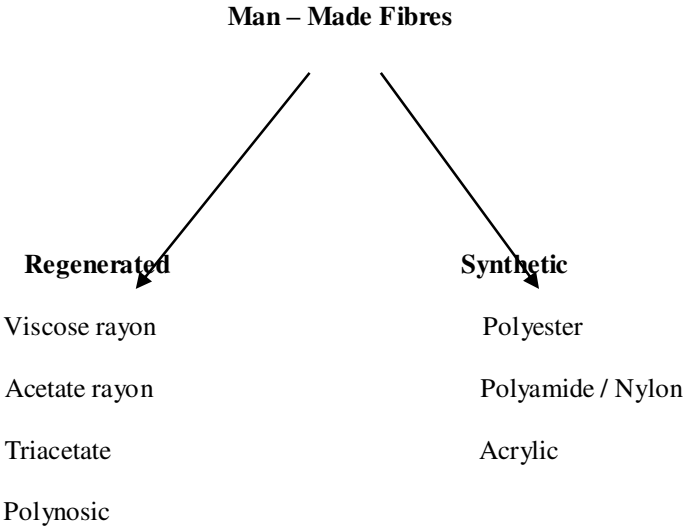
YEAR 10 LESSON NOTES-CLOTHNG AND TEXTILES

WEEK 1: TOPIC: FIBRES AND FABRICS

CLASSIFICATION OF MAN MADE FIBRES



Man Made Fibres

- ✓ Man-made fibres are natural fibres modified by addition of chemicals
- ✓ Man-made fibres consist of regenerated and synthetic fibres

1. Regenerated Fibres

- ✓ These are fibres that are made from cellulose but the fiber structure has b altered by man by addition of chemicals

Sources

- ✓ Regenerated fibres are produced from raw materials that form fibres naturally, for example wood pulp or cotton linter

2. Synthetic Fibres

- ✓ Synthetic fibres are man-made fibres that are made entirely from chemicals
- ✓ Synthetic fibres are continuous filament fibres so that means that the fibres come in long lengths and do not have to be spun out into yarn.

Sources

- ✓ Synthetic fibres are produced by polymer beads made from chemical mixtures.
- ✓ These beads are then melted into liquid form and then extruded through a spinneret.
- ✓ The long soft filament which comes out of the spinneret get in contact with the environment and solidifies which then is drawn to increase its strength

Review Questions

1. What is meant by the term “regenerated fibre”?
2. List down the two types of man-made fibre and give two examples for each.
3. Give two examples of regenerated fibre and synthetic fibre.

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Lesson Notes-Week 2 [12TH -16TH July]

Year 10

Home Economics

Strand: HEC 10.3 Clothing and Textiles

Sub-Strand: HEC 3.1 Study of fibres and fabric, Blends and Finishes, Decorations

Content Learning Outcome: At the end of this lesson, students should be able to:

- ✔ identify fibres by conducting physical test(burning test)
- ✔ distinguish properties of human modified fibres and synthetic fibres and relate properties of fibres to their care.

BURNING TEST OF MAN MADE FIBRES

Test	Polyester	Polyamide	Acrylic	Viscose rayon	Acetate rayon
Burning	Melts and burns	Flickers and melts	Burns and melts	Burns readily	Burns and melts
Flame	Luminous red or yellow	Yellow	Luminous reddish	Yellow	Yellow
Removed from flame	Self-extinguishing	Produce white smoke	Continues to burn	Bright yellow flame	Continues to burn
Residue	Hard brown bead	Hard dark brown beat	Hard black irregular beads	Light grey feathery ash	Hard black irregular bead
Smell of the smoke	Slightly sweet	Strong celery smell	Burnt meat- acrid	Burning paper smell	Vinegar

DIFFERENCES IN SPUN AND FILAMENT YARNS

SPUN YARN	FILAMENT YARN
1. Staple fibres **2.** Spinning **3.** More individual fibres **4.** More twists per inch **5.** Less luster **6.** Less strength	**1.** Filament fibres **2.** Throwing **3.** Fewer individual fibres **4.** Fewer twists per inch **5.** Greater luster **6.** Greater strength

CHARATERISTICS OF MAN MADE FIBRES

Characteristics	**Regenerated (viscose, acetate, triacetate, polynosic)**	**Synthetic (polyester, polyamide, acrylic)**
Crease resistance	Creases badly	Does not crease
Heat conductivity	Good conductors of heat	Poor conductors of heat
Effect of heat	Absorbent	Poor absorbency
Pilling tendency	Does not pill	Pills easily
Soil repellency	Attracts dust but launders well	Attracts dirt but launders well
Moisture absorbency	More absorbent	Low absorbency
Wet strength	Weaker wet than dry	Strong when wet
Abrasion resistance	Low abrasive properties	Very good
Effect of light	Fair sunlight resistance	Not affected by sunlight
Effects of moth and mildew	Affected by silverfish and mildew	It is resistant
Shrinkage resistance	Shrinks badly	Does not shrink

Review Questions

1. Identify the smell of the smoke when nylon fibres are burnt.
2. Describe the residue formed when acetate rayon is burnt?
3. What is the meaning of the term hydrophobic

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Lesson Notes –Week 3 {19/07/21-23/07/21}

Year 10

Home Economics

Strand: HEC 10.3 Clothing and Textiles

Sub-Strand: HEC 3.1 Study of fibres and fabric, Blends and Finishes, Decorations

Content Learning Outcome: At the end of this lesson, students should be able to:

- ✔ compare the properties of human modified fibres and synthetic fibres

PROPERTIES OF SYNTHETIC FIBRES / NON CELLULOSE

FIBER	PROPERTIES	BLENDS	ADVANTAGE	DISADVANTAGE	USES
Polyester	1. Very strong when wet 2. High resistance to abrasion 3. Does not shrink or stretch 4. Lacks elasticity Can be heat set into permanent pleats	It is blended to overcome its hydrophobic nature and to make more comfortable	1. Wrinkle resistant 2. Good dimensional stability 3. Strong 4. Moths and mildew resistant 5. Little care during ironing and laundering	1. Low moisture absorption 2. Discoloration of white 3. Holds oily stain	Carpet, upholsteries, knitted clothing, woven clothing, curtains, shirts, dresses, neck ties.
Polyamide/ Nylon trade names ● Banlon ● Helanca	1. Strong 2. Resistant to abrasion 3. Does not absorb moisture 4. Clingy 5. Little strength lost during washing	To make the fabric more absorbent and increase the durability of the other fiber.	1. Strong 2. Quick dry 3. High wet strength 4. Resilient 5. Heat sensitive 6. Mildew and insect resistant	1. Low moisture absorption 2. Low resistance to sunlight 3. Absorbs and holds body oil	Carpets, hosiery, lingerie, knitted clothing, swimwear, upholstery
Acrylic	1. Strong, hard wearing and warm 2. Crease and abrasion resistant 3. Not very absorbent 4. Resistant to moths and mildew	Blended to overcome the hydrophobic nature and to increase durability to other fibres	1. Good strength and elasticity 2. High bulking power 3. Accepts heat setting	1. Pilling 2. Hold oily stains 3. Low moisture absorption	Draperies, carpets, upholstery, sweater, skirts, suits and blankets

LAUNDERING POLYESTER FABRICS

- ❖ Polyester fabrics needs to be washed at cold temperature to prevent permanent marks

REASONS FOR BLENDING SYNTHETICS WITH OTHER FIBRES

- Reason for blending the synthetic fibres (polyester, polyamide and acrylic with other fibres is to overcome its hydrophobic in nature and make it more comfortable to wear.

Review Questions

1. Identify 2 uses for each of the following synthetic fibres .

a) Polyester
b) Nylon
c) Acrylic

2. Why is nylon called easy care fabric

3. List 3 advantages of using polyester fabrics for clothing.