

POF035: General Platform presentation

The effect of temperature on adsorption

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Abstract

Military respirators are used in a wide range of climatic conditions. The relative humidity of the environment is known to have a substantial effect on the performance of the adsorbent, however the effect of temperature is less well documented.

Dstl has developed a climatic test chamber, which allows respirator canister testing to be carried out at varying temperature and humidity conditions. The chamber houses a canister test rig, which is supplied with an environmentally controlled air supply and can be set at different temperatures to allow representative testing of canisters at a range of real world climatic conditions.

The chamber has been consequently used to investigate whether the environmental temperature can have a significant effect on breakthrough times when testing respirator canisters.

This paper describes the initial test set up and presents the results of initial investigations into temperature effects on the filter breakthrough of physisorbed chemicals.