MEL200 is a zirconium hydroxide-based decontamination powder possessing high porosity and unprecedented chemical agent reactivity. The unprecedented chemical agent reactivity is attributed to the surface functionality of the zirconium hydroxide microbeads coupled with the macroporous nature of the pore size distribution. MEL200 far exceeds the sorbent, decontamination powder specification for efficacy, reactivity, reactive capacity and vapor off-gassing. MEL200 is cost-competitive with the A-200 decontamination powder currently employed in the M295 and M100 decontamination kits.

Decontamination systems

MEL200 is a high performance alternative to A-200 currently employed in the M295 and M100 decon kits. In use, MEL200 is rubbed onto a chemical agent contaminated surface. Chemical agent is rapidly absorbed from the surface into the pores of MEL200, where the agent is detoxified upon contact surface hydroxyl groups. The spherical geometry of MEL200 allows for rapid application. When used in the M295 or M100, MEL200:

- Allows the warfighter to decontaminate their equipment in a short period of time.
- Minimizes chemical agent transfer during critical operations, such as MOPP gear exchange, equipment transfer, entry/exit, etc.
- Minimizes agent penetration onto surfaces of their equipment.

MEL200 has been incorporated into prototype M295 and M100 decontamination kits and is accepted as a viable replacement for A-200, which is no longer currently available.
Applications
The properties of MEL200 allow it to be incorporated into a range of decontamination products that include:

- Spray decontamination applicators – MEL200 mixed with kerosene can be delivered as a spray which allows for rapid decontamination of a large area.
- Reactive barrier material – Incorporation of MEL200 into barrier material provides a mechanism whereby persistent chemical agent is adsorbed and detoxified.
- Sensitive equipment decontamination – SED employs a fluoroether cleaning solvent to remove chemical and biological agent from contaminated equipment. MEL200 unprecedented ability to detoxify chemical agents provides a mechanism by which the solvent is purified for re-use.

References