TECHNICAL TEXTILES – PART X

REF: TT/ JAN 2022/ WK 3

MedTech or Medical Textiles (Continued)

Wipes

A wipe is a small piece of cloth used for the purpose of cleansing or disinfecting. Wipes could be woven, knitted or nonwoven. Nonwoven wipes are extensively used because of their excellent absorption and softness properties. Nonwoven fabrics consisting of the spun lace and other fabrics are used for the different wipes. These are made from nonwoven bonded fabrics which may be soaked with an antiseptic finish. The wipes may be used to clean the wounds or the skin prior to wound dressing application. The different types of wipes are - baby wipes, skin cleaning wipes, nursing wipes, bath wipes, etc.

Barrier fabrics

To keep the environment of operating theatre clean and infection free, a barrier fabric is required. Surgical gowns acts as a barrier to prevent the release of pollutant particles into the air. With the rapid increase in blood borne diseases, the need for medical workers to wear garments that provide a barrier to fluids such as water and blood have become important. These items can be in the form of simple slip-on body covers and wraps like masks. The major requirements for barrier fabrics are that they resist the penetration of liquids, particularly blood and at the same time be sterile, breathable, flexible and inexpensive. Because of these requirements most of the barrier garments are made from nonwoven fabrics that are disposable thus reducing the need for re-sterilization. In some cases special breathable films are being added to fibers and fabrics. Different nonwoven fabric constructions are considered for this application.

Properties of barrier fabrics are -

- The fabric should constitute a barrier to moisture and bacteria. The fabric is treated to make it water and impermeable.
- It should not allow bacteria to penetrate through.
- It must be able to withstand prolonged handling and lengthy procedures.
- The material should have a non-slip surface and must have passed flammability tests.
- Must be flexible, draping smoothly on application.
- The fabric must comply with anti-static requirements.
- Dyes used on the fabric must be fast and non-irritant.

AgroTech or Agriculture Textiles

Textiles used in Agriculture are called AgroTech or Agriculture textiles. They are used for crop protection, fertilization etc.
The essential properties required for agriculture textiles are -

- **Tensile Strength -** The tensile strength is necessary parameter for the products like shade nets. It decides the durability of the material.
- **Solar radiation -** Agriculture textiles are laid over the cultivated areas immediately after sowing or planting. For such application Agro-textiles has to withstand solar radiation with varying surrounding temperature.
- **Ultraviolet radiation –** Ultraviolet (UV) radiation leads to degradation of molecular chains. No single material is resistant to all radiations .Polypropylene and Polyester is more resistant to UV radiations when used as an outdoor material. Polyethylene is treated with the appropriate UV stabilizers; they are potential to reduce the impact of UV radiation on plants by light absorbing or light-reflecting non-woven.
- **Bio degradability -** Natural fibers like wool, jute, cotton are also used where the bio-degradability of product is essential. Natural polymer gives the advantage of bio-degradation but has low service life when compared to the synthetics.
- **Abrasion Resistance –** The abrasion of the agro textile products like shade net would result in holes though which animals and pests could enter and harm the crops. Thus, good abrasion resistance is required of shade nets.
- **High potential to retain water -** This is achieved by fibers which allow taking in much water and by filling in super-absorbers.

References:

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2. http://technotex.gov.in/
3. http://www.ittaindia.org/
4. https://www.technicaltextile.net/
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UNSCRAMBLE THE JUMBLE WORDS
VOWNONEN
ARTLETLUOIV
LAMSINA
SOABBRNIG

Last week`s Answers: 1) CONTAMINATED 2) POTENTIAL 3) RHEOLOGICAL 4) SUTURES

Wishing you a great week ahead!

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