

## Deodorant Thread **DEODOREY** - Weaving Thread **WeftYarn**

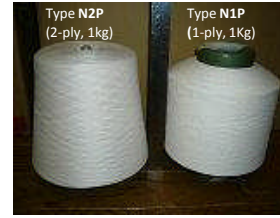
Deodorant thread **DEODOREY** is the revolutionary thread that is made from the nanotechnology-based gas-adsorbing fiber, which adsorbs and neutralizes body odor molecules in the air. **WeftYarn** was developed as a weaving thread for fabrics.

### How to apply **WeftYarn** to products

The deodorant fabric, that is, the fabric which is woven of natural/synthetic thread (warp) and weaving thread "WeftYarn" (woof) must be made first. Then, you can use it as a whole/partial material of the clothes/linens which contact with the skin directly or of the bags which hold the sweaty clothes/linens.

Possible applications of Deodorant fabric are;

- Clothing items: underwear, socks, caps/hats, scarves, etc.
- Athletic items: sportswear, athletic shoes, gym-towels, gym-bags (inner bag), etc.
- Linen items: bed sheets, pillow cases, towels, laundry hampers, etc.
- Other items: insoles, slippers, stuffed animals, wigs/hairpieces, pet collars, etc.



**DEODOREY - Weaving Thread "WeftYarn"**

### Features of Deodorant Thread **DEODOREY**

#### [Feature 1] Deodorizing Human Body Odors

The components (urea, fatty acid, keratin, etc.) of sweat and dead skin surface are oxidized or decomposed by bacteria on the skin surface, and changed to odor components. (See Fig-1) An aromatic makes unpleasant smell less noticeable, but **DEODOREY** deodorizes them by adsorbing and neutralizing odor molecules. (See Fig-2)

(\*) Components of perfume are not deodorized by **DEODOREY**.

(\*) Components (Acetaldehyde, Pyridine & Hydrogen) of tobacco odor are not deodorized by **DEODOREY**.

#### [Feature 2] Strong & Speedy Deodorizing Ability

Since the surface area of **DEODOREY** is large because of its fibrous structure, it has the remarkable deodorizing ability, which is stronger 5-20 times than existing deodorizer like activated carbon, and can make sweat odors deodorized for a short time.

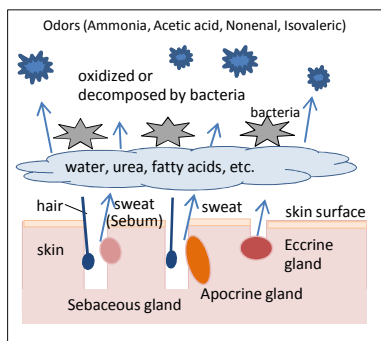
(\*) Only 3 grams (0.1 ounce, 80 yards) of **DEODOREY** can adsorb and neutralize 98% of initial Ammonia gas 100ppm in 20 minutes. (Test report by Japan Synthetic Textile Inspection Association)

#### [Feature 3] Long-life Deodorizing Ability

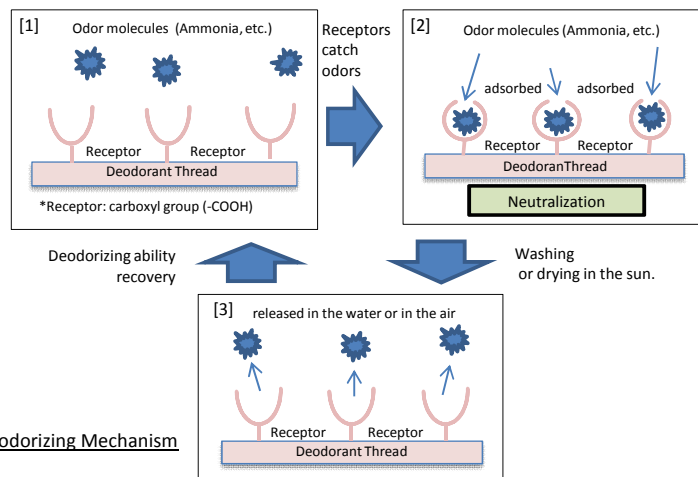
The deodorizing ability is not declined by washing. On the contrary, washing makes adsorbed odors released in the water and drying in the sun makes them released in the air so that the deodorizing ability can be recovered. (See Fig-2) It lasts almost indefinitely.

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| <p>&lt;Specifications&gt;<br/>                 Material: Polyester 70%, Acrylate 30%<br/>                 Composition: Type <b>N1P</b>: 20 tex / 1-ply<br/>                                   Type <b>N2P</b>: 20 tex / 2-ply<br/>                 Color: Pinkish white<br/>                 Usage: Weaving thread for fabrics<br/>                 Length:<br/>                   Type <b>N1P</b> - 50,000 meters (55,556 yards)/cone<br/>                   Type <b>N2P</b> - 25,000 meters (27,778 yards)/cone</p> |
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| <p>Application examples of "WeftYarn"</p> <p> &lt; Deodorant Towel &gt;<br/>                 "WeftYarn" is woven into the base fabric of a towel as a woof.<br/>                 Pile: Cotton 100%.</p> <p> &lt; Deodorant Woven Tape (Ribbon) &gt;<br/>                 Warp: Polyester<br/>                 Woof: "WeftYarn"<br/>                 Usage: Clothing tags, etc.</p> |
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[Fig-1] Body Odor Production Mechanism



[Fig-2] Deodorizing Mechanism

### Application Consideration/Precaution of Deodorant Thread **DEODOREY**

- In the case that the used length of **DEODOREY** is too short, you cannot get the expected deodorant effect. If you use 25-75m/10cm<sup>2</sup> (28-83yards/4 inch<sup>2</sup>) of **DEODOREY** for your product, it may comply with the standards "Deodorant processed textiles certification criteria" published by Japan Textile Evaluation Technology Council. However, as this is one of the guidelines, you need to ask the designated examining organizations to verify if your product acquired expected deodorant ability or not.
- It is possible to yarn-dye and piece-dye **DEODOREY** in faint (light) colors and light deep colors. However, **DEODOREY** must be dyed under the specified conditions in order to avoid losing its deodorizing ability. If it is necessary to dye **DEODOREY** by yourself, please contact EmmaCreation in advance. Also, if you wish dyed **DEODOREY**, please send your inquiry to EmmaCreation.
- Since **DEODOREY** contains the deodorant fiber which is difficult to dye in dark (deep) colors, **DEODOREY** itself cannot be dyed in dark colors perfectly.