

Green Technologies and Sustainability in the Care and Maintenance of Protective Textiles

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Abstract : Protective textiles get soiled, stained and even worn during their use, which may not be usable after a certain period due to the loss of protective performance. They need regular cleaning and maintenance, which helps to extend the durability of the clothing, retains their useful properties and ensures that fresh clothing is ready to wear when needed. Generally, the cleaning processes used for various protective clothing include dry-cleaning (using solvents) or wet cleaning (using water). These cleaning processes can alter the fabric surface properties, dimensions, and physical, mechanical and performance properties. The technology of laundering and dry-cleaning has undergone several changes. Sustainable methods and products are available for faster, safer and improved cleaning of protective textiles. We performed a comprehensive and systematic review of green technologies and eco-friendly products for sustainable cleaning of protective textiles. Special emphasis is given on the care and maintenance procedures of protective textiles for protection from fire, bullets, chemical and other types of protective clothing.

Keywords : Sustainable cleaning, protective textiles, ecofriendly cleaning, ozone laundering, ultrasonic cleaning

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