

## PHENETHYLAMINES



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## KEY POINTS

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## MAIN FORMS

MDMA (3,4-methylenedioxyamphetamine) or 'ecstasy' belongs to the family of synthetic drugs known as phenethylamines and shares a chemical similarity to the stimulant amphetamine and the hallucinogen mescaline (Koesters, Rogers & Rajasingham, 2002). MDMA is a central nervous system stimulant and has both hallucinogenic and ephedrine-like effects (Johnson, Maxwell and Leitnerschmidt, 1997). Although chemically related to amphetamine, MDMA is not a derivative and is produced by a different chemical process.

In its base form, MDMA is a white, musty-smelling oil with a searing, bitter taste. The base is converted into a salt form or powder for processing into capsules or tablets, usually with a symbol or logo. MDMA derivatives found in Australia include MDA, MDEA and PMA. Table 7 shows the common phenethylamines used in Australia.

Table 7: Phenethylamines used in Australia

Drug type	Common names	Forms	Method of administration
3,4-methylenedioxyamphetamine (MDMA)	XTC, X, ecstasy, Adam, M & M, eccy, E, go, scooby snacks, hug, beans	Tablet, geltab, powder	Oral, intranasal, smoking, injecting
3,4- methylenedioxyethylamphetamine (MDEA)	Eve	Tablet	Oral
3,4-methylenedioxyamphetamine (MDA)	Love bug, crystal, P, window pane	Tablet	Oral
N-methyl-1-(1,3-benzodioxol-5-yl)-2-butanamine (MBDB)	Eden	Tablet	Oral
Paramethoxyamphetamine (PMA) <sup>a</sup>	Death, Dr Death, Mitsubishi double	Tablet, powder (rare)	Oral, intranasal, injecting (rare)
4-bromo-2,5-dimethoxyphenethylamine	Nexus, 2-CB, bromo, TWOs	Tablet (Nexus), blotting paper, powder	Oral, intranasal
4-bromo-2,5-dimethoxyamphetamine (DOB) <sup>b</sup>	DOB, 4-bromo-DMA, bromo	Tablet, blotting paper	Oral
2,5-dimethoxy-4-methylamphetamine (DOM) <sup>c</sup>	DOM, STP	Tablet, blotting paper	Oral
4-methylthioamphetamine (4-MTA)	Flatliner, golden eagle	Tablet	Oral

a. PMA has stimulant and hallucinogenic properties. It is an analogue of MDMA with broadly similar effects.

b. Strong effect–low effective dose.

c. Similar dose to DOB.

Source: ACC, Australian Government Analytical Laboratories, South Australian Forensic Science Centre



## INTERNATIONAL TRENDS

The production of MDMA continues to be concentrated in Western Europe, particularly the Netherlands and Belgium, with an increase in production observed in Eastern Europe (Interpol, 2005). MDMA has been seized mainly in Western and Central Europe (54 percent) and Oceania (26 percent). The majority of precursors required to manufacture MDMA originate in China.

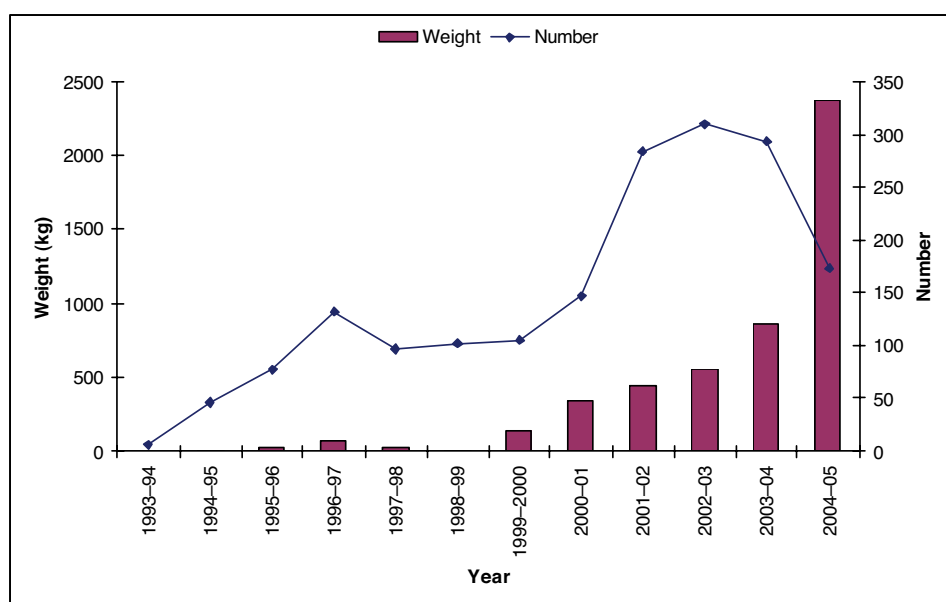
Globally the volume of MDMA seizures has declined to the point where there are now 37 percent less than in the peak year of 2002. This may reflect declining production rates in European centres. In the United States there are also indications of declining rates of use and availability of MDMA (NDIC, 2005), contrasting with the strong rise in seizures in Oceania and East and South East Asia.

## DOMESTIC TRENDS

### Australian Border Situation

The trend of large and professionally organised shipments of MDMA to Australia has developed to the point where the total weight of MDMA detected in 2004–05 was nearly three times the weight of MDMA detected in the preceding year, while the number of detections was over 40 percent lower (see Figure 8). This clearly points to fewer shipments of much greater weight. The 2004–05 Australian detections included what is believed to be the world's biggest single detection of MDMA—more than 1.2 tonnes, or five million MDMA tablets—in a container of ceramic tiles shipped from Italy. In comparison, the biggest MDMA shipment detected in the preceding year was 342 kilograms.

Figure 8: Number and weight of detections of phenethylamines at the Australian border, 1993–94 to 2004–05



Source: Australian Customs Service

### Significant Seizures

The four most significant seizures of MDMA listed below account for 97 percent of the total weight of MDMA detected in Australia in 2004–05. The remaining 169 detections involved amounts ranging from single tablets to approximately 12 kilograms of tablets (one kilogram equals approximately 3400 MDMA tablets). Relatively high prices for MDMA in Australia, compared to Europe, contribute to opportunistic smuggling of traffickable quantities of the drug to Australia by air passengers and in postal articles (see Figures 9 and 10).

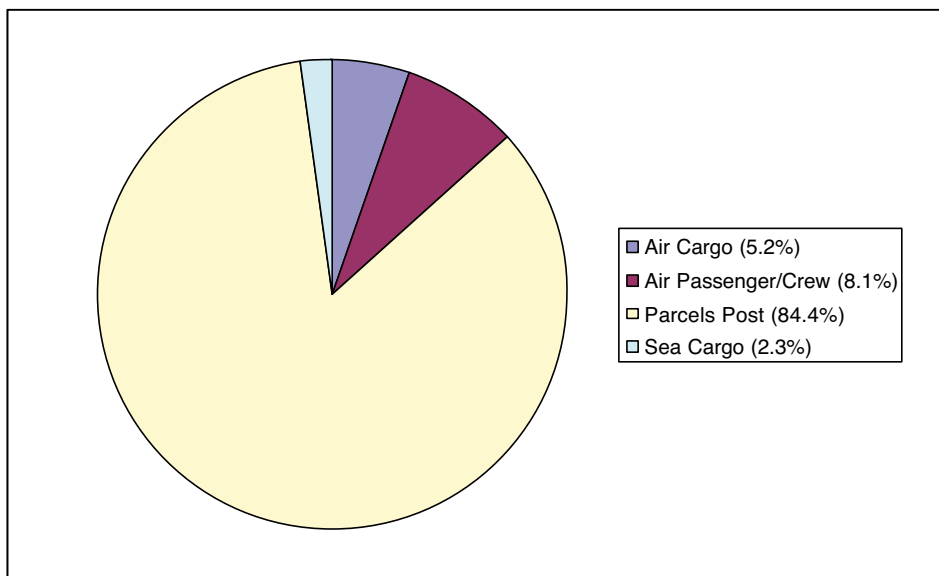
Significant detections of phenethylamines in 2004–05 included:

- 1230 kilograms, or approximately five million MDMA tablets concealed in a container load of ceramic tiles shipped to Melbourne from Italy on 13 April 2005. This is the largest ever detection of MDMA at the Australian border and is also believed to be the world's biggest single seizure of MDMA tablets;
- 820 kilograms of MDMA, comprising nearly three million tablets and sufficient bulk MDMA powder to produce another 0.8–1 million tablets, concealed in an industrial bakery oven sent to Sydney from Poland via Germany as air cargo on 19 October 2004;
- 161 kilograms of MDMA tablets shipped to Sydney from Belgium in a sea cargo container of furniture on 5 November 2004; and
- 92 kilograms of MDMA tablets shipped to Sydney from the Netherlands in a sea cargo container of German-made barbecues on 8 April 2005.

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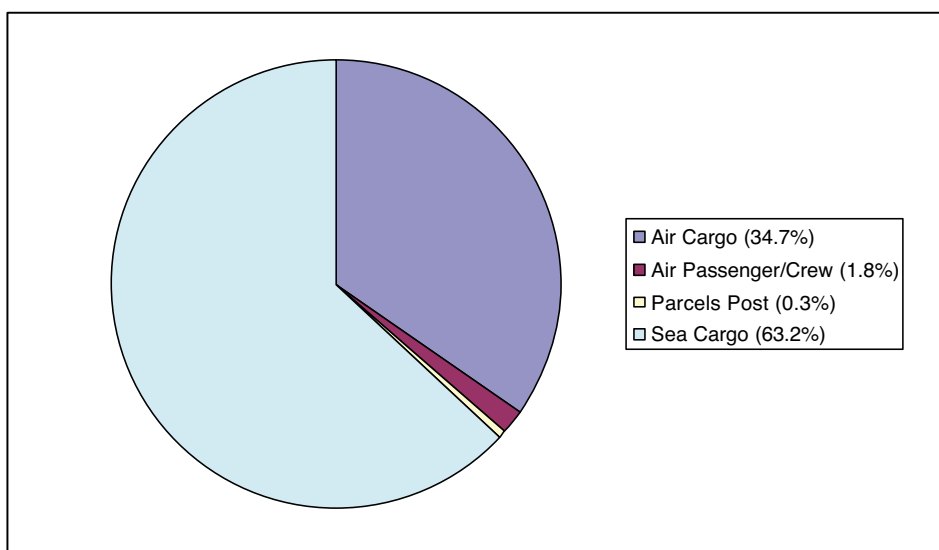


Figure 9: Number of detections of phenethylamines at the Australian border, by method of importation 2004–05



Source: Australian Customs Service

Figure 10: Weight of detections of phenethylamines at the Australian border, as a proportion of total weight, by method of importation 2004–05



Source: Australian Customs Service

## Precursors

One thousand and fifty kilograms of an intermediate chemical (a proto-precursor, or precursor to a precursor) which is used in the process of manufacturing piperonylmethylketone (PMK, also known as MDP2P)—a direct MDMA precursor—was detected in sea cargo from China to Sydney in December 2004. More than 2000 kilograms of the same compound, also shipped in sea cargo from China, was detected at Melbourne in February 2005. There are further operational indications of major shipments of precursors to Australia.

Detections of bulk MDMA precursors suggest a shift in clandestine manufacture of MDMA in Australia towards larger scale operations and more efficient chemical processes. MDP2P (PMK) and safrole (another MDMA precursor) remain available from chemical industry suppliers in China.

## Embarkation Points

Countries of embarkation for MDMA shipments totaling more than one kilogram were (in descending weight order): Italy, Poland, Belgium, the Netherlands, Indonesia, Malaysia, Canada, Austria, France and the United Kingdom. It should be noted, however, that embarkation data are affected by air transport connection patterns and location of air traffic hubs, and do not necessarily reflect the true origin of drugs.

Embarkation points of attempted MDMA importations in 2004–05 have reflected the traditional Western European origin of MDMA trafficked to Australia, but also the possible movement of Western European production of the drug eastwards, after the accession of Eastern European countries to the European Union in May 2004. The relatively high position of Indonesia in the list above is influenced by one large detection of 11 kilograms of MDMA tablets in sea cargo. This detection may indicate availability of MDMA in Indonesia from local production, but may also reflect MDMA trading routes from Europe following the traditionally close pattern of relations between Indonesia and the Netherlands. The high position of Canada is affected by a single detection of more than 11 kilograms of MDMA tablets on a Vietnamese-Canadian air passenger courier.

## DOMESTIC MARKET INDICATORS

The UNODC reports that Australia has the highest consumption of MDMA per capita in the world (UNODC, 2005). Results from the 2004 National Drug Strategy Household Survey reveal that after cannabis, MDMA and ATS are the most common recently used illicit substances. In addition, almost one in 10 respondents aged 18–19 years reported having used MDMA in the previous 12 months (AIHW, 2005).

The majority of MDMA in Australia is imported, however, recent seizures of precursor chemicals, clandestine laboratories and the distribution of tablet presses into the illicit market indicates that locally produced MDMA is available in Australia (see Amphetamines chapter). Domestic and international diversion of precursor chemicals and MDMA production equipment is likely to continue.



## Availability

A national study of MDMA users shows that the availability of MDMA remains stable. Sixty-one percent of those surveyed considered MDMA to be 'very easy' to obtain and 35 percent considered it to be 'easy'. Over two thirds (68 percent) of the national sample reported that they typically used more than one tablet (Dunn, Stafford and Degenhardt, 2005). The majority of users were also likely to use other drugs with MDMA.

## Price

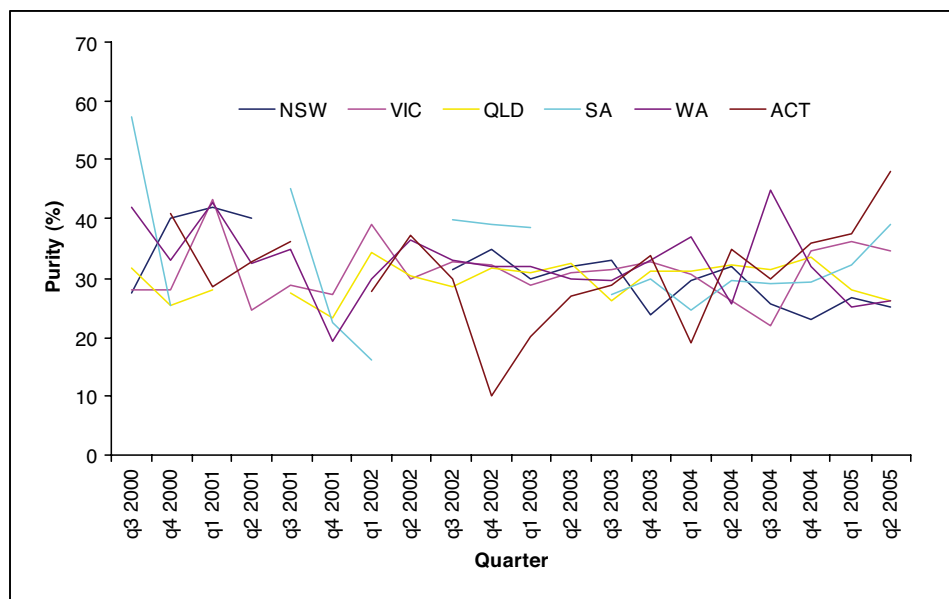
The street price for a single MDMA tablet/capsule remained relatively unchanged from 2003–04 across reporting jurisdictions. NSW reported the largest range in price from \$30–\$70. MDMA prices were not available for Victoria and the Northern Territory. However, according to the 2005 Party Drug Trends survey, the median price of a MDMA tablet ranged from \$30 in New South Wales, Victoria, Queensland and South Australia to \$50 in the Northern Territory. The majority of MDMA users in all jurisdictions reported that the price of MDMA had remained stable in the preceding six months prior to being interviewed (Dunn, Stafford and Degenhardt, 2005).

## Purity

Some tablets sold as 'ecstasy' may include a variety of drugs mixed with MDMA or may contain no MDMA at all. Tablets have been found to include such combinations as: methylamphetamine with additives such as ketamine and caffeine; amphetamine and caffeine; amphetamine and MDMA; MDA and MDMA; MDA, caffeine, and LSD; and LSD and clonazepam. As such, the purity of phenethylamines fluctuates with the time and place of manufacture being the major determinants (see Figure 11).

Among offending populations, urinalysis results from more than 3140 police detainees in seven different watch-houses revealed a large discrepancy between the urinalysis results and self-report data for MDMA. Fifty percent of police detainees who stated they had used MDMA in the past 48 hours did not test positive to MDMA. Of those, 64 percent tested positive to methylamphetamine, suggesting that a substantial proportion of detainees, who believed they had taken MDMA, may have actually consumed methylamphetamine (Schulte, Mouzos and Makkai, 2005). Groups involved in the production of MDMA are likely to continue cutting adulterants into high purity powder in order to maximise yield and profits.

Figure 11: Median purity of phenethylamines samples, 2000–01 to 2004–05



### Seizure and Arrests

As a number of jurisdictions do not differentiate between seizures connected with ATS and phenethylamines, it is not possible to provide a jurisdictional breakdown for each state and territory. As such, all seizures have been aggregated into the ATS category. For details on seizures connected with phenethylamines, see the Amphetamines chapter.

## NATIONAL IMPACT

MDMA production in Australia is likely to increase along with detections of MDMA precursors. Indicators suggest a shift in clandestine manufacture of MDMA in Australia towards larger scale operations using more efficient chemical processes. As domestic MDMA production increases and users become more discerning of other substances being sold as MDMA (through pill testing kits and user websites), there may be a decrease in other ATS sold as MDMA. The increase in domestic MDMA production is also unlikely to affect MDMA prices in the short term, as the user demand is likely to sustain current pricing.



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