Annex IV

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

Figures A.I-A.IV 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 A.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

- **Coca leaf**
  - Sulphuric acid (100-300 litres)
  - Coca base/paste
  - Potassium permanganate (20-55 kilograms)
  - Acetic anhydride (100-250 litres)
  - Morphine
  - Acetone/ethyl ether/methyl ethyl ketone/toluene (1,000-2,000 litres)
  - Hydrochloric acid (20-40 litres)
  - Cocaine
  - Heroin
  - Acetone/ethyl ether hydrochloride (100 kilograms)
  - Morphine
  - Hydrochloric acid (30-40 litres)

*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 have been used at all stages of drug manufacture.*
Figure A.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

- Norephedrine hydrochloride (130 kilograms)
- 1-Phenyl-2-propanonea (100-150 litres)
- Amphetamine
- Phenylacetic acid (120-180 kilograms)
- alpha-Phenylacetoacetonitrile (150-220 kilograms)
- Acetic anhydride (180-280 litres)
- Sulphuric acid
- Methamphetamine
- Phenylacetic acid
- Pseudo/Ephedrine hydrochloride (150 kilograms)
- Methamphetamine hydrochloride (100 kilograms)
- Sulphuric acid
- Hydrochloric acid

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.

a Methods based on 1-phenyl-2-propanone result in racemic d,l-methamphetamine while methods based on ephedrine, pseudoephedrine or norephedrine result in d-methamphetamine.
Figure A.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

- Piperonal (210 kilograms)
- Safrole-rich oils\(^a\) (210 litres)
- Intermediate A
- 3,4-MDP-2-P (110 litres)
- Intermediate B\(^b\)
- 3,4-Methylenedioxymethamphetamine (MDMA) (100 kilograms)
- Hydrochloric acid
- 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.

\(^b\) The manufacture of 100 kilograms of MDMA via intermediate B would require 200 litres of safrole,
Figure A.IV. Illicit manufacture of lysergic acid diethylamide (LSD), methaqualone and phencyclidine: scheduled substances and the approximate quantities thereof required for the illicit manufacture of 1 kilogram of LSD and 100 kilograms of methaqualone and phencyclidine

- Ergometrine (3 kilograms)
- Ergotamine (5 kilograms)
- Piperidine (80 litres)
- Lysergic acid (1.5 kilograms)
- Anthranilic acid (100 kilograms)
- N-Acetylanthranilic acid (125 kilograms)
- Acetic anhydride (100 litres)
- Hydrochloric acid
- LSD (1 kilogram)
- Phencyclidine (100 kilograms)
- Methaqualone (100 kilograms)