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**NANOINVENTORY: A REPRESENTATIVE SURVEY OF
NANOPARTICLE USAGE IN SUISSE INDUSTRY.**

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A large number of applications using manufactured nanoparticles <100 nm are currently being developed and may be introduced into industrial processes and consumer products. Manufactured nanoparticles may have the potential to cause similar negative health effects as micro- and nano-sized ambient particles. In 2006, a targeted telephone survey among 200 companies showed that the use of nanoparticles in Swiss industry was a reality [1]. Several types of nanoparticles were used in quantities of more than 1000 kg/annum per company, but the majority of nanoparticle applications were on a small production scale. Most of the companies had many unanswered questions about best practices. However, the survey provided only a qualitative picture. The purpose of the here presented study was to provide a quantitative estimation of the potential occupational exposure to nanoparticles in Swiss industry.

Method: A layered representative survey among 1'626 Swiss companies in the manufacturing sector was conducted in 2007. The selection was designed to reflect the Swiss manufacturing industry and to be statistically representative for the whole country. The survey was done by a questionnaire sent by letter. It collected data about the application of nanoparticles and the potentially exposed employees.

Results: The response rate was 58.3%. It allows the estimation of the current potential occupational exposure to nanoparticles in Switzerland. The survey revealed a low number of nanoparticle applications in Swiss industry with 0.6% (95%-confidence interval 0.2% to 1.1%) companies using nanoparticles. An estimate 0.23% (0.21% to 0.26%) Swiss workers are potentially exposed to nanoparticles due to working in the same room as a nanoparticle application. Information about the percentage of companies currently dealing with nanoparticles is valuable for risk evaluation. The low number of companies dealing with nanoparticles in Switzerland suggests that policy makers as well as the companies' responsible for health, safety and environmental questions can focus their effort at the moment on a relatively small number of companies and workers. The collected data about types of particles and applications may also be used for the research on prevention strategies and adapted protection means. However, to reflect the most recent trends in the used types of particles and applications, the here collected information has to be continuously updated, and a large-scale inventory of the usage may be considered.

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Reference:

[1] Schmid, K.; Riediker, M. 2008, *Use of Nanoparticles in Swiss Industry: A Targeted Survey*, *Environ. Sci. Technol.*, (7), 2253-2260.