

SUSTAINABLE MATERIALS RECOMANDED FOR MAKING CLOTHING FOR PREMATURE BABIES

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Rezumat. Hainele pentru bebeluși trebuie să fie rezistente, confortabile și sigure. Copii nou-născuți pe parcursul zilei pot avea uneori patru ținute pe zi, iar fiecare dintre ele va avea nevoie de spălare frecventă. În lucrare am realizat o sinteză a materialelor recomandate pentru acest grup de purtători. Am prezentat unele dintre cele mai potrivite materiale textile, cu o analiză detaliată a proprietăților pe care le oferă și a particularităților durabilității. Produsele dezvoltate corespund tuturor cerințelor și sunt realizate din materiale textile care sunt ușor de reciclat și reutilizat.

Cuvinte cheie: lână merino, in, tencel, bumbac organic, bambus.

Introduction

In the process of making a clothing product, it is necessary to follow some details to ensure the best possible success of those products. The firsts steps of the process of making clothes are related to the choice of models and materials.


Product characteristic of recommended materials for premature babies

Models and materials in the manufacture process of functional clothing for premature children are chosen according to selected material (it is generally taken into account that children's products must be easy to wash, in light colors, with an attractive appearance). For children's underwear, only materials that can withstand washing should be chosen. The materials used for premature babies should be soft and light, so that the clothes do not tire the children's movements and bring pleasure.


Given the best choices of materials for these clothing products, it is natural to say that:

Tabel 1




Sustainable materials, description and specific properties

Merino Wool	
Merino wool is much finer and softer than regular wool . It is grown by Merino sheep that graze the highlands of Australia and New Zealand. Since the 12th century, when the breed originated, the sheep have developed the softest and finest fleece. They can withstand temperatures ranging from -20 C° up to +35 C°. And with modern day spinning technology and fiber treatments, merino wool makes for outstanding fabrics that outclass materials such as cotton or synthetics on all fronts. Merino wool brings style, comfort and performance together in perfect harmony [1-3].	
	
Specific properties	
Washable The naturally protective outer layer of your merino wool shirt or T-shirt will prevent stains from being absorbed. However, when your favorite item is dirty, just wash it on low temperature . Not sure how to start? Check the care label inside your garment!	Odor resistant No matter how hot it is, you'll feel fresh all day long. Your merino wool T-shirt or shirt will not smell – like cotton shirts do. On top of that, you don't need to wash it each time you've worn it. Just hang it in the open air and enjoy it again the next day.

Continuation of table 1

Specific properties	
<p>Wrinkle resistant The elastic properties of the merino fiber make it extremely wrinkle resistant. If you hang your shirt out to dry, ironing becomes optional. And when you're travelling with a packed suitcase, just get out your merino wool clothes, hang them for half an hour and you're all good. No annoying wrinkle damage from seatbelts or backpacks any more. It's the ultimate on-the-go companion.</p>	<p>Thermo regulating Cooling When it's hot, the fibers absorb your body's moisture vapors and evaporate them outside of the fabric – keeping you nice and cool. Warming But in wintertime, these moisture vapors condense inside the fiber, giving off heat and keeping you nice and warm.</p>
<p>No itch Have we got news for you! Our superfine merino wool fibers are only 17 microns thick. In comparison, a human hair is between 60 and 180 microns in thickness. What that means? Our merino wool is more flexible, bends softly against your skin and doesn't itch one bit.</p>	<p>Non allergenic Merino wool does miracles for style-lovers with sensitive skin. Research shows that wearing merino wool T-shirts or sweaters reduces adult and infant eczema symptoms impressively compared to other fabrics. This hypoallergenic fiber treats your skin softly and with great care.</p>
<p>Quick drying Merino wool is a surprisingly fine fabric, that releases water easily. It's dry long before your other garments are. Just put it in the machine, dry flat or place it on a hanger and wear it again in no time!</p>	<p>Durable Merino wool is 6 times stronger than cotton. Each fiber can be bent back onto itself over 20.000 times. In comparison: cotton breaks after 3.200 times. Poor cotton. Lucky merino wool T-shirt owner!</p>
<p>UV resistant The natural UV barrier of the fabric keeps you safe from damaging UV radiation from the sun – unlike synthetics and cotton.</p>	
How sustainable is merino wool?	
<p>Renewable Synthetic fibers and cotton demand a great amount of manipulation and processing. Merino wool, however, is made of grass, water and fresh air. The merino sheep that provide the wool graze the hills of New Zealand and Australia freely, delivering a new fleece harvest twice a year.</p>	<p>Biodegradable The Merino fiber will naturally decompose in soil when it is disposed. It will give back its nutrients into the earth.</p>
Linen	
<p>Linen has a rich history and seems to be one of the oldest fabrics in the world. For thousands of years, mankind had relied on linen for durable means of clothing. At Wolk, we've selected the best European linen with the „Masters of Linen” label, that ensures impeccable quality. Manufactured with fibers of a flax plant, linen is a remarkable fabric, highly absorbent with exceptional ventilation traits [9, 10].</p>	
	
Specific properties	
<p>It's durable Did you know linen is used in paper money to increase its strength? It's the strongest natural fiber, thicker than cotton and extremely long-lasting. It also comes in variable lengths, contributing to its strength and thus to its longevity.</p>	<p>It keeps you cool Summer and heat, make way for freshness! The open structure of linen doesn't insulate, resulting in a breathing effect that keeps your body cool in hot and humid circumstances. Linen makes for great summer clothing. Its high air permeability lets air flow through freely, allowing your body to breathe – which is great for your skin as well.</p>
<p>Non allergenic Sensitive skin, say hello to linen. Its hypoallergenic traits take good care of your skin, without any irritation or allergic reaction.</p>	<p>Moisture wicking Linen stays remarkably dry to the touch, even though it can absorb up to 20% of its weight in moisture. However, it quickly releases all moisture into the atmosphere, leaving you with a comfortable and dry feeling.</p>
<p>Machine washable Your linen shirt turns softer after each wash – nice, isn't it? Be sure to wash your linen shirt at low temperature, using soft water. The gently machine cycle takes optimal care of the fabric. Not quite sure how to start washing your new favorite linen shirt? Check the care label inside of the garment.</p>	
How sustainable is linen?	

Continuation of table 1

Renewable The cool, damp regions of Belgium, The Netherlands and the north of France are ideal to grow the flax plants that provide for linen fibers. These plants grow well without irrigation or fertilizers. Nothing of the plant is wasted in the production process and flax farming has no impact on the environment	Biodegradable When you have to part from your linen shirt, take comfort in knowing its nutrients flow back into the earth. As a completely biodegradable fabric , it has no impact on the environment when it's tossed out.
Tencel	
Tencel is a lyocell material, made from 100% woodpulp and produced by the Austrian company Lenzing. Because of its natural origin, it is completely biodegradable, making it an eco-friendly option. But what's equally important: it has an outstanding performance in hot temperatures and a superb touch. To top it off, it's softer than silk, more absorbent than cotton and cooler than linen.	
Specific properties	
It keeps you cool Higher performance and greater comfort? You got it! Its moisture absorbing capacity keeps you cool and dry, even on the warmest of days	Quick drying Tencel dries extremely quick. Did your shirt get damp after that intensive bike ride? Then you'll notice it dries much faster than traditional cotton shirts.
Machine washable Hand washing is a thing of the past. Just put your worn tencel shirt in the machine and wash it at low temperature. Rest assured, it maintains its rich color. Don't put it in the dryer, though. Just put it on a hanger and it's good as new again.	No odor stay fresh No need to feel stressed about body odor ever again. Tencel fibers transport moisture directly to the fiber core, keeping the surface of your Tencel T-shirt or sweater dry. The result: up to 2000 times less bacteria grow on Tencel fibers than on synthetic fibers, eliminating body odor effectively.
Wrinkle resistant The natural wrinkle resistance of the fiber guarantees a clean and wrinkle-free surface at any time. Put it in your suitcase without worrying how it comes out. Just put it on and get going!	Moisture wicking Tencel can absorb huge amounts of moisture, without wetting the fiber surface. The moisture is directed into the fiber core, thanks to a network of sub-microscopic channels called nanofibrils.
Non allergenic The smooth fiber surface makes for an outstanding feeling of softness, preventing any irritation to the skin.	
How sustainable is Tencel?	
Renewable 10 times more ecological than cotton. Up to 20% less water usage for production. No pesticides or synthetic solvents used in the manufacturing process. Built 100% out of fast growing and sustainably harvested botanical fibers. Need we say more? Tencel is a sustainable and responsible choice.	Biodegradable Since Tencel is natural, it will decompose naturally in soil when it is disposed.
Bamboo	
Bamboo is a type of grass, yet it resembles a tree. Bamboo plantations, widespread throughout East Asia, look like forests. Bamboo is one of the fastest growing plants in the world. It grows without need for pesticides or fertilizers. For these reasons, it is considered the most renewable resource on Terra[11].	
Specific properties	
Soft, silky	Non allergenic Another positive is bamboo fabrics are known to be hypoallergenic, so it is less likely to cause an allergic reaction to your little one.
Anti-bacterial and antifungal	Anti UV properties
Very hydrophilic	Blendable with other fibres
Excellent dyestuff absorption	
How sustainable is bamboo?	
Renewable	Biodegradable
Organic Cotton	
Organic cotton is about growing cotton crops without using fertilizers, pesticides, and other toxic chemicals. With this kind of farming method, cotton trees are not sprayed or treated with any chemical. They only rely on approved organic farming methods. As a result, organic cotton farming results into a sustainable environment as it helps maintains soil fertility and harvests chemical free cotton [4-8].	

Continuation of table 1

Specific properties	
Soft, silky	Non allergenic
Anti-bacterial and antifungal	More comfort for baby
Very hydrophilic	It's durable
Excellent dyestuff absorption	Anti UV properties
How sustainable is Organic cotton?	
Renewable	Biodegradable

Clothing products made from the materials described above were based on the following criteria:



Those products are made of natural and ecological materials, that meet appropriate properties and at the same time offer the best social responsibility.

Conclusions

Merino Wool, linen, Tencel, bamboo, organic cotton are fibers that give the fabrics a soft touch, durability, wear, increased hygroscopicity, maintain body temperature and at the same time have anti-allergic properties, antibacterial and non-irritating, thus providing children with psychosensory comfort. All those fibers are obtained without using of pesticides, insecticides, herbicides or other chemicals. They have the ability to decompose and reuse, thus giving the products a high degree of sustainability.

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