

Denim Mills



techna italia
Prodotti chimici industriali

OFFICINA³⁹

CHEMISTRY PLUS CREATIVITY



Indigo Warp Dyeing

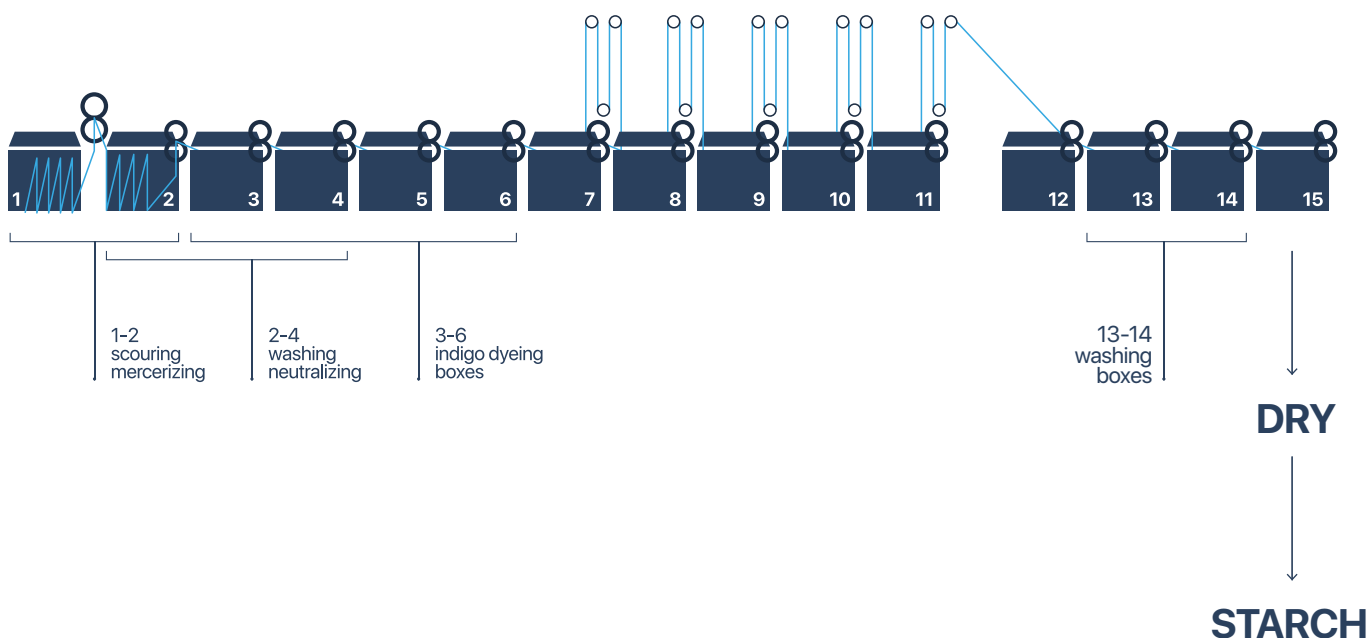
CONTINUOUS INDIGO OR INDIGO SULPHUR BLACK DYEING

The steps:

- Scouring/mercerizing
- Washing/neutralizing
- Indigo dyeing
- Washing

The machines:

- Slasher
- Ropes



Indigo Dyeing Process

INDICATIVE PROCESS

- Box number 1: Scouring/mercerizing recipe
- Box number 2: Scouring/mercerizing recipe
- Box number 3: Wash at 60°C
- Box number 4: Wash at 80°C
- Box number 5: Cold wash
- Box number 6: Cold wash
- Box number 7: Indigo dyeing recipe
- Box number 8: Indigo dyeing recipe
- Box number 9: Indigo dyeing recipe
- Box number 10: Indigo dyeing recipe
- Box number 11: Indigo dyeing recipe
- Box number 12: Cold wash
- Box number 13: Cold wash
- Box number 14: Cold wash
- Box number 15: Finishing (softener and/or **NOVOFIL TNC**)



Scouring/mercerizing recipe (boxes 1 and 2):

Working wet on dry,

16-18° Bé Caustic Soda

5 gr/l **DETERWET NA** (special wetting/detergent compound suitable for strong alkali conditions)

2 gr/l **SEQUESTRANTE 549** (iron sequestering agent with high dispersing properties)

Boxes must be at room temperature

Washing (boxes 3 to 6):

To wash-off the impurities removed during the scouring/mercerizing step

Indicative Indigo recipe (boxes 7 and 11):

6-10 gr/l Indigo in powder form

6-8 gr/l Sodium Hydrosulphite

6 gr/l Caustic Soda 100%

1-2 gr/l **DETERWET FSE-M** (wetting agent)

1 gr/l **SEQUESTRANTE 549** (sequestering)

1-2 gr/l **DISPERSOLO WS** (dispersing agent for Indigo)

Washing (boxes 12 to 15):

Remove the residual sodium hydrosulphite, caustic soda and unfixed indigo.

To improve this washing process add 2 gr/l of **PERMACOL RK**.

Indigo Dyeing Process

BLUE / BLACK

Two ways to apply sulphur black:

→ ***Bottoming***

→ ***Topping***

Bottoming Indicative process

- Box number 1: Scouring/mercerizing recipe
- Box number 2: Wash at 40°C
- Box number 3: Wash at 60°C
- Box number 4: Sulphur Black
- Box number 5: Cold wash
- Box number 6: Cold wash
- Box number 7: Indigo dyeing recipe
- Box number 8: Indigo dyeing recipe
- Box number 9: Indigo dyeing recipe
- Box number 10: Indigo dyeing recipe
- Box number 11: Indigo dyeing recipe
- Box number 12: Wash at 60°C
- Box number 13: Wash at 40°C
- Box number 14: Wash at 40°C
- Box number 15: Finishing

Indicative Sulphur Black recipe (box 4):

30 cc/l **SULPHUR BLACK** in liquid form.
8 cc/l **NOVOX B CONC**
1 cc/l **DETERWET FSE-M**
4-6 cc/l NaOH 50%
1-2 gr/l **SEQUESTRANTE 549**
bath temperature 70-80°C

Topping Indicative process

- Box number 1: Scouring recipe
- Box number 2: Scouring recipe
- Box number 3: Wash at 40°C
- Box number 4: Wash at 80°C
- Box number 5: Cold wash
- Box number 6: Cold wash
- Box number 7: Indigo dyeing recipe
- Box number 8: Indigo dyeing recipe
- Box number 9: Indigo dyeing recipe
- Box number 10: Indigo dyeing recipe
- Box number 11: Indigo dyeing recipe
- Box number 12: Washing
- Box number 13: Sulphur dyeing bath
- Box number 14: Oxidizing/Fixing
- Box number 15: Finishing

Indicative Sulphur dyeing bath recipe (box 13):

30 gr/l SULPHUR dyestuffs (Black or Brown, Olive,...)
20-30 gr/l **RIDUCENTE DS**
1 gr/l **DETERWET FSE-M**
1-2 gr/l **SEQUESTRANTE 549**
bath temperature 75-85°C

Indicative oxidizing recipe "pad-ox" (box 14):

30 gr/l **OXIDOL CLR**
30 gr/l Acetic Acid
30 gr/l **NOVOFIX FF 25**
bath temperature 70-80°C

BLACK ON BLACK Indicative process

- Box number 1: Scouring/mercerizing bath
- Box number 2: Scouring/mercerizing bath
- Box number 3: Wash at 40°C
- Box number 4: Wash at 60°C
- Box number 5: Wash at 60°C
- Box number 6: Sulphur Black
- Box number 7: Sulphur Black
- Box number 8: Wash at room temperature
- Box number 9: Wash at 60°C
- Box number 10: Wash at 60°C
- Box number 11: Oxidizing
- Box number 12: Oxidizing
- Box number 13: Wash at room temperature
- Box number 14: Wash at room temperature
- Box number 15: Wash at room temperature

Indicative Sulphur Black recipe (box 6 & 7):

100 cc/l LIQUID SULPHUR BLACK
8 cc/l **NOVOX B CONC**
1 cc/l **DETERWET FSE M**
4-6 cc/l NaOH 50%
1-2 gr/l **SEQUESTRANTE 549**
bath temperature 70-80 °C

Illustrative oxidizing recipe "pad ox" (box 11 & 12):

30 gr/l **NOVOFIX FF 25**
30 gr/l **OXIDOL CLR**
25 gr/l Acetic Acid
bath temperature 70-80 °C

Denim Mills Product

Dyeing Auxiliaries

DETERWET FSE-M

Powerful wetting agent for dye baths. It performs in a wide range of pH

DETERWET NA

Mercerizing agent stable and performing in strong alkaline conditions

DISPERSOLO WS

Dispersing/Stabilizing agent for Indigo

NOVOFIL TNC

Waxing agent to reduce yarn-to-yarn and yarn-to-metal friction
Perfectly suitable for rope-opening and to improve sewability

NOVOFIX FF 25

Fixing agent to improve washing fastness of Indigo

NOVOX B CONC

Stable reducing agent for dyeing with Sulphur Dyes

OXIDOL CLR

Oxidizing agent for the development of Sulphur Dyes with increased fastness and brighter hues

PERMACOL RK

Compound with solubilizing, dispersing, sequestering and levelling properties specifically for Indigo and Sulfur dyeing

RIDUCENTE DS

Ecological reducing agent for Sulphur Dyeing

SEQUESTRANTE 549

Universal sequestering/chelating agent designed for high performance in alkaline conditions

Other Auxiliaries

NOVOFIX WRI-S Special polymer to improve crocking fastness of Indigo and Black Sulphur

NOVOLUBE PAN 200 NEW Lubricant for rope-opening

REDUCER H-TD Reducing agent stable in steaming conditions

Auxiliaries for Fabric Desizing

DETERPAL AJ-T NEW Dispersing/Emulsifying agent with colloid protection properties, it keeps all impurities in fine dispersion

DETERWET MK Wetting/dereating agent with anti-foaming properties
Excellent wetting times with high twisted yarns

NOVALASE HT Alfa-amylase stable in high-temperature conditions
Recommended for pad-steam desizing

NOVALASE LT Alfa-amylase with high yield at low temperature,
recommended for continuous washing ranges

Auxiliaries for Mercerizing

DETERPAL TIM Anti-backstaining agent to prevent redeposition of Indigo
in washing and mercerizing of denim fabric

DETERWET NA Mercerizing agent stable and performing in strong alkaline conditions

OXIDOL CLR Oxidizing agent to prevent agglomeration of Indigo particles
and improves crocking fastness

OXIDOL PTR LIQ Anti-reducing agent during washing-off and mercerization of Indigo

SEQUESTRANTE 549 Universal sequestering/chelating agent designed for
high performance in alkaline conditions

Auxiliaries for Finishing

MICROFINISH BP NEW	Silicone micro-emulsion with soft and supple touch
MICROFINISH HY/B	Hydrophilic silicone micro-emulsion
MICROFINISH STCH/2	Elastomeric silicone, it improves elasticity and elastic recovery of stretch denim
NOAMIN AZ NEW	Anti-ozone softener with soft and bulky touch
NOVOFIL TNC	Waxing agent to reduce yarn-to-yarn and yarn-to-metal friction Perfectly suitable for rope-opening and to improve sewability
NOVOFIX WRI-S	Special polymer to improve crocking fastness of Indigo and Black Sulphur

Finishing Specialties

CATALYST ZF ECO	Catalyst/Crosslinker to improve durability of coating and lower curing temperature
NOVAPRET GLASS C LIQ	Self-polishing compound for pigmented leather-like looks
NOVAPRET NFC/LT	Zero-formaldehyde and low-curing DMDHEU resin for bleachable effects
NOVAPRET S-PF	Copolymer for soft and transparent films on denim
NOVAPRET WO13	PU for soft, transparent and elastic films on denim
NOVOCRYL A-VE	Copolymer for transparent and rigid films on denim
NOVOFOAMER EXTRA	Stable foaming agent for Gaston coating
NOVOPRINT SIM + NEBUDYE D	Special colored coating system for dischargeable effects on denim and pfd
SMART BLEACH	Alternative bleaching system for Chlorine-free discoloration of denim

Via Zandonai, 6 - 13900 Biella - Italy
+39 015 8492913 - info@officina39.com
www.technaitalia.com - www.officina39.com

