

# HydroBlue® 92

**Our leading solution for premium textile dyeing**



GOTS Approved Additive  
Approved Ecocert Greenlife  
GOTS-ECOCERT-08-00006

ROADMAP TO  
**ZERO**

The following BASF Hydrosulfite product range is now GOTS-approved: HydroSulfite F, HydroBlue® 90, HydroBlue® 92

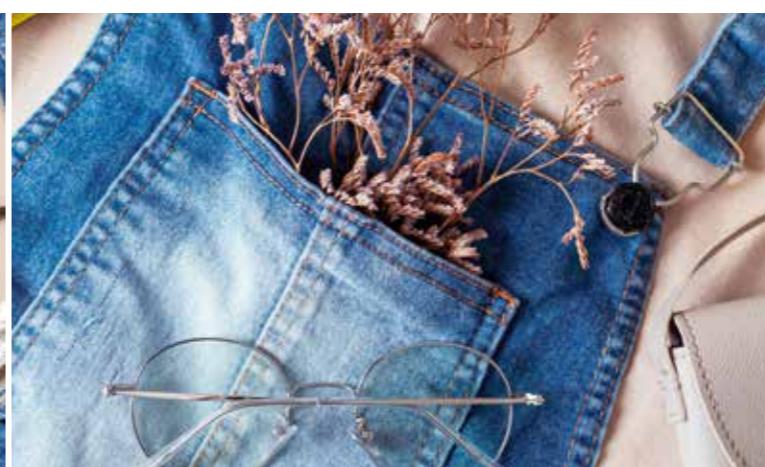
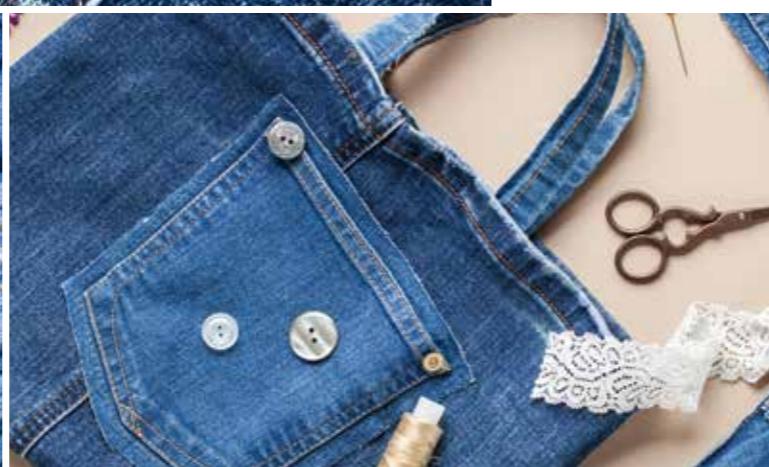
**BASF**

We create chemistry

*HydroBlue® 92*



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## About BASF

BASF is one of the world's largest chemical companies: We create chemistry for a sustainable future. With around 111,500 employees, six Verbund sites, and 239 additional production sites worldwide, we serve customers and partners in almost every country in the world.

The portfolio of BASF ranges from chemicals, materials, industrial solutions, surface technologies, and nutrition & care to agricultural solutions. We combine economic success with environmental protection and social responsibility. Through science and innovation, we enable our

customers in nearly every industry to meet the current and future needs of society. Through our major investments in research and development, we provide them with uniquely innovative products and sustainable competitive advantages.

Innovations in the chemical industry are nowadays not just based on the development of new chemicals, but increasingly on new materials and system solutions. For us, innovations of this kind require a broad portfolio and interdisciplinary cooperation as well as a deep understanding of technology and our customers' value chains.

## HydroBlue® 92

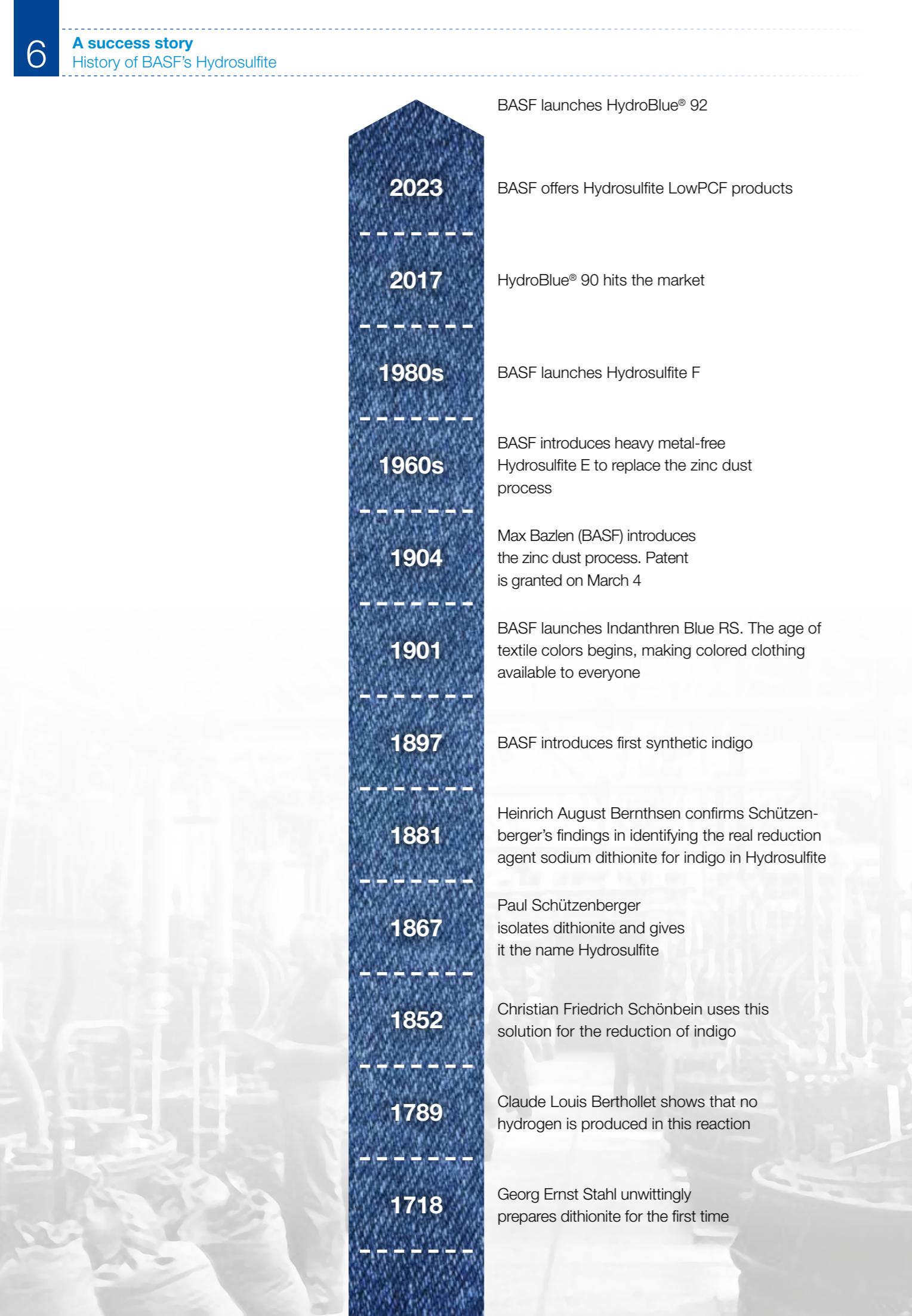
As the inventor of the original Hydrosulfite in 1904, we have massively improved on our heritage and are very proud to present the all-new first-choice dyeing product for leading suppliers of premium denim brands.

Due to its **long-term stable, odorless, and dustfree dithionite content of 92%**, it offers **consistent dyeing quality, reliability, and efficiency**,

comes with **less impurities** and leads to **less dosage**, combined with **safer handling** compared to our existing product variants.

Finally, quality-oriented customers around the world seeking process stability and best yield in dyeing application do not need to look any further. HydroBlue® 92 is always authentic.

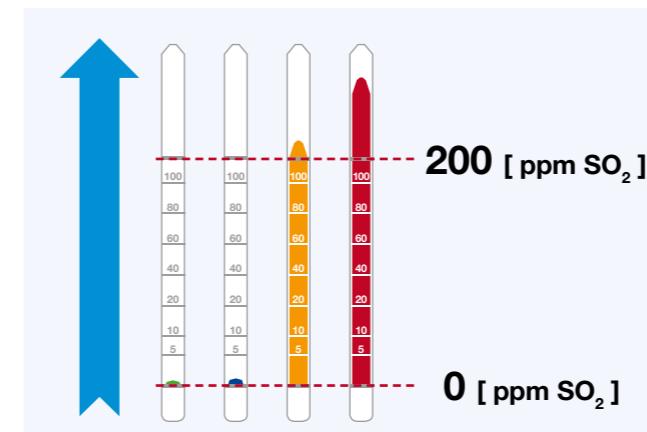




## Fresh colors, fresh air

HydroBlue® 92 is an improved formate-based Hydrosulfite which surpasses by far the market-standard Hydrosulfite grade, available on the market in quality and efficiency. Over other formate-based products, HydroBlue® 92 offers a higher sodium dithionite content of 92%, unprecedented stability and contains less impurities. This leads to an excellent consistency of dyeing results. Workers and production facilities will tremendously benefit, too, as conventional Hydrosulfites contain and release

considerable amounts of outgassed SO<sub>2</sub>. BASF measurements show that HydroBlue® 92 contains at least 200 times less SO<sub>2</sub> than the standard formate-based Hydrosulfites available on the market. Even compared to our HydroBlue® 90 we do see an improvement as HydroBlue® 92 has a metering range of 0 ppm SO<sub>2</sub>. Besides the benefit of being odorless, HydroBlue® 92 is also dustfree: Another important factor for workers and production facilities.



## BASF trial on SO<sub>2</sub> metering range

BASF HydroBlue® 92	= 0 ppm or close to 0 ppm
BASF HydroBlue® 90	< 1 ppm
Zinc dust grade	>200 ppm
Market standard formate grade	>>200 ppm

## Stable product leads to extra-long shelf life of at least two years

Measurements certify the excellent stability of HydroBlue® 92. A comparison to other grades, conducted by a university specializing in textiles, shows that HydroBlue® 92 is the most stable Hydrosulfite on the market.

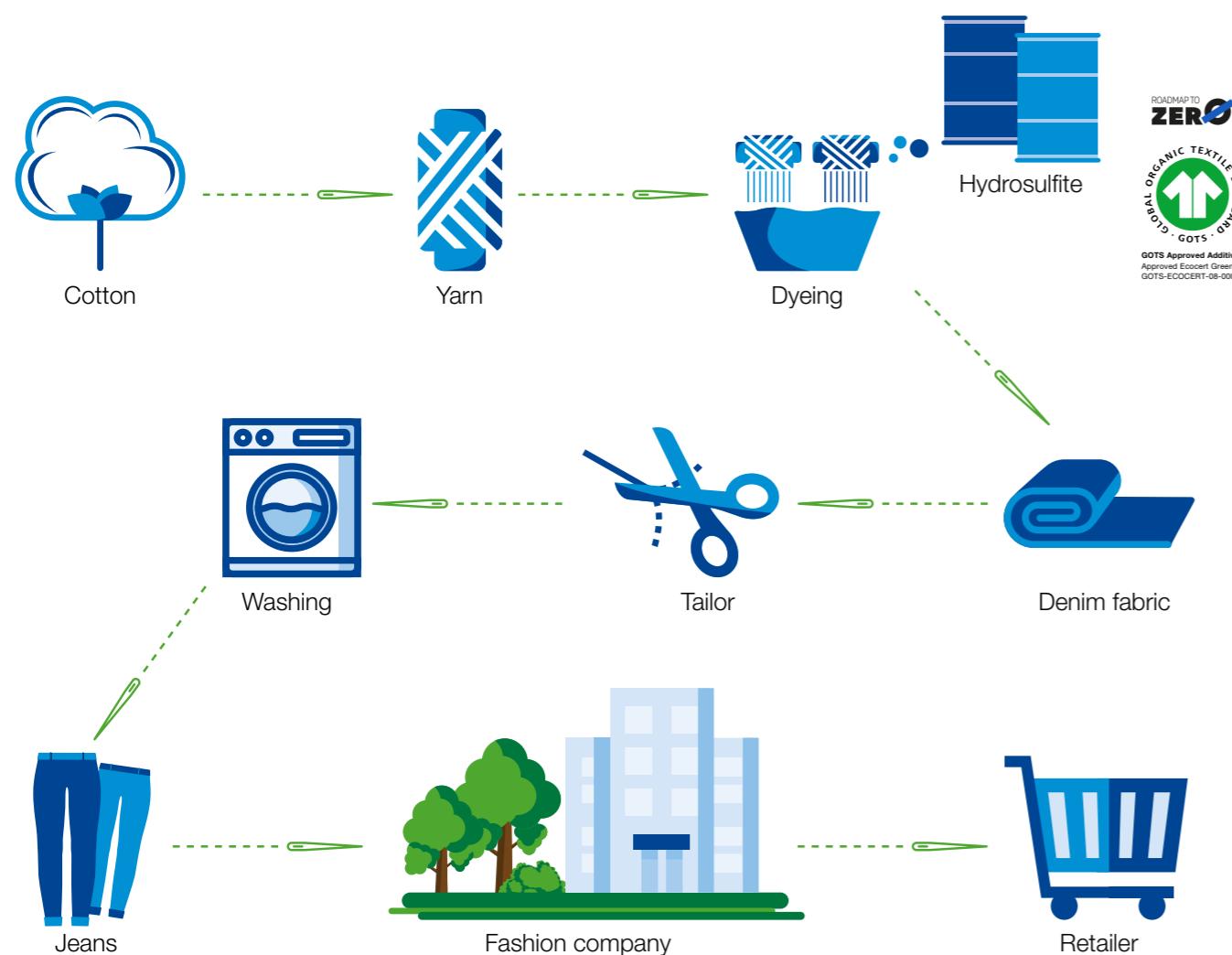
Hydrosulfite is converted from SO<sub>2</sub> using a strong reducing agent. Less SO<sub>2</sub> means less decomposition and higher stability. Therefore, a sulfuric smell is an indicator of decomposition.

**92 % dithionite  
odorless  
dustfree  
less  
impurities**

## HydroBlue® 92 will optimize your value chain

Sodium dithionite is a reducing agent, added in the yarn dyeing process with the indigo before denim fabric is made. Unique to BASF, the stable sodium dithionite content of HydroBlue® 92 products ensures an even steadier and

more consistent dyeing effect on the yarn to minimize off-specification products along the value chain. It increases your efficiency, the safety of your workers, the quality of your products, and the satisfaction of your customers.



The quality of Hydrosulfite is one of the most important factors for denim as well as for vat dyeing processes manufacturers because faults in denim dyeing are difficult to detect until the very last moment – i.e. when the jeans have been produced. This means that denim quality largely depends on the quality of the Hydrosulfite reducing agent and

indigo used. Manufacturers can directly impact their production by choosing BASF's consistent product quality. Our further improved formate process enables us to achieve our new best product quality and stability as of now available, named HydroBlue® 92.

## Benefits at a glance

HydroBlue® 92 offers unique improvements and benefits to various departments and people across different areas of responsibility of a dyeing company.

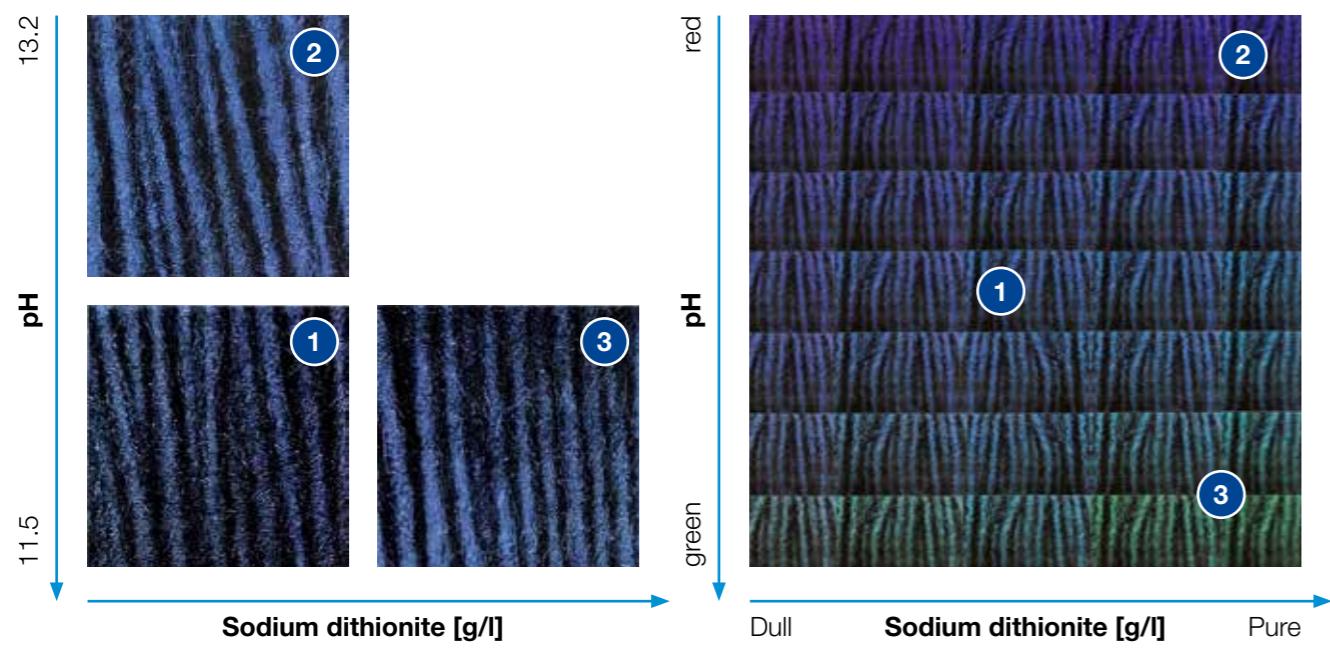
### BENEFITS FOR DYEING COMPANIES

- |                 |   |
|-----------------|---|
| Owner           | <ul style="list-style-type: none"> <li>Higher revenues through higher production share of A-quality denim – even for manufacturing of small denim batch sizes due to outstanding product consistency.</li> <li>Sustainable solution, significant increase of EHS (Environment, Health &amp; Safety) standards, and workers' satisfaction as HydroBlue® 92 is stable, odorless (<math>\text{SO}_2</math> of 0 ppm), and dustfree.</li> <li>Better image due to reliable high quality, high safety standards, and various certifications (like ZDHC Level 3 v3.1 as well as GOTS).</li> </ul> |
| Dyeing manager  | <ul style="list-style-type: none"> <li>Higher revenues through higher production share of A-quality denim – even for manufacturing of small denim batch sizes due to outstanding product consistency.</li> <li>Continuous, stable, and uniform dyeing quality and better color strength results are possible as HydroBlue® 92 offers better process stability.</li> </ul>   |
| Production      | <ul style="list-style-type: none"> <li>Stable and uniform dyeing quality even for manufacturing of small denim batch sizes. Less effort in production for cleaning and analyzing, combined with higher production security (no lumps, no caking).</li> <li>Reduced risk of incidents because of improved EHS standards (stability, odorless and dustfree).</li> <li>Metering range shows 0 ppm <math>\text{SO}_2</math> for HydroBlue® 92.</li> </ul>   |
| Purchasing      | <ul style="list-style-type: none"> <li>Higher efficiency of HydroBlue® 92 compared to other Hydrosulfites due to higher dithionite content.</li> <li>Income stream through selling used high-quality drums. Alternatively: savings by reusing drums internally.</li> <li>Achieve and secure stable and continuous dyeing quality in production.</li> <li>Due to higher dithionite content dosage level can be reduced.</li> </ul>   |
| Quality manager | <ul style="list-style-type: none"> <li>Achieve stable and uniform dyeing quality even for manufacturing of small denim batch sizes. Less effort in production for cleaning and analyzing, combined with higher production security (no lumps, no caking).</li> <li>Reduced risk of incidents because of improved EHS standards (stability, odorless and dustfree).</li> <li>Certified according to ZDHC Level 3 v3.1 and GOTS. Can be used to produce textiles in line with OEKO-TEX® standards.</li> </ul>   |



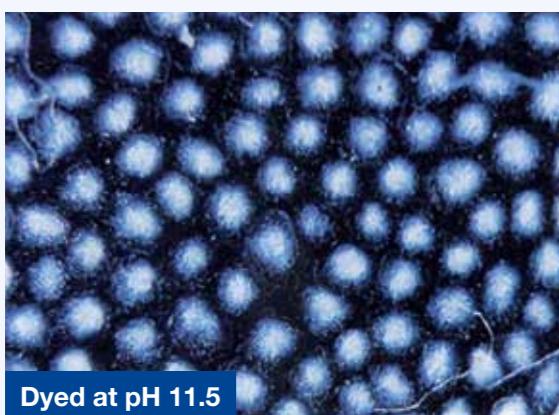
## Influence of sodium dithionite – color shade

Change in color shades:

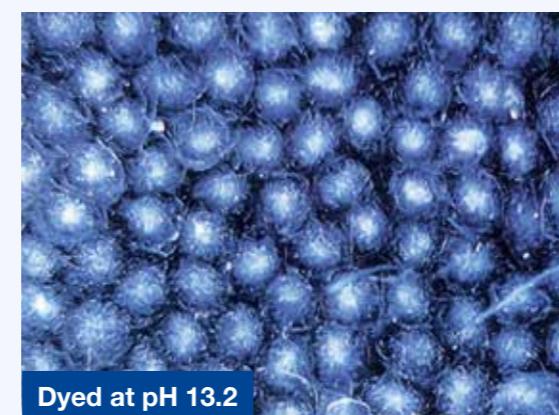


The indigo-dyed yarn may appear more greenish, reddish, dull, or pure depending on the ratio of sodium dithionite and caustic soda. The smallest variation in terms of sodium dithionite content can affect dyeing results, such as ring dyeing, fastness, and color fixation. Thanks to the stable sodium dithionite content in HydroBlue® 92, consistent dyeing results enable manufacturers to reproduce the same shade.

## Ring dyeing



Dyed at pH 11.5



Dyed at pH 13.2

Dyed at pH 11.5, the ring dyeing effect is more distinctive, compared to pH 13.2 where greater dye penetration is visible.

## Why choosing HydroBlue® 92?

All features and benefits at a glance.



### Consistent dyeing quality

Reliable results for A-quality denim



### Free-flowing crystal behavior

Stable for indigo dyeing



### $\text{SO}_2$

No release of  $\text{SO}_2$  in production facilities



### Less heavy metals

Meets criteria set by leading fashion companies



### External study proofs the highest yield

92 % dithionite content leads to higher process efficiency



### Safe handling

Odorless, dustfree, 50 kg or 110 kg drums with tension ring, unpressurized



### Outstanding stability

Exceptional consistency ensures the uniform shade of color



### Improved processability

Drum that is easy to open and close



### Longer shelf life

Stable content extends the shelf life to two years



### Complying to quality standards

ZDHC Level 3 v3.1, GOTS. Can be used for the processing of textiles that meet the requirements of OEKO-TEX®.



The background of the entire page is a close-up photograph of a stack of folded denim jeans. The jeans are folded in several horizontal layers, creating a visual texture of different shades of blue from dark navy to light wash. The denim material has a distinct woven pattern and visible stitching along the edges.

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