

LOW TEMPERATURE BLEACHING PROCESS

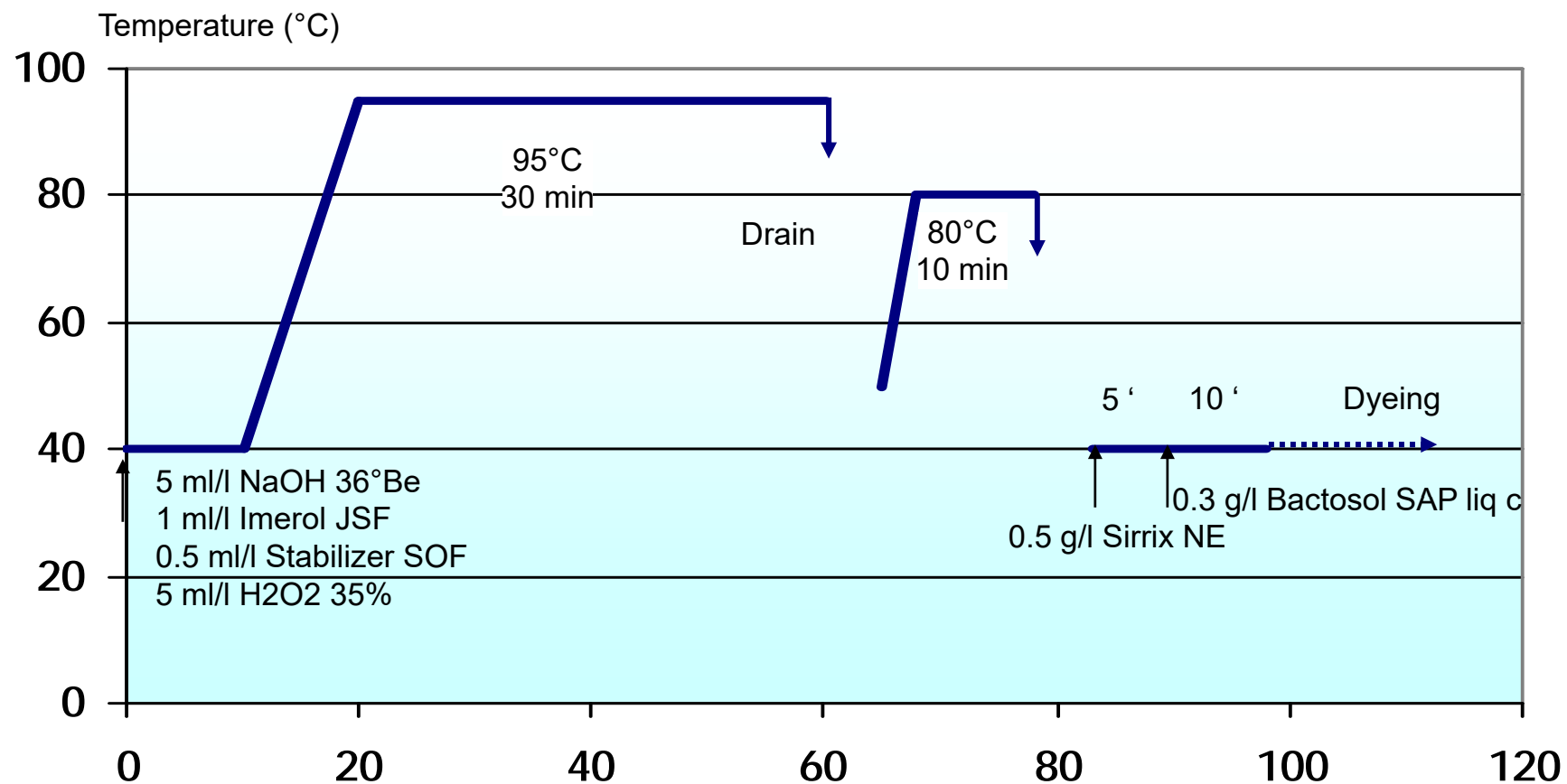


Low Temperature Bleaching

- New bleaching process for exhaust application at low temperature based on 2 products
- Due to the increasing costs of energy there is a demand to develop new processes working at low temperature
- With our Low Temperature Bleaching process we offer the possibility to work at 75°C instead of 95°C in comparison with a classical bleaching
- A first calculation with the **one way tool** gives us a saving of about 40% in energy
- Both products are GOTS-Oekotex-Community Ecolabel-Bluesign approved

Exhaust Bleaching

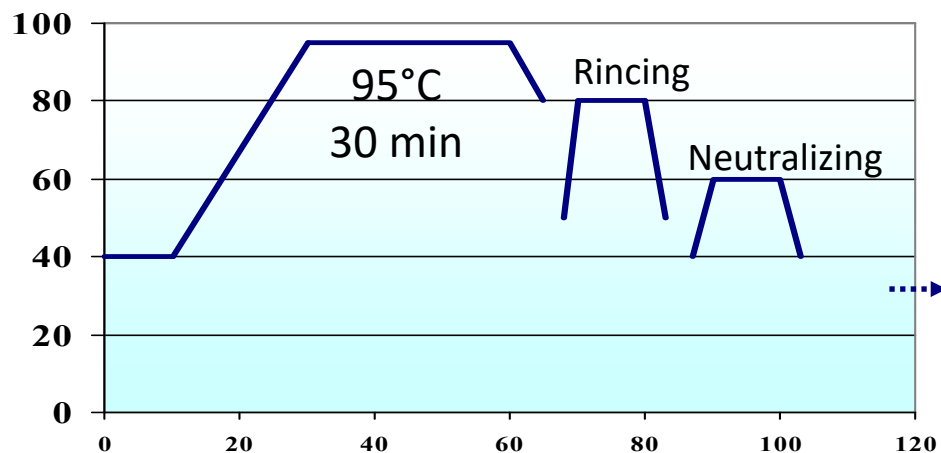
Classical Bleaching



Low Temperature Bleaching

Low Temperature Bleaching

Process comparison



Wetting Agent

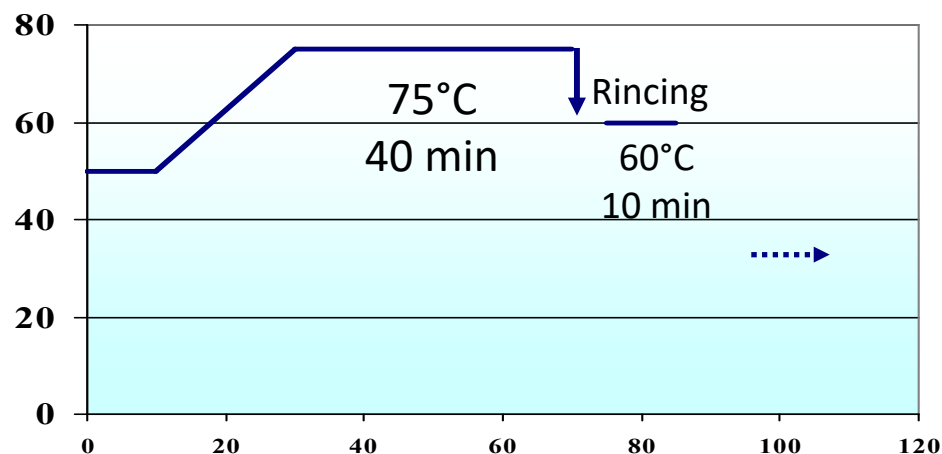
Stabilizer

NaOH

H₂O₂

Sirrix NE

Bactossol SAP liq c



Imerol LTB

Stabilizer LTB

NaOH

H₂O₂

Sirrix NE

Bactossol SAP liq c

Low Temperature Bleaching

Imerol LTB	Wetting washing emulsifying agent
Stabilizer LTB	Bleaching regulator
Bactosol SAP liq c	Broad-band catalase for residual peroxide elimination
Sirrix NE liq	Strong and flexible universal neutralizing agent

- High wetting power

Imerol LTB liquid

Imerol LTB Liquid is a strong detergent and wetting agent specially designed for jet applications.

- Alkali stable up to 6°Bé
- Nonionic
- Biodegradable
- Strong detergency
- High emulsification power between 60 and 80°C in order to remove fatty substances ⇒ high absorbency

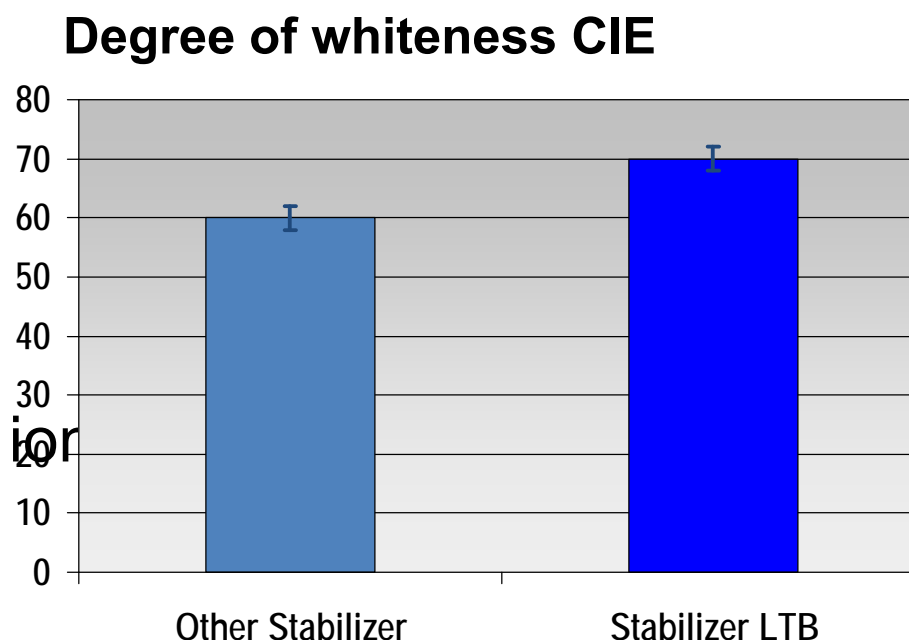
- No Foaming behaviour



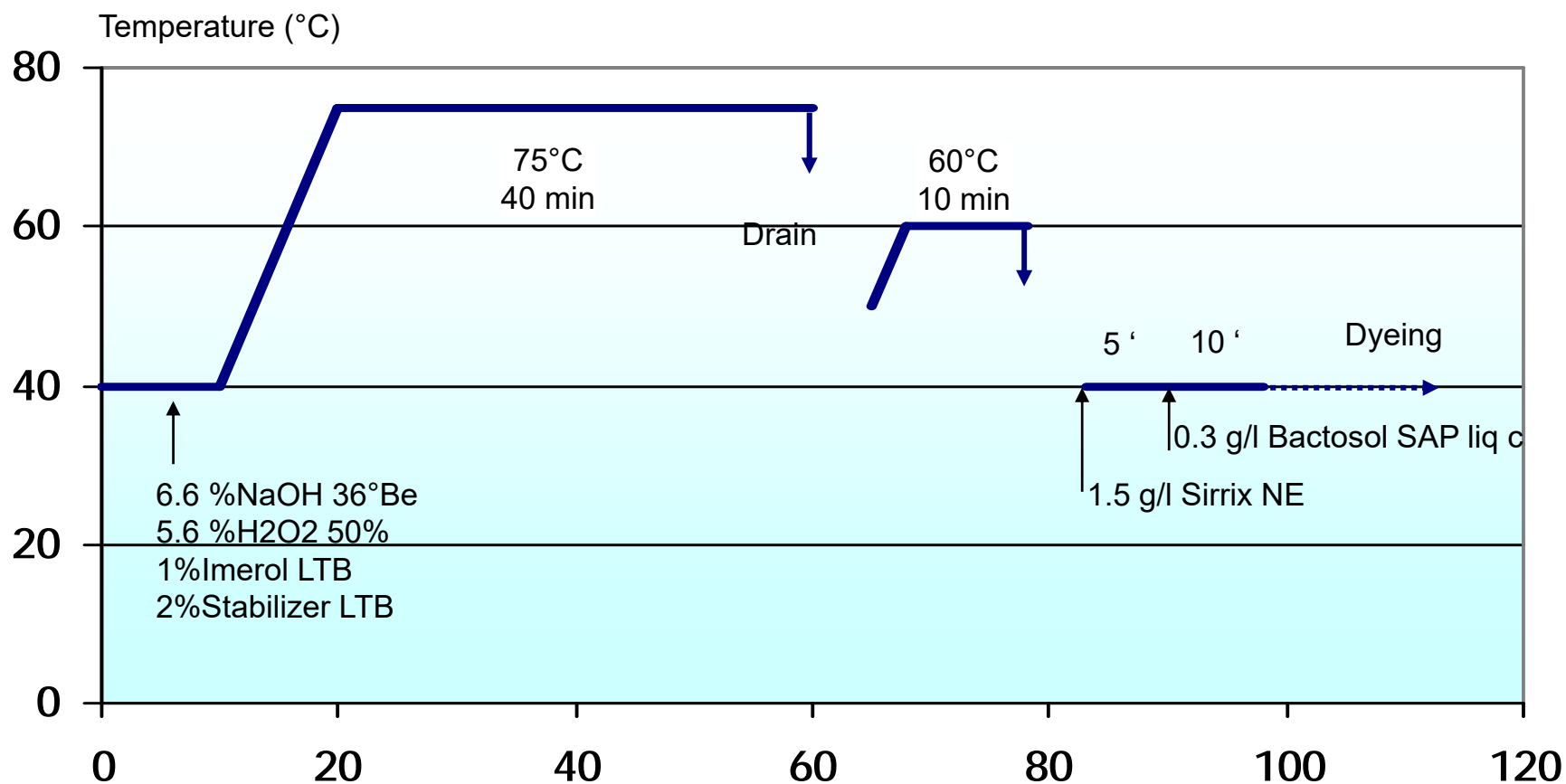
Stabilizer LTB liq

Specific Bleaching regulator for alkaline peroxide bleaching of cotton and its components in fibre blends.

- High degree of whiteness at low Temperature
- Prevents catalytic damages (complexes heavy metal ions)
- Non-foaming
- Biodegradable



Low Temperature Bleaching



INTRODUCING A BREAKTHROUGH SUSTAINABILITY SERVICE: ONE WAY





INTRODUCING A BREAKTHROUGH SUSTAINABILITY SERVICE: ONE WAY

Archroma's ONE WAY, introduced in October 2012, helps mills and brand owners to develop innovative textile solutions that are both more ecologically and economically sustainable. Our ultimate aim is to provide a fast, measurable and reliable approach to the selection of chemical product and process solutions. **ONE WAY METHODOLOGY AND TOOLBOX** To help customers meet their sustainability targets in a fast and reliable manner, the ONE WAY methodology takes a highly systematic approach to the selection of chemicals and production processes.



ONE WAY Definition / Mission:

Use the most resource efficient processes possible: minimizing use of materials, energy, water, and waste.

Minimize or eliminate water and air pollution.

Create technologies and processes that enhance biodiversity.

Develop, design products & applications which contains none-hazardous dyes & chemicals

Product selection based on eco-standards requirements

More than
15 textiles
eco-standards and criteria
included

- ONE WAY dyes and chemicals are screened against more than 15 textiles eco-standards and criteria
- **Instant access** to the eco-profile of almost **600** products in the **ONE WAY Selector**

ARCHROMA ONE WAY - Calculator 0.9.2.63

Program Process Machine Types Base Data Templates Material Templates Dyes and Chemicals About

Calculation Reporting

Standard Bleaching LT Bleaching*

Save Save As... Base Data : New Germany Material : 100% Cotton Knit [kg] 300 [running m] 1000 Recipe Settings Calculate

START

Jet Overflow Jet Overflow Jet Overflow

LT Bleaching Rinsing 60°C After treatment

END

Total values

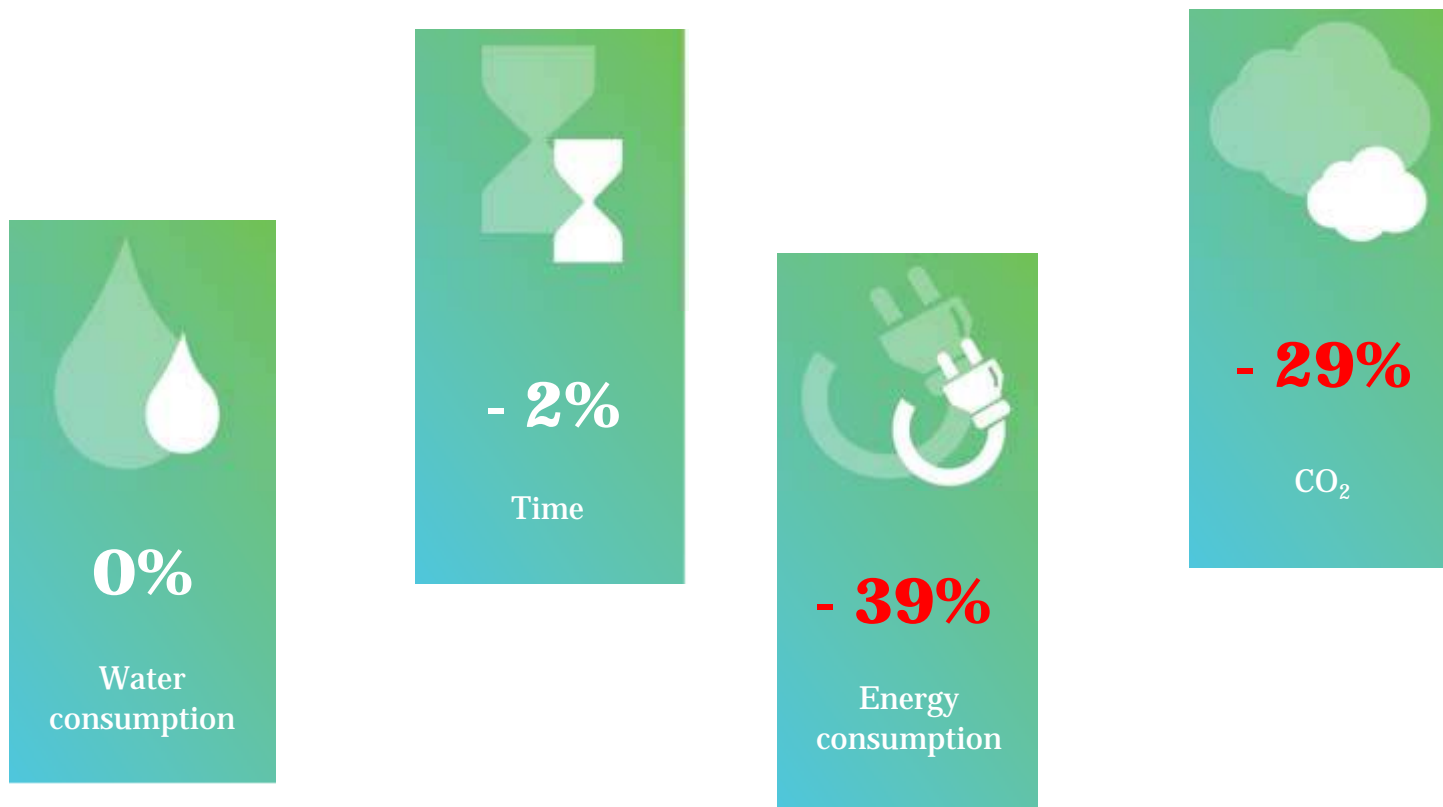
	168.12	94	35.12	39
Time [min]:	168.12	94	35.12	39
Water consumption...	8100	3000	2550	2550
Water cost [EUR]:	38.07	14.1	11.98	11.98
Electr. consumption...	31.1	17.39	6.5	7.22
Electricity cost [EUR]:	4.67	2.61	0.97	1.08
Heating Energy [MJ]:	757.34	532.8	224.54	-
Total Energy [MJ]:	869.31	595.4	247.93	25.97
Steam consumptio...	363.23	255.54	107.69	-
Steam cost [EUR]:	16.8	11.82	4.98	-
Gas consumption [...]	25.46	17.91	7.55	-
Gas cost [EUR]:	16.8	11.82	4.98	-
Oil consumption [kg]:	-	-	-	-
Oil cost [EUR]:	-	-	-	-
Coal cost [EUR]:	-	-	-	-
Brown coal cost [E...]	-	-	-	-
Wood cost [EUR]:	-	-	-	-
Bargasse cost [EUR]:	-	-	-	-

C:\Users\pcaneva\Documents\ONEWAY Data\Process\LT Bleaching.owp

Exhaust Continuous Semi Continuous Printing

Beam Hank Jet Overflow Jigger Package Paddle Star Winch

Process comparison –Classical Bleaching/LTB Bleaching

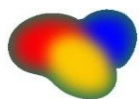


Environment



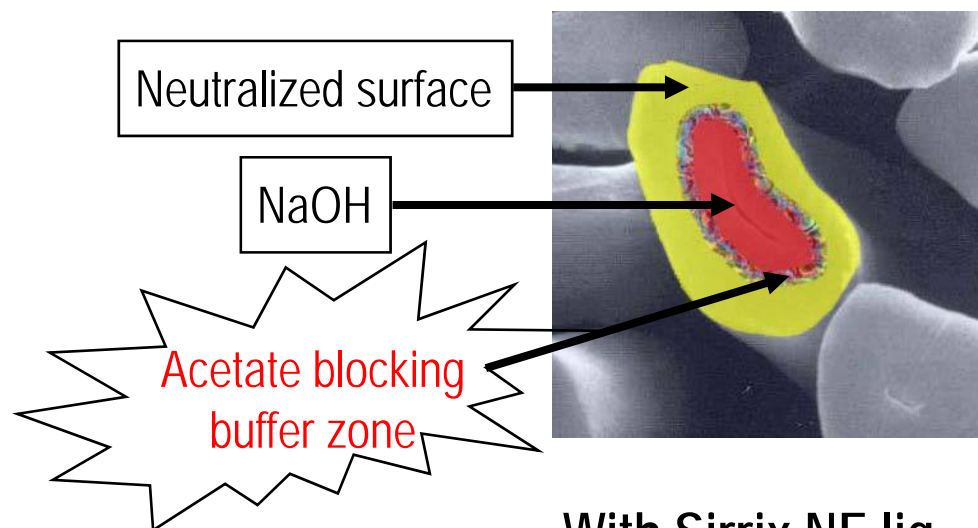
Neutralization And Peroxyde Elimination

Sirrix NE liquid is a strong neutralizing agent. Its synergetic association of organic acids allows a perfect adjusting of the desired pH on the whole range.

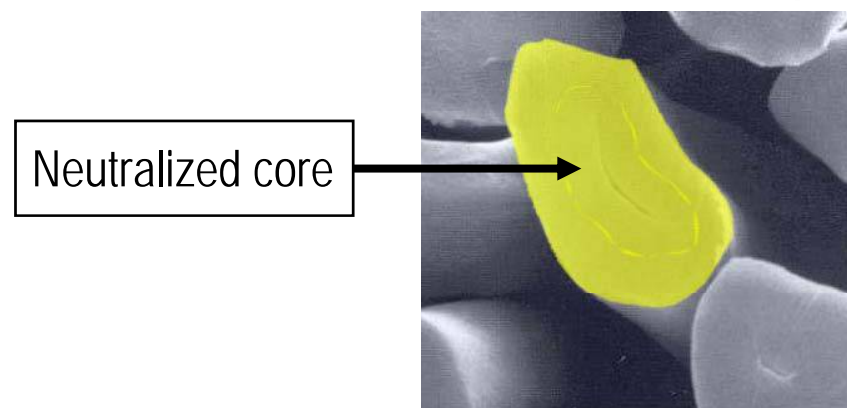


- Core neutralization
- No blocking buffer
- Phosphorus and Nitrogen free
- Biodegradable
- Low COD / BOD

With Acetic Acid



With Sirrix NE liq.





Sirrix NE liquid Built-in Ecology

Neutralization test on a continuous washing machine with automatic pH regulation:

Set: pH 4.0

Consumption with Acetic Acid 80%: 15 g/kg

Consumption with Sirrix NE liq.: 11 g/kg

	COD	BOD5
Acetic Acid 80%	850 mg/g	650 mg/g
Sirrix NE liq.	330 mg/g	230 mg/g

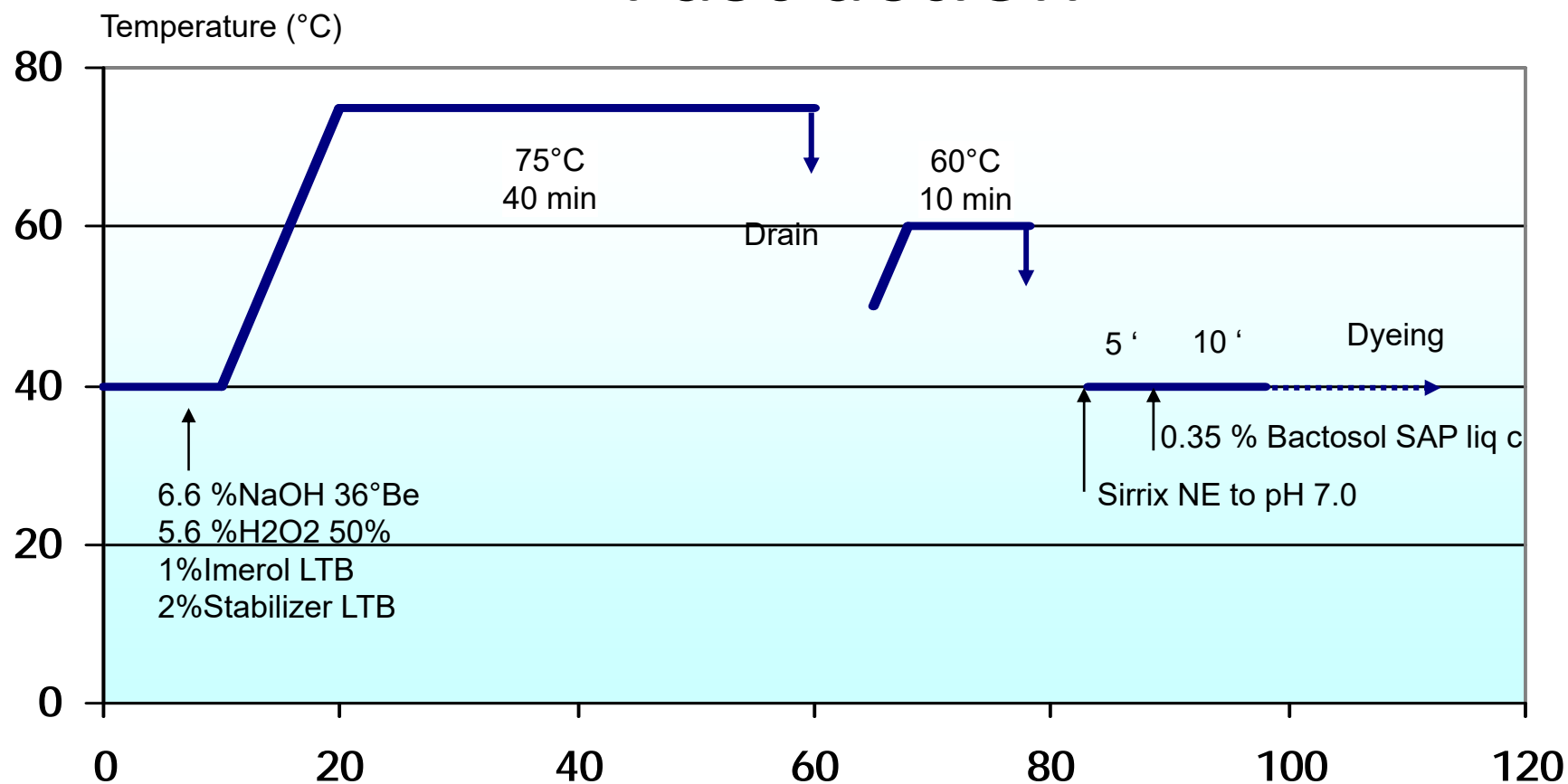
COD and BOD5 per kg of material :

	COD	BOD5
Acetic Acid 80%	12.75 g/kg	9.75 g/kg
Sirrix NE liq.	3.63 g/kg	2.53 g/kg



Bactosol SAP liq c

Fast action



Bulk trials

Applications

Yarn Packages



Towel

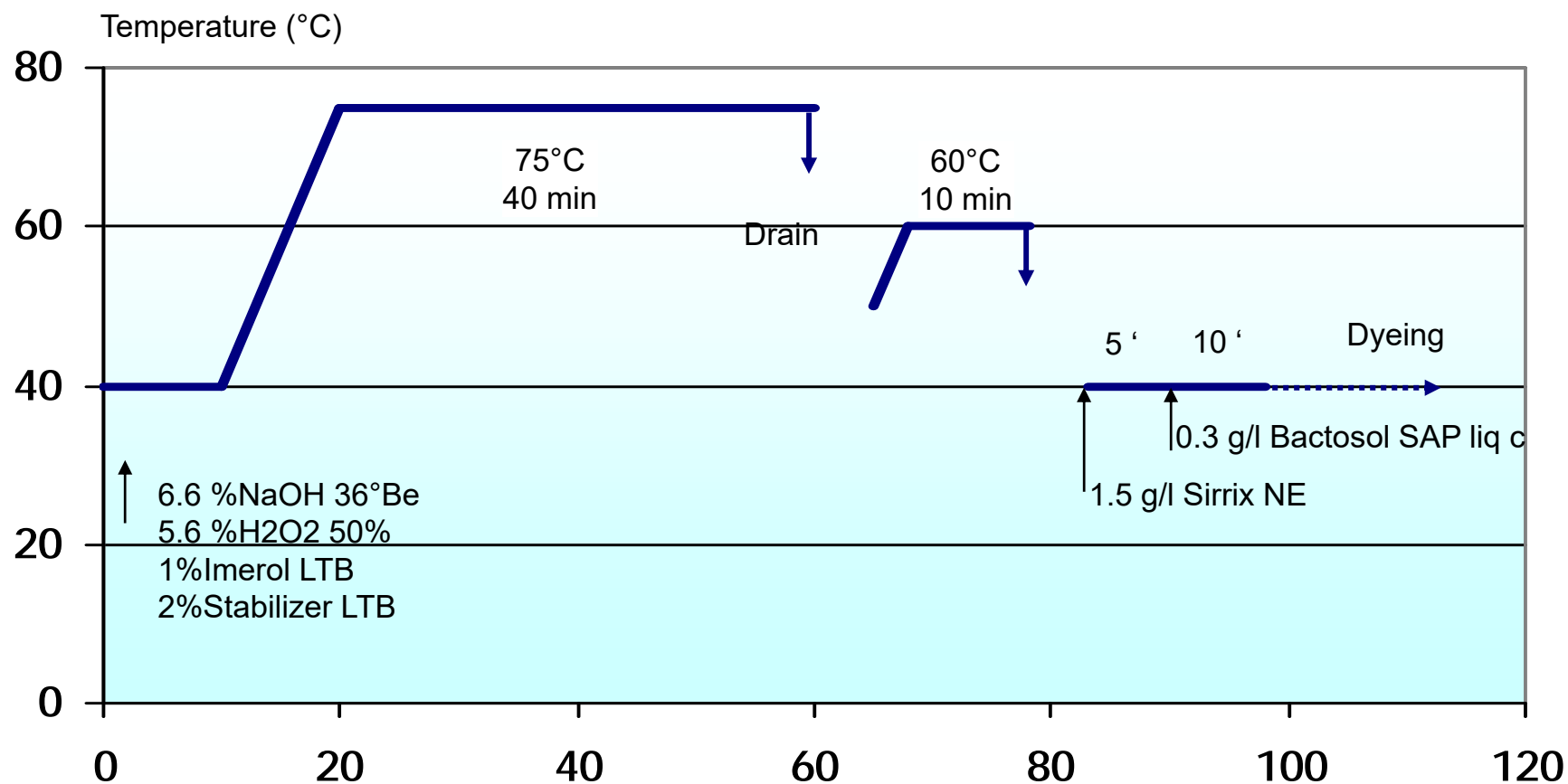


Knitwear



Low Temperature Bleaching

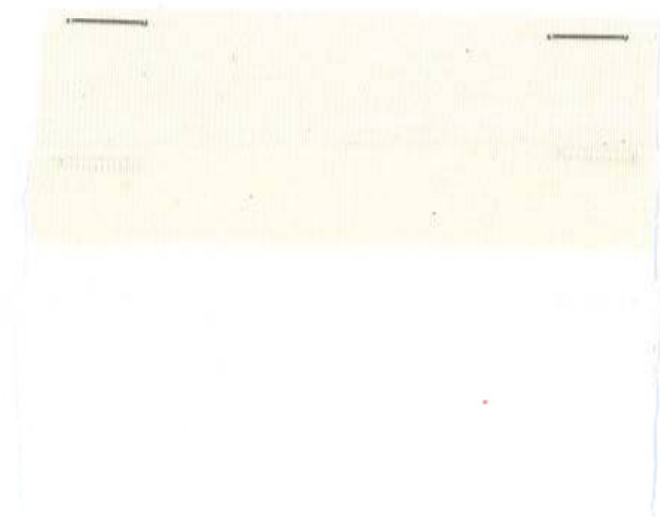
Cotton 100% 230 kg LR:1/6.5





Low Temperature Bleaching

Cotton 100% 230 kg LR:1/6.5



Raw material

Essai 1

grade of whiteness: CIE 71.9
wicking test: 80 mm

Essai 2

grade of whiteness: CIE 72.5
wicking test: 97 mm

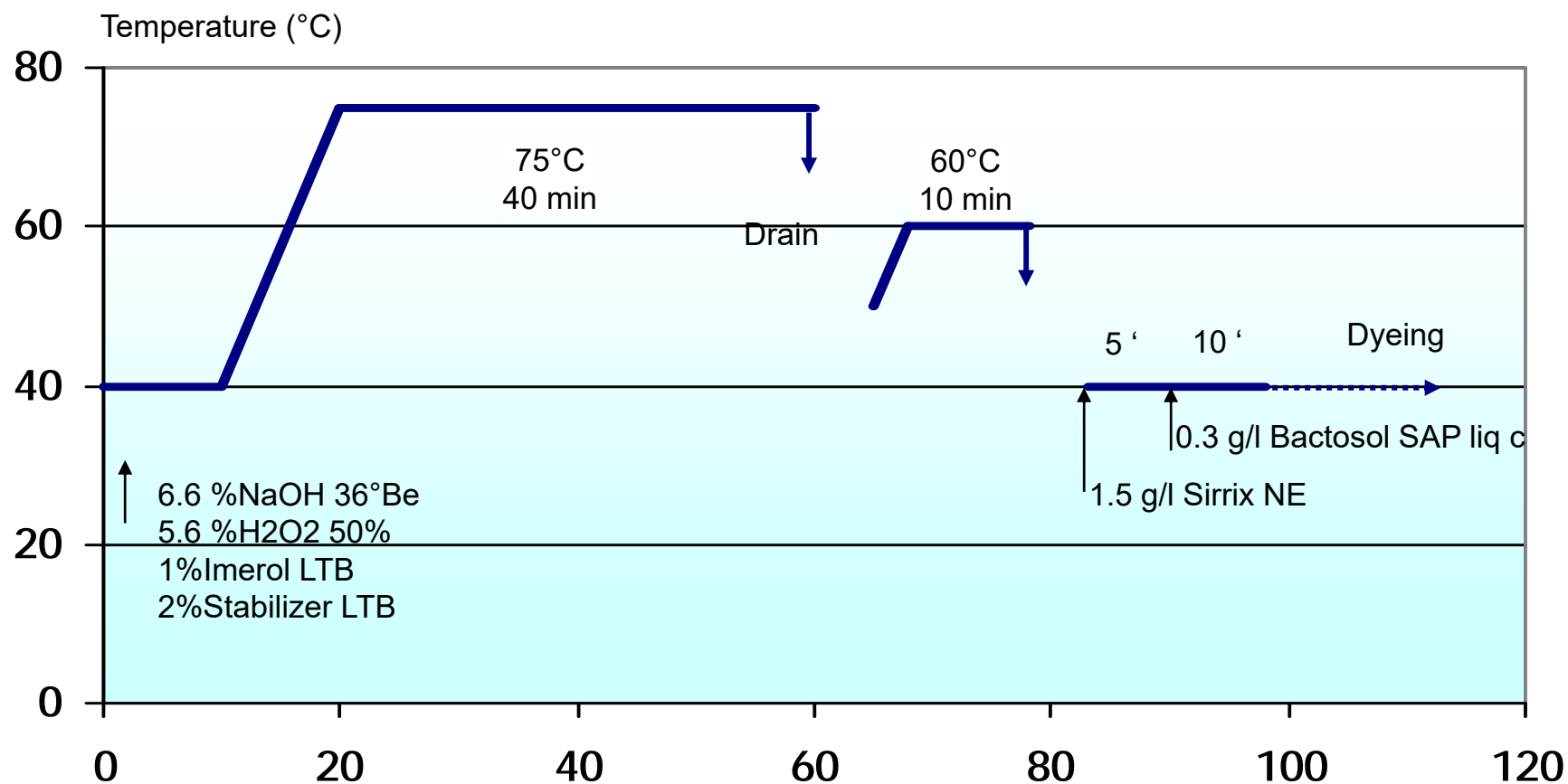
Essai 1

Essai 2

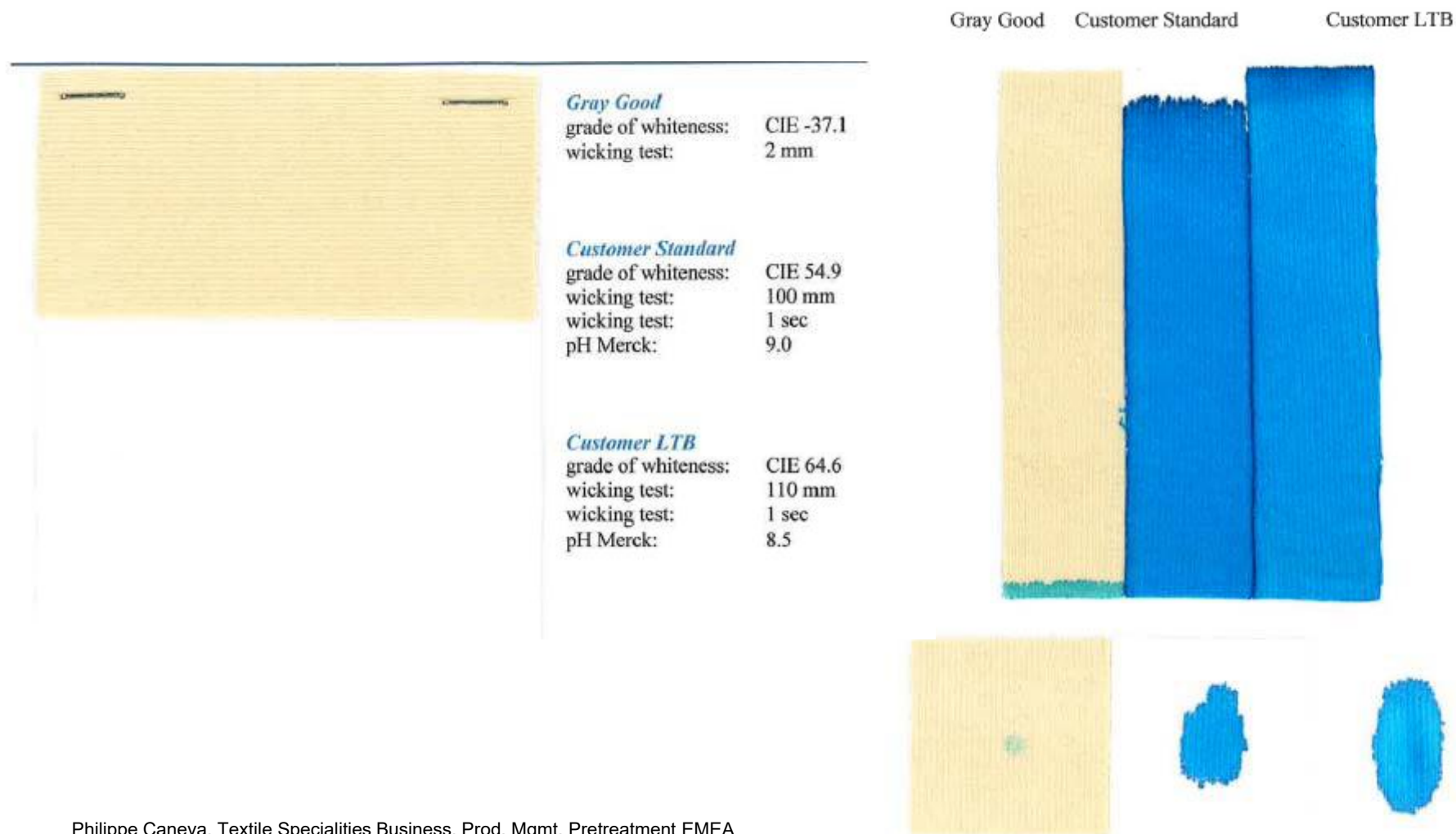


Low Temperature Bleaching

Cotton/Lycra 95%/5%

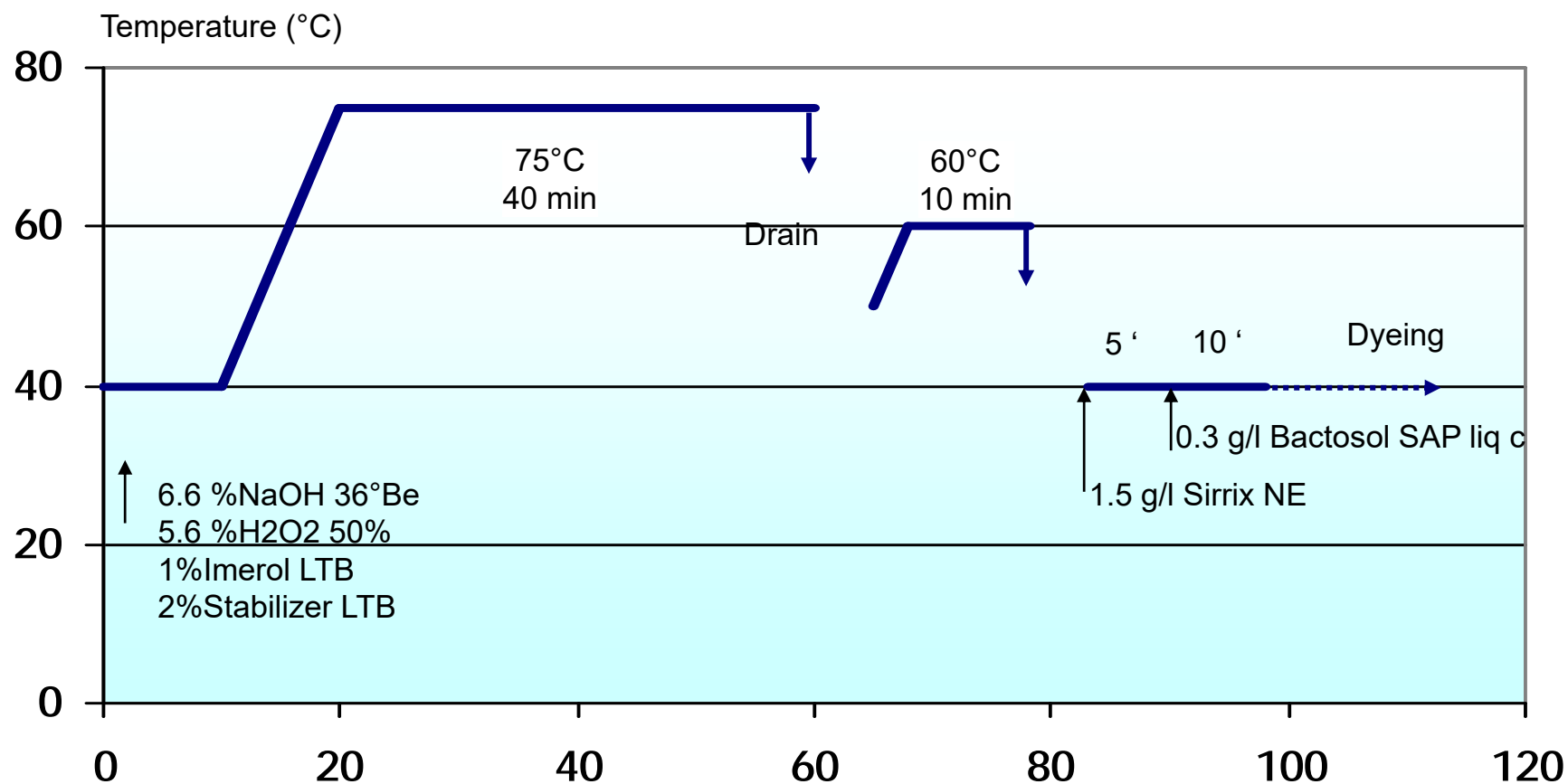


Low Temperature Bleaching (Italy) Cotton/Lycra 95%/5%



Low Temperature Bleaching

Yarn 100 % Cotton



Low Temperature Bleaching

Yarn 100 % Cotton

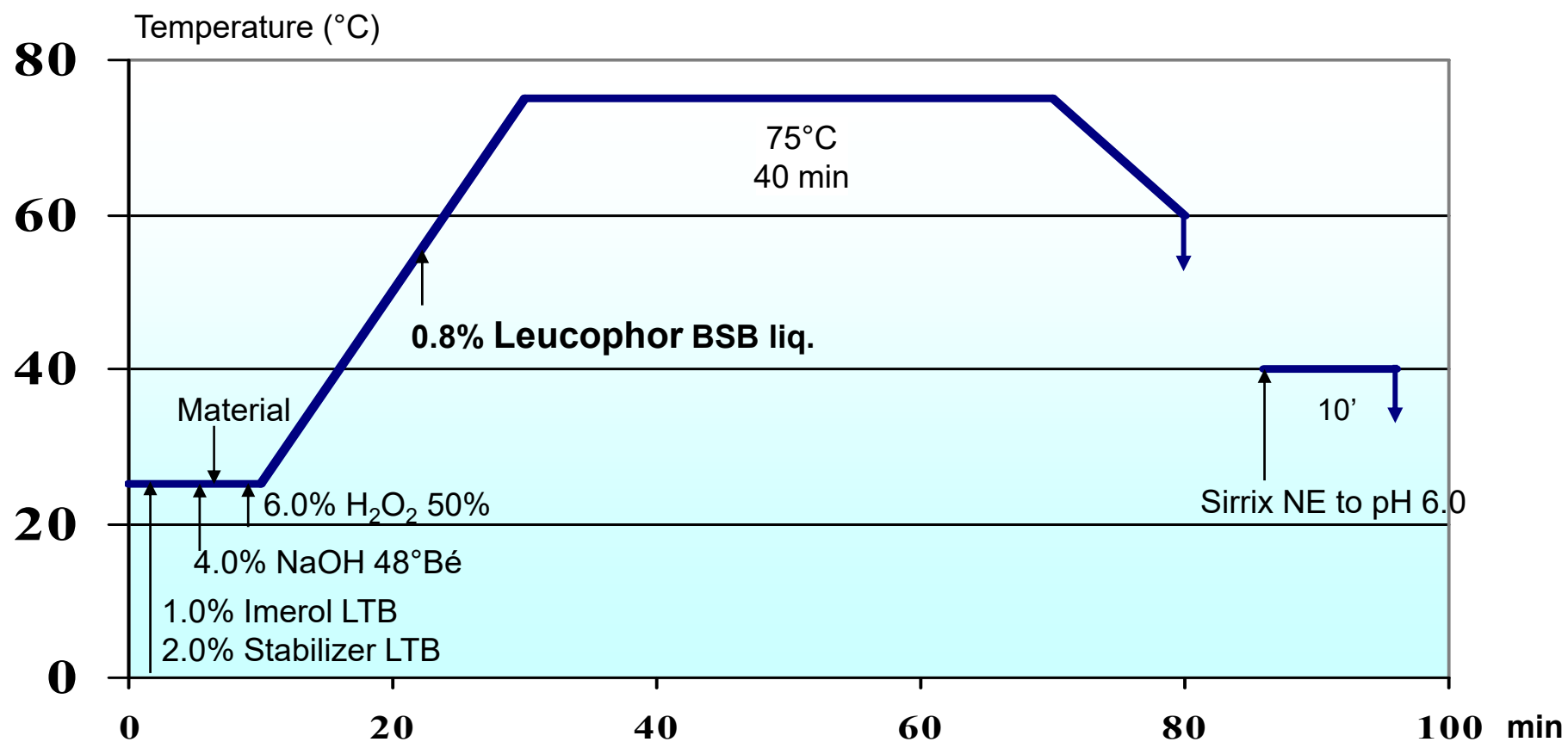


Degree of Whiteness CIE: 60,5

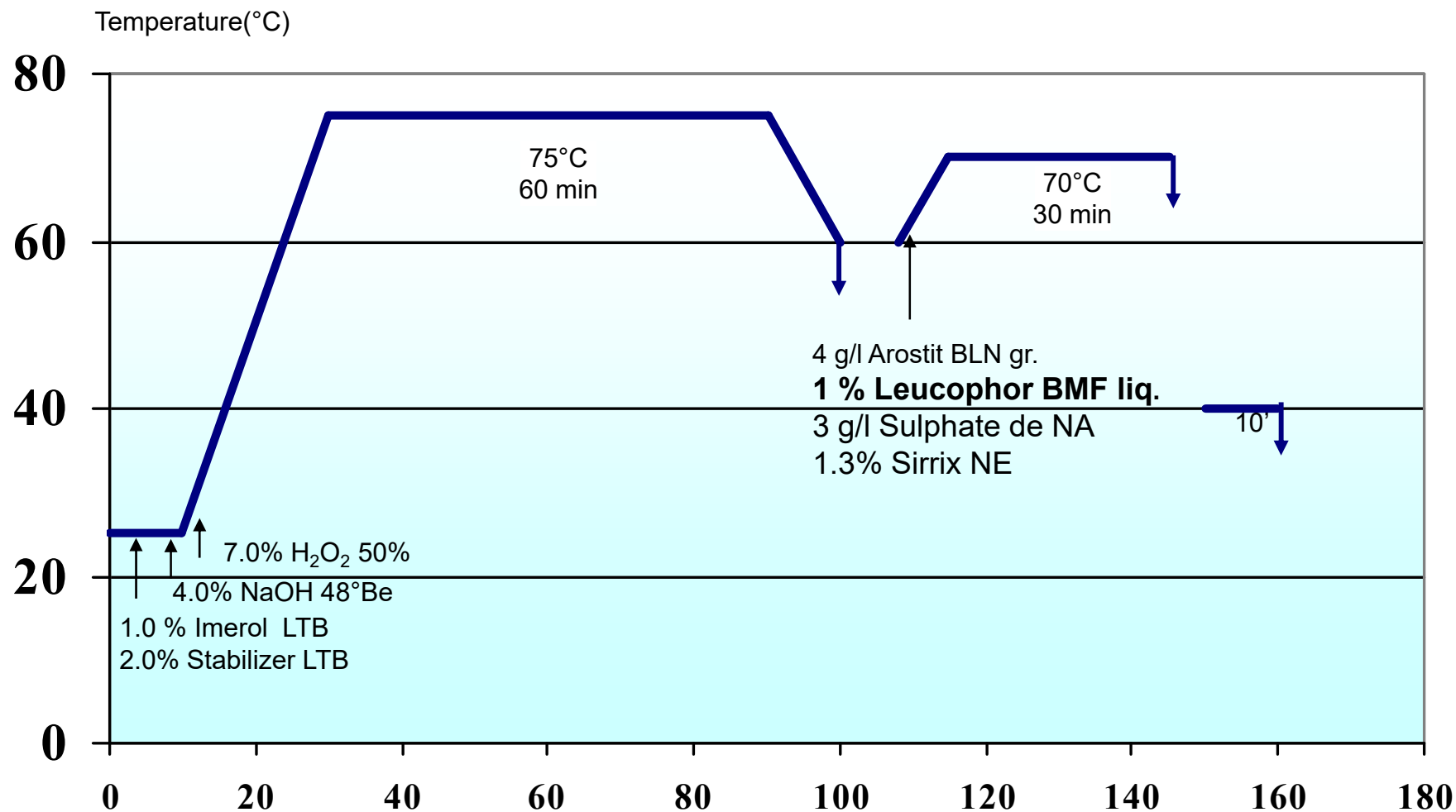
Absorbency: 110 mm

LTB and Fullwhite

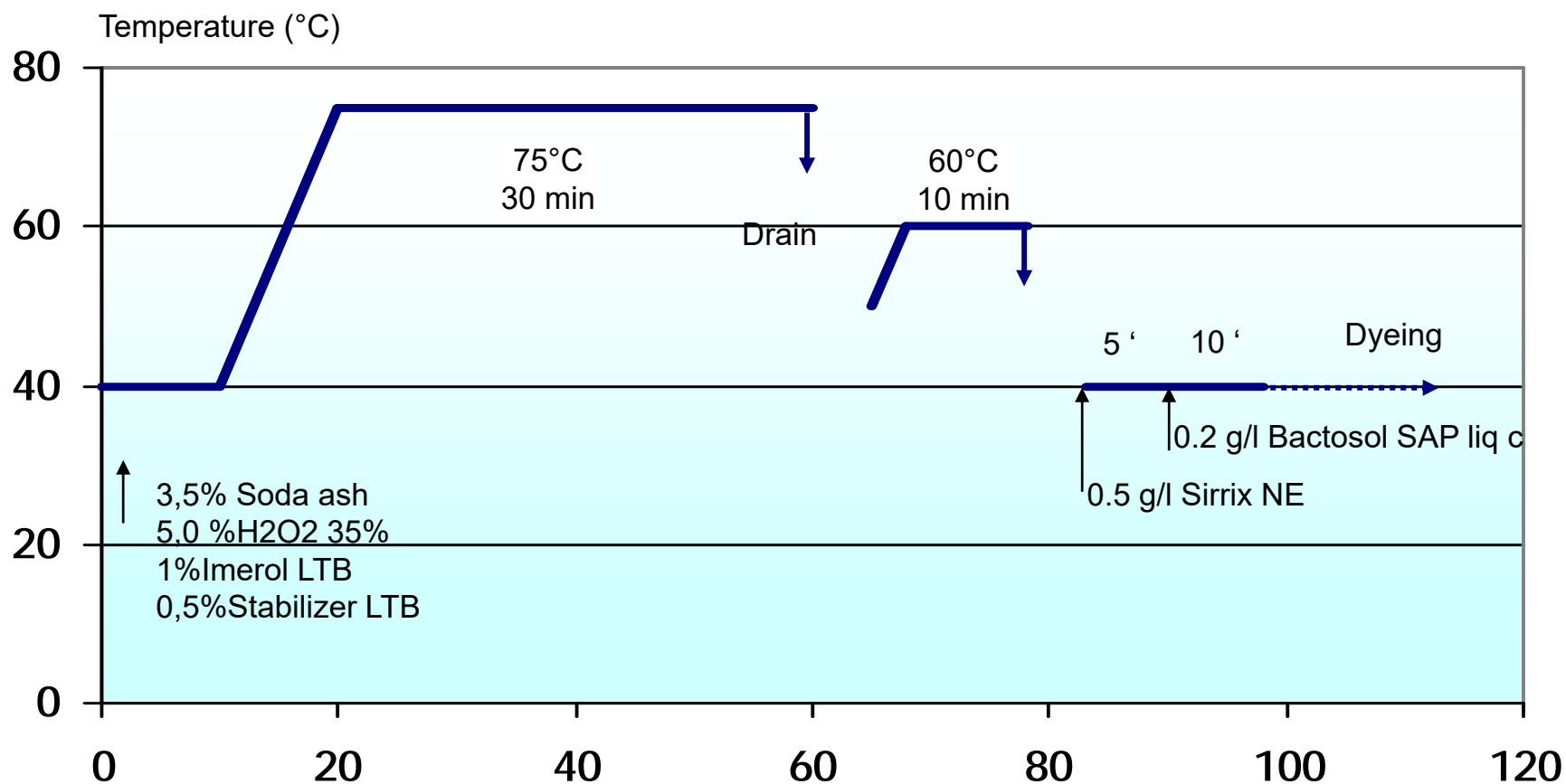
LTB Bleaching and OBA in one step



LTB Bleaching and OBA in 2 steps



LTB Bleaching on Viscose-Viscose/Lycra



LTB Bleaching on Viscose-Viscose/Lycra



Degree of Whiteness CIE: 77,0