



Q³ Agent Decon

Rapid • Reactive • Revolutionary

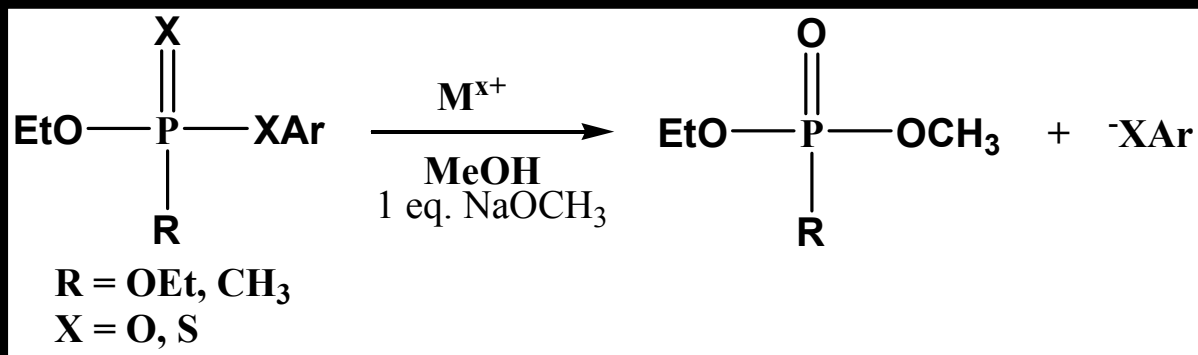


Technology Summary

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Million to billion fold increase in kinetics. Catalytic alcoholysis promoted by metal ion catalysts



Alcohol + metal ions = rapid, catalytic degradation under neutral conditions

>5 years of characterization · 12 published papers · issued US patent

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Advantages:

- Extremely fast, million and billion-fold accelerations in reaction rates
- Occurs under neutral, non-corrosive conditions (pH, temperature)
- Highly reactive, does not create toxic by-products
- Compatible with key military materials and JSTDS-SS materials
- Rapid reaction – vastly improves operational tempo - No rinse cycle
- Excellent for sensitive equipment, weapons and aircraft
- Catalytic, so system can be reused; storage in normal conditions
- Organophosphates are more soluble in alcoholic media
- Significantly decreases physical burden on warfighters in MOPP gear
- 6x less decontaminant required to react with CW agents

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Independent Live Agent Testing

- Efficacy of method was tested on tabun (GA), soman (GD), and VX
- In liquid solution, the system destroyed nerve agents within 30 sec.
- >99% decontamination of contaminated surfaces was achieved within 10 minutes, the shortest time period tested
- Degradation products were non-toxic o-methylation products (non-toxic triesters, LD50 >1500 mg/kg)
- “Force-to-fail” experiments by ECBC showed that more than 34% agent (by volume) can be loaded into the system with no failure of the catalyst (versus the US challenge level of 2% and NATO standard of 1%).

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Applications:

- Decontamination of military equipment, vehicles, including sensitive equipment, weapons and aircraft and its components
- Demilitarization of chemical weapon stockpiles
- Clean up of contaminated sites, buildings or civilian areas
- Soil decontamination and remediation
- Military & civilian emergency preparedness
- Thorough Decontamination Operations
- Decontamination prior to return to CONUS

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