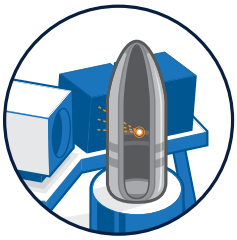
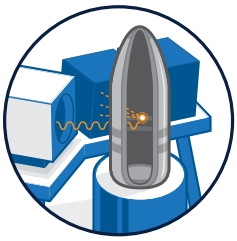
PORTABLE ISOTOPIC NEUTRON SPECTROSCOPY (PINS)

PINS provides information about the contents of unidentified munitions without opening them, detecting the presence of chemical elements in items with an unknown liquid fill.

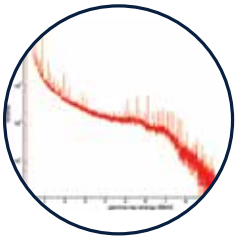


Step 1
PINS uses atomic particles called neutrons.



Step 2
Neutrons penetrate container walls and interact with atomic nuclei, which emit radiation called gamma rays.

Step 3
The energy intensity pattern, or spectrum, of gamma rays is unique for each chemical element.



Step 4
Analysis of gamma ray spectrum enables identification of key elements and their relative concentrations to identify the chemical fill.

The Portable Isotopic Neutron Spectroscopy System quickly and reliably identifies compounds inside suspect chemical-filled munitions.

PINS

The Recovered Chemical Materiel Directorate uses PINS as a transportable nonintrusive assessment system to analyze and provide on-site information about the contents of unidentified munitions without opening them. This system reduces risk to the public, workers and emergency response personnel.

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