



The improvement of the fabrics used in the professional market through research on consumer need and engineering parameters. The application of TRIZ methodology in textile under the pilot plant production of SENAI CETIQT – Technology Center of Chemical and Textile Industry in Rio de Janeiro

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- **SENAI CETIQT - Technology Center of Chemical and Textile Industry** - this base unit have acted as the principal Human Resources Trainer Center for National Textile Chain and one of the foremost in the world, with complete models base, is possible reproduce the industry environment, beyond the models base of production, an integrated network of laboratories and an area of Innovation, Research and Studies, focusing on anthropometry, and Consumption Behavior, Color, Design, Creative Economy, Technological Forecasting and marketing, Sustainability and Social and Environmental responsibility.

Method of inventive principles

Was used an approach by Altran*, which suggests the following sequence:

1. Define the specific problem
2. Identify the generic problem
3. Get solutions to the general problem
4. Get specific solutions



*www.altran.com.br

1 – Define the specific problem

What are the needs of Brazilian consumer?

Mobility and Temperature



Mobility – during the performance of work requiring the use of specific garments, it is necessary that the user feel comfortable and keep minimal movement functions.

1 – Define the specific problem

What are the needs of Brazilian consumer?

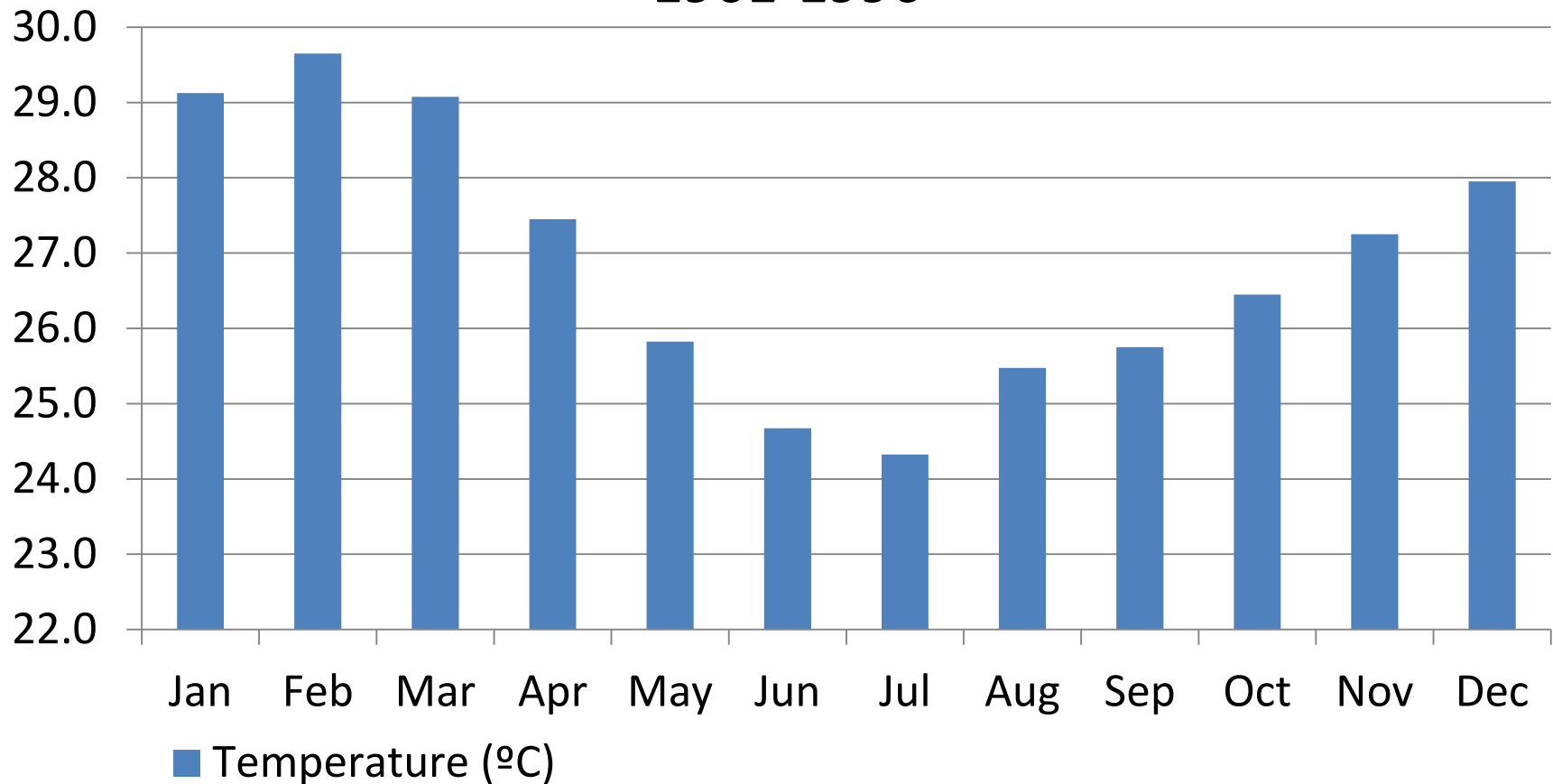
Mobility and Temperature



Temperature – most of the year the Brazilian consumer works in high temperature conditions, and need garments that minimize the impact of heat.

2 - Identify the generic problem

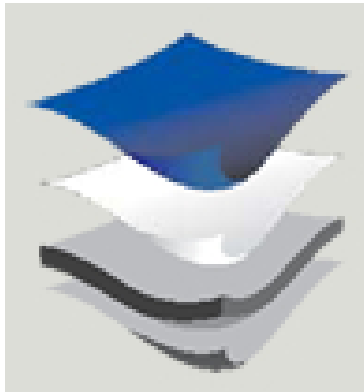
Normal Climatological the southeastern region of Brazil
1961-1990



2 – Identify the generic problem

- Current tissue composition and characteristics

The typical range of the weight of the fabrics for protective clothing ranges currently found on the market an average of 170g / m² to 330g / m² and 220g / m² and 250g / m² the most common values.



Plain Wave External Layer: 93% meta-aramid, 5% para- aramid, 2% carbon;

Net Barrier: PU –Polyurethane;

Termal barrier whitth lining: 100% fibras flame retardant fibers.

3 – Get solutions to the general problems



- In this study it was possible to detect does not only the union of the tissue is a critical point, but also the type of material. In Senai-Cetiqt the manufacture of textile materials, with techniques developed within its own base model is performed. Every new project is developed properly tested and recorded by professionals.

4 – Get specific solutions

- **Nomex** - is a registered trademark for flame-resistant meta-aramid material developed in the early 1960s by DuPont and first marketed in 1967.

Nomex and related aramid polymers are related to nylon, but have aromatic backbones, and hence are more rigid and more durable. Nomex is the premier example of a meta variant of the aramids (Kevlar is a para aramid). Unlike Kevlar, Nomex cannot align during filament formation and has poorer strength. However, it has excellent thermal, chemical, and radiation resistance for a polymer material.

4 – Get specific solutions



Infant DuPont™ Nomex® - 2 pockets -
<http://www.balaska.com.br>



Infant DuPont™ Nomex
http://jornalodoautodromoalbum7.blogspot.com.br/2012_02_01_archive.html

Bibliographic reference:

- DuPont, available in:
www.dupont.com
- Altran Technologies SA, available in:
www.altran.com.br
- Lakeland Brasil SA, available in:
www.qualytextil.com.br