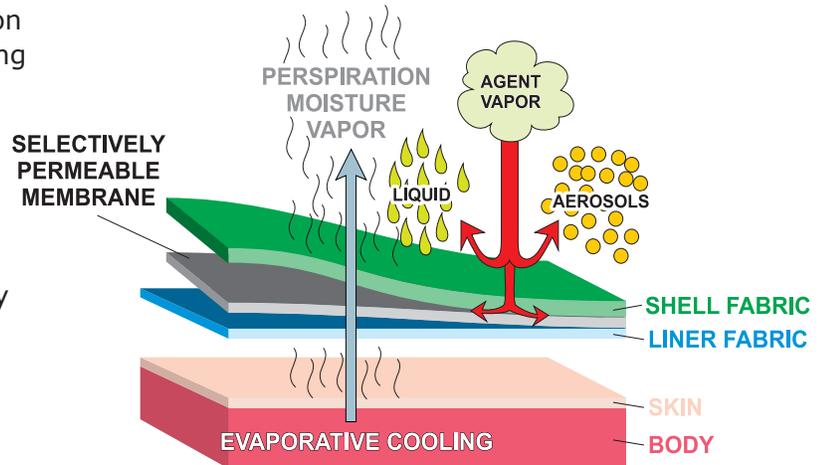




ADVANCED LIGHTWEIGHT CHEMICAL/BIOLOGICAL PROTECTION BASED ON THE USE OF SELECTIVELY PERMEABLE MEMBRANES | WarSTAR

CURRENT CLOTHING SYSTEMS:

Protective clothing with activated carbon technologies has been reliably protecting troops since World War I. While improvements have been made the core principles for this protection remain the same but ongoing concern for future threats and the changing battlefield environment compel the Joint Services to continually augment, investigate and develop alternative technologies for enhancing individual protection.



ADVANCED CLOTHING SYSTEMS:

Natick Soldier RD&E Center (NSRDEC) is an important contributor to the mission of protecting our troops. A good example for our efforts would be **Selectively Permeable Membranes (SPM)**. This pioneering and innovative technology — a one-piece suit, with a special closure system — provides potential increased individual protection at a reduced bulk and weight with a more effective barrier to hostile environmental conditions. This new technology allows selective permeation of moisture vapor while preventing the passage of chemical and biological warfare agents. NSRDEC also seeks to facilitate a new generation of self-deactivating and elastomeric protective materials based on SPM technologies. SPM-based clothing is launderable, is lighter than current over-garments, is more comfortable and has reduced package volume that reduces the logistics burden.

By partnering the effort with industry NSRDEC leverages the developmental effort and insures the viability of these materials for future products. The overall cost of a SPM based clothing system is expected to be comparable to current clothing systems. SPM may find their way into other product improvements for items such as butyl rubber boots and gloves, and products similar to OSHA approved Level B and C suits. NSRDEC has current efforts through Joint Service and Homeland Defense related initiatives to help expand consideration of SPM technology to medical, agricultural, industrial chemical, and first responder applications as well as focusing on the military.

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REV 03-21-08 | OPSEC 02-024