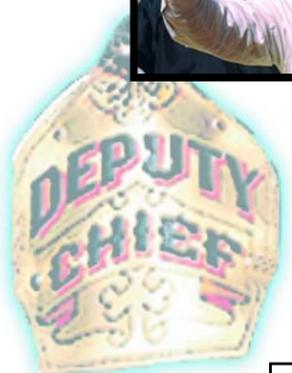




A violent explosion rocks a large downtown office building. Hundreds of people must be rescued. Firefighters and rescue personnel believe the area is contaminated by hazardous chemicals. Complicating matters, people evacuating the building may inhale harmful airborne particles. Here is a product that could help protect these people.



Escape Mask

How It Helps: The escape mask uses microfibrous filter technology that traps toxins and irritants ranging from sarin and anthrax to pollen and dust mites. It is lightweight, foldable, and fits inside a shirt pocket. Small and compact, it can be easily carried and distributed by the hundreds to protect people from harmful air threats. Unlike today's gas masks, the escape mask offers a lower pressure drop so it makes breathing easier—a must for the elderly or young children. The microfibrous technology can be tailored to anticipated threats such as a "cocktail" attack with a combination of chemical agents. It can be recharged simply by being reheated.



How It Works: The microfibrous filter technology contains sorbent materials in a mesh of carbon-metal composite and cellulose wood fibers that, under a microscope, resembles a wad of chicken wire. This matrix has high electrical conductivity and high surface area (about 1,000 square meters per gram). The fibers are then put through a paper machine on a roll, and the resulting sheets are sent through a furnace at 1,000°C, which melts the fibers and fuses them together. The sheets are then cut into strips and placed in canisters for use in the escape masks.

How Much It Will Cost: The target price of the escape mask is less than \$150. Other types of escape masks currently on the market cost more.



When It Will Be Ready: The escape mask will be available during the first quarter of 2003. Initially, it will be distributed to the first-responder market for use in emergency situations, such as terrorist attacks or building fires. Additional microfibrous filter products are being developed. Air security products include a chemical/biological filter for commercial and government facilities. The first air-quality product will be a replacement filter for home use.

Who Is Working On It: The innovator is IntraMicron, Inc. Formed in 2001, the company develops filter products for personal and facility protection, as well as for air quality assurance.

It has an exclusive worldwide license for the microfibrous filter technology from Auburn University, where Dr. Bruce Tatarchuk invented the technology. The company recently secured more than \$1 million in early-stage venture funding. It employs seven people and occupies 2,000 square feet of office space in Birmingham, Alabama. A new 14,000-square-foot manufacturing facility with office space in Gahanna, Ohio, also has been leased. The company plans to move into this facility by mid-2003. For more information, contact John Stein of IntraMicron at (205) 443-4670 or stein@intramicron.com. The company Web site is www.intramicron.com.




MDA Origins

The carbon-metal composite used in the microfibrous filter technology originally was developed by Auburn University's Space Power Institute with funding from BMDO's Innovative Science & Technology program. The material would be ideal for use in developing advanced capacitors to power lasers, railguns, and other weapon systems. Fuel cells and batteries made from the material also could provide power for space-based platforms.

