



VX: A BRIEF FOR STATES PARTIES



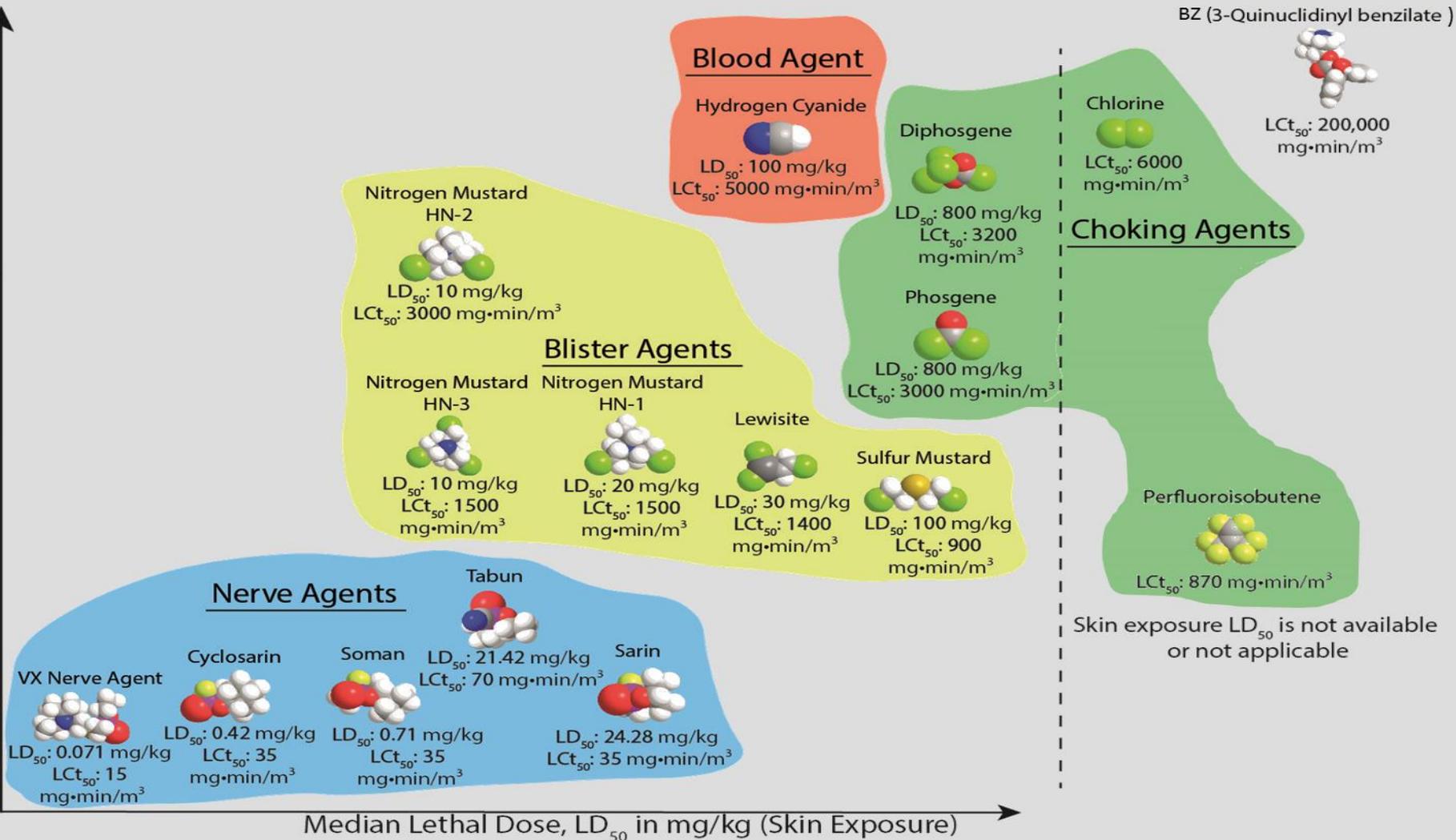


VX background

- Discovered by the British in 1952 during a commercial pesticide research programme.
- Highly toxic Nerve Agent
- Colourless liquid, but usually a pale yellow liquid.
- The only known use for VX is as a CW agent.
- Highly involatile – developed as terrain denial agents
- Under normal circumstances, there is rarely a risk of breathing in vapour, and route of exposure is invariably skin contact.
- Lack of significant vapour hinders detection.
- Readily detectable by a reasonably equipped laboratory.



Median Lethal Concentration, LC_{50} in $mg \cdot min/m^3$
Decreasing acute toxicity

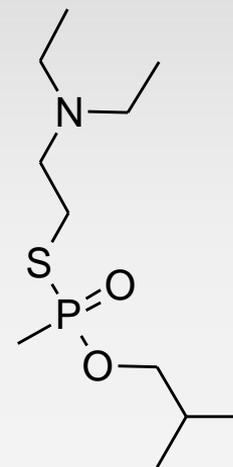
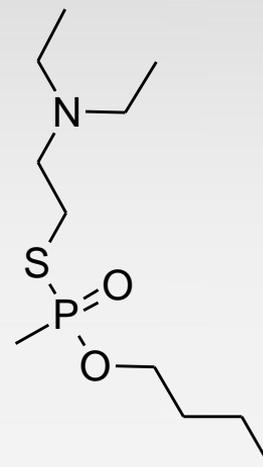
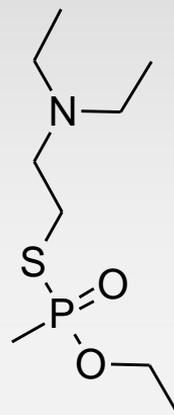
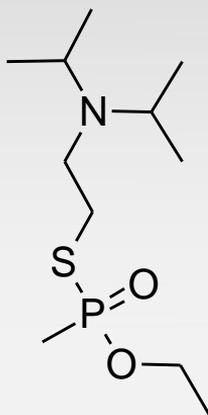




Various V agents

A number of Schedule 1.A.03 chemicals have been researched and/or stockpiled.

The toxicity of all these agents is presumed to be similar





Synthesis of VX

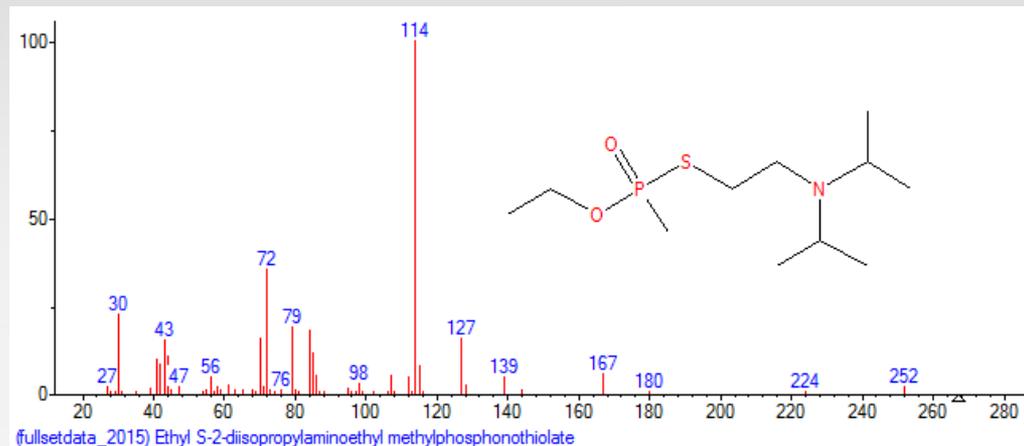
- VX may be synthesized in a multi-step process
 - There are a variety of pathways to create VX
 - Most pathways require other scheduled chemicals
 - Pure VX requires stabilizers for long term storage
- VX may be made as a binary agent
 - Two relatively harmless chemicals can be mixed to create VX
 - There are at least two binary VX formulations





Analysis of VX

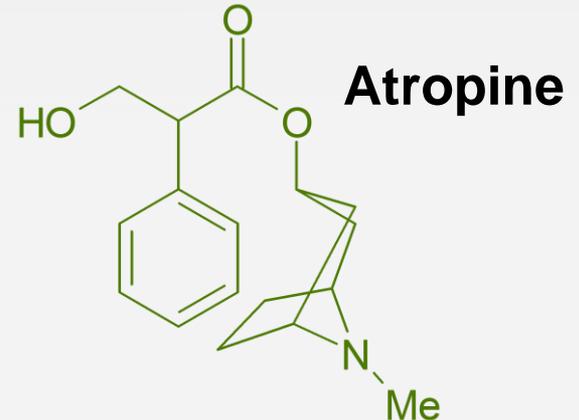
- Gas Chromatography - Mass Spectrometry may be used to analyze for VX and its degradation products
- Library data (e.g. OCAD) may be used for the identification





Medical Countermeasures

- **ATROPINE:** an anticholinergic that limits the effects of excess neurotransmitter at the synapse – anti-muscarinic effects
- **PRALIDOXIME (2-PAM Cl or P2S):** a cholinesterase re-activator that chemically attacks the bound agent. Must be administered quickly
- **DIAZEPAM:** an anticonvulsant to counter the symptoms of nerve agent poisoning





Decontamination

- Oxidation is the best decontamination process for VX
- Traditional household chlorine bleach may be used full-strength to decontaminate surfaces
- A 1:10 dilution of bleach in water may be used to decontaminate skin.