

TECHNOLOGY FOR DENIM AND DYEING

SMART INDIGO™

BECAUSE IT MAKES A DIFFERENCE



Now also for
SULPHUR
BLACK

➤ Smart Indigo™

Smart Indigo™ is an industrially proven technology that will make a difference by bringing a revolutionary change to the global denim and dyeing industry, combining benefits for the environment, the people and the producers of denim and other items.

First, Smart Leuco-Indigo revolutionized the denim process-now the same technology is available for **Sulphur Black** denim and dyeing as well.

green
technology



➤ Makes more from less

This revolutionary leuco-indigo process opens up a whole new range of opportunities:

- Electricity instead of chemicals
- High sustainability
- More ecological and economical
- Reduced health hazards
- Better color consistency and performance
- Savings in wastewater treatment and energy
- Easy to handle and more efficient

The same process is used for sulphur black reduction

➔ **SULPHUR BLACK.**

ELECTRICITY INSTEAD OF CHEMICALS

➤ Production on-site

“Smart Leuco-Indigo” and “Smart Sulphur Black” is produced by an electrochemical process consuming considerably fewer resources than existing methods. Using only pigment, caustic soda, water and electricity. In a fully automated process, the clean Leuco-Indigo / Sulphur Black is produced, metered and fed directly to the dye bath. The Smart Indigo™ solution is the most sustainable way to dye denim.

Without

- Chemicals
- Environmental burdens
- Health hazards
- Long transportation routes

Using

- Indigo pigment / Sulphur Black pigment
- Water
- Caustic soda
- Electricity

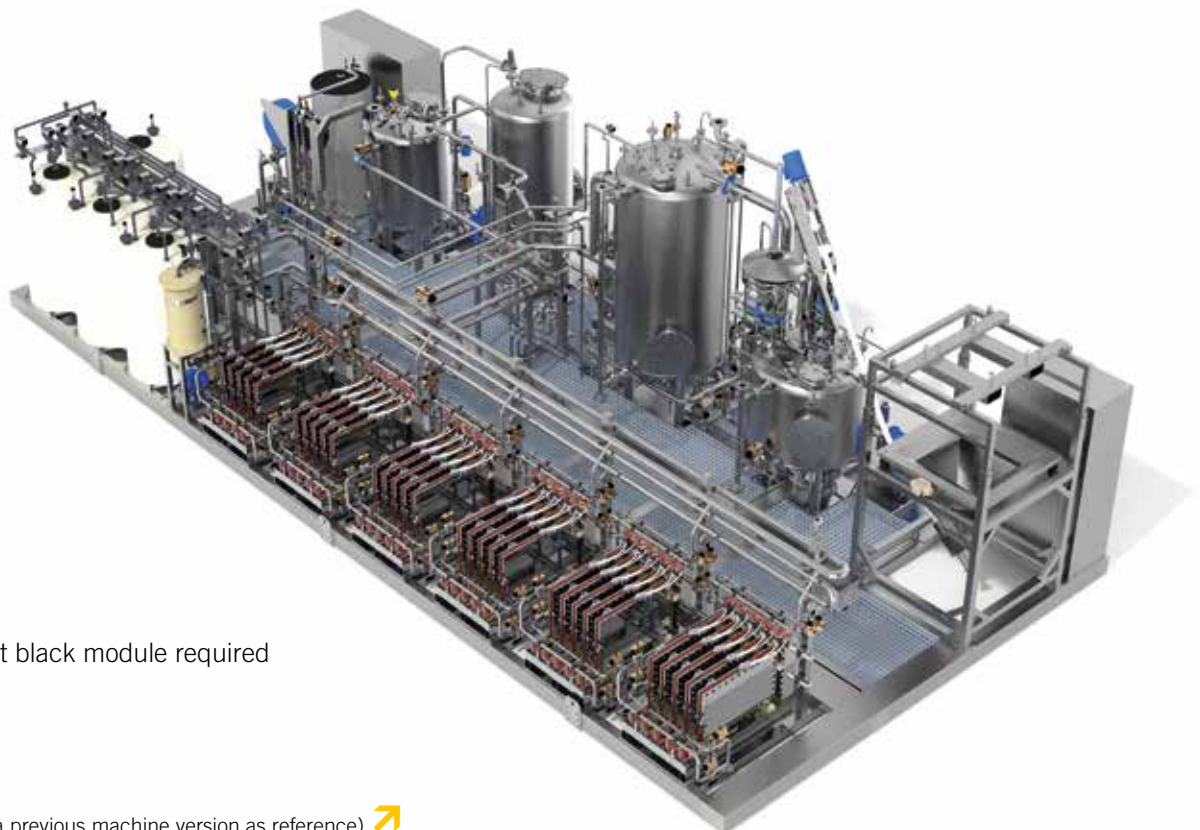
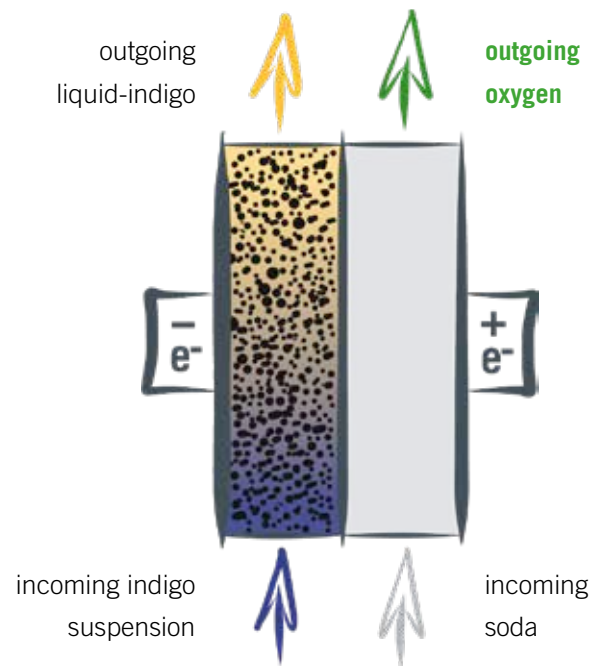
Discharging only

- Oxygen

Sulphur Black:

- Additional smart black module required

➤ 3-dimensional carbon electrode technology



(Example image shows a previous machine version as reference) ➤

PLANET – PEOPLE – PROFIT

➤ Planet – massively reduced pollution

- Reduced chemical load in wastewater
- Energy consumption reduced by a factor of six*
- Carbon footprint reduced by up to 90%*
- No transportation ways required

*smart ideas
move the world*



➤ People – healthier and safer workplaces

- No health hazards
- No handling of toxic chemicals
- No fire hazards

➤ Profit – favorable production

- Independence from pre-reduced Leuco-Indigo / Sulphur Black suppliers, their pricing and delivery conditions
- On-demand production on-site
- No costs for chemicals
- Significantly lower costs for energy, water & wastewater treatment*
- Improved reproducibility due to higher color consistency*

➤ Machine specification

- Dimensions approx.: 12 × 5.5 × 4.0 m (l × w × h) for 2-ton machine
- New scalable platform, allows different machine capacities
- Capacity: Smart Indigo™ (30%) 1 - 6 tons per day
Sulphur Black (435 GPL- 220%) 1- 10 tons per day
Transformation of approx. 400 tons of indigo powder (grain) per year for 4-ton machine
- Electricity consumption approx. 300 kWh to produce 1 ton Smart Indigo™ (30%)

*smart
fashion*



*Measured under real production conditions by several denim producers

SMART INDIGO – FOR DENIM AND DYEING

➤ No limits for denim and dyeing

Smart Indigo™ technology can be used in all applications where indigo or sulphur black dyeing is applied:

Classic cotton yarns (and any blend thereof), recycled yarns, Tencel™, Viscose, Modal, Wool/Silk, Blended yarns, ...

The Smart Indigo™ system is designed to integrate into existing indigo and sulphur dyeing lines without changing the downstream dyeing logic.

➤ Certifications & Sustainability Compliance

Smart Indigo™ technology complies with internationally recognized sustainability and chemical management frameworks within the denim industry.

Certifications and partnerships include:

- bluesign® certified product
- ZDHC Level 3 approved
- Fashion for Good partner

These certifications confirm compliance with strict environmental, chemical and occupational safety standards for modern dyeing operations.



➤ VANDEWIELE

Smart Indigo™ is part of VANDEWIELE, a market leader in designing and manufacturing high-tech machinery and solutions for the textile industry, headquartered in Kortrijk (Belgium). VANDEWIELE covers the entire textile production process – from yarn production to final finishing – with cutting-edge solutions for spinning, weaving and dyeing/finishing.

As an experienced specialist in denim dyeing, Smart Indigo™ stands for Swiss quality standards and the highest reliability. Our proven technologies help manufacturers stay at the forefront of the industry while supporting sustainability and safer working environments – because it makes a difference.

➤ Decision Summary – Why Smart Indigo™

- Electrochemical reduction technology for Leuco-Indigo and **Sulphur Black** dyeing
- No hazardous chemicals, no fire hazards, no toxic residues
- Fully automated, on-demand, on-site dye reduction
- Reduced operating costs for energy, water and wastewater treatment
- Certified, industrially proven and globally accepted technology

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