

HydroBlue® 92

Our leading solution for premium textile dyeing



ROADMAP TO
ZERO

BASF
We create chemistry

HydroBlue® 92

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



We create chemistry.....	4
The quality brand.....	5
A success story.....	6
Premium features.....	7
An optimized process.....	8
Benefits for all.....	9
Influence of sodium dithionite.....	10
HydroBlue® 92 in 30 seconds.....	11



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.



BASF launches HydroBlue® 92

2023

BASF offers Hydrosulfite LowPCF products

2017

HydroBlue® 90 hits the market

1980s

BASF launches Hydrosulfite F

1960s

BASF introduces heavy metal-free Hydrosulfite E to replace the zinc dust process

1904

Max Bazlen (BASF) introduces the zinc dust process. Patent is granted on March 4

1901

BASF launches Indanthren Blue RS. The age of textile colors begins, making colored clothing available to everyone

1897

BASF introduces first synthetic indigo

1881

Heinrich August Bernthsen confirms Schützenberger's findings in identifying the real reduction agent sodium dithionite for indigo in Hydrosulfite

1867

Paul Schützenberger isolates dithionite and gives it the name Hydrosulfite

1852

Christian Friedrich Schönbein uses this solution for the reduction of indigo

1789

Claude Louis Berthollet shows that no hydrogen is produced in this reaction

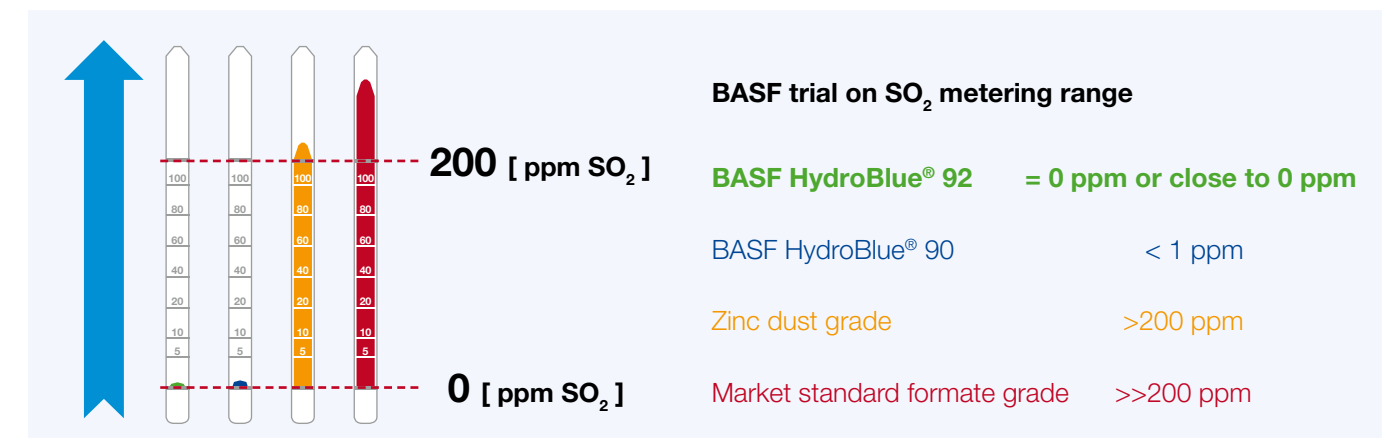
1718

Georg Ernst Stahl unwittingly prepares dithionite for the first time

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 SO₂. BASF measurements show that HydroBlue® 92 contains at least 200 times less SO₂ 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 SO₂. Besides the benefit of being odorless, HydroBlue® 92 is also dustfree: Another important factor for workers and production facilities.



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.

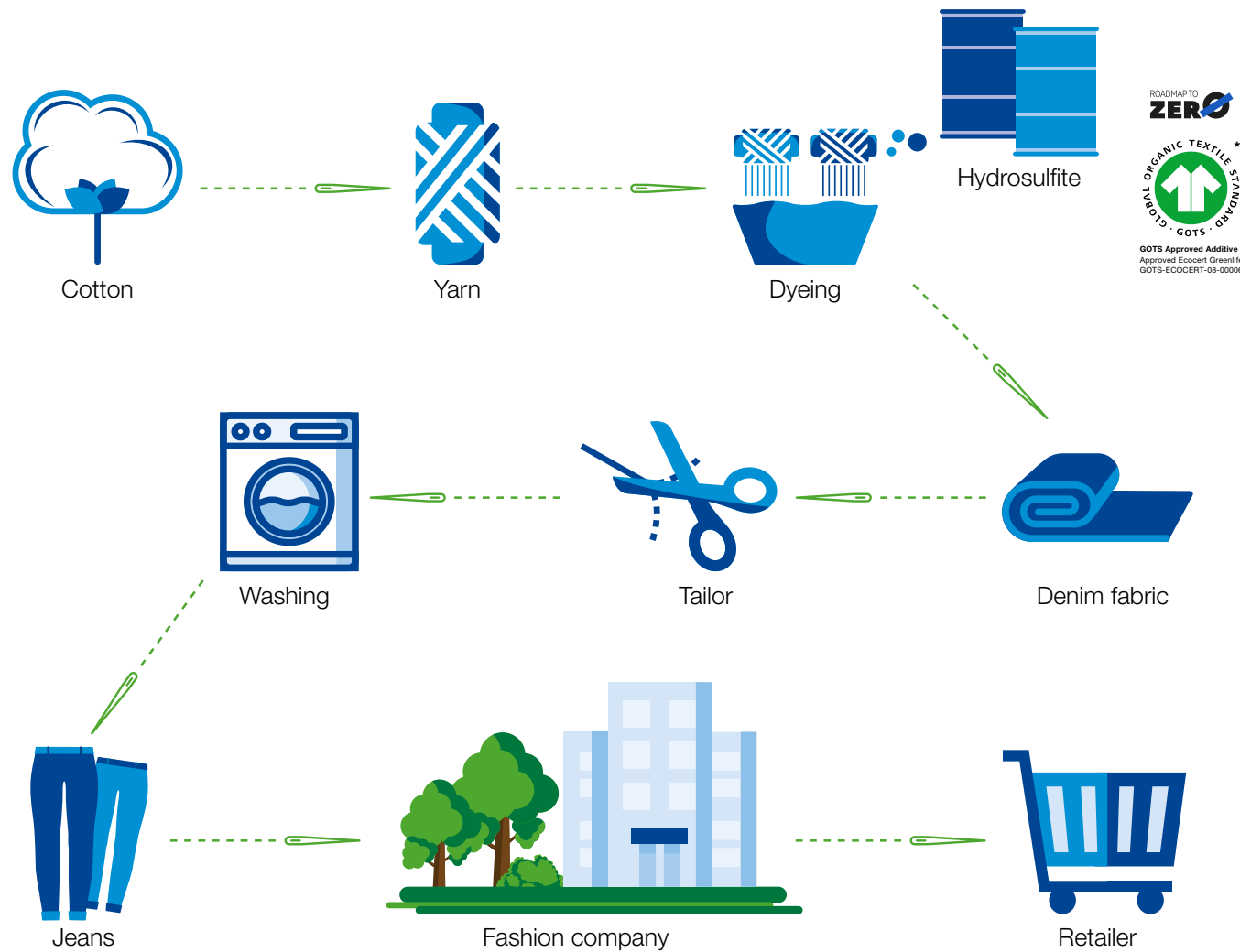
! Hydrosulfite is converted from SO₂ using a strong reducing agent. Less SO₂ means less decomposition and higher stability. Therefore, a sulfuric smell is an indicator of decomposition.

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.

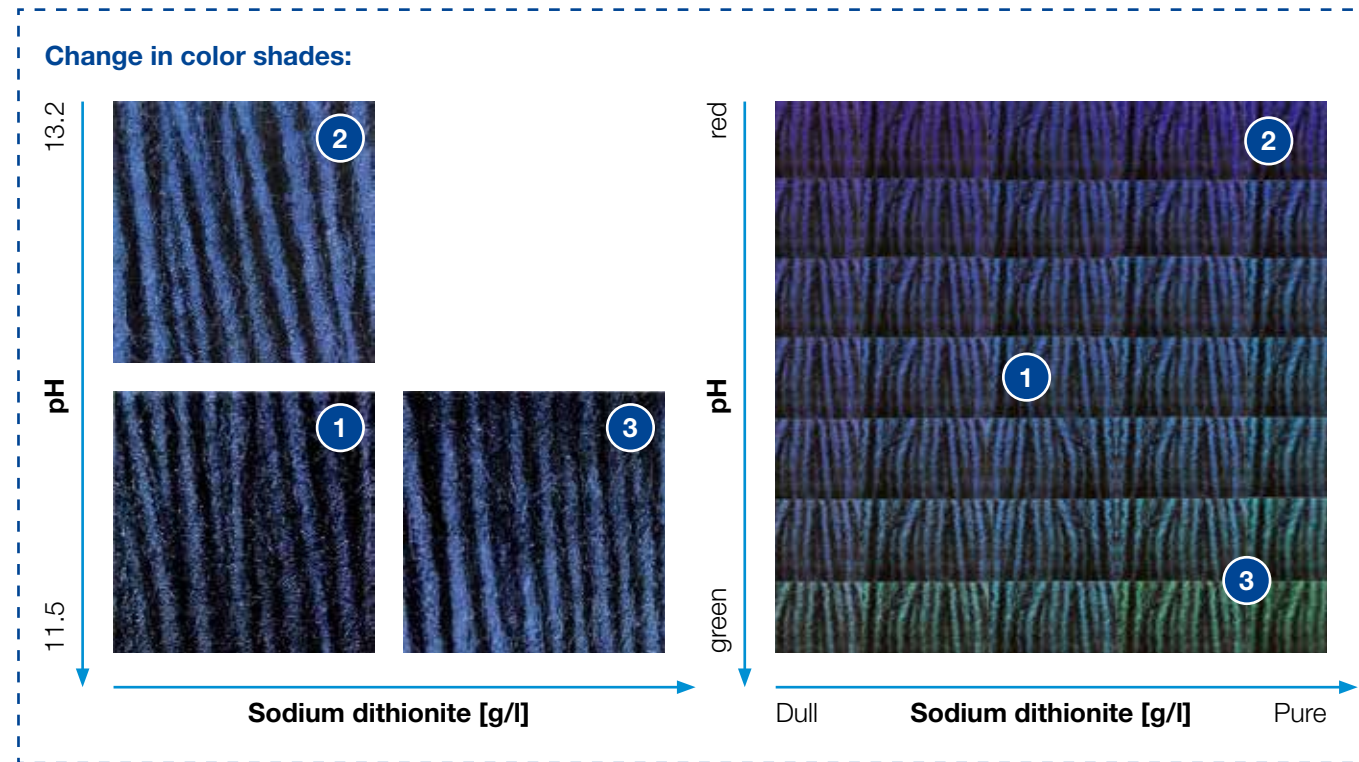
BENEFITS FOR DYEING COMPANIES

Owner	<ul style="list-style-type: none"> Higher revenues through higher production share of A-quality denim – even for manufacturing of small denim batch sizes due to outstanding product consistency. 	<ul style="list-style-type: none"> Sustainable solution, significant increase of EHS (Environment, Health & Safety) standards, and workers' satisfaction as HydroBlue® 92 is stable, odorless (SO₂ of 0 ppm!), and dustfree. 	<ul style="list-style-type: none"> Better image due to reliable high quality, high safety standards, and various certifications (like ZDHC Level 3 v3.1 as well as GOTS).
Dyeing manager	<ul style="list-style-type: none"> Higher revenues through higher production share of A-quality denim – even for manufacturing of small denim batch sizes due to outstanding product consistency. 	<ul style="list-style-type: none"> Continuous, stable, and uniform dyeing quality and better color strength results are possible as HydroBlue® 92 offers better process stability. 	
Production	<ul style="list-style-type: none"> 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). 	<ul style="list-style-type: none"> Reduced risk of incidents because of improved EHS standards (stability, odorless and dustfree). 	<ul style="list-style-type: none"> Metering range shows 0 ppm SO₂ for HydroBlue® 92.
Purchasing	<ul style="list-style-type: none"> Higher efficiency of HydroBlue® 92 compared to other Hydrosulfites due to higher dithionite content. 	<ul style="list-style-type: none"> Income stream through selling used high-quality drums. Alternatively: savings by reusing drums internally. 	<ul style="list-style-type: none"> Achieve and secure stable and continuous dyeing quality in production. Due to higher dithionite content dosage level can be reduced.
Quality manager	<ul style="list-style-type: none"> 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). 	<ul style="list-style-type: none"> Reduced risk of incidents because of improved EHS standards (stability, odorless and dustfree). 	<ul style="list-style-type: none"> Certified according to ZDHC Level 3 v3.1 and GOTS. Can be used to produce textiles in line with OEKO-TEX® standards.



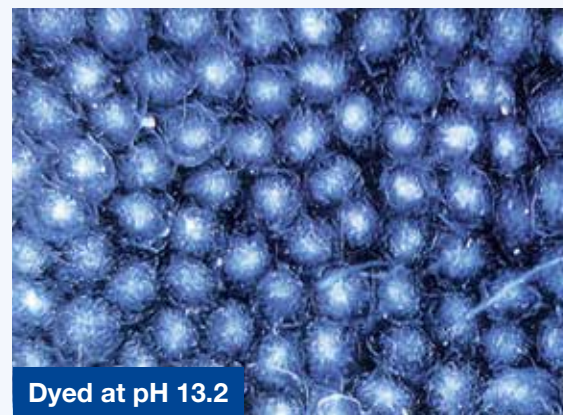
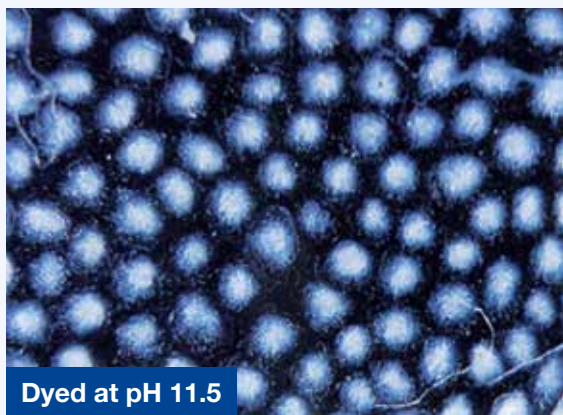
* The following BASF Hydrosulfite product range is now GOTS-approved: Hydrosulfite F, HydroBlue® 90, HydroBlue® 92

Influence of sodium dithionite – color shade



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, 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

**Odorless**

No release of SO₂ 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®.



BASF SE

Monomers Division
67056 Ludwigshafen Germany
hydrosulfite@basf.com
www.hydrosulfite.com

Disclaimer:

Exclusion of liability clause

The data contained in this publication are based on our current knowledge and experience. In view of the many factors that may affect the processing and use of our product, these data do not relieve processors of the responsibility to carry out their own inspections and tests, neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights, etc. given herein may change without prior notice and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient to ensure that all proprietary rights, laws, and legislation are observed.

HydroBlue® 90, HydroBlue® 92 = registered trademark of BASF SE

OekoTex® = registered trademark of Forschungsinstitut Hohenstein Prof. Dr. Jürgen Mecheels GmbH & Co. KG

Picture credits:

Title: Shutterstock/Marina_Nik_11
Page 2+3: Shutterstock/Silvia Stoyanova;
Shutterstock/Picha.S;
Shutterstock/NatalyaBond;
Shutterstock/o mundo de Le
Page 4+5: BASF
Page 6: BASF
Page 9: BASF
Page 10: BASF
Page 11: Shutterstock/Dusya Kan
Back: Shutterstock/urfin