2%
Methylphenidate	2	2.2%
Clonazepam	1	1.1%
Domperidone	1	1.1%
Vardenafil	1	1.1%
OTHER		
Caffeine	2	2.2%
Benzylpiperazine, Trifluoromethylphenylpiperazine and Caffeine	1	1.1%
Glucosamine	1	1.1%
Negative	3	3.4%
TOTAL	89	100.0%

* Substances not regulated by the CDSA were not recorded in composition

On the other hand, the study also revealed that a tablet's appearance was no guarantee of its composition. The same observation had been made in the *Drug Analysis Report on Designer Drugs Seized in Quebec*³ published in 2004 by Health Canada. In fact, a tablet's logo and colour are not exclusive to a particular composition. Two tablets with the same appearance can have different compositions.

PRICES OF TABLETS

For Quebec as a whole, from June 2007 to July 2008, the price of tablets sold as speed ranged from \$2.50 to \$20.00; and the price of tablets sold as ecstasy ranged from \$3.00 to \$20.00. In both cases, most tablets sold for \$10.00. The study did not reveal any significant difference in price in the various regions of Quebec.

CONCENTRATION OF AMPHETAMINERGIC
DRUGS IN THE TABLETS



CONCENTRATION OF AMPHETAMINERGIC DRUGS IN THE TABLETS

The study shows that there is high variability in the concentration of amphetaminergic drugs in the tablets as presented in **CHARTS 14 AND 15**. Overall, the concentration of methamphetamine varies from less than 1 mg to 57 mg; the concentration of amphetamine varies from less than 1 mg to 66 mg; the concentration of MDMA varies from less than 6 mg to 115 mg; and, the concentration of MDA varies from 24 to 60 mg.

CHART 14

CONCENTRATION OF METHAMPHETAMINE AND AMPHETAMINE IN ALL OF THE TABLETS

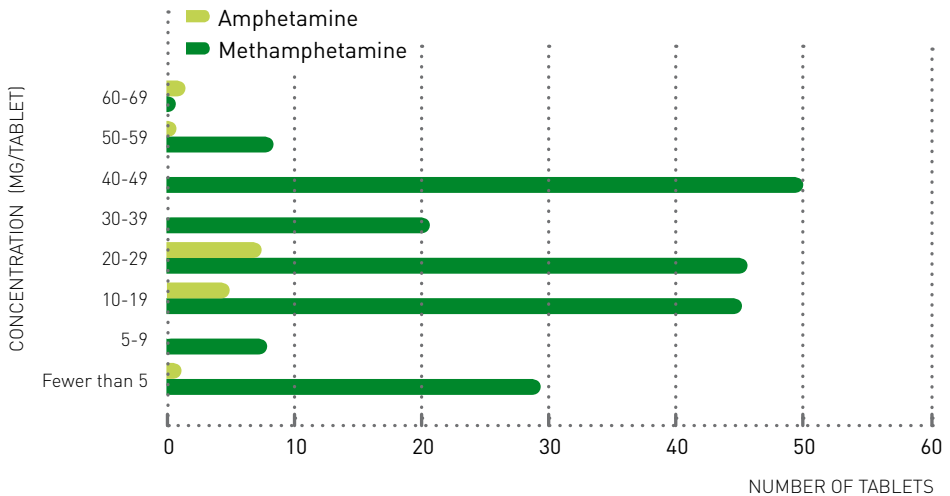
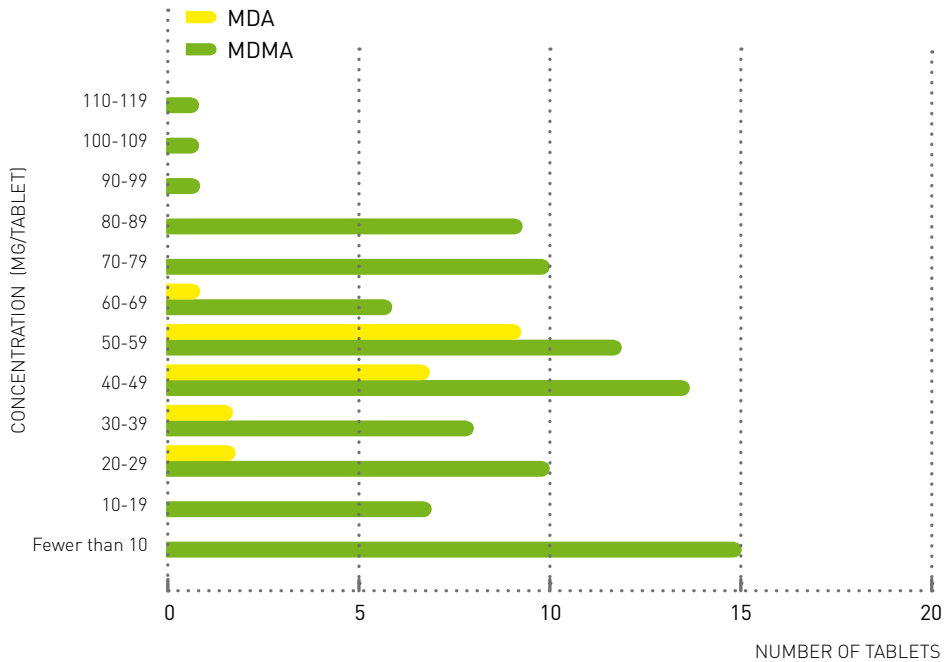


CHART 15

CONCENTRATION OF MDMA AND OF MDA IN ALL OF THE TABLETS



In order to illustrate the differences between the tablets containing a single drug and those containing more than one drug, the results were compiled separately.

The results for the tablets containing a single drug are presented in **CHARTS 16 AND 17**.

For the tablets that contained only methamphetamine, the concentrations varied from 3 to 57 mg. Except for the two tablets that contained less than 5 mg of methamphetamine, all of the tablets contained dosages that were sufficient to induce an effect in a normal individual. Dosages varying from 5 to 30 mg taken orally are sufficient to produce strong sensations of physical and intellectual potency, and dosages of 20 to 60 mg are necessary to bring the person taking it to a pronounced state of euphoria. The most common concentrations ranged from 40 to 49 mg, from 20 to 29 mg, and from 10 to 19 mg.

For amphetamine, the concentrations observed in the tablets analyzed varied from 17 to 66 mg.



CHART 16

CONCENTRATION OF METHAMPHETAMINE AND OF AMPHETAMINE IN THE TABLETS CONTAINING A SINGLE DRUG

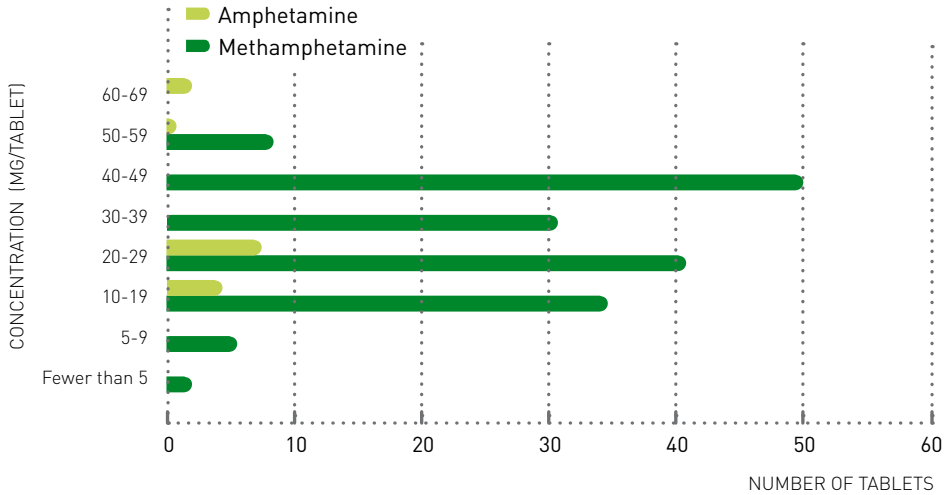
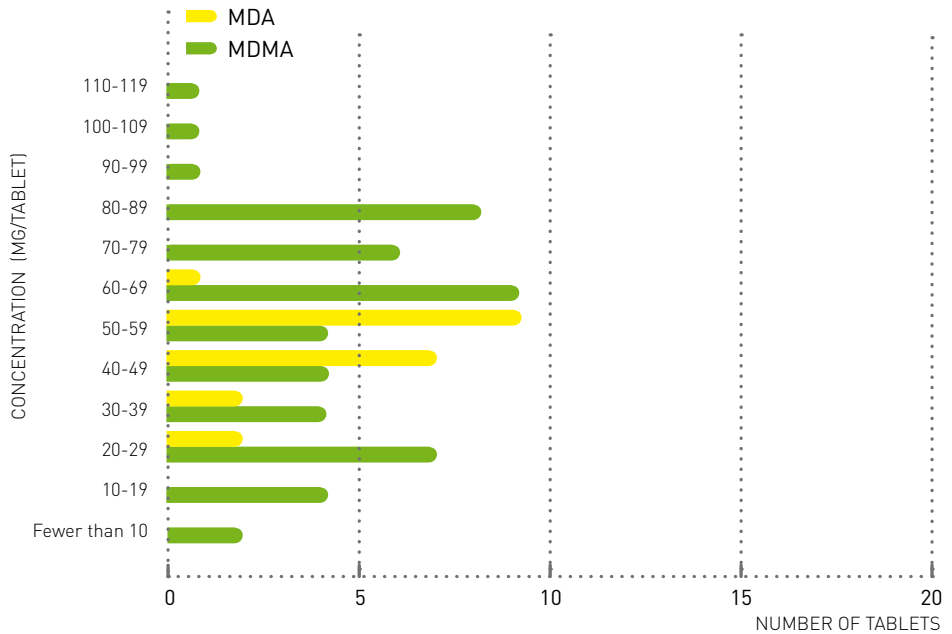


CHART 17

CONCENTRATION OF MDMA AND OF MDA IN THE TABLETS CONTAINING A SINGLE DRUG



As for the tablets that contained only MDMA, the dosages observed varied from 8 to 115 mg. In this study, 73% of the tablets analysed contained more than 30 mg which is sufficient to produce an effect. For MDMA, effects begin to be felt at around 30 mg but dosages of 75 to 200 mg are necessary to produce the sought after effect. In this study, the most frequently found concentrations were from 60 to 69 mg, from 80 to 89 mg, and from 20 to 29 mg.

For MDA, the dosages observed in this study ranged from 24 to 60 mg. The greatest proportion contained 50 and 59 mg. For this drug, typical dosages to obtain the desired effect are 60 to 120 mg.

In this study, 17% of the tablets analyzed contained a combination of drugs, mainly methamphetamine and MDMA. The results for tablets containing more than one drug are found in **CHARTS 18 AND 19**.

CHART 18

CONCENTRATION OF METHAMPHETAMINE AND AMPHETAMINE IN THE TABLETS CONTAINING MORE THAN ONE DRUG

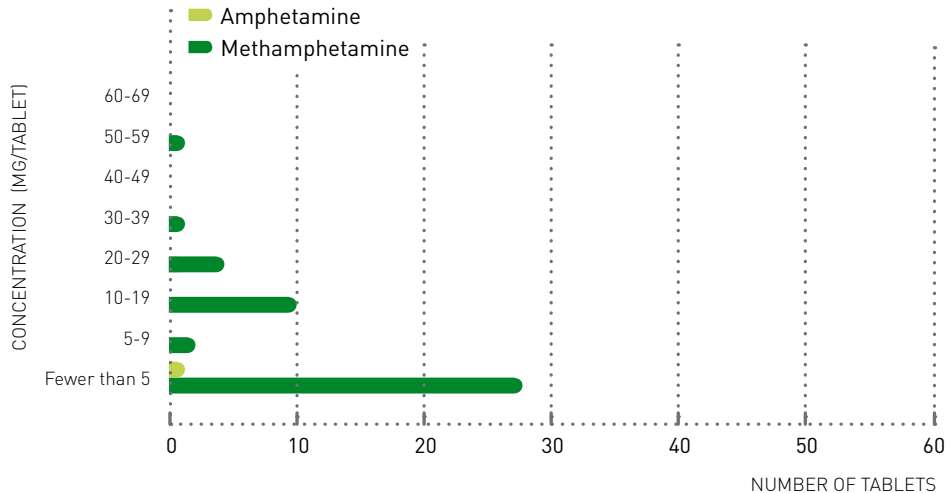
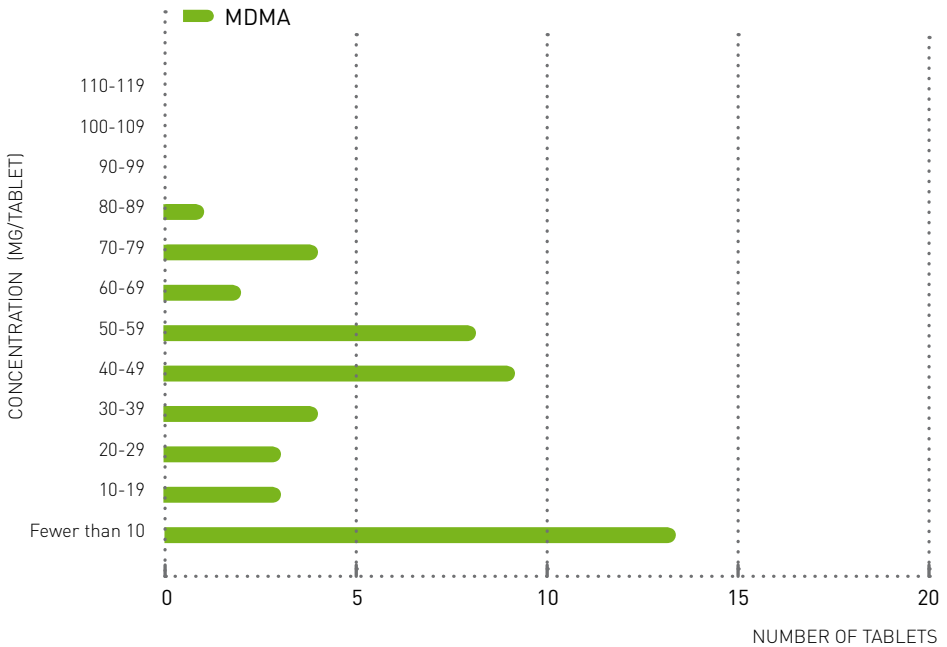


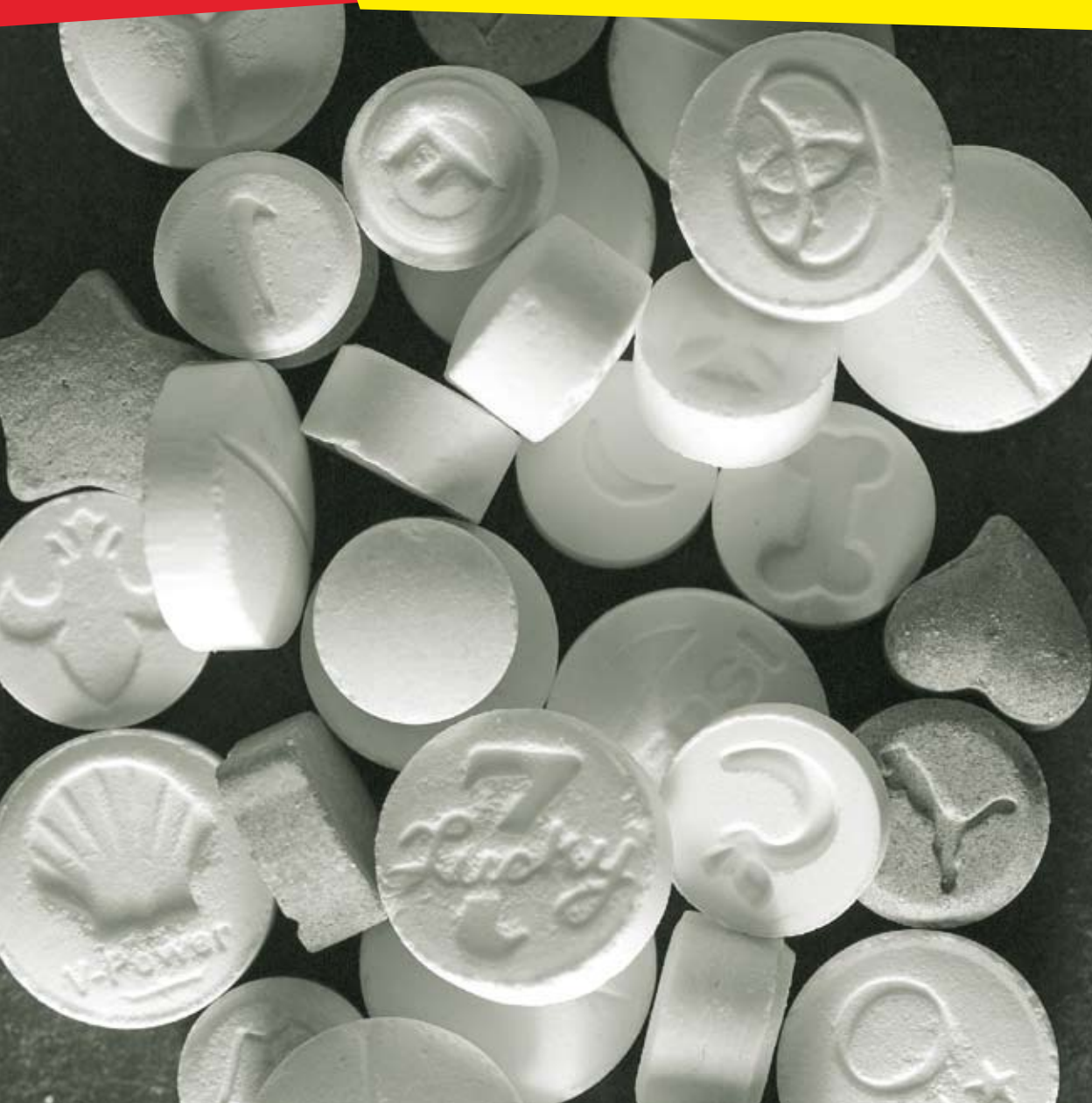
CHART 19

CONCENTRATION OF MDMA IN THE TABLETS CONTAINING MORE THAN ONE DRUG



As is the case for tablets containing a single drug, the concentrations observed in the multi-drug tablets are variable, yet they are generally lower. Generally, one drug was present in active dosage. In most cases (64%), the tablets contained less than 5 mg of methamphetamine and in 40% of cases they contained less than 30 mg of MDMA. For methamphetamine, the concentration varies from less than 1 mg to 51 mg and for MDMA, from less than 5 mg to 80 mg. The detailed dosages for each methamphetamine–MDMA combination are presented in **APPENDIX 11**, while the toxicological analysis is presented in the section entitled *Designer drugs sold in tablet form—often very heterogeneous combinations*, by Dr. Claude Rouillard.

DESIGNER DRUGS SOLD IN TABLET FORM—
OFTEN HETEROGENEOUS COMBINATIONS



DESIGNER DRUGS SOLD IN TABLET FORM—OFTEN HETEROGENEOUS COMBINATIONS

By Dr. Claude Rouillard

Given that illicit designer drugs are produced in equally illicit laboratories, tablet composition and the concentration of active ingredients vary widely. Consumers of these tablets and the general public are by and large unaware of this problem. They thoughtlessly relate such tablets to therapeutic drugs sold legally. Legal drugs, also sold in tablets, are very homogeneous and contain a very accurate concentration of one or more active ingredients with inactive substances that are also well controlled and chosen after much consideration. As a result, legal drugs for all practical purposes have a similar and easily predictable composition.

Such is not the case for designer drugs sold illicitly in tablet form. As this study shows, 1) most (83%) but not all contain amphetaminergic drugs, 2) approximately 20% of the tablets contain more than one active ingredient, 3) the combinations often include active ingredients with similar and additive effects but also in some cases, different effects, and, 4) the ingredients used as cutting agents are often active ingredients (e.g., caffeine). The results are highly variable and unpredictable.

More than one active ingredient may result in various types of interaction between the various substances. As a result of complex pharmaceutical interactions, such ingredients may antagonize each other, have a cumulative effect, or provoke undesirable and dangerous effects. These interactions also depend on the concentration of active ingredients. In this study, 18% of tablets were found to contain two or more active ingredients. The main combination was methamphetamine–MDMA (42 tablets). This is not surprising, given that consumers are looking for one or the other of these drugs. The desirable and undesirable effects of these combinations can be determined by examining the concentration of active ingredients. In a significant proportion of tablets

containing the methamphetamine–MDMA combination, the concentration of methamphetamine is insufficient to produce a significant psychostimulant effect (24/42) whereas the concentration of MDMA is sufficient to produce the sought-after effect. Conversely, in a certain number of tablets, the presence of MDMA is negligible whereas the concentration of methamphetamine is sufficient (12/42). This significant variability and subsequent impossibility of predicting the effects of these tablets is also shown by the fact that some tablets (3/42) contained insufficient concentrations of both methamphetamine and MDMA. Nevertheless, three tablets contained sufficient concentrations of both methamphetamine and MDMA to induce significant effects for each drug. Because these two drugs are psychostimulants of the same pharmacological class, we can at the very least expect powerful psychostimulant effects accompanied by the hallucinogenic effects of MDMA. Such a combination could lead a teenager or other novice user or even an already sensitized chronic user to have certain physiological, neurological, or psychiatric complications. We must, however, keep in mind that tolerance to these drugs varies from one individual to another and that tolerance develops quickly with use. By the same token, sensitization to the undesirable effects also develops with use. There were also two tablets containing three drugs: methamphetamine, MDMA, and ketamine. Given the major psychoactive properties of ketamine, we can assume that its presence increases the risk of psychiatric complications.

When a tablet is produced, inactive ingredients must be added to the active ingredient so as to bulk up the tablet volume and to be able to compress all the substances to make them into a solid product. In the pharmaceutical industry, complementary ingredients (fillers) are usually inactive and chosen with care based on certain properties sought. One of the original phases of this study was the specific sampling of fillers found in the tablets analyzed. Interestingly enough, this study shows the presence of various substances with some psychoactive potential. Among these substances we mainly found caffeine, but also the antihistamine diphenhydramine, and two local anesthetics—lidocaine and procaine. It is unlikely that the concentrations of diphenhydramine, lidocaine, or procaine were sufficient to produce any effect whatsoever. However, such was not the case for caffeine. Caffeine is a minor psychostimulant and although its main effects are weak, they resemble the effects of amphetaminergic drugs. Among the effects we noted were an increase in vigilance, a decrease in fatigue,



and an increase in cardiac activity. The results show concentrations of up to 450 mg, the equivalent of about four cups of coffee. Most of the tablets containing caffeine that were analyzed had concentrations above 100 mg. Some tablets contained a concentration of methamphetamine insufficient to produce the effect sought yet they had a concentration of caffeine sufficient to induce an effect similar to the one sought, but of a lesser magnitude. When consumed alone, caffeine is a quite harmless substance. On the other hand, strong dosages in combination with amphetamine-type drugs could produce certain cardiovascular problems as well as anxiety, agitation, irritability, and insomnia.

Considering the data along with the fact that only 54% of the drugs sold as speed actually contained methamphetamine and considering that only 23% of drugs sold as ecstasy actually contained MDMA, we can conclude that the main characteristics of these tablets are their variability with the resultant difficulty of predicting the effects produced by the drug. These effects could range from the more or less noticeable to the highly significant depending on drug composition and on the individual consumer profile. We must also take into account that these drugs are typically taken socially, among friends and at festive events. On these occasions, they are often taken with other substances such as alcohol and cannabis.

The consumption of illicit drugs is also in danger of changing rapidly over the coming years and of becoming more complicated with the appearance on the designer drug market of various molecules that taken alone or in combination can produce effects that resemble the effects of amphetaminergic drugs. Among these drugs we note benzylpiperazine (BZP), trifluoromethylphenylpiperazine (TFMPP), 5-methoxy-N,N diisopropyltryptamine (5-MeO-DiPT or foxy), and 5-methoxymethylisopropyltryptamine (5-MeO-MiPT). Thanks to the Internet, the popularity of these molecules is rapidly increasing, a phenomenon whose impact is difficult to predict.

CONCLUSION



CONCLUSION

The purpose of this study was to draw a province-wide portrait of the composition of drugs sold in tablet form in Quebec. In total, 365 tablets from various regions were analyzed.

The study clearly showed that methamphetamine is the predominant drug for most regions. On a provincial level, it was identified in 57% of tablets versus 28% for MDMA, 6% for MDA, and 4% for amphetamine. It should be noted that MDMA was also identified in all regions. Amphetaminergic drugs were identified in 83% of the tablets analyzed in the study.

The study also showed that the composition of amphetaminergic drugs was highly variable. In 17% of cases, drugs consisted of a combination of two or three substances. The combination of methamphetamine–MDMA was the one most frequently found. As for cutting, 46 different compositions were found. Caffeine was the filler most commonly used. It was identified in 61% of tablets. In most cases, the concentration of caffeine was sufficient to produce a psychostimulant effect.

As was the case for composition of these drugs, the concentration of amphetaminergic drugs was also highly variable. For methamphetamine, the concentration varied from less than 1 mg to 57 mg, and for MDMA, from less than 6 mg to 115 mg. In most cases, the concentrations in the tablets were higher than the concentration dosages recognized to be active.

Another observation: consumers could not rely on the dealer or on the appearance of the tablet to know its composition. In fact, the study showed that in many cases, there was a disparity between the drug sold and actual tablet content. Only 54% of tablets sold as speed contained only the alleged drug, and this percentage dropped to 23% for tablets sold as ecstasy. In other cases, the tablets contained an entirely different drug, a combination of drugs, or a prescription drug. As well, the study revealed that a tablet's logo and colour were not exclusive to a particular composition. Therefore, according to this study, tablet drug users often do not know what they are taking. In fact, only a chemical analysis can reveal a tablet's exact composition.

CLAUDE ROUILLARD, PhD

Professor, Faculty of Medicine, Université Laval, Quebec City, Canada

Claude Rouillard holds a BSc from Université du Québec à Trois-Rivières and an MSc from Université Laval where he also completed his PhD in 1988. After post-doctoral studies at the CHUL Research Centre and at the Sinai Research Institute in Detroit, he began his university career in 1990 as Assistant Professor at Université Laval where he is now full professor in the Faculty of Medicine and Senior Researcher for the Neuroscience unit of the CHUQ Research Centre.

He teaches neuropharmacology and speaks at numerous conferences on his research work and on drug dependence. He also acts as an expert for various organizations and government agencies. His research focuses on understanding the cerebral mechanisms involved in Parkinson's disease, schizophrenia, and drug dependence. He is the recipient of research grants from various national and international organizations, among them the Canadian Institutes of Health Research, the Parkinson Society Canada, the Parkinson's Disease Foundation (USA), and the Stanley Medical Research Institute (USA). He is author or co-author of more than 40 scientific publications in international neuroscientific and psychiatric journals as well as two book chapters.

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<http://dsp-psd.pwgsc.gc.ca/Collection/H21-233-2004E.pdf>
- ⁴ *Compendium of Pharmaceuticals and Specialties* (2008).
Canadian Pharmacists Association





APPENDICES

TABLET COMPOSITION PROVINCE OF QUEBEC : APPENDIX 1

SUBSTANCES IDENTIFIED	NUMBER OF TABLETS	(%)	SUBSTANCES IDENTIFIED	NUMBER OF TABLETS	(%)
Methamphetamine and Caffeine	101	27.8%	MDMA, Ketamine, and Procaine	1	0.3%
Methamphetamine	27	7.4%	Methamphetamine and Diphenhydramine	1	0.3%
MDA	19	5.2%	Methamphetamine and Phenylpropanolamine	1	0.3%
MDMA	18	5.0%	Methamphetamine, Amphetamine, N,N-Dimethylamphetamine, and Caffeine	1	0.3%
MDMA and Caffeine	15	4.1%	Methamphetamine, Caffeine, Diphenhydramine, and Phenylacetic Acid	1	0.3%
Methamphetamine, Caffeine, and Diphenhydramine	14	3.9%	Methamphetamine, Ketamine, Caffeine, Diphenhydramine, and Phenylacetic Acid	1	0.3%
MDMA, Caffeine, and Procaine	12	3.3%	Methamphetamine, MDMA, and Lidocaine	1	0.3%
Amphetamine and Caffeine	11	3.0%	Methamphetamine, MDMA, and Procaine	1	0.3%
Negative	9	3.0%	Methamphetamine, MDMA, and Lidocaine	1	0.3%
Methamphetamine, MDMA, Caffeine and Diphenhydramine	7	2.5%	Methamphetamine, MDMA, and Procaine	1	0.3%
Clonazepam	7	1.9%	Methamphetamine, MDMA, Caffeine, Diphenhydramine, and Nicotinamide	1	0.3%
Methamphetamine, MDMA, and Caffeine	6	1.7%	Methamphetamine, MDMA, Caffeine, Diphenhydramine, and Phenylacetic Acid	1	0.3%
Caffeine	5	1.4%	Methamphetamine, MDMA, Caffeine, Diphenhydramine, and Phenylacetic Acid	1	0.3%
Methamphetamine, Caffeine, and Dimethyl Sulfone	5	1.4%	Methamphetamine, MDMA, Ephedrine/Pseudoephedrine, and Lidocaine	1	0.3%
Methamphetamine, Caffeine, and Phenylacetic Acid	5	1.4%	Methamphetamine, MDMA, Ketamine, and Caffeine	1	0.3%
Ephedrine and/or Pseudoephedrine	4	1.1%	Methamphetamine, MDMA, Ketamine, Caffeine, and Dimethyl Sulfone	1	0.3%
Methamphetamine and MDMA	4	1.1%	Methamphetamine, MDMA, Ketamine, Caffeine, Procaine, Diphenhydramine, and Lidocaine	1	0.3%
Methamphetamine, Caffeine, and Procaine	4	1.1%	Methamphetamine, MDMA, Ketamine, Caffeine, Procaine, Diphenhydramine, and Lidocaine	1	0.3%
Methamphetamine, MDMA, Caffeine, and Procaine	4	1.1%	Methamphetamine, MDMA, Ketamine, Caffeine, Procaine, Diphenhydramine, and Lidocaine	1	0.3%
Methamphetamine, MDMA, Caffeine, Dimethyl Sulfone, and Procaine	4	1.1%	Methamphetamine, MDMA, Ketamine, Caffeine, Procaine, Diphenhydramine, and Lidocaine	1	0.3%
Amphetamine	3	0.8%	Methamphetamine, MDMA, Ketamine, Caffeine, Procaine, Diphenhydramine, and Lidocaine	1	0.3%
Lorazepam	3	0.8%	Benzylpiperazine, Trifluoromethylphenylpiperazine, and Caffeine	1	0.3%
MDMA and Dimethyl Sulfone	3	0.8%	Caffeine and Diphenhydramine	1	0.3%
Methamphetamine, MDMA, Caffeine, and Dimethyl Sulfone	3	0.8%	Caffeine, Diphenhydramine, and Dimethyl Sulfone	1	0.3%
Methamphetamine, MDMA, Caffeine, and Lidocaine	3	0.8%	Celecoxib	1	0.3%
Methylphenidate	3	0.8%	Cocaine and Acetaminophen	1	0.3%
Citalopram	2	0.6%	Diazepam	1	0.3%
MDA and Caffeine	2	0.6%	Diphenhydramine	1	0.3%
MDMA and Diphenhydramine	2	0.6%	Domperidone	1	0.3%
MDMA, Ketamine, Caffeine, and Procaine	2	0.6%	Flurazepam	1	0.3%
Methamphetamine and Dimethyl Sulfone	2	0.6%	Glucosamine	1	0.3%
Methamphetamine, Caffeine, Diphenhydramine, and Dimethyl Sulfone	2	0.6%	Methotrimeprazine	1	0.3%
Methamphetamine, MDMA, Ephedrine and/or Pseudoephedrine, and Caffeine	2	0.6%	Methylaminorex	1	0.3%
Nitrazepam	2	0.6%	Nexin	1	0.3%
Quetiapine	2	0.6%	Niacin	1	0.3%
5-Methoxy-N,N-Diisopropyltryptamine	1	0.3%	Oxycodone	1	0.3%
5-Methoxymethylisopropyltryptamine	1	0.3%	Penicillin V Potassium	1	0.3%
MDMA and Procaine	1	0.3%	Piperonal	1	0.3%
MDMA, Caffeine, and Diphenhydramine	1	0.3%	Psilocybin	1	0.3%
MDMA, Caffeine, and Dimethyl Sulfone	1	0.3%	Sildenafil	1	0.3%
MDMA, Caffeine, Diphenhydramine, and (Dextro and/or Levomethorphan	1	0.3%	Tadalafil	1	0.3%
MDMA, Ketamine, and Caffeine	1	0.3%	Vardenafil	1	0.3%
			Zopiclone	1	0.3%

INFORMATION ON TABLETS SEIZED IN ABITIBI-TÉMISCAMINGUE : APPENDIX 2

COMPOSITION	SOLD AS		UNIT PURCHASE PRICE	LOGO	COLOUR	SCORED
	ECSTASY	SPEED				
MDMA, Methamphetamine, Caffeine, Diphenhydramine		X	\$10	Heart*	Pink	No
MDMA, Methamphetamine, Caffeine, Diphenhydramine		X	\$20	Heart*	Pink	No
Methamphetamine, Caffeine	X		\$5	West Coast Choppers	White	No
Citalopram	X		\$5	C. N	White	Yes
Citalopram	X		\$5	20	White	Yes
Methamphetamine	X		\$10		Pink	Yes
MDMA	X	X	\$10	Diamond*	Blue	No
MDMA, Diphenhydramine	X		\$20	Star*	Pink	No
Glucosamine	X		\$8-10	Capsule*	White	No
Methylphenidate		X	\$10	123, PMS.20	White	Yes
Methylphenidate		X	\$10	PMS 5,130	Orange	No
Methamphetamine, Caffeine	X		\$20	Pin-up	White	No
MDMA	X		\$20	Dove	Pink	Yes
Methamphetamine		X	\$8-10	Rolls Royce	Green	Yes
MDMA	X		\$5	Dove	Pink	Yes
Methamphetamine, Caffeine	X		\$5	Popeye	White	Yes
MDMA, Diphenhydramine	X		\$5	West Coast Choppers	Yellow	No
Methamphetamine, Caffeine		X	\$10	Fred Flinstone	White	No

Note: Logos marked with an asterisk indicate that the tablet was this shape rather than its usual round shape

INFORMATION ON TABLETS SEIZED IN THE LOWER ST. LAWRENCE-GASPÉ PENINSULA : : : APPENDIX 3

COMPOSITION	SOLD AS		LOGO	COLOUR	SCORED
	ECSTASY	SPEED			
	UNIT PURCHASE PRICE				
MDMA	X	\$5		Mauve	No
Methamphetamine, Caffeine	X	\$5	Couche-Tard	White	Yes
Negative	X	\$5	Capsule*	Red	No
Methamphetamine, Caffeine, Diphenhydramine	X	\$8	Cougar	White	No
Methamphetamine, Caffeine	X	\$8	Bat	White	No
Methamphetamine, Caffeine	X	\$8	Roadrunner	White	No
Caffeine, Diphenhydramine, Dimethyl Sulfone	X	\$5	OnStar	White	No
Methamphetamine, Phenylpropanolamine	X	\$15	Moon	White	Yes
Methamphetamine, Caffeine, Diphenhydramine, Dimethyl Sulfone	X	\$10	Bomb	White	No
MDMA, Caffeine	X	\$10	LG	Orange	No
Methamphetamine, Caffeine, Procaine	X	\$10	Inverted F	White	No
Methamphetamine, Caffeine, Procaine	X	\$10	Inverted F	White	No
Methamphetamine, Caffeine, Procaine	X	\$10	Inverted F	White	No
MDMA, Methamphetamine, Caffeine, Diphenhydramine	X	\$10	MSN	Pink	No
MDMA, Methamphetamine, Lidocaine	X	\$10	Star	Pink	No
MDMA, Caffeine, Procaine	X	\$10	Goat	Orange	No
MDMA, Caffeine, Procaine	X	\$10	Louis Vuitton	Orange	No
MDMA, Methamphetamine, Ephedrine and/or Pseudoephedrine, Lidocaine	X	\$10	Star	Pink	No
MDMA, Methamphetamine, Caffeine, Lidocaine	X	\$10	Strawberry*	Pink	No
MDMA, Caffeine, Procaine	X	\$10	XXX	Pink	No
Methamphetamine, Caffeine, Diphenhydramine	X	\$10	Bomb	White	No
Methamphetamine, Caffeine, Procaine	X	\$5	Omega	White	No
MDMA, Caffeine, Procaine	X	\$10	Goat	Orange	No
Methamphetamine, Caffeine, Dimethyl Sulfone	X	\$5	Omega	White	No
Methamphetamine, Caffeine	X	\$10	Shell V-Power	White	Yes
MDMA, Caffeine, Procaine	X	\$10	XXX	Mauve	No
MDMA, Caffeine, Procaine	X	\$10	XXX	Mauve	No
MDMA, Methamphetamine, Ephedrine and/or Pseudoephedrine, Caffeine	X	\$10	Star	Pink	No
MDMA, Caffeine, Procaine	X	\$10	XXX	Mauve	No
MDMA, Methamphetamine, Ephedrine and/or Pseudoephedrine, Caffeine	X	\$10	Star	Pink	No
MDMA, Methamphetamine, Caffeine, Diphenhydramine	X	\$10	MSN	Pink	No
Methamphetamine, Caffeine, Diphenhydramine	X	\$10	Bacardi	White	No
MDMA, Caffeine, Procaine	X	\$10	LG	Orange	No
MDMA, Caffeine, Procaine	X	\$10	Louis Vuitton	Orange	No
MDMA, Caffeine, Procaine	X	\$10	Goat	Orange	No

Note: Logos marked with an asterisk indicate that the tablet was this shape rather than its usual round shape

INFORMATION ON TABLETS SEIZED ON THE NORTH SHORE

APPENDIX 4

COMPOSITION	SOLD AS		UNIT PURCHASE PRICE	LOGO	COLOUR	SCORED
	ECSTASY	SPEED				
Methamphetamine	X		\$10	Couche-Tard	White	Yes
Methamphetamine, Caffeine	X		\$10	Pin-up	Yellow	No
Methamphetamine, Caffeine	X				White	No
Methamphetamine, Caffeine	X			Pin-up	White	No
Methamphetamine, Caffeine	X			Pin-up	White	No
Methamphetamine, Caffeine					White	No
MDA				Logo scratched out	Beige	No
Celecoxib	X			Capsule*	Blue & white	No
Methamphetamine, Caffeine	X			Pin-up	White	No
MDA	X				White	No
Methamphetamine, Caffeine	X		\$20	Pin-up	Yellow	No
MDMA, Methamphetamine, Ketamine, Caffeine, Dimethyl Sulfone	X		\$20	Transformers*	Mauve	No
MDMA, Methamphetamine, Caffeine, Diphenhydramine	X		\$20	Star*	Pink	No
MDA	X		\$20		White	No
MDMA, Caffeine				Transformers*	Mauve	No
Methamphetamine				Couche-Tard	White	Yes
Quetiapine	X			Seroquel	White	No
Quetiapine	X			Seroquel200	White	No
Clonazepam				Clonazepam	Pink	No
Clonazepam	X			Clonazepam, PMS 2.0	White	Yes
Nitrazepam	X			APO, NIT 10	White	Yes
Clonazepam	X			Clonazepam, PMS 2.0	White	Yes
Nitrazepam	X			APO, NIT 10	White	Yes
Clonazepam	X			Clonazepam, PMS 2.0	White	Yes
Methamphetamine, Caffeine	X			Clonazepam	Pink	No
Methamphetamine	X			Pin-up	White	No
Methylphenidate	X			Shell*	White	No
Methotrimeprazine	X			PMS 10, 110	White	Yes
Codeine, Acetaminophen	X			APO 25	Yellow	No
Methamphetamine, Caffeine	X			EMTEC 30	White	Yes
Methamphetamine		X	\$3	7 Up	White	Yes
Lorazepam				NHL	White	Yes
Zopiclone	X			APO 2	White	Yes
Methamphetamine, Caffeine	X		\$4	TEC 213	Blue	Yes
Methamphetamine	X		\$4	Greg Norman	White	No
	X			Taz	White	Yes

Note: Logos marked with an asterisk indicate that the tablet was this shape rather than its usual round shape

INFORMATION ON TABLETS SEIZED IN THE EASTERN TOWNSHIPS : : : APPENDIX 5

COMPOSITION	SOLD AS		UNIT PURCHASE PRICE	LOGO	COLOUR	SCORED
	ECSTASY	SPEED				
Methamphetamine, Caffeine	X		\$10	Pin-up	White	No
Methamphetamine	X		\$10	Couche-Tard	White	Yes
Methamphetamine, Caffeine	X		\$10	Kärv	White	No
Methamphetamine	X		\$5	OnStar	White	No
Methamphetamine, Caffeine				Paw	White	No
Caffeine	X			Coca-Cola	White	Yes
Methamphetamine, Caffeine	X			Shell V-Power	White	Yes
Methamphetamine, Caffeine	X			Shell V-Power	White	Yes
Amphetamine	X			Checkmark	Beige	Yes
Domperidone	X			rph DS1	White	No
Lorazepam	X			Ativan, 1	White	Yes
Methamphetamine, MDMA, Caffeine	X			O2	Blue	Yes
Amphetamine, Caffeine	X			Z	White	No
Methamphetamine, Caffeine, Diphenhydramine	X			Lightning bolt	White	No
Methamphetamine, Caffeine	X			Pepsi	White	Yes
MDMA				Shell V-Power	White	Yes
MDMA, Caffeine	X			Crescent moon	White	No
Methamphetamine, Caffeine	X			7 Up	White	Yes
MDMA, Caffeine	X			Transformers*	Pink	No
Methamphetamine	X			Star	White	Yes
Amphetamine, Caffeine	X		\$10	Z	White	No
MDA	X		\$10	e	Pink	Yes
MDA	X		\$10	Mercedes	White	Yes
MDA	X			e	Pink	Yes
Methamphetamine, Caffeine	X		\$10	Mercedes	White	Yes
Methamphetamine, Caffeine				OnStar	White	No
Negative [no drug]				Extraterrestrial	White	No
5-Methoxymethylisopropyltryptamine				69	Grey	No
MDMA				Mercedes	White	Yes
Methamphetamine, Caffeine				e	Pink	Yes
MDA				Z	White	Yes
Amphetamine, Caffeine	X			Puma	White	No
MDMA, Ketamine, Caffeine, Procaine	X				Blue	No

Note: Logos marked with an asterisk indicate that the tablet was this shape rather than its usual round shape



INFORMATION ON TABLETS SEIZED IN THE MONTREAL REGION :: APPENDIX 6

COMPOSITION	ECSTASY	SOLD AS SPEED	UNIT PURCHASE PRICE	LOGO	COLOUR	SCORED
Methamphetamine, Caffeine	X		\$6	Playboy	White	Yes
Methamphetamine	X		\$6	Shell V-Power	White	Yes
MDA	X		\$6	Cadillac	White	Yes
Methamphetamine, Caffeine	X		\$6	Playboy	White	Yes
Methamphetamine, Caffeine, Diphenhydramine	X		\$6	Bat	White	No
Methamphetamine, Caffeine	X		\$6	Playboy	White	Yes
MDA	X		\$6	Cadillac	White	Yes
Methamphetamine	X		\$6	x	Blue	No
MDMA	X		\$6	Bic	White	No
MDMA	X		\$6	Motorola	White	No
MDMA	X		\$6	Male-female union	White	Yes
Methamphetamine, Caffeine	X		\$6	Roadrunner	Blue	No
MDMA, Caffeine	X		\$6	Scorpion	Pink	No
MDMA, Caffeine	X		\$6	Hand	Green	No
MDMA, Methamphetamine	X		\$6	Heart	White	Yes
Methamphetamine, Caffeine	X		\$6	Star	White	No
Methamphetamine, Caffeine, Diphenhydramine	X		\$6	Bat	White	No
Methamphetamine, Caffeine	X		\$6	Coca-Cola	White	Yes
Caffeine	X		\$6	Fred Flinstone	White	Yes
MDMA	X		\$6	Male-female union	White	Yes
Methamphetamine, Caffeine	X		\$6	Pepsi	White	Yes
Methamphetamine, Caffeine	X		\$6	7 Up	White	Yes
MDA	X		\$6	Superman	White	No
Methamphetamine	X		\$6	Heart	Peach	Yes
Methamphetamine, Caffeine	X		\$6	Inverted F	White	No
MDMA	X		\$6	Transformers*	Pink	No
MDMA, Dimethyl Sulfone	X		\$6	Heart*	Mauve	No
Methamphetamine, MDMA, Caffeine, Diphenhydramine	X		\$7	Spawn	White	No
Methamphetamine	X		\$7	Lightning bolt	White	No
Methamphetamine, Caffeine	X		\$7	Spawn	White	No
MDMA, Dimethyl Sulfone	X		\$10	Diamond*	Blue	No
Methamphetamine, MDMA, Ketamine, Caffeine	X		\$10	TKO	Pink	No
MDA, Caffeine	X		\$10	Star	White	No
Methamphetamine, Caffeine	X		\$10	Versace	White	Yes
MDMA, Ketamine, Caffeine, Procaïne	X		\$10	Coca-Cola	White	Yes
MDMA	X		\$10	Omega	Blue	No
Amphetamine, Caffeine	X		\$10	Capsule*	Red	No
Niacin	X		\$10	Fleur de lys	White	No
Amphetamine, Caffeine	X		\$10	Oblong*	White	Yes
Benzylpiperazine, Trifluoromethylphenylpiperazine, Caffeine	X		\$10	Star of David	White	No
MDA	X		\$10	Star	Yellow	No
	X		\$10	Hearts and crown	White	Yes

Note: Logos marked with an asterisk indicate that the tablet was this shape rather than its usual round shape

INFORMATION ON TABLETS SEIZED IN THE MONTREAL REGION : CONT'D APPENDIX 6

COMPOSITION	ECSTASY	SPEED	UNIT PURCHASE PRICE	LOGO	COLOUR	SCORED
MDMA, Ketamine, Caffeine				Transformers*	Mauve	No
Methamphetamine, Caffeine				Lightning bolt	White	Yes
MDMA, Caffeine	X	X	\$20	Hand	Green	No
Methamphetamine	X	X	\$5	Pepsi	White	Yes
Methamphetamine, Ketamine, Caffeine, Diphenhydramine, Phenylacetic acid	X	X	\$7	Harley-Davidson	White	Yes
MDMA, Caffeine, Procaine	X	X	\$10	Puma	Green	No
Negative	X	X		Shell	Yellow	Yes
Negative	X	X		Shell	Yellow	Yes
Lorazepam	X			1, M	White	No
Methamphetamine, MDMA, Caffeine, Procaine		X	\$8	Bell	White	Yes
Methamphetamine, Caffeine, Diphenhydramine	X		\$8	Spawn	White	No
MDMA, Methamphetamine, Caffeine, Lidocaine	X			Strawberry*	Mauve	No
MDMA, Methamphetamine, Caffeine, Lidocaine	X			Strawberry*	Mauve	No
Methamphetamine, Caffeine	X	X		OnStar	White	Yes
Methamphetamine, Caffeine, Phenylacetic acid	X	X		OnStar	White	Yes
Methamphetamine, Caffeine, Phenylacetic acid	X	X	\$10	Shell	White	No
Methamphetamine, Caffeine	X			OnStar	White	Yes
Methamphetamine, Caffeine	X	X		Mr. Smile	Mauve	Yes
MDMA	X			69	Gray	No
MDMA	X	X	\$5	Armani	Green	Yes
MDA	X	X	\$15	e	Pink	Yes
Methylaminorex	X	X	\$10	G, 0	Yellow	Yes
Methamphetamine, Caffeine	X	X	\$10	OnStar	White	Yes
Methamphetamine	X		\$10	Cylinder*	Pink	No
Methamphetamine	X	X	\$10	NHL	White	Yes
MDMA, Caffeine	X		\$10	Spiral	Pink	No
Methamphetamine, Caffeine	X	X	\$10	Kärv	White	No
MDMA, Methamphetamine, Caffeine, Dimethyl Sulfone	X	X	\$10	Bomb	Pink	No
Tadalafil	X	X	\$10		Yellow	
Methamphetamine, Caffeine	X	X	\$10	Kärv	Pink	No
Methamphetamine, Caffeine, Dimethyl Sulfone	X	X	\$15	Lucky 7	White	Yes
Methamphetamine, Caffeine, Dimethyl Sulfone	X	X	\$15	Lightning bolt	Blue	No
MDMA, Caffeine, Dimethyl Sulfone	X	X	\$10	Transformers*	Pink	No
MDMA, Methamphetamine, Caffeine	X	X	\$10	Dolphin	White	No
Methamphetamine, Caffeine	X	X	\$10	Ray Ban	White	Yes
Methamphetamine, Caffeine, Phenylacetic acid	X	X	\$10	x	Beige	No
Methamphetamine, MDMA, Caffeine, Diphenhydramine, Nicotinamide	X	X	\$10		Pink	No
Methamphetamine, Caffeine	X	X	\$10	Lightning bolt	White	Yes
MDA	X	X	\$10		White	No
MDMA, Methamphetamine, Caffeine, Dimethyl Sulfone	X	X	\$10	Star*	Pink	No
Methamphetamine, Caffeine	X	X	\$10	Bacardi	White	No
MDMA, Caffeine	X	X	\$10	Spiral	Pink	No

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INFORMATION ON TABLETS SEIZED IN THE MONTREAL REGION : : : CONT'D APPENDIX 6

COMPOSITION	ECSTASY	SPEED	UNIT PURCHASE PRICE	LOGO	COLOUR	SCORED
MDMA, Methamphetamine, Caffeine, Procaine, Dimethyl Sulfone		X	\$20	Scorpion	Pink	No
Methamphetamine, Caffeine	X		\$10	Pin-up .G	Gray	No
Methamphetamine		X	\$10	Couche-Tard	White	Yes
Vardenafil	X		\$10	Bayer, 20	Orange	No
MDMA, Caffeine	X		\$10	MSN	Blue	No
Methamphetamine, Caffeine		X	\$10	Pin-up	White	No
Methamphetamine, MDMA, Caffeine, Procaine	X		\$15	Maple Leaf	Green	No
Methamphetamine, Caffeine		X	\$10	Roadrunner	Orange	No
Negative	X		\$10	White	White	No
Methamphetamine, Caffeine		X	\$10	Mercedes	White	Yes
MDA	X		\$10	Versace	White	Yes
MDMA, Caffeine, Procaine	X		\$15	Capsule*	Green	No
MDA	X		\$10	Hearts and crown	Pink	Yes
Methamphetamine, Caffeine, Diphenhydramine		X	\$15	OnStar	White	No
Methamphetamine, MDMA, Caffeine	X		\$20	Omega	White	No
MDA		X	\$15	Hearts and crown	White	Yes
Methamphetamine, Caffeine, Diphenhydramine, Phenylacetic acid		X	\$15	Bat	White	No
Methamphetamine, Caffeine	X		\$15	Lightning bolt	White	No
Methamphetamine, Caffeine		X	\$15	Red Bull	White	Yes
MDMA		X	\$15	Dove	Pink	Yes
Methamphetamine, Caffeine, Diphenhydramine		X	\$15	Sanair	White	No
MDMA	X		\$15	Fox Racing	Blue	Yes
Methamphetamine, Caffeine, Dimethyl Sulfone	X		\$15	West Coast Choppers	Blue	No
Caffeine		X	\$15	Fred Flinstone	White	Yes
Methamphetamine, Caffeine		X	\$15	OnStar	White	No
Methamphetamine, Diphenhydramine		X	\$15	.G	White	No
MDMA, Caffeine, Procaine	X		\$15	Fantastic Four	Green	No
Methamphetamine, Caffeine		X	\$10	Bat	White	No
Methamphetamine, Caffeine	X		\$10	Cougar	White	No
MDA		X	\$10	e	Pink	Yes
Methamphetamine, Caffeine		X	\$10	Ray Ban	White	Yes
Methamphetamine, Caffeine, Dimethyl Sulfone	X		\$10	Fox Racing	Blue	Yes
Methamphetamine, Caffeine		X	\$10	OnStar	White	No
MDA	X		\$10	Versace	White	Yes
Methamphetamine, Caffeine		X	\$10	Puma	White	Yes
MDMA, Methamphetamine	X		\$10	Pin-up	Orange	No
Methamphetamine, Caffeine		X	\$10	Kärv	White	No
MDMA, Methamphetamine, Caffeine, Diphenhydramine	X		\$10	Swallow	Green	No
Negative		X	\$10	Couche-Tard	White	-
Methamphetamine, Caffeine		X	\$10	F	White	-

Note: Logos marked with an asterisk indicate that the tablet was this shape rather than its usual round shape

INFORMATION ON TABLETS SEIZED IN MAURICIE-CENTRE-DU-QUÉBEC

APPENDIX 7

COMPOSITION	SOLD AS		UNIT PURCHASE PRICE	LOGO	COLOUR	SCORED
	ECSTASY	SPEED				
Amphetamine		X	\$10	Pontiac	White	Yes
MDMA, Caffeine		X	\$10	Exclamation mark	Yellow	No
MDMA, Caffeine		X	\$10	Exclamation mark	Yellow	No
Amphetamine		X	\$10	Checkmark	White	Yes
MDA, Caffeine		X	\$10	Versace	Blue	Yes
Sildenafil		X	\$10	Capsule*	Black	No
Clonazepam		X	\$10	APO C-0.5	Orange	Yes
Flurazepam		X	\$10	Capsule* APO 30	Red and white	No
Diazepam		X	\$10	APO 10	Blue	Yes
MDMA, Dimethyl Sulfone			\$10	Coco Chanel	Yellow	No
MDMA, Methamphetamine, Caffeine, Procaine	X		\$10	LG	Orange	No
Methamphetamine, Caffeine, Diphenhydramine, Dimethyl Sulfone		X	\$10	Bentley	White	No
Methamphetamine, Caffeine		X	\$10		White	No
Methamphetamine, Caffeine		X	\$10	Bomb	Yellow	No
Amphetamine, Caffeine		X	\$10	Fleur de lys	White	No
Methamphetamine		X	\$10	Pepsi	White	Yes
Methamphetamine, Caffeine		X	\$10	Inverted F	White	No
Methamphetamine, Caffeine				Red Dragon Apparel	Blue	No
Methamphetamine, MDMA, Ketamine, Caffeine, Procaine, Diphenhydramine, Lidocaine				Puma	Red	No
MDMA, Ketamine, Procaine				Versace	White	Yes
MDA				Bat	White	No
Methamphetamine, Caffeine, Diphenhydramine					White	No
Negative					White	No
Methamphetamine, MDMA, Procaine		X*			Red	No
Amphetamine, Caffeine		Star of David			White	No

Note: Logos marked with an asterisk indicate that the tablet was this shape rather than its usual round shape

INFORMATION ON TABLETS SEIZED IN OUTAOUAIS : APPENDIX 8

COMPOSITION	SOLD AS		UNIT PURCHASE PRICE	LOGO	COLOUR	SCORED
	ECSTASY	SPEED				
Methamphetamine		X	\$10	Bone	White	No
Methamphetamine		X	\$3	OnStar	White	No
Methamphetamine		X	\$3	Pepsi	White	No
Methamphetamine		X	\$3	Pepsi	White	Yes
Methamphetamine, Caffeine		X	\$3	Greg Norman	Mauve	No
Methamphetamine, Caffeine		X		Spawn	White	No
Methamphetamine, Caffeine		X		Popeye	White	Yes
Methamphetamine		X			White	No
Piperonal		X		Nike	Green	Yes
Caffeine, Diphenhydramine		X				
Amphetamine, Caffeine	X			OnStar	White	No
Methamphetamine, Caffeine	X			Domino	White	No
Diphenhydramine		X		Coca-Cola	White	Yes
Caffeine	X			Clover	White	Yes
Methamphetamine, Dimethyl Sulfone	X			Moon	White	No
Methamphetamine, Dimethyl Sulfone	X			Nike	White	No
MDMA	X			Nike	White	No
Methamphetamine, Caffeine		X		Heart	White	Yes
				Kärv	White	No

INFORMATION ON TABLETS SEIZED IN THE QUEBEC CITY REGION : APPENDIX 9

COMPOSITION	ECSTASY	SOLD AS SPEED	UNIT PURCHASE PRICE	LOGO	COLOUR	SCORED
Methamphetamine, Caffeine	X		\$10	Shell V-Power	White	Yes
Methamphetamine	X		\$10		Blue	Yes
Methamphetamine, Caffeine	X		\$10	Couche-Tard	White	Yes
Amphetamine, Caffeine				Domino	White	No
Methamphetamine, Caffeine, Diphenhydramine	X			Inverted F	White	No
Methamphetamine	X		\$10	OnStar	White	No
Methamphetamine, Caffeine, Phenylacetic acid	X		\$10	x	Yellow	No
Methamphetamine, MDMA, Caffeine	X		\$10	O2	Blue	No
MDMA, Methamphetamine, Caffeine, Diphenhydramine, Phenylacetic acid				MSN	Pink	No
MDMA, Caffeine, Diphenhydramine	X			Transformers*	Pink	No
MDMA, Methamphetamine, Caffeine, Diphenhydramine	X		\$5	MSN	Pink	No
Methamphetamine, Caffeine, Phenylacetic acid	X		\$5	x	White	No
Oxycodone		X	\$5	V5	Blue	Yes
MDMA, Procaïne		X	\$5		Green	No
Methamphetamine, Caffeine		X	\$5	Puma	Green	No
Methamphetamine, Caffeine		X	\$5	Couche-Tard	White	Yes
Methamphetamine, Caffeine		X	\$10	O2	White	No
MDMA, Caffeine		X	\$7.50	Hand	Green	No
Methamphetamine				U.S. army general	White	Yes
Methamphetamine, Caffeine		X	\$5	Couche-Tard	White	Yes
Caffeine				Capsule*	White	No
MDMA, Methamphetamine, Caffeine		X	\$5	Star*	Pink	No
Methamphetamine, Amphetamine, Caffeine, N,N-Dimethylamphetamine		X	\$8	O2	Blue	No
5-methoxy-N,N-Disopropyltryptamine				Fox racing	Gray	No
MDMA, Methamphetamine, Caffeine, Dimethyl Sulfone				Star*	Pink	No
Methamphetamine, Caffeine				Couche-Tard	White	Yes
Penicillin V Potassium		X	\$7	APO 300	Orange	Yes
Methamphetamine, Caffeine, Diphenhydramine				Inverted F	White	No
MDMA, Caffeine, Diphenhydramine, [Dextro and/or Levo] methorphan		X		Pin-up..G	White	No
Methamphetamine, Caffeine		X		Playboy	White	Yes
MDMA, Methamphetamine, Caffeine, Diphenhydramine		X	\$2.50	Bomb	Pink	No
Methamphetamine, MDMA, Caffeine, Diphenhydramine		X	\$2.50		White	No
Methamphetamine, Caffeine		X	\$2.50	7 Up	White	No
Methamphetamine, Caffeine		X	\$2.50	Playboy	White	No
Methamphetamine, Caffeine		X		Toyota	White	Yes
Methamphetamine, Caffeine		X	\$10	Clover	White	No
Methamphetamine, MDMA, Caffeine, Procaïne		X	\$10	TKO	Pink	No
Methamphetamine, Caffeine		X	\$10		Green	No
Psilocybin						

Note: Logos marked with an asterisk indicate that the tablet was this shape rather than its usual round shape

















































INFORMATION ON TABLETS SEIZED IN SAGUENAY-LAC-ST-JEAN :: APPENDIX 10

COMPOSITION	SOLD AS		UNIT PURCHASE PRICE	LOGO	COLOUR	SCORED
	ECSTASY	SPEED				
Negative	X			Canal Vie	White	No
Negative		X		Canal Vie	White	No
Methamphetamine, Caffeine, Diphenhydramine		X	\$10	Bat	White	No
Methamphetamine, Caffeine		X	\$10	Lucky 7	White	Yes
Methamphetamine, Caffeine		X	\$10	Lucky 7	White	Yes
Methamphetamine, Caffeine		X	\$10	Lucky 7	White	Yes
Methamphetamine, Caffeine		X	\$10	Star	White	No
MDMA, Caffeine	X		\$5	Louis Vuitton	Pink	No
MDMA	X		\$5	American Airlines	White	No
MDMA, Methamphetamine	X		\$5	Pin-up	Orange	No
Methamphetamine, Caffeine		X	\$5	Playboy	White	Yes
Methamphetamine, Caffeine		X	\$5	Playboy	White	Yes
Methamphetamine, Caffeine		X	\$5	Playboy	White	Yes
Methamphetamine, Caffeine		X	\$5	Playboy	White	Yes
Methamphetamine, Caffeine		X	\$5	Fred Flinstone	White	No
Negative	X			Canal Vie	White	No
Negative	X			Canal Vie	White	No
Methamphetamine, Caffeine, Diphenhydramine		X		OnStar	White	No
Pseudoephedrine		X			White	Yes
Methamphetamine, Caffeine		X	\$5	Puma	White	Yes
Methamphetamine, Caffeine		X	\$5	7 Up	White	Yes
Methamphetamine, Caffeine		X	\$10	Mercedes	White	Yes
Methamphetamine, MDMA, Ketamine, Caffeine, Dimethyl Sulfone, Procaine		X	\$10	Bell	White	Yes
Ephedrine and/or Pseudoephedrine		X	\$10	Pentagram	White	No
Ephedrine and/or Pseudoephedrine		X	\$10	Pentagram	White	No
Ephedrine and/or Pseudoephedrine		X	\$10	Pentagram	White	No
Methamphetamine, MDMA, Caffeine, Dimethyl Sulfone, Procaine		X	\$5	Bell	White	Yes
Methamphetamine, Caffeine		X	\$5	Playboy	White	Yes
Clonazepam	X			Clonazepam, pms 2.0	Orange	Yes
Methamphetamine, Caffeine		X		Playboy	White	Yes
Methamphetamine, MDMA, Caffeine, Dimethyl Sulfone, Procaine		X	\$5	Bell	White	Yes
MDMA, Methamphetamine	X		\$5	Pin-up	Orange	No
Methamphetamine, MDMA, Caffeine		X		Pin-up	White	Yes
Methamphetamine, Caffeine		X		Playboy	White	Yes
Methamphetamine, MDMA, Caffeine, Dimethyl Sulfone, Procaine	X			Bell	White	Yes
Methamphetamine, Caffeine		X	\$10	Bell	White	Yes
MDA	X		\$10	e	Pink	Yes
Methamphetamine, Caffeine		X	\$10	x	Yellow	No
Nexus		X	\$5	.G	Blue	Yes
Amphetamine, Caffeine		X	\$5	Star of David	White	No
Amphetamine, Caffeine		X	\$5	Star of David	White	No

CONCENTRATION OF METHAMPHETAMINE AND MDMA : APPENDIX 11 IN THE TABLETS CONTAINING THESE DRUGS IN COMBINATION

	METHAMPHETAMINE (MG)	MDMA (MG)	OTHER DRUG
METHAMPHETAMINE LESS THAN 5 MG MDMA LESS THAN 30 MG	1	21	
	1	22	
	4	2	
METHAMPHETAMINE 5 MG OR MORE MDMA 30 MG OR MORE	6	58	
	7	56	
	12	72	
METHAMPHETAMINE MORE THAN 5 MG MDMA LESS THAN 30 MG	10	<6	Ketamine
	12	<6	
	12	<6	
	12	<6	
	12	<6	
	12	<6	
	13	<6	
	20	10	
	23	<6	
	26	<6	
	35	<6	Ketamine
51	<6	Ketamine	
METHAMPHETAMINE LESS THAN 5 MG MDMA 30 MG OR MORE	4	31	
	<1	34	
	3	38	
	2	38	
	<1	41	
	2	46	
	2	46	
	2	46	
	4	47	
	2	47	
	2	48	
2	49		
2	49		
3	51		
3	53		
4	54		
2	54		
3	56		
2	56		
<1	65	Ketamine	
2	71		
2	75		
2	80		
2	80		

DRUG ANALYSIS REPORT ON DESIGNER DRUGS SEIZED IN QUEBEC June 2007 to July 2008 : APPENDIX 12

<p>Shell V-Power MDMA Eastern Townships</p> 	<p>Shell V-Power METH, CAFFEINE Lower St. Lawrence and Gaspé Peninsula</p> 	<p>Fred Flinstone CAFFEINE Montreal region</p> 	<p>Fred Flinstone METH, CAFFEINE Saguenay - Lac-St-Jean</p> 	<p>Coca-Cola METH, CAFFEINE Outaouais</p> 	<p>Coca-Cola CAFFEINE Eastern Townships</p> 
<p>On Star CAFFEINE, DIPHENHYDRAMINE, DIMETHYLSULFONE Bas-St-Laurent - Gaspésie</p> 	<p>On Star METH, CAFFEINE, PHENYLACETIC ACID Montreal region</p> 	<p>Fox racing METH, CAFFEINE, DIMETHYLSULFONE Montreal region</p> 	<p>Fox racing METH, CAFFEINE, N-DISOPROPYL-TRYPTAMINE Quebec City Region</p> 	<p>Fox racing 5-METHOXY-N, N-DISOPROPYL-TRYPTAMINE Quebec City Region</p> 	<p>Transformers MDMA, METH, KETAMINE, DIMETHYLSULFONE North Shore</p> 
<p>Transformers MDMA, CAFFEINE, DIPHENHYDRAMINE Quebec City Region</p> 	<p>Puma MDMA, KETAMINE, CAFFEINE, PROCAINE Eastern Townships</p> 	<p>Puma METH, CAFFEINE Montreal region</p> 	<p>Domino AMPHETAMINE, CAFFEINE Quebec City Region</p> 	<p>Heart MDMA, METH, CAFFEINE, DIPHENHYDRAMINE Abitibi-Témiscamingue</p> 	<p>Red Dragon Apparel METH, MDMA, KETAMINE, CAFFEINE, DIPHENHYDRAMINE, LIDOCAINE, PROCAINE Mauricie - Centre-du-Québec</p> 
<p>Star MDMA, METH, CAFFEINE, DIPHENHYDRAMINE North Shore</p> 	<p>Hand MDMA, CAFFEINE Quebec City Region</p> 	<p>Omega METH, CAFFEINE, DIMETHYLSULFONE Lower St. Lawrence and Gaspé Peninsula</p> 	<p>X MDMA, METH, PROCAINE Mauricie - Centre-du-Québec</p> 	<p>Canal Vie NEGATIVE Saguenay - Lac-St-Jean</p> 	<p>69 MDMA Eastern Townships</p> 
<p>.6 NEXUS Saguenay - Lac-St-Jean</p> 	<p>Star of David AMPHETAMINE, CAFFEINE Saguenay - Lac-St-Jean</p> 	<p>e MDA Eastern Townships</p> 	<p>Extraterrestrial 5-METHOXY-METHYLISOPROPYL-TRYPTAMINE Eastern Townships</p> 	<p>Fleur de lys AMPHETAMINE, CAFFEINE Mauricie - Centre-du-Québec</p> 	<p>Star BZP, TMPPP, CAFFEINE Montreal region</p> 
<p>Lightning bold METH Montreal region</p> 	<p>Bomb MDMA, METH, CAFFEINE, DIMETHYLSULFONE Montreal region</p> 	<p>Red Bull METH, CAFFEINE Montreal region</p> 	<p>Toyota METH, CAFFEINE Quebec City Region</p> 	<p>Dolphin MDMA, METH, CAFFEINE Montreal region</p> 	<p>Diamond MDMA Abitibi-Témiscamingue</p> 
<p>NHL METH North Shore</p> 	<p>02 METH, MDMA, CAFFEINE Eastern Townships</p> 	<p>Spawn METH, CAFFEINE Montreal region</p> 	<p>Greg Norman METH, CAFFEINE Outaouais</p> 	<p>TKO METH, CAFFEINE Quebec City Region</p> 	<p>Dove MDMA Abitibi-Témiscamingue</p> 
<p>Pin up METH, CAFFEINE Abitibi-Témiscamingue</p> 	<p>Stawberry MDMA, METH, CAFFEINE, LIDOCAINE Lower St. Lawrence and Gaspé Peninsula</p> 	<p>Hearts and crown MDA Montreal region</p> 	<p>Motorola MDMA Montreal region</p> 	<p>Couche-Tard METH North Shore</p> 	<p>Kärv METH, CAFFEINE Montreal region</p> 

METH : Methamphetamine, TMPPP: Trifluoromethylphenylpiperazine, BZP: Benzylpiperazine, Nexus : 4-bromo-2,5-dimethoxybenzeneethanamine
 Note: a tablet similar to those represented on this table can have a completely different composition.