

ArcticShield® X-System Socks produced by Arctic Shield

Nanomaterial description

1. Material source or producer: Not reported
2. Manufacturing process: Not reported
3. Appearance: Not reported
4. Chemical composition: Ag
5. Physical form/shape: Not reported
6. Purity: Not reported
7. Size distribution: Not reported
8. Solubility: Not reported
9. State of aggregation or agglomeration: Not reported
10. CAS number (if applicable): Not reported

Product description

Socks claimed to contain nano-silver technology to control the growth of odor causing bacteria. Nano-silver particles are said to be "...permanently integrated into the fibers of the fabric".

Applications

Exposure potential for professional end-users

APPENDIX 1: NanoRiskCat Template

Although the manufacturers claim that the nano-silver particles are “...permanently integrated into the fibers of the fabric”, exposure to the professional end-users has to be expected as use of the product requires that there is direct contact between the fabric of the socks and the human skin. Scientific studies have furthermore found that human sweat makes nano-silver migrate out of textiles fabric (Kulthong et al. 2010).

Hence we concluded that the overall **Exposure potential for professional end-users is** ●

Consumer exposure potential

Although the manufacturers claim that the nano-silver particles are “...permanently integrated into the fibers of the fabric”, consumer exposure has to be expected as use of the product requires that there is direct contact between the fabric of the socks and the human skin. Scientific studies have furthermore found that human sweat makes nano-silver migrate out of textiles fabric (Kulthong et al. 2010).

Hence we concluded that the overall **Exposure potential for professional end-users is** ●

Environmental exposure potential

Although the manufacturers claim that the nano-silver particles are “...permanently integrated into the fibers of the fabric”, release of nano-silver particles during wash seems possible and has been observed in scientific studies (Geranio, et al. 2009).

Hence we concluded that the overall **Exposure potential for professional end-users is** ●

References

Geranio, L., Heuberger, M., Nowack, B. 2009. The Behavior of Silver Nanotextiles during Washing. *Environmental Science and Technology*. 43(21): 8113-8118.

Kulthong, K., Srisung, S., Boonpavanitchakul, K., Kangwansupamonkon, W., Maniratanachote, R. Determination of silver nanoparticle release from antibacterial fabrics into artificial sweat. *Particle and Fibre Toxicology* 2010, 7:8 doi:10.1186/1743-8977-7-8. Available: <http://www.particleandfibretoxicology.com/content/7/1/8> (Accessed 16-02-2011)