



## ACTIVE PHARMACEUTICAL INGREDIENT (API) CONFIRMATION WITH X-RAY DIFFRACTION

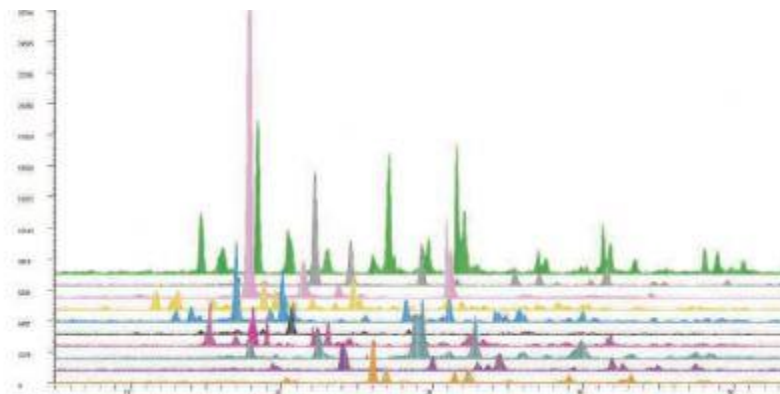


Olympus X-ray diffraction (XRD) analyzers can be used to identify pharmaceuticals and unknown substances such as narcotics and counterfeit medication. Olympus XRD analyzers can be used in the field or a controlled laboratory environment for safe, fast analysis of hazardous materials.

### Fast results with Olympus technology

Olympus XRD instruments use leading-edge and reliable technology employed in NASA's Curiosity Rover, part of the successful NASA Mars Science Laboratory program.

While the TERRATM and BTX-II analyzers use identical powder-XRD technology to identify compounds. The BTX-II is a small benchtop unit for laboratory investigation. The Terra actually operates both as electric, or battery-operated for up to five hours. Both analyzers are equipped with a unique, patented powder-handling system that utilizes small powder quantities with little sample preparation (less than 15 mg).



Comparison plots of XRD patterns

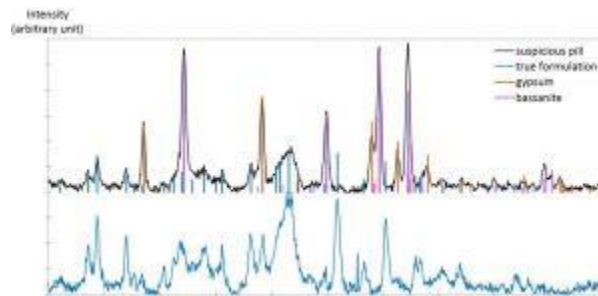
### Identifying Unknown Compounds

#### 1. Pharmaceuticals: Detecting Counterfeits

Pharmaceutical companies spend millions of dollars developing and marketing medications. When counterfeit medications are sold under their brand name it not only harms the company's reputation and

profits but, more importantly, it puts patients at risk of being exposed to harmful substances or ineffective formulations. Pharmaceutical drugs display specific XRD fingerprints that can be used to identify counterfeit medications.

- Rapid identification of counterfeit pharmaceuticals
- Detect the presence of active and inactive ingredients as well as foreign and substitute materials
- Help ensure patient safety and safeguard pharmaceutical manufacturer's branding



XRD data analysis reveals the presence of filler materials (gypsum and basanite) in a blue pill expected to contain a popular name brand drug

## 2. Narcotics Identification

Police and legal teams need a fast, conclusive method to detect illegal substances. Olympus XRD analyzers provide rapid compound identification of unknown substances. Narcotics have unique XRD fingerprints that can be used to identify suspect materials.

- Fast, easy sample preparation and analysis for rapid results
- Sample spinner cell is safe for analyzing potentially hazardous materials
- Sealed cell enables samples to be archived for future analysis



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