

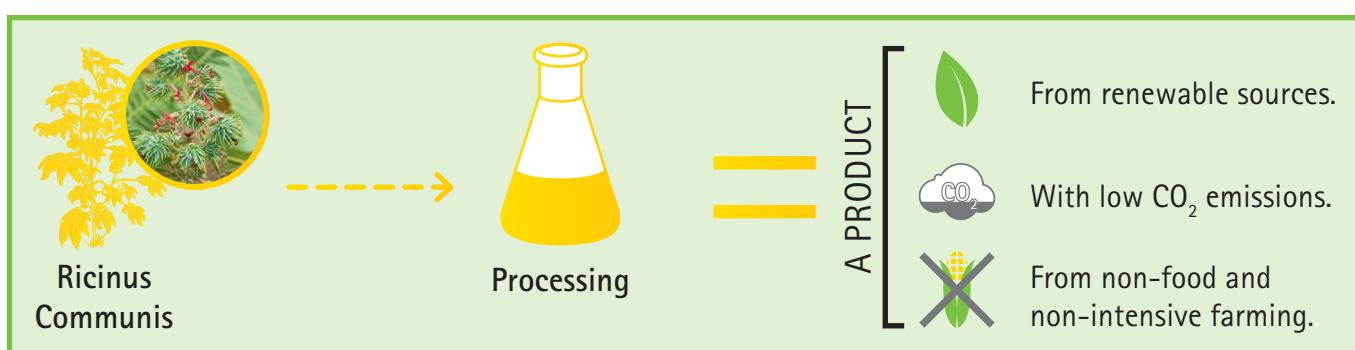
# BIO-SOURCED POLYAMIDE

by RadiciGroup

POLYAMIDE 6.10 STAPLE AND YARN MADE WITH 64% RENEWABLE SOURCE MATERIALS

Radici Yarn, a company belonging to the Fibres area of RadiciGroup, is now offering a new polyamide 6.10 range of products - for apparel, furnishings, contract, automotive and other applications - made with 64% renewable source materials. The starting product is polymerized from hexa-methylenediamine and sebacic acid at RadiciGroup's Chemicals plants, then compounded at various Plastics production sites located all over the world or alternatively used in the Fibres sector. RadiciGroup follows every production process from the raw material to the final product.

Sebacic acid is a substance of biological origin obtained from castor oil plant (*Ricinus communis*) seeds. This plant is cultivated, mostly in China and India, in arid environments, and for this reason does not compete with agricultural products for human consumption.



## Castor cultivation process

- **Where is castor cultivation specifically located?**  
The plant needs a hot and extremely humid climate to grow properly. Castor cultivation is concentrated in India (net exporter), China and Brazil. The top three regions in India are Gujarat (>70% of total crop in 2011), Rajasthan and Andhra Pradesh.
- **Is castor harvesting process manual or automated?**  
The plant is generally gathered by hand in the Indian regions listed above.
- **What kinds of safety laws regulate the Castor industry – especially in countries where people are in direct contact with seeds and/or Castor meals?**  
No specific safety procedures are required - where people come into direct contact with Castor meal, safety precautions are minimal (e.g. gloves).
- **How is soil kept fertile?**  
The soil is maintained fertile with various fertilisers and regular crop rotation.
- **About castor cultivation water management and irrigation: how much water is usually used?**  
Castor is a deep rooted crop and therefore very drought resistant. Usually the land is rain-fed but occasionally - when necessary - the fields are irrigated (i.e. furrow preferred). The minimum rainfall in the cultivated areas is 38-50 cm/year.
- **The seeds used for sowing belong to a special variety. Are they different from the kind of seeds usually used for harvest?**  
A range of special Castor hybrids/varieties have been developed and are now used for commercial cultivation in crop regions. Generally seeds used for the crop's sowing are high yield type seeds. Seeds planted for higher yield types do differ from the harvested seeds.

## Castor oil manufacturing

- **Where are the Castor seeds processed (i.e. pressing, extraction, filtering, refining)?**  
Seed crushing and Castor oil derivative manufacturing units mainly remain in India, in the Gujarat region.

radilon®  
6.10

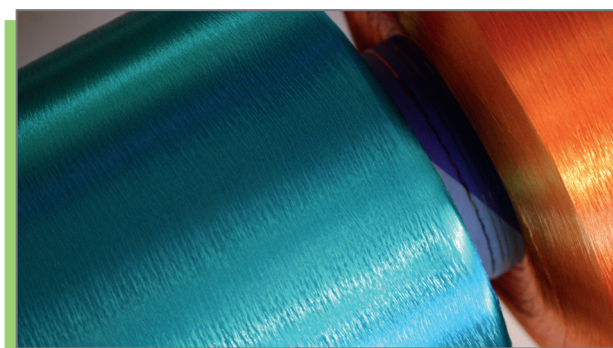
dorix®  
6.10



## RANGE OF PA6.10 FIBRES



**STAPLE FIBRE** - Range of coarse denier fibres (from 17 dtex to 135 dtex) available in a relevant number of solution dyed colors to achieve the best fastness results. The color range is highly flexible and conceived on a tailor-made basis, according to each customer's specific needs.



**CONTINUOUS FILAMENT** - The wide range of products are in constant development to fit the necessities of many final different applications (circular knitting, socks, warp knitting and weaving). Radici Yarn's R&D team always supports customers to provide the best possible solutions.

## TECHNICAL PROPERTIES COMPARISON

PROPERTIES	UNIT	PA6	PA66	PA6.10	POLYESTER	COTTON
MELTING POINT	°C	225	262	220	255	-
WATER ABS, SATURATION	%	9.5	8.5	3.3	0.2 - 0.4	20
DENSITY	g/cm <sup>3</sup>	1.13	1.14	1.07	1.39	1.5
DIMENSIONAL STABILITY		••	••	•••	•••	•
RENEWABLE SOURCE		-	-	•••	- (•••• in case of R-PET)	••••
MECHANICAL RESISTANCE		•••	•••	•••	••	•
THERMAL RESISTANCE		•••	••	••	•••	•
DRYING SPEED DUE TO LOW WATER PICK UP		••	••	•••	••••	•
CHEMICAL RESISTANCE		••	••	•••	••	•

### RADICI YARN SpA

Via Provinciale, 1125 IT - 24020 Villa d'Ogna (BG)  
Phone +39 0346 89111 - Fax +39 0346 23396

e-mail: [fashion.fibres@radicigroup.com](mailto:fashion.fibres@radicigroup.com)  
[www.radicigroup.com/fibres](http://www.radicigroup.com/fibres)

*The information provided in this document is supplied in good faith and corresponds to Radici Yarn's knowledge at the date of its publication. This information may be subject to revision as new knowledge becomes available. The numerical data presented in this document are values obtained by measurement under prescribed conditions. The release of this data by Radici Yarn does not constitute a guarantee of the quality and/or safety of your company's finished products. Radici Yarn makes no warranties and assumes no liability in connection with any use of this information.*