

MODERN & SMART FABRICS

KEY WORDS:



Modern Fabric
Goretex®
Kevlar®
Nomex®
Polartec®
Neoprene

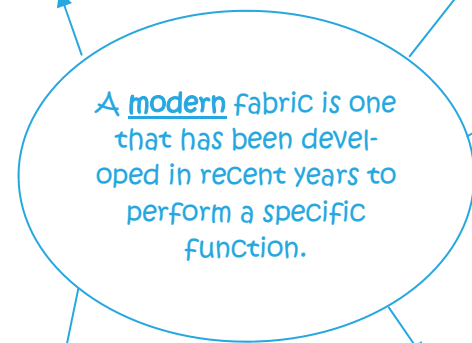
Smart Fabric
Thermochromic
Photochromic
Solvation Chromism

E-textiles/Interactive fabric

Biomimetics
Fastskin
Stomatex
Micro encapsulation
Reflective textiles
Nanotechnology

Polartec fleece:
Soft napped synthetic fleece fabric used for insulation.

Kevlar:
Bulletproof and stab proof fabric

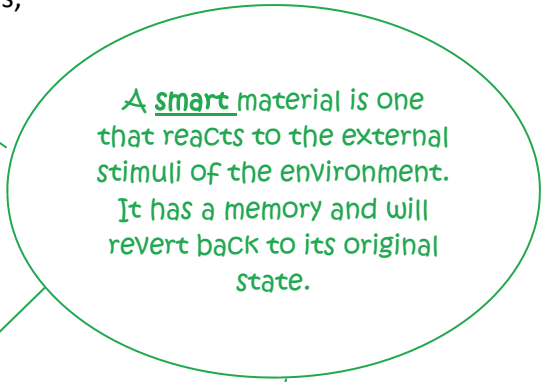


Neoprene:
Most notably used in wet-suits as an insulator

Nomex:
Flame resistant fabric

Goretex:
A waterproof fabric that is also breathable.
A membrane fabric.

Photochromic:
Respond to light conditions, changing colour with light

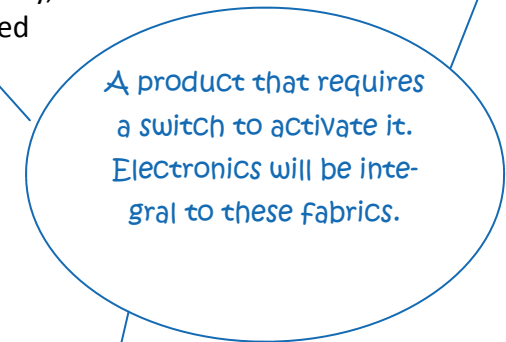


Thermochromic:
Colour encapsulated onto the surface of the fabric will change colour with heat.

Hydrochromic:
Fabric changes colour when wet, ideal for babies nappies.

Gorix:
Carbonised fibre with conductivity, ideal for heated car seats.

Soft Switch:
Conductive threads are woven into the fabrics incorporating pressure sensors to control devices.



Things such as switches and mechanisms within products can also be classed as e-textiles.

Biomimetic fabrics are those that mimic nature,
bio - mimic = biomimicry
E.g. the natural way a leaf breathes and regulates temperature helps to inspire fabric construction.

CASE STUDY: VELCRO
Swiss inventor George De Mestral noticed how burrs stuck to his legs one day whilst out walking his dog. Each burr consisted of hundreds of hooks that grabbed onto loose loops of fibres. He used this idea to develop velcro, a strong fastening, reusable hook and loop system.

Other Fabric Developments

FASTSKIN:

Developed by Speedo to mimic shark skin, allows swimmers to travel faster making the swimmer more aerodynamic.

Banned in competitive swimming as can be seen as cheating.

MICRO-

ENCAPSULATION:

Allows fibres and fabrics to be impregnated with scents, anti-bacterial treatments and mosquito repellents. Can also be used to absorb bad smells and moisture.

REFLECTIVE:

Enables high visibility as the glass embedded into the surface reflects light.

NANOTECHNOLOGY:

Small particles coat the fabric to improve its properties, can make fabrics more durable and stain resistant.

DOES NOT AFFECT THE GARMENTS WEARABILITY.

STOMATEX:

Used in sportswear, this helps regulate temperature to keep the wearer dry and comfortable.

FIBRE OPTICS:

Used in trainers for illuminated logos. Sensors are used in military garments to detect harmful chemicals.