

Claims

- [Claim 1] A portable bag for sterilizing an object accommodated therein, comprising:
- a flexible body defining an internal space for accommodating the object;
 - a plurality of ultraviolet (UV) radiation emitting means arranged at opposing internal walls of the flexible body;
 - wherein the flexible body comprises one or more layers of fabric material, with one layer of the one or more layers forming the internal walls comprising a reflective fabric material adapted to reflect ultraviolet (UV) radiation emitted from the UV radiation emitting means and UV radiation reflected from the object.
- [Claim 2] The portable bag according to claim 1, wherein the UV radiation emitting means comprise light emitting diodes (LEDs) adapted to emit ultraviolet C (UVC) radiation having a wavelength ranged from about 100nm to about 280nm.
- [Claim 3] The portable bag according to claim 2, wherein the UVC radiation has a wavelength ranged from about 260nm to about 280nm.
- [Claim 4] The portable bag according to claim 2, wherein the LEDs are adapted to emit ultraviolet A (UVA) radiation having a wavelength ranged from about 315nm to about 400nm.
- [Claim 5] The portable bag according to claim 4, wherein the UVA radiation has a wavelength at a near visible range of about 390nm to about 400nm.
- [Claim 6] The portable bag according to claim 1, further comprising one or more visible light emitting means.
- [Claim 7] The portable bag according to claim 2, wherein the plurality of UV radiation emitting means comprise at least three UVC LEDs on each of the opposing internal walls.
- [Claim 8] The portable bag according to claim 7, wherein the at least three UVC LEDs on each of the opposing internal walls are linearly aligned and/or are evenly spaced.
- [Claim 9] The portable bag according to claim 7, wherein the at least three UVC LEDs comprise three UVC LEDs on each of the opposing internal walls, with a second UVC LED among the three UVC LEDs positioned at a substantially middle position along a longitudinal length of a respective side of the internal walls.
- [Claim 10] The portable bag according to claim 1, wherein each of the radiation

- emitting means has a radiating power of about 3mW to about 20mW.
- [Claim 11] The portable bag according to claim 1, wherein each of the radiation emitting means has a radiating angle of about 100 deg to about 150 deg.
- [Claim 12] The portable bag according to claim 1, wherein the one or more layers of fabric material comprises multi-layers of fabric materials, the multi-layers of fabric materials comprising one or more materials selected from a group consisting of nylon material, polyester material, cotton material and metallic material.
- [Claim 13] The portable bag according to claim 12, wherein the multi-layers of fabric materials comprise an innermost layer comprising aluminium fabric, aluminium based fabric or aluminium coated fabric.
- [Claim 14] The portable bag according to claim 12, wherein the multi-layers of fabric material comprise an outermost layer formed of woven polyester fabric.
- [Claim 15] The portable bag according to claim 14, wherein the multi-layers of fabric materials comprise a second layer adjacent the outermost layer, the second layer comprising a filler material.
- [Claim 16] The portable bag according to claim 15, wherein the filler material is selected from a group consisting of polyester fiberfill, cotton and foam materials.
- [Claim 17] The portable bag according to claim 13, wherein the multi-layers of fabric materials comprise a third layer adjacent the innermost layer, the third layer comprising a UV resistant layer.
- [Claim 18] The portable bag according to claim 17, wherein the UV resistant layer comprises woven nylon fabric materials.
- [Claim 19] The portable bag according to claim 1, further comprising a closing means for closing an opening of the flexible body.
- [Claim 20] The portable bag according to claim 19, wherein the closing means comprises a sealing portion formed of at least one of a UV resistant material and a water resistant material.
- [Claim 21] The portable bag according to claim 1, further comprising an actuating means to actuate UV radiation from the UV radiation emitting means.
- [Claim 22] The portable bag according to claim 21, wherein the actuating means comprises one or more of a switch and/or a button.
- [Claim 23] The portable bag according to claim 21, wherein the actuating means comprises a magnetic inductor for actuating UV radiation from the UV radiation emitting means.

- [Claim 24] The portable bag according to claim 23, wherein the closing means comprises a zip fastener having a metallic zip head detectable by the magnetic inductor for actuating UV radiation from the UV radiation emitting means.
- [Claim 25] The portable bag according to claim 1, further comprising a signalling means adapted to generate a signal indicating a usage condition of the portable bag.
- [Claim 26] The portable bag according to claim 25, wherein the signal comprises one or more of a visible signal and an audio signal.
- [Claim 27] The portable bag according to claim 1, further comprising a rechargeable battery for powering the UV radiational emitting means, the rechargeable battery being rechargeable via a USB connection.
- [Claim 28] The portable bag according to claim 1, further comprising a supporting member for supporting the object accommodated in the flexible body.
- [Claim 29] The portable bag according to claim 28, wherein the supporting member comprises a hanging means for hanging the object in the internal space of the flexible body.
- [Claim 30] The portable bag according to claim 29, wherein the hanging means comprises a rotatable hanger.
- [Claim 31] The portable bag according to claim 30, wherein the rotatable hanger is electrically motorized to effect rotation of the object accommodated within the flexible body.
- [Claim 32] A method of manufacturing a portable bag for sterilizing an object accommodated therein according to claim 1, the method comprising:
 providing at least a UV radiation reflective layer material;
 arranging a plurality of UV radiation emitting means at a surface of the UV radiation reflective layer material; and
 processing the UV radiation reflective layer material into a flexible bag body, with the surface of the UV radiation reflective layer material forming internal walls of the bag body defining an internal space for accommodating the object; wherein the UV radiation reflective layer material is adapted to reflect UV radiation emitted from the plurality of UV radiation emitting means and UV radiation reflected from the object.