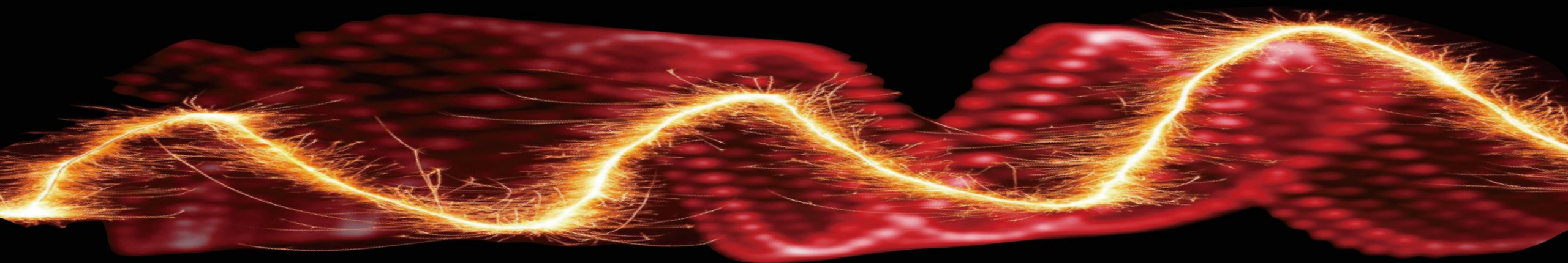




「LITHERMO」

ライトサーモ™



LITHERMO[®]

Heat-storage polyester material that absorbs infrared rays

"LITHERMO" uses high-tech polyester yarns that can absorb infrared rays and convert them into heat energy to promote the function of heat storage by mixing high-tech exothermic polymers into polyester. This is a new type of Japanese high-tech exothermic and heat-storage material that is cold resistant and can store heat for a long time.



环保



发热



轻盈



蓄热

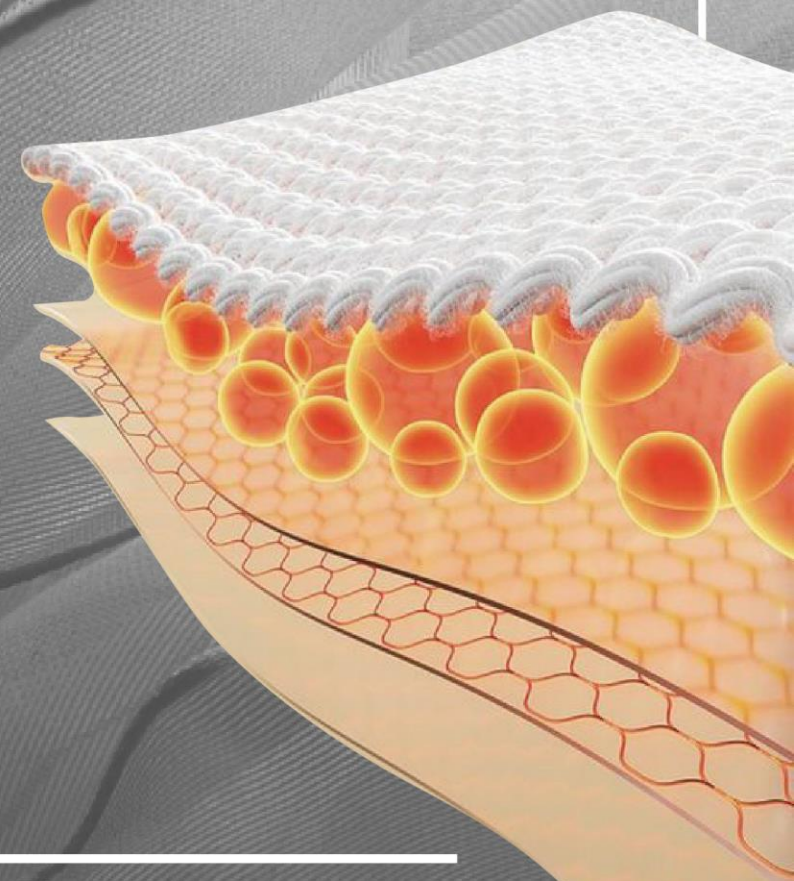


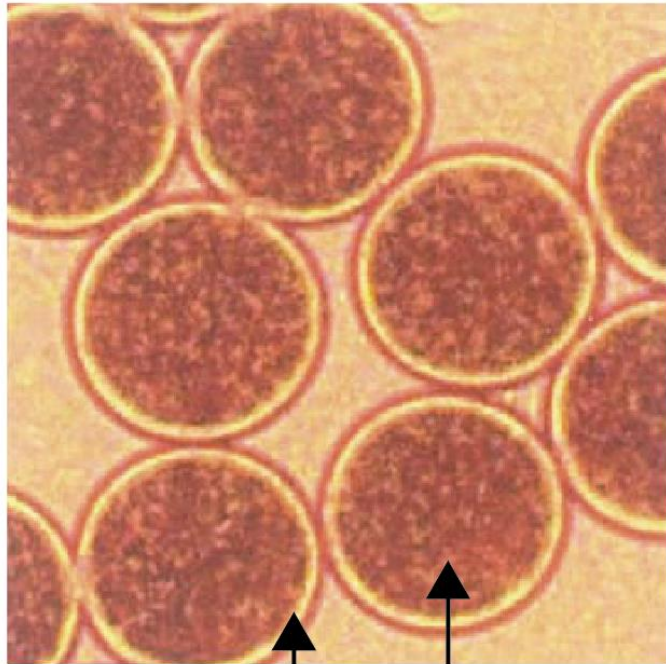
易染色



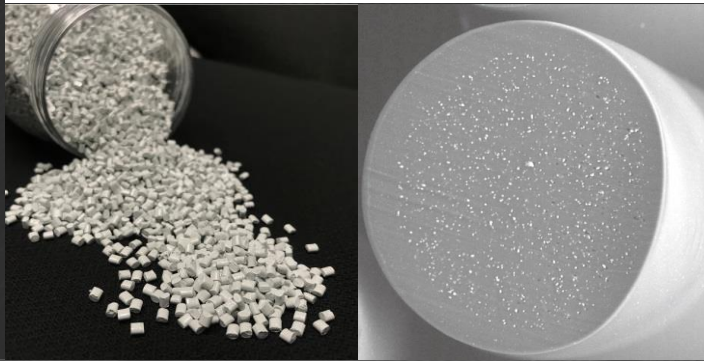
可混纺

Environmentally friendly Exothermic Light Heat storage Easy dyeing Blending





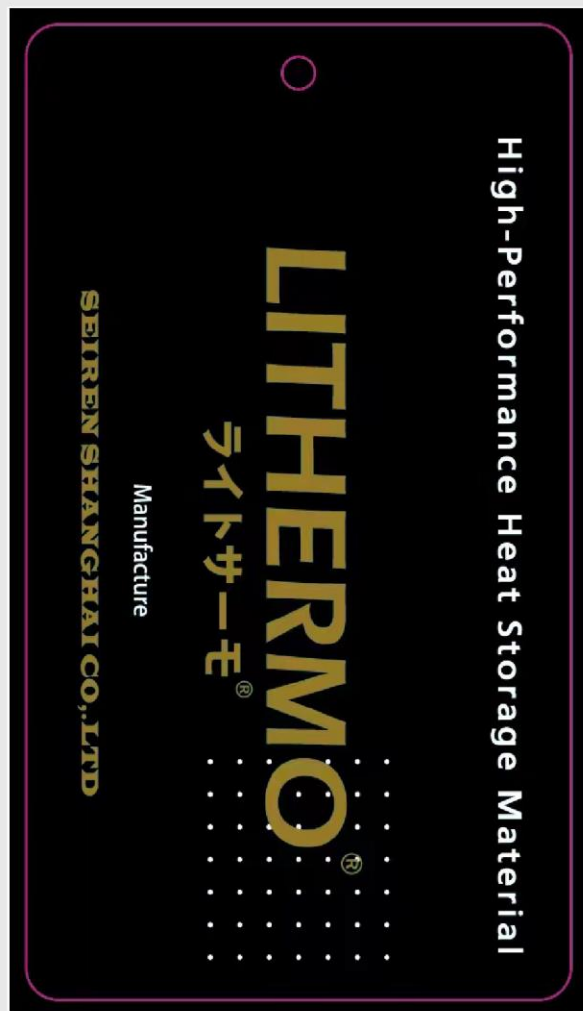
SD-PET 特殊ポリマー



Technical analysis of LITHERMO

- Its heating masterbatch is imported from Japan, safe, environmentally friendly, and highly functional.
- Advanced composite spinning technology and mixing technology are adopted, and its core is a kind of high-tech exothermic polymer.
- Infrared rays can be absorbed by it to produce heating effect.
- Far-infrared rays emitted by human body can be reflected by it to achieve excellent performance in heat storage.
- With high whiteness, it can be dyed into any color.
- It can be blended with various fibers to meet the needs of manufacturing various products.

LITHERMO-Exclusive Tag



LITHERMO
ライトサーモ®

High-Performance Heat Storage Material

- Produces heat, which is converted from absorbed infrared.
- Offers wear comfort to end products with its excellent ventilating and heat-retaining property
- Feels extremely soft

高机能蓄熱素材

- 具有吸收红外线，转化成热能的功能。
- 舒适透气，轻便保暖。
- 柔软的触感。

高性能蓄熱

- 赤外線を吸収、変換して発熱する効果があります。
- 着心地が良く、通風性と保温性に優れています。
- とてもソフトな肌触りです。

The diagram on the left shows infrared rays (赤外線) being absorbed by the LITHERMO material (ライトサーモ) and converted into heat (発熱) that warms the human body (人体). The graph on the right plots temperature (温度) in degrees Celsius against time (経過時間) in minutes. It compares LITHERMO (ライトサーモ) and DMC, showing that LITHERMO reaches a higher temperature faster and maintains it longer.

経過時間(分)	ライトサーモ(°C)	DMC(°C)
0	20	20
2	35	30
4	45	38
6	50	42
8	52	45
10	53	46
12	53	46
14	53	46
15	53	46

【登録商標】 認定商標

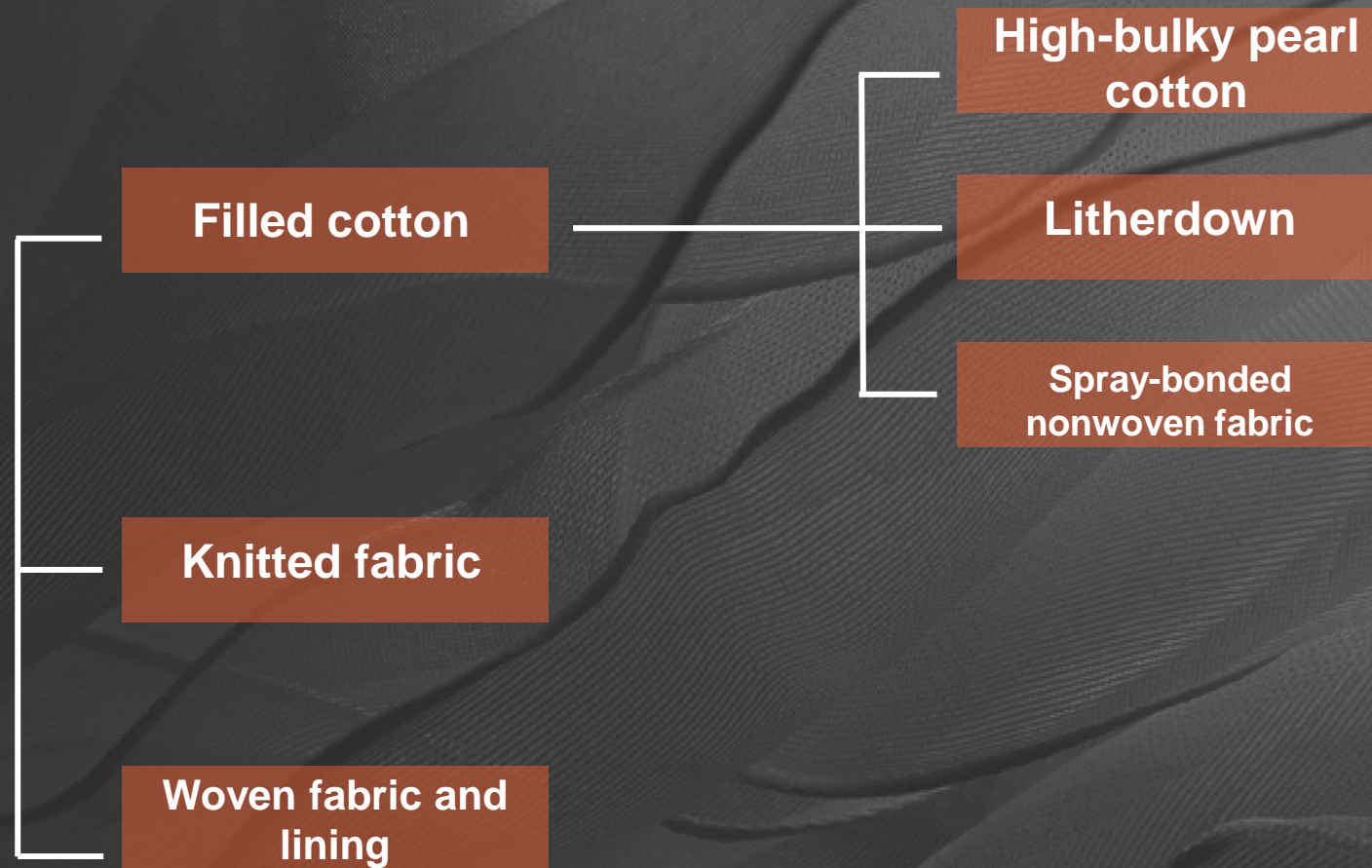
ライトサーモ、「SEIREN SHANGHAI」の登録商標です。

Manufacture:
SEIREN SHANGHAI CO., LTD

LITHERMO-Competitor Analysis

Product Brand	Factory	Material	Color	Heating Effect	Heating Principle	Description
HEATECH	Uniqlo	Acrylic	White		Moisture absorption and exothermic effect	Mainly used for underwear, it can absorb moisture and generate heat, but its effect is almost zero in the dry winter.
EKS	Torobo	Acrylic	White		Moisture absorption and exothermic effect	High price, limited to certain brands, moisture absorption and heat emission; and the effect is almost zero in dry winter
CERAM	Torobo	Acrylic	White		Far-infrared ray reflection	It is mainly used in underwear, and the far-infrared energy is low.
SORONA	Dupont	Polyester	White	×	×	Some corn extracts, emphasizing the concept of biological environmental protection
THERMOLITE	Dupont	Polyester	White	×	×	Hollow polyester; thermal effect is achieved by adding scuba knitting fabric
Thinsulate	3M	Polyester	White	×	×	Superfine fiber ; thermal effect is achieved by adding scuba knitting fabric, but the effect is mediocre.
Primaloft	Primaloft	Polyester	Black	×	Far-infrared ray reflection	Mediocre bulkiness, water repellence, and good moisture retention in wet environment
Graphene	-	Polyester	Black	○	Far-infrared ray absorption	Black with limited dyeing options; high price; now only used in the cutting-edge electronics industry
LITHERMO	Shilian	Polyester	White	○	Far-infrared ray absorption	Infrared rays emit heat, which generates much higher energy than a single far-infrared ray does, and the temperature increased is more than 4 °C higher than that by the control under experimental conditions; imported from Japan, the raw materials have outstanding heating and thermal effects; the newly developed, highly-bulky and washable pearl cotton has 11 °C higher than that of 90/10 down in terms of heating performance, and the heat retaining rate reaches 92%.

LITHERMO®





High-bulky pearl cotton



环保

Environmentally friendly



发热

Exothermic



轻盈

Light



蓄热

Heat storage

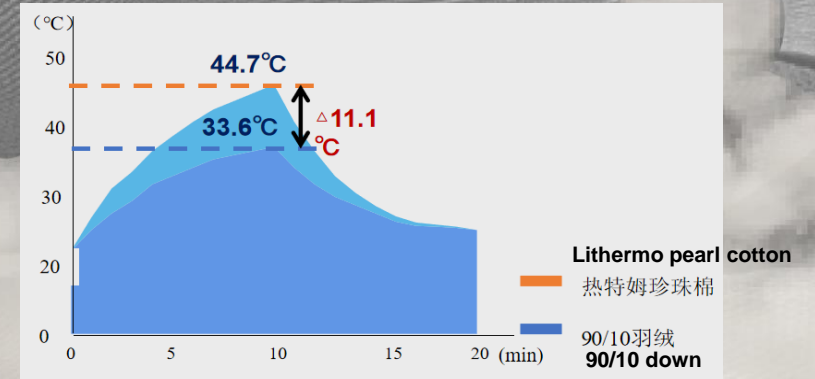
Excellent in heating and heat storage

Fluffier and softer; better compression resistance and elasticity; unique molecular structure and shape, light and washable, not being subject to agglomeration; able to be filled by machine and mixed with down; soft, flexible and easy to shape a slim look

Compared with normal pearl cotton:



Comparison experiment of 30% LITHERMO high-bulky pearl cotton and 90/10 down:



Litherdown™



Comparison experiment
with 90/10 down:

Heating and heat storage performances
are better than those of pure down

Litherdown

When illuminated and cooled down, the performances in heating and heat storage of the mixture of LITHERMO and down are always higher than those of down by 1.0 °C ~2.4 °C.

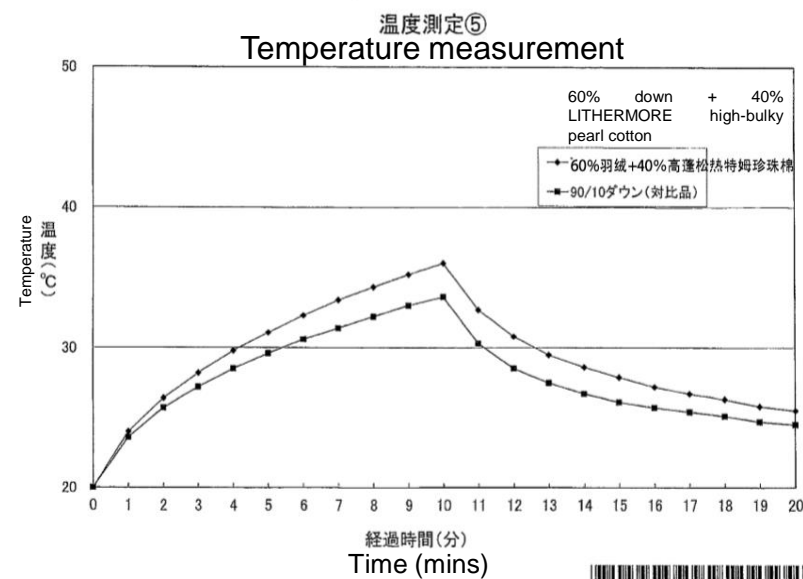


60% down

40% LITHERMO
high-bulky cotton

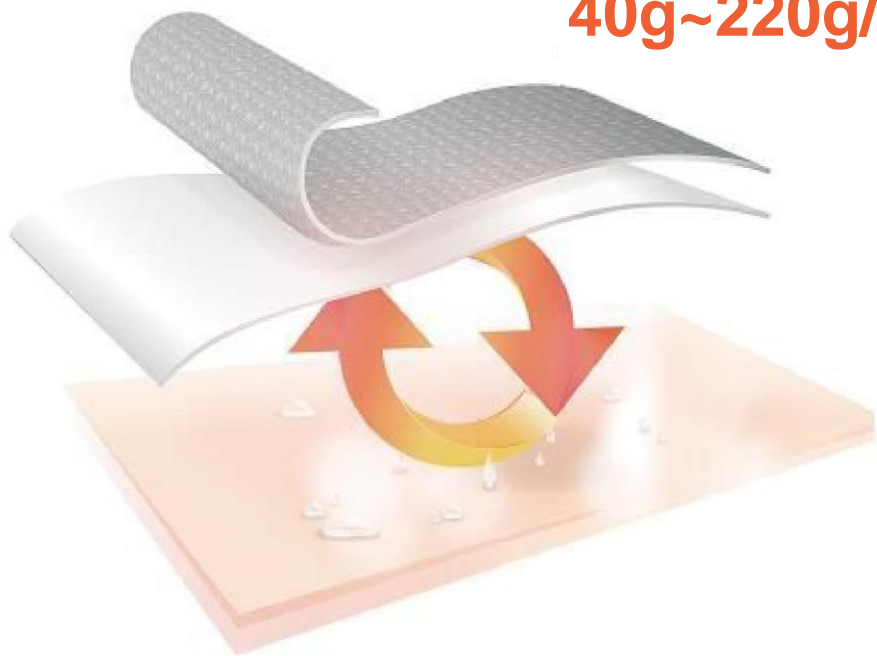
+ = Litherdown™

ボーケン №.E1019002216



Spray-bonded nonwoven fabric

40g~220g/M²



环保
Environmentally friendly



发热
Exothermic



轻盈
Light

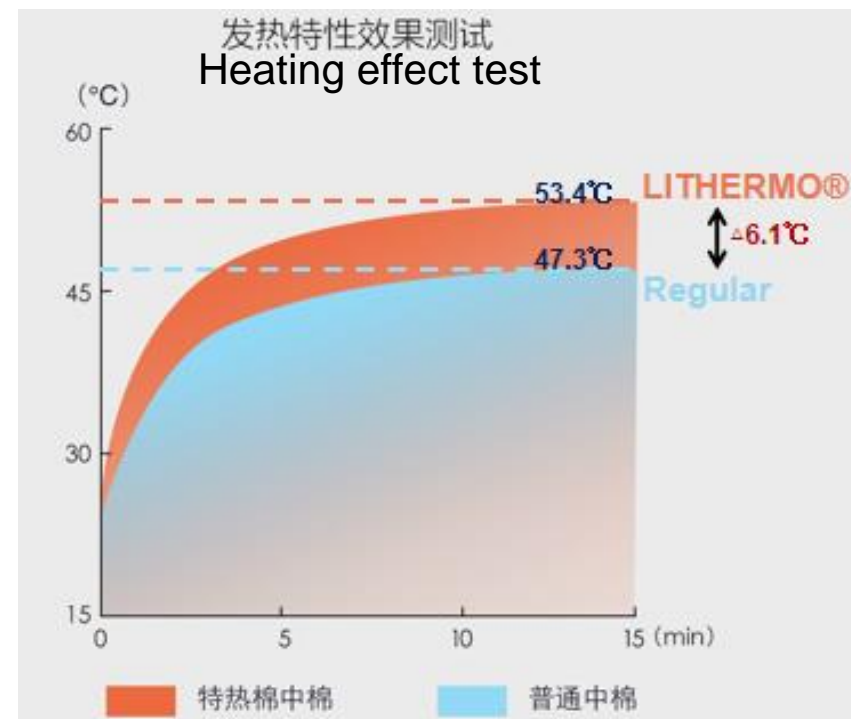


蓄热
Heat storage

Better heating and thermal performances

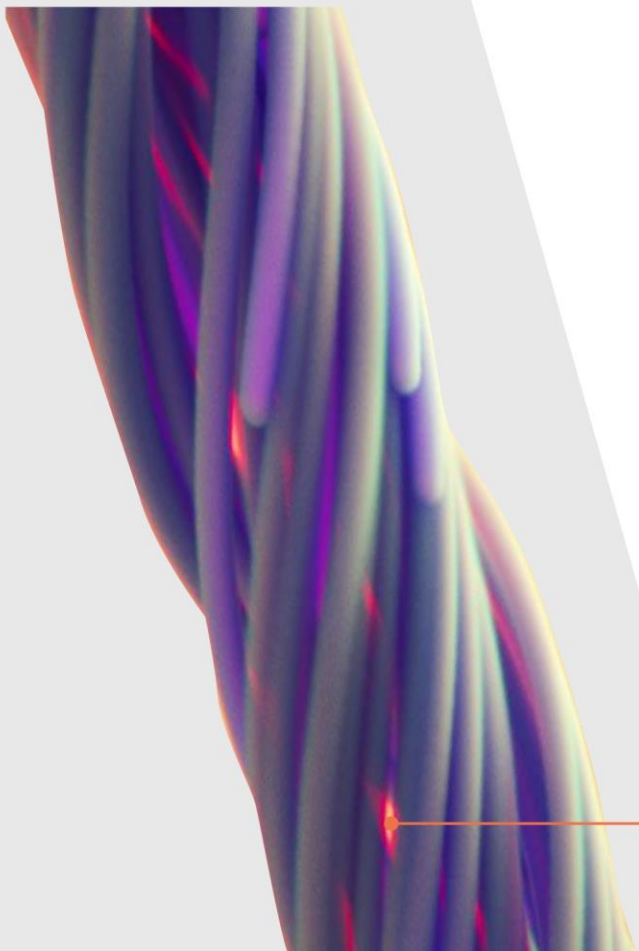
Compared with normal spray-bonded nonwoven fabrics, it has no obvious color difference, and has better heating and heat storage performances.

Comparison experiment between 120g spray-bonded nonwoven fabric (including 30% LITHERMO) and normal spray-bonded nonwoven fabric



LITHERMO
spray-bonded
nonwoven fabric

Normal spray-bonded
nonwoven fabric



LITHERMO staple fiber

Anti-static, antibacterial, moisturizing and other functional yarns can be added to realize "thermal + antibacterial", "thermal + ventilative", "thermal + moisturizing" performances and more possibilities. With safe, environmentally friendly and highly functional traits, it allows the fabrics to be more skin friendly, comfortable and thermal.



Knitted fabric



环保 发热 轻盈 蓄热 易染色 可混纺

Environmentally friendly Exothermic Light Heat storage Easy dyeing Blending



Thermal Heat retaining Cold resistance

A high-tech polyester filament yarn that can absorb infrared rays and convert them into heat energy to promote heat storage is used to weave exothermic woven fabrics

It can be used to create gear with high adaptability that is windproof, rainproof and cold resistant.



Woven fabric



环保



发热



轻盈



蓄热



易染色



可混纺

LITHERMO[®]

Inner layer

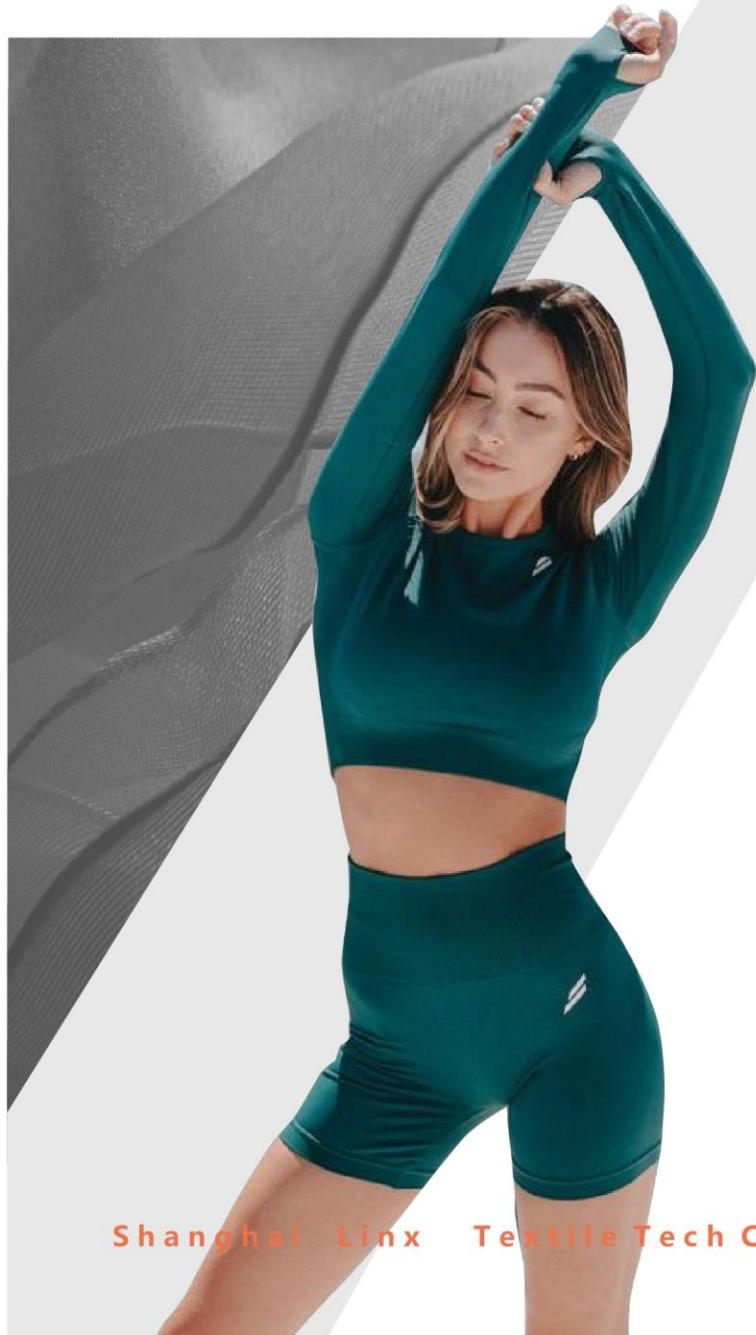
Mid-layer

Applications

Outer layer

Home textile products

Lighter, Warmer, More lasting heat storage



Shanghai Linx Textile Tech Co.,Ltd

Inner layer (underwear, yoga clothes, thermal underwear, socks)

Safe Environmentally friendly Highly functional

Anti-static, antibacterial, moisturizing and other functional yarns can be added to realize "thermal + antibacterial", "thermal + ventilative", "thermal + moisturizing" performances and more possibilities. With safe, environmentally friendly and highly functional traits, it allows the fabrics to be more skin friendly, comfortable and thermal.



环保



发热



蓄热



易染色



可混纺

Environmentally friendly Exothermic Heat storage Easy dyeing Blending



Shanghai Linx Textile Tech Co.,Ltd

Mid-layer (sweater and pullover)

Heat accumulating and retaining

The wool yarn is blended with LITHERMO staple fiber, which forms a heat accumulation groove without affecting the hand feel and color. With heat accumulated and retained, its thermal effect is outstanding.



环保



发热



蓄热



易染色



可混纺

Environmentally friendly Exothermic Heat storage Easy dyeing Blending

Mid-layer (Polar fleece)

Thermal Heat retaining Cold resistant

The use of polar fleece fabric woven with LITHERMO staple fiber strengthens the heat storage performance of polar fleece products, which can effectively extend the heat retaining period. It can also be bonded with woven fabrics to create lighter and warmer high-tech gear by combining with its windproof, rainproof and other functions.



环保



发热



轻盈



蓄热

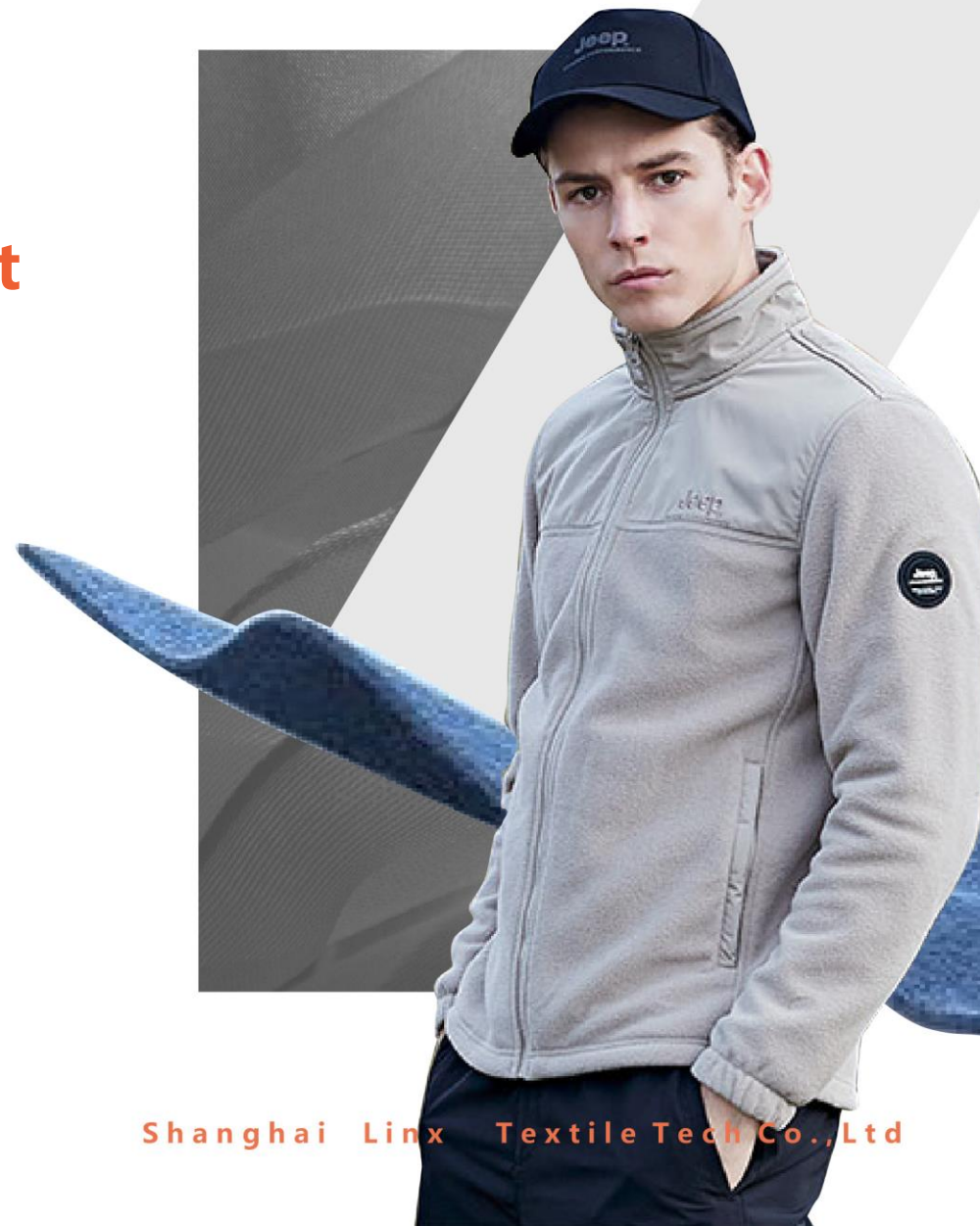


易染色



可混纺

Environmentally friendly Exothermic Light Heat storage Easy dyeing Blending



LITHERMO

Shanghai Linx Textile Tech Co., Ltd

Thermal Heat accumulation Heat storage

With the core functions of "heat emission, accumulation and storage", it absorbs infrared rays to emit heat and reflects far-infrared rays to store heat, which can be converted into heat energy without the fabric close to skin. It is used in the life scenario of "demanding for heat" where the wearer needs the outer layer to continuously emit heat.



环保



发热



蓄热



易染色



可混纺





Shanghai Linx Textile Tech Co., Ltd

Outer layer (Outdoor jacket, windbreaker)

Light Heat emission Heat storage

“LITHERMO cotton” filler is formed by blending of LITHERMO and staple fiber, including high-quality hollow fibers, spray-bonded nonwoven fabrics, high-bulky pearl cotton and Litherdown, which can realize other composite functions to meet needs of manufacturing various products while ensuring the core function: heat emission and storage.



环保



发热



轻盈



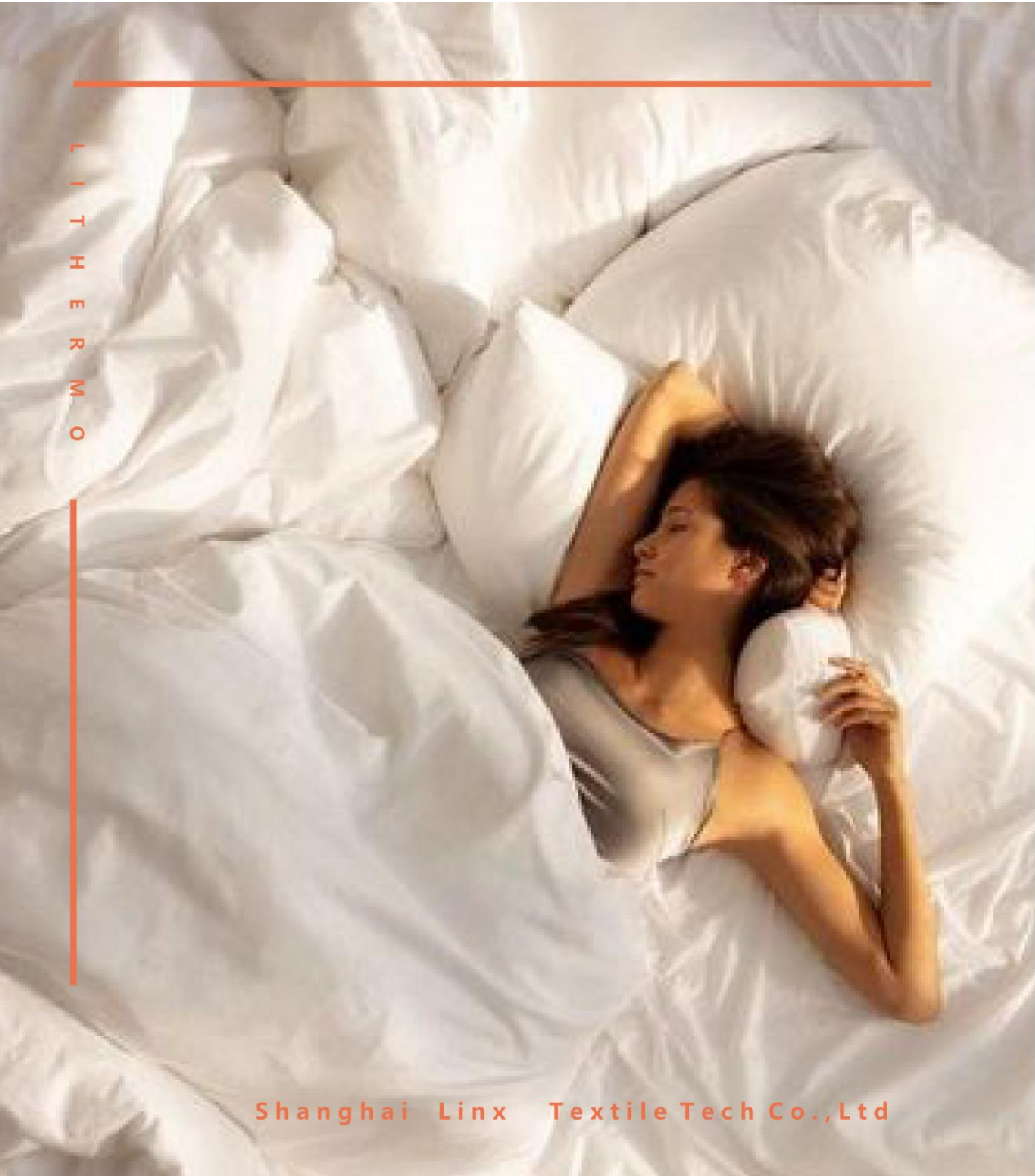
蓄热

Environmentally
friendly

Exothermic

Light

Heat storage



L I T H E R M O

Home textile products

Light and comfortable

“LITHERMO cotton” filler is formed by blending of LITHERMO and staple fiber, including high-quality hollow fibers, spray-bonded nonwoven fabrics, high-bulky pearl cotton and Litherdown, which can be used for home textile filling and achieve better heat storage performance under the same weight. The home textile products with better hand feel and lighter weight can be manufactured.



环保



发热



轻盈



蓄热



易染色



可混纺

Shanghai Linx Textile Tech Co., Ltd

Environmentally friendly Exothermic Light Heat storage Easy dyeing Blending

THANKS

THANKS