OXFORD INSTRUMENTS

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Rapid screening of street drugs

including psychoactive substances using the Pulsar analyser

WHY IS RAPID IDENTIFICATION IMPORTANT?

Rapid identification of suspected drugs is important in prisons to reduce harm by allowing appropriate treatment to be given without delay. It can be used to deter the use of illegal substances by providing effective enforcement.

When used by the police service, rapid analysis and identification can be used to expedite charging decisions. It can provide the sample results within custody, impacting directly on numbers of offenders released under investigation or on bail, reducing forensic costs.

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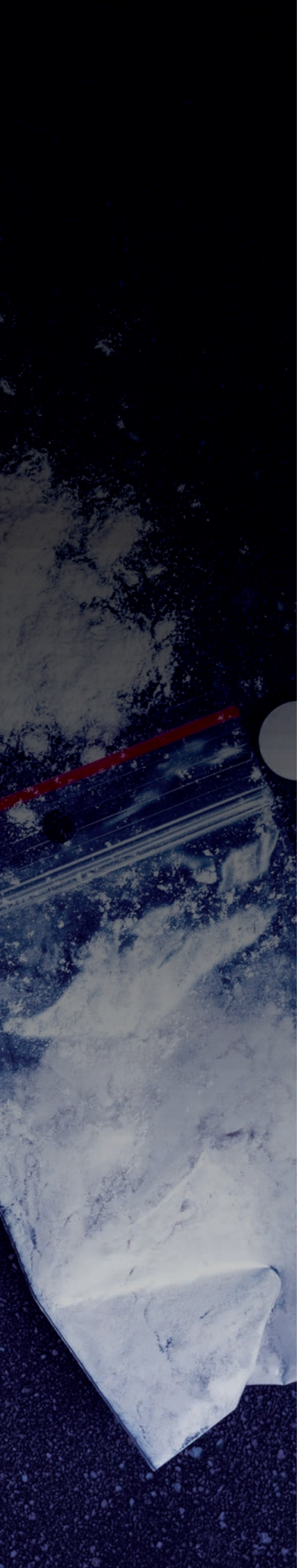
What types of samples can be measured?

Pulsar can measure powders, tablets, tobacco-like materials such as "spice" and substances coated on or impregnated into paper.

Pulsar's database currently has information on many classes of substances including: cathinones, synthetic cannabinoids, amphetamines, narcotics, fentanyls, steroids, cutting agents, controlled pharmaceuticals and others.



HOW DO WE PREPARE AND MEASURE SAMPLES?

Sample preparation involves mixing some of the sample with a small amount of liquid (solvent) in a vial, then transferring the dissolved sample into a Pulsar sample tube. The whole process takes a few minutes.

Powders and smoking blends are put straight into the vial. Tablets should first be crushed. Paper samples should be cut into small pieces, or a thin strip can be rolled up. The solvent will extract or wash off the active ingredient.

The sample tube is then placed in the instrument and a few mouse clicks will start the measurement. The measurement itself will normally take no more than five minutes - sometimes longer if the sample is small or of low strength.

How does Pulsar identify drugs?

Inside the Pulsar computer is a database of several hundred "fingerprints" of drugs, psychoactive substances and common legal pharmaceuticals such as paracetamol. When a sample is run on Pulsar, it searches the database for a match to the sample's fingerprint. If it finds a match, it will tell you what the sample is. If it doesn't, it will give you a "best guess", based on other classes of compounds in the database. Whenever we find samples that are not in the database, we work with our partners to analyse them and add their fingerprints to the database.

WHAT IS PULSAR?

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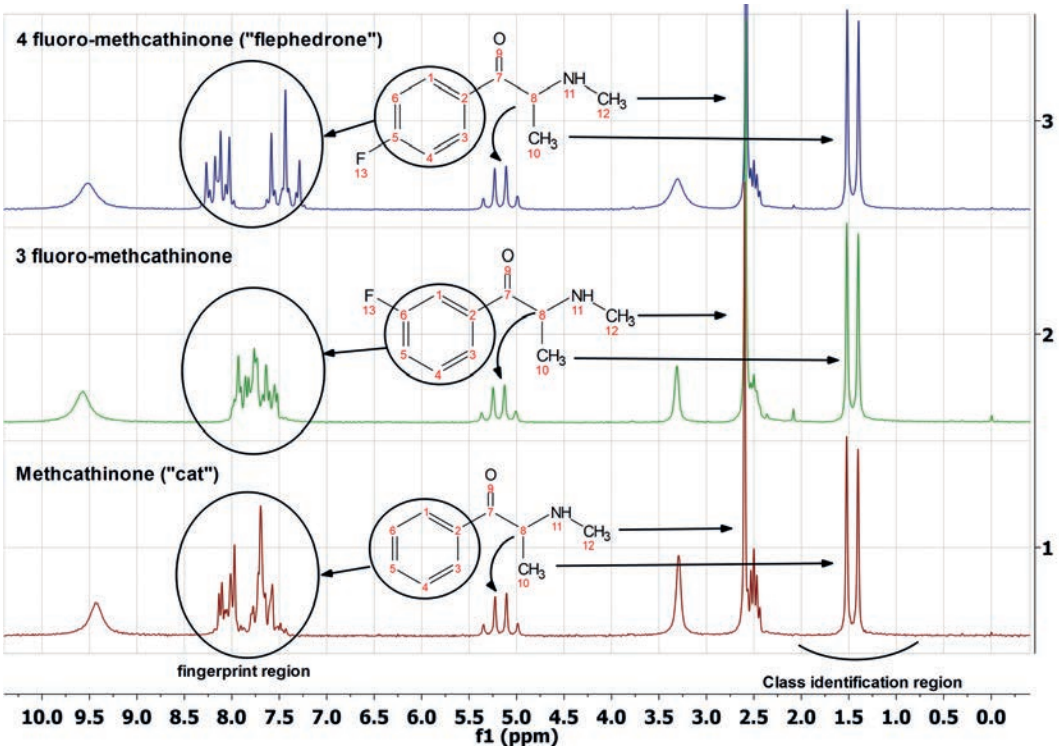
Pulsar is a Magnetic Resonance (MR) analyser. MR is an analytical technique used to identify materials by their chemical structure. Any organic material, such as a drug, generates a spectrum or "fingerprint" of the molecule which we can use to identify it.

Drugs that are very similar in structure will have similar MR spectra, but there are enough differences to give each drug its own unique fingerprint. For example, the diagram below shows the chemical structure of three cathinones, together with their MR spectra. The arrows indicate which peaks in the spectra come from which parts of the molecules.

The peaks in the class identification region on the right identify them all as cathinones, but the peaks in the fingerprint region on the left distinguish between them.



We're here to help you!

OiService aims to keep your **Pulsar** working as hard as you do.
Our global network of service hubs provides a full range of technical support:

Consumables and accessories
Range of sample tubes and other accessories available.

Online diagnostics
In-depth support over the internet.

Telephone help-desks
For a fast response to your problem.

Extended warranties
Avoid unplanned costs.

Maintenance contracts
Ensures your analyser produces the right result every time.

Training
Understand your analyser and its features.

Repairs
Fast and efficient turnaround.

Part no.: Pulsar PS Brochure MR/201/0418

MORE INFORMATION

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