

Exposure Assessment of Silver Nanoparticles for Risk Management

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As increasing the use of engineered nanomaterials, it is expected for workers and researchers to increase the exposures to nanomaterials in the workplace. It is important to obtain reliable exposure data in the nanotechnology workplace for worker protection. Although most manufacturing process is based on liquid phase process, there are currently few exposure data in liquid phase process relatively compared to the gas phase or vapor phase process. In this work, we measured the number concentration of Ag nanoparticle during a liquid-phase producing process in a commercial manufacturing facility. Especially, the number concentration of Ag nanoparticles evaporated by liquid-vapor equilibrium during the liquid-phase process was higher than that during the handling processes of a dry powder. Measured data in this study can be used to establish occupational safety guidelines in the nanotechnology workplace in a liquid-phase production facility.