



# Commercial Opportunity

## **PepGel**

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### **THE CHALLENGE**

Materials that provide protection against chemical and biological hazards find utility in various commercial sectors yielding significant sales. According to market research the Global Medical Gloves Market is valued at £2.3bn (2006) and is projected to grow at over 10% pa. European sales alone account for over 35% of this total figure. The Global Chemical Protective Gloves Market is growing at a more modest 5% pa and sales are expected to exceed £522m in 2006. These high volume low value protective glove markets (typically 10-13p each glove) contrast with the higher value, but lower volume protective clothing market. Even so, the Global Chemical Protective Clothing Market is valued at over £1.6bn. Protective Clothing and gloves that are worn for any length of time have a physiological burden on the wearer through the build-up of sweat and heat. Reducing this burden is beneficial to the individual's effectiveness and minimises the risk of heat exhaustion.

Cost-effective water-vapour permeable materials with excellent chemical resistance are a rare commodity. Such materials have utility as a coating to provide a chemical/biological protective barrier. Although many materials may provide the water vapour permeability, like Gore-Tex®, few can provide the necessary chemical hardness to act as an effective barrier against harmful agents.

### **THE DSTL INNOVATION**

PepGel is a water soluble polymer with excellent chemical hardness and "breath-ability" developed through work between Dstl and Flexible Fabrics Consulting Ltd. PepGel is being evaluated in diverse sectors such as concrete coatings and wound care.

Dstl scientists have now developed a production process to produce a PepGel-based barrier glove. The glove consists of a layer of PepGel laminated between outer and inner layers of hydrophilic polyurethane (hPU – a water vapour permeable polymer). The hPU provides a durable low cost water-vapour permeable membrane and has a water vapour permeability equivalent to approximately 80% of that of Gore-Tex®. The layer of PepGel provides both water vapour permeability and a very effective barrier to harmful chemicals and to biological agents, including organic agents like petrol and diesel in their gaseous or liquid states.

### **THE OPPORTUNITY**

Ploughshare Innovations, the technology transfer company for Dstl, is seeking suitable licensees to develop this exciting technology into the various markets, such as the protective apparel, general protective coatings and any other field.