



ORGANISATION FOR THE
PROHIBITION OF CHEMICAL WEAPONS

Working together for a world free of chemical weapons

Chemical Analysis in the Chemical Weapons Convention OPCW Open Day 23rd September 2012

Mobile Laboratory



Ultrasonic bath

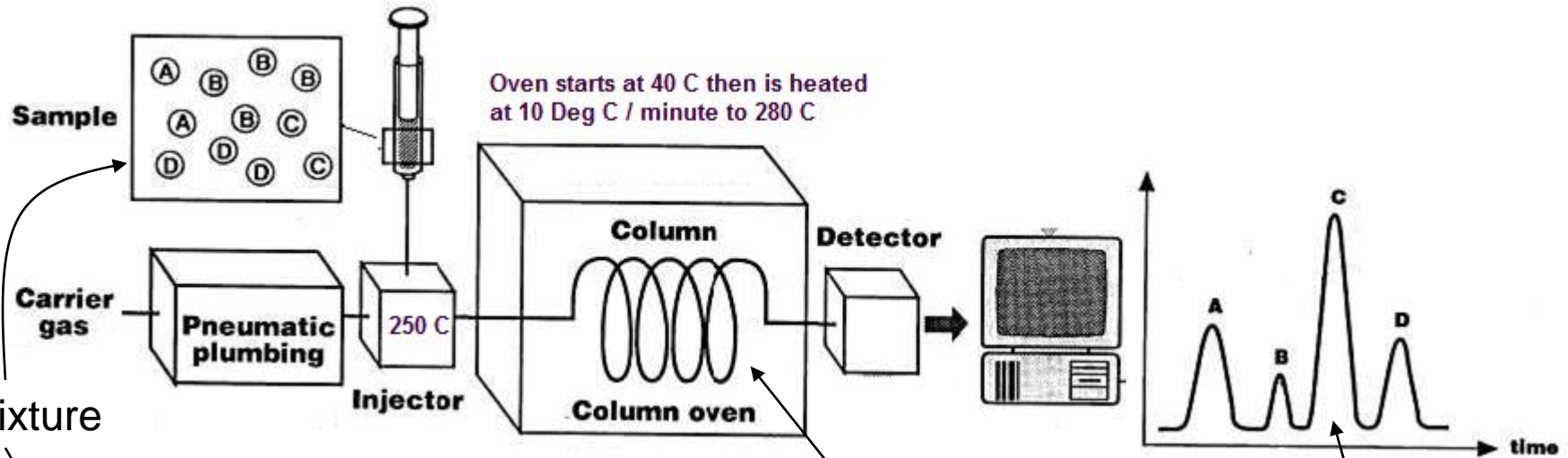


Centrifuge

Analytical balance

Centrifuge / evaporator

Principle of Gas Chromatography



Mixture



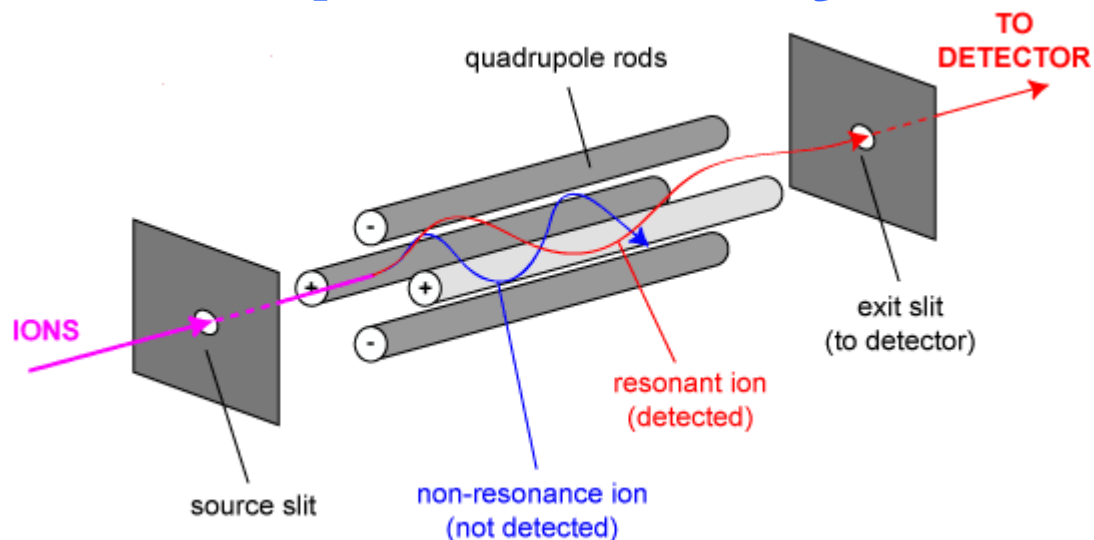
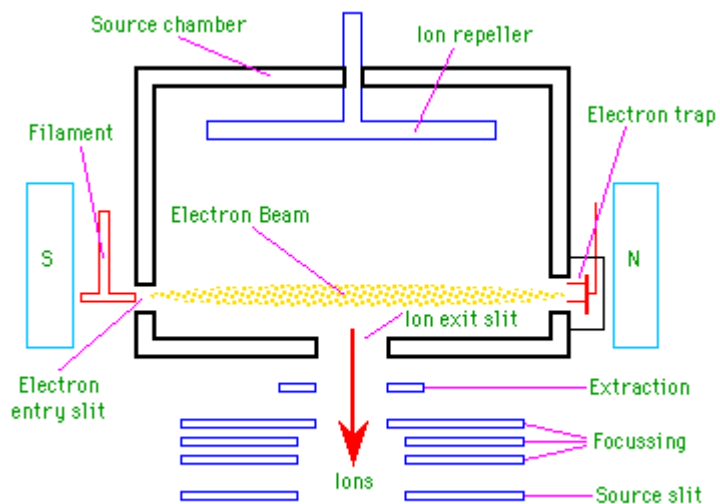
separates chemicals based on physical and chemical properties

separates coins based on size and weight

The more of each type of coin, the bigger the stack

The more of each chemical, the bigger the peak

Principle of Mass spectrometry

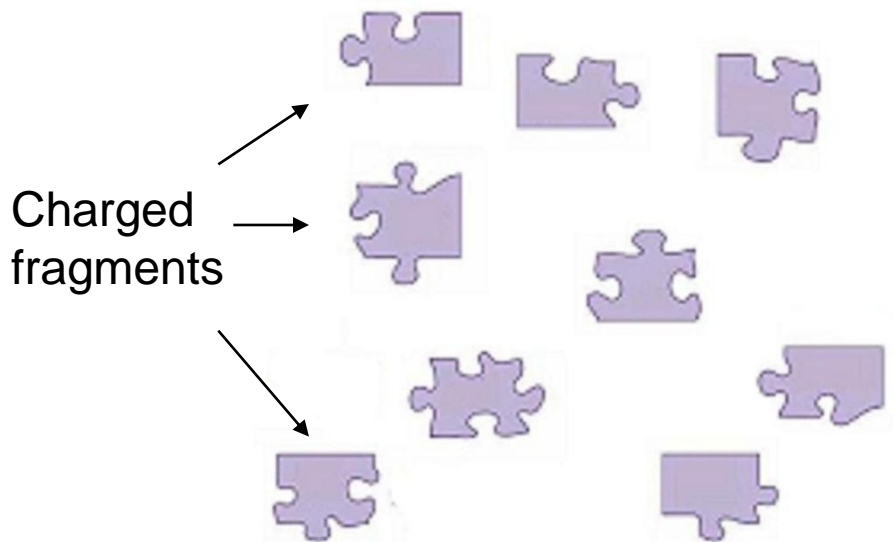


Electron beam breaks molecule into charged fragments

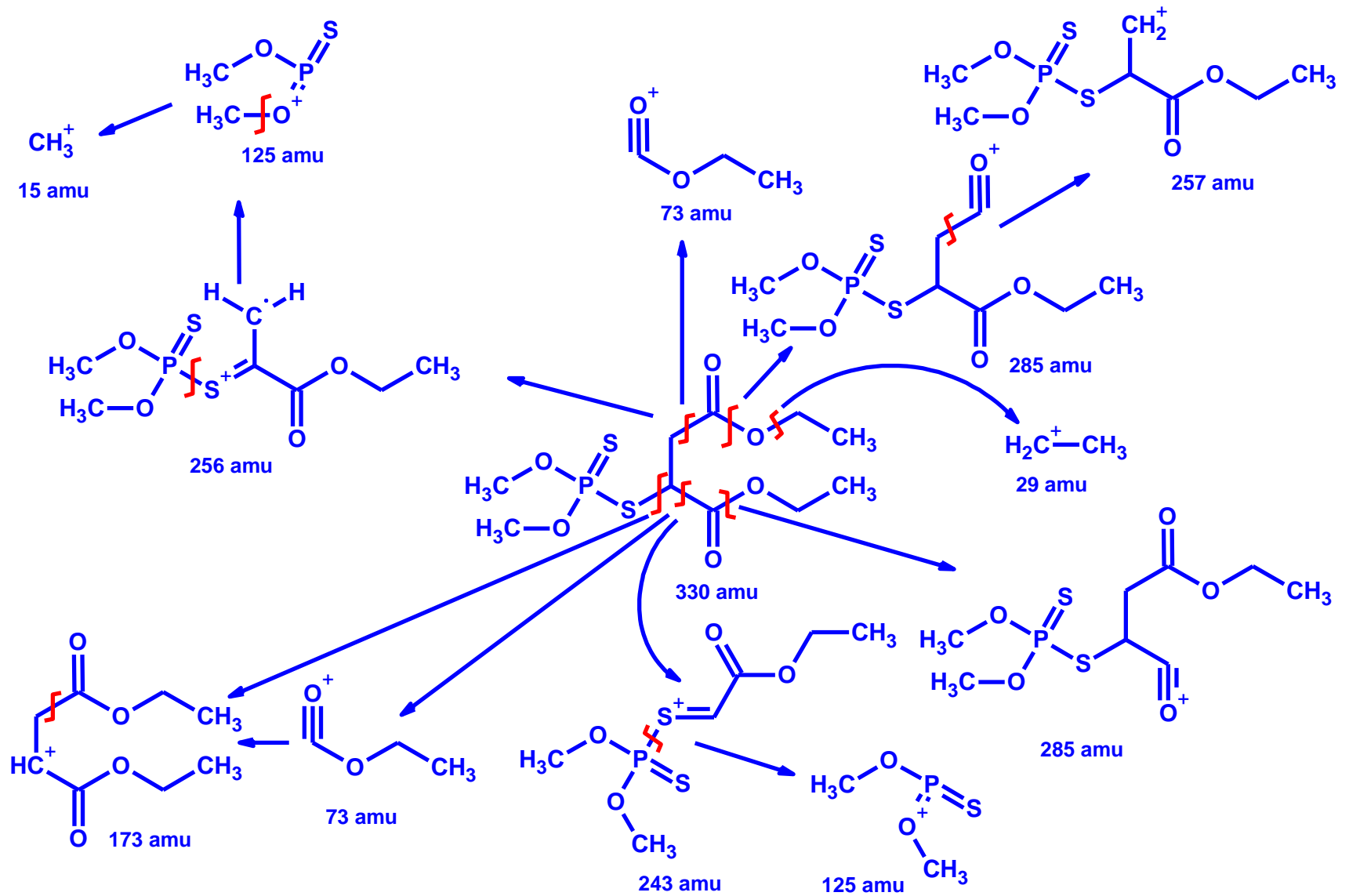


Molecule

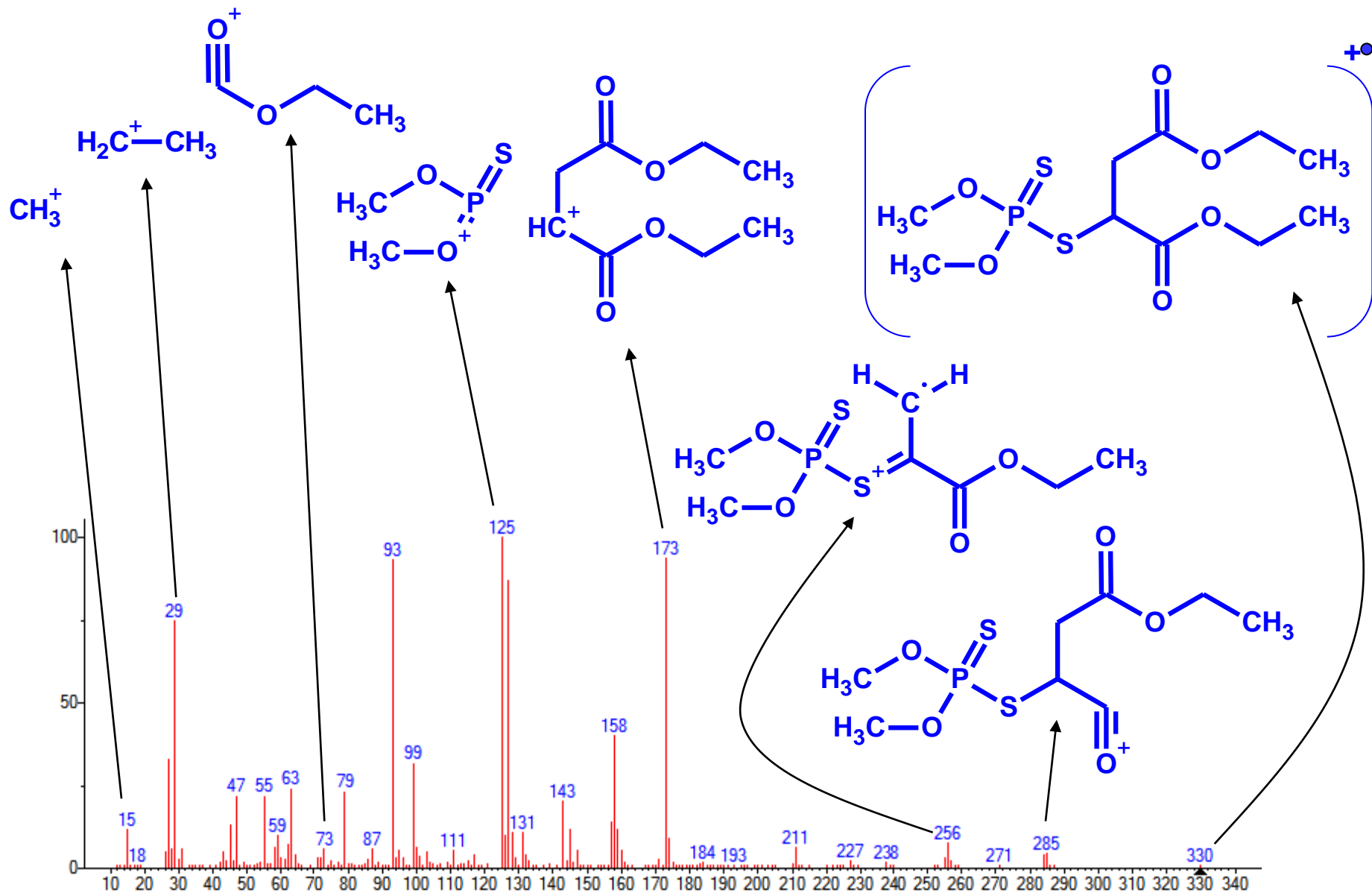
Mass analyzer sorts fragments according to their mass



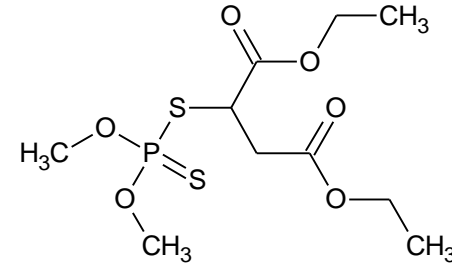
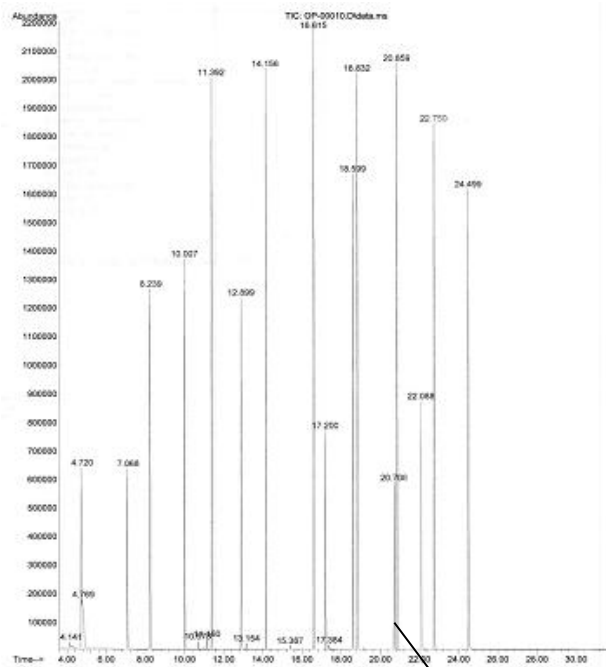
Fragmentation of Malathion



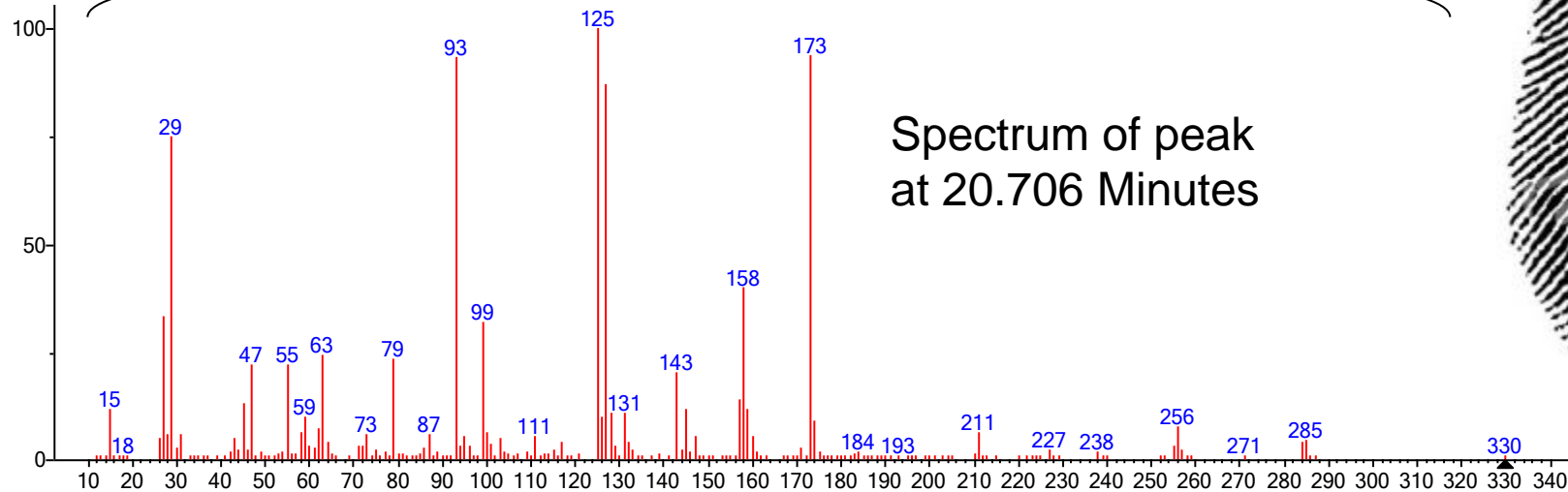
Fragmentation of Malathion

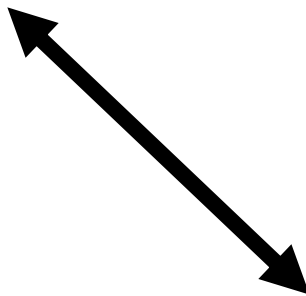
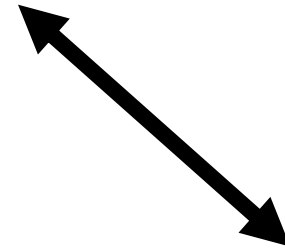
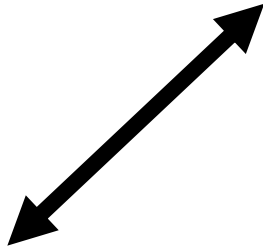


Chromatogram & Mass Spectrum



Molecular Weight of Malathion 330.358





QUESTIONS ?

