

Starlight®

Continuous filament yarn made from recycled post-consumer PET

join performance

join sustainability



For Sustainability



From bottle to yarn

A fundamental process for the environment

Every year a hundred thousand tons of PET are used to produce bottles and just a fraction of these are recycled.

A PET bottle in the environment starts to decompose only after 700 years.

The impact on the environment in producing a yarn starting from recycled polymer is substantially different compared to one from virgin PET.

Energy use and CO2 emission reduction are fundamental steps to improve the environment. For instance, recycling one single plastic bottle equals saving enough energy to run a 60W light bulb for 6 hours.



Polyester is a valuable raw material as it can be recycled without changing its properties.

The modern PET recycling process makes a final product which is no different from that produced from virgin raw material.

The PET recycling process does not produce waste and the manufacturer's commitment to using renewable energy creates a process with very low environmental impact.



Choosing a recycled product means to be aware of its potential

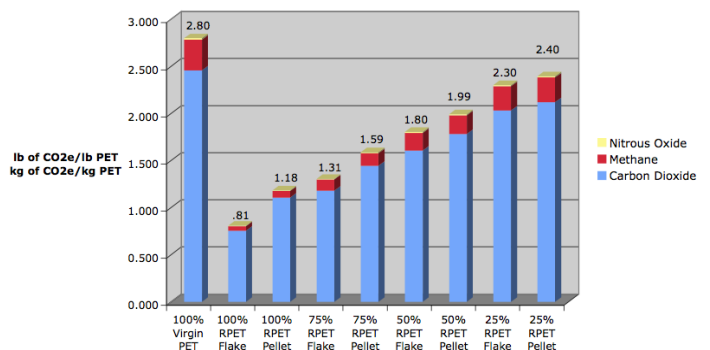
Energy absorption data and CO2 emissions in the air comparison between a virgin polyester and a recycled one underline substantial differences.

CO2 emissions are reduced by 50% for production of a new granule suitable for spinning compared to those generated by a virgin PET granule.

The energy employed to produce a recycled granule is roughly 70% less compared with a virgin one. A good portion of this saving derives from the energy used to extract from oil the basic materials which will form PET.

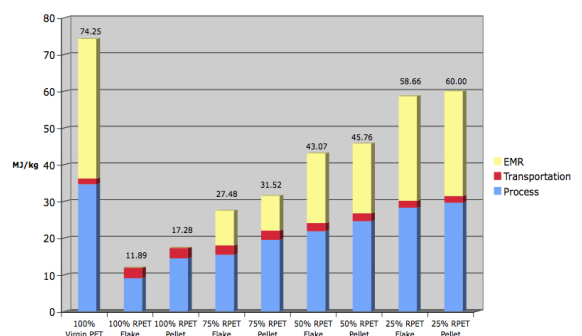
The differences are so high that it's impossible not to consider them fundamental in a process addressed to limit the environmental impact of the products.

Comparison of Virgin PET and Varying Levels of Recycled PET: GHG Emissions



Sources: Final LCI for RPET and RHDPE - April 7, 2010 - GWP for Methane is 25, for N2O is 298, PER IPCC 2007. RPET data is based on volume based collection with 50% compaction and the cut off recycling allocation methodology.

Comparison of Virgin PET to Varying Levels of Recycled PET: Energy



Sources: Final LCI for RPET and RHDPE - April 7, 2010 - GWP for Methane is 25, for N2O is 298, PER IPCC 2007. RPET data is based on volume based collection with 50% compaction and the cut off recycling allocation methodology.

Certification and constant commitment to sustainability

Using a recycled product is not enough, it's compulsory for this to be included in a Company Strategy

Choosing to produce sustainable yarns is a very important step for a Company.

Using recycled materials or renewable energies are not sufficient to guarantee quality products to its customers. It's fundamental to have alongside a company strategy, a project and a commitment which permeates the organization, going through suppliers selection, processes definition, measurement and endorsement. Market needs products behind which there's a strongly sustainable footprint and guarantee for the future.



r-Starlight yarn is exactly the result of this choice, it's not simply a product but a system which integrates everything which is related to yarn production: from the polymer to spinning and dope dyeing.

Each process has been selected to guarantee to the customer a maximum performance in terms of sustainability.

r-Starlight yarn has a Product Certification issued by the International Company DNV

r-Starlight implies a selection of processes and materials which includes the most advanced technological solutions addressed to respect the environment.

Radici Group adopted GRI as standard of sustainability

In 2011, Radici Group adopted GRI (Global Reporting Initiative) as a standard to measure sustainability. Already adopted by the most important textile groups worldwide, this choice will lead the Group to face sustainability, not only in terms of "green" materials and energies, but also with a serious and constant commitment on all the management, social and territorial issues.



Since many years Radici Group has the annual Sustainability Report

Post-consumer PET Product Certification and LCA

Studies on LCA value of a recycled polyester mass dyed yarn, show a definitely better value compared to virgin materials, other synthetic fibres, but also with natural fibres such as organic cotton.



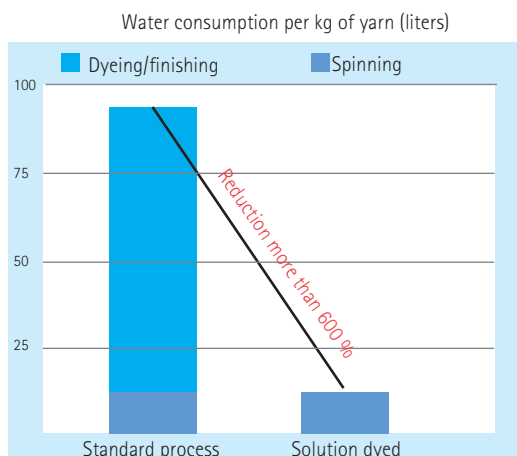
The supporting documents which endorse the r-Starlight product performance are the basis to work toward sustainability in a clear and transparent way.

Dope Dyeing = Zero WATER

A fundamental process to value a recycled yarn



Dope dyeing means eliminating all water consumption and purification problems



Graphic shows the substantial differences between the two different types of dying process. With reduced water consumption in dope dyeing reaching up to 600%.

For each kilo of traditionally dyed yarn there's a waste of approx. 80 liters of water.

Using dope dyeing has a remarkable impact on LCA values and on r-Starlight position as the best eco-sustainable product.

With the same technology it's possible to add bacteriostatic additives during yarn extrusion, thus preventing further water use for finishing processes as well as final fabric treatments.

Water is a fundamental element of the ecosystem. When you talk about recycled PET yarns the dyeing process is often not discussed:

Dyeing the polyester either on package or in fabric requires huge amount of water.

r-Starlight with dope dyeing technology completely cancels this problem, attributing to the yarn an exceptional sustainability value.

Dope dyeing means adding coloured granules to the polymer during the extrusion process.

This process, as well as the one related to the preparation of coloured granules, does not need water.

The non use of water also cancels the need for all related purification processes which must be carried on dyeing baths.

There's no water output into the surrounding environment, thus avoiding any risk of contamination.

Absence banned substances

In mass dyeing the dyes used do not contain banned substances, such as organic compounds or heavy metals, thus making it compliant with current regulations.

Oeko-tex Certification + Reach

All the r-Starlight yarns are 100 certified to the Oeko-tex Standard by Centro Tessile Cotoniero and are compliant to all the criteria of Reach regulations.

Great Performances, great Flexibility

A yarn with no limits, thousands of colours and additives available for the best performances



Thousands of colors, wide products range, flexibility on quantity

It's also possible to select the yarn on the basis of the type of the final fabric desired: breathable, bright, cotton effect, insulating or very soft.

This great flexibility, in case of the r-Starlight product, does not lead to quantity limitation: the min. required quantity for each combination of the various characteristics is as low as 200 kg.

Additionally it's also possible to add a bacteriostatic function which makes the product even more suitable for the sportswear, medical and technical market.



Bacteriostatic yarn made with HEIQ additive based on silver ions.

Using the same technology as dope dyeing, the additive is added during the extrusion phase, thus making it permanent in the yarn.

This guarantees high bacteriostatic performances which remains unchanged even after 300 washes.

r-Starlight is the answer to the customer request for versatility: no restrictions, every single product is completely customized.

Our experience in specialty markets makes us understand that it's fundamental to give the customer all the necessary tools to allow him to create and use something new.

The yarn is available in thousands of different colours with exceptional fastness, or alternatively, customers specific colour requests thanks to our internal matching system.

It's possible to have a super bright, bright or semi dull or full dull, in all types of standard polyester yarns: flat, air or friction textured, twisted or on beams.



r-Starlight : flexibility numbers

> 3000 colors available

Min 200 kg for each product/color

10 different filament cross section

> 100 count available

300 washes guarantees for bacteriostatic effect



r-Starlight[®]

r-Starlight[®]
BACTERIOSTATIC YARN *feel*

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