



IREPS

Integrated Respiratory and Eye Protective Scarf

What is IREPS?

The "Integrated Respiratory and Eye Protective Scarf," or IREPS, is a scarf the U.S. Army Edgewood Chemical Biological Center (ECBC) developed to protect Warfighters and first responders from riot-control agent as simply and quickly as putting on a surgical mask. It is comfortable and can be donned without removing any head-borne gear. The wrap includes a material with one-way stretch so that it can be pulled around the user's headphone ear cups, as well as the back of the protective helmet for full protection. Finally, because it is small and light, the user can easily stow it in a pocket when not in use.

What problem does IREPS solve?

The idea for the solution came from Special Operations personnel who needed a mask to protect against riot control agents such as 2-chlorobenzal-malononitrile, also known as CS, or tear gas. They also wanted a mask that could protect users who have beards, as Special Operations Soldiers often do to blend in better in Middle East areas of operation. Members of law enforcement who use CS and other riot control agents can also use IREPS to avoid having to use a traditional full-facepiece respirator that requires the removal of protective helmets and other head-borne items to put it on.

Why is IREPS unique?

ECBC researchers constructed it using a commercially available vapor filtration material known as 3M™ Advanced Electret Media that traps particulates plus another commercially available fabric that contains beds of activated carbon granules to remove vapor hazards. The researchers combined the two fabrics into multiple layers to form a semi-permeable material that allows the fabric to breathe. The resulting IREPS filter passed the National Institute for Occupational Safety and Health (NIOSH) standards for protection from CS riot control agent and demonstrated a filtration capacity of up to 140 minutes.

Interested in more?
Contact ECBC

Edgewood Chemical Biological Center
Communications Office
T: (410) 436-1479
E: usarmy.APG.ecbc.mbx.communications-office@mail.mil
www.ecbc.army.mil