ON THE NATURE OF DUST EXPOSURE ASSOCIATED WITH NYLON FLOCKING

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Abstract

Flocking is the process of applying short fibers (called flock) to an adhesive-coated surface. The short fibers are typically cut from long strands and are applied to the surface of an object to provide a velvet-like finish. In this study, we made gravimetric measurements of dust exposure in the flocking environment and investigated the nature of this dust by using a variety of light and electron microscopy techniques. Average levels of total and respirable particulate were 11.4 and 2.2 mg/m^3 respectively. Air samples consisted of flock particles (fibers nominally 10-15µm in diameter by about 1000µm in length) and a variety of respirable particle types, several of which were linked directly to the process. Of special interest were elongated respirable particles, which by microscopic analysis, complemented with melting point determination were found to be shreds of nylon.

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