Annex VIII

Use of scheduled substances in the illicit manufacture of narcotic drugs and psychotropic substances

Figures I–VI below depict the use of scheduled substances in the illicit manufacture of narcotic drugs and psychotropic substances. The approximate quantities provided are based on common manufacturing methods. Other manufacturing methods using scheduled substances – or even non-scheduled substances instead of or in addition to scheduled substances – may also be encountered, depending on the geographical location.

Figure I. Illicit manufacture of cocaine and heroin: scheduled substances and the approximate quantities thereof required for the illicit manufacture of 100 kilograms of cocaine or heroin hydrochloride

Note: The extraction of cocaine from coca leaf and the purification of coca paste and the crude base products of cocaine and heroin require solvents, acids and bases. A wide range of such chemicals are used at all stages of drug manufacture.
Figure II. Illicit manufacture of amphetamine and methamphetamine: scheduled substances and the approximate quantities thereof required for the illicit manufacture of 100 kilograms of amphetamine sulphate and methamphetamine hydrochloride

Note: Methcathinone, a less commonly encountered amphetamine-type stimulant, can be manufactured from pseudo/ephedrine hydrochloride, requiring the same approximate quantities as methamphetamine to yield 100 kilograms of hydrochloride salt.

α-Phenylacetoacetamide (APAA) (150–230 kilograms) or α-Phenylacetoacetonitrile (APAAN) (150–230 kilograms) or Methyl α-phenylacetooacetate (MAPA) (150–230 kilograms)

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The weight range reflects the fact that APAA, APAAN and MAPA are purpose-made designer precursors without recognized legitimate uses and are therefore often impure (street-level quality).

Methods based on 1-phenyl-2-propanone result in racemic d,l-meth/amphetamine, while methods based on ephedrine, pseudoephedrine or norephedrine result in d-meth/amphetamine. In a subsequent step, racemic d,l-meth/amphetamine can be – and actually is – separated in illicit laboratories to also produce d-meth/amphetamine.
**Figure III. Illicit manufacture of 3,4-methylenedioxymethamphetamine (MDMA) and related drugs: scheduled substances and the approximate quantities thereof required for the illicit manufacture of 100 kilograms of MDMA**

1. **Piperonal (210 kilograms)**
2. **Safrole-rich oils\(^{a}\) (210 litres)**
3. **3,4-MDP-2-P methylglycidate\(^{b}\) (210 kilograms)**
4. **Intermediate A**
5. **Safrole (150 litres)**
6. **3,4-MDP-2-P (110 litres)**
7. **Intermediate B\(^{c}\)**
8. **3,4-Methylenedioxymethamphetamine (MDMA) (100 kilograms)**
9. **Hydrochloric acid**
10. **MDMA hydrochloride**

**Note:** Isosafrole, another precursor of MDMA under international control, is not included in this scheme, as it is not commonly encountered as a starting material; it is an intermediate in a modification of methods for manufacturing MDMA from safrole, requiring approximately 300 litres of safrole to manufacture 100 kilograms of MDMA.

\(^{a}\)Assuming the safrole-rich oils have a safrole content of 75 per cent or higher.

\(^{b}\)Refers, for the purpose of this scheme, to the methyl ester and salts of 3,4-MDP-2-P methyl glycidic acid (i.e. purpose-made designer precursors without recognized legitimate uses that are therefore often impure (street-level quality)).

\(^{c}\)The manufacture of 100 kilograms of MDMA via intermediate B would require 200 litres of safrole.
Figure IV. Illicit manufacture of methaqualone and phencyclidine: scheduled substances and the approximate quantities thereof required for the illicit manufacture of 100 kilograms of methaqualone and phencyclidine.

- Anthranilic acid (100 kilograms)
- Acetic anhydride (100 litres)
- Piperidine (80 litres)
- N-Acetylanthranilic acid (125 kilograms)
- Hydrochloric acid
- Phencyclidine (100 kilograms)
- Methaqualone (100 kilograms)

Figure V. Illicit manufacture of lysergic acid diethylamide (LSD): scheduled substances and the approximate quantities thereof required for the illicit manufacture of 1 kilogram of LSD.

- Ergometrine (3 kilograms)
- Ergotamine (5 kilograms)
- Lysergic acid (1.5 kilograms)
- LSD (1 kilogram)
Figure VI. Illicit manufacture of fentanyl: scheduled substances and the approximate quantities thereof required for the illicit manufacture of 1 kilogram of fentanyl

- tert-Butyl 4-phenylamino)piperidine-1-carboxylate (1-boc-4-AP) (2.6-2.9 kilograms)
- N-Phenethyl-4-piperidone (NPP) (1.5 kilograms)
- N-Phenyl-4-piperidinamine (4-AP) (1.5 kilograms)
- 4-Anilino-N-phenethylpiperidine (ANPP) (1.3 kilograms)
- Norfentanyl (1.1 kilograms)
- Fentanyl base (1 kilogram)