

HydroBlue[®] 90

Our solution for consistent
dyeing results

 **BASF**

We create chemistry

HydroBlue[®] 90
Always authentic.



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About BASF

BASF is one of the world's leading chemical companies: We create chemistry. With more than 100,000 employees, six Verbund sites, and more than 370 additional production sites worldwide, we serve customers and partners in almost every country in the world.

The portfolio of BASF ranges from chemicals, plastics, performance products, and crop protection products to oil and gas. 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® 90: Always authentic.

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 **dust-free dithionite content of 90%**

it offers **unparalleled consistent dyeing quality, reliability,** and **efficiency,** combined with **safer handling.**

Finally, quality-oriented customers around the world seeking process stability and best yield in dyeing application need look no further. HydroBlue® 90 is always authentic.



A history of Hydrosulfite

Develop a stable Hydro F

	2017	HydroBlue® 90 hits the market
BASF launches Hydro F	1980s	
	1960s	BASF introduces heavy-metal-free Hydrosulfite E to replace the zinc dust process
Max Bazlen (BASF) introduces the zinc dust process. Patent is granted on March 4	1904	
	1901	BASF launches Indanthren Blue RS. The age of textile colors begins, making colored clothing available to everyone
BASF introduces first synthetic indigo	1897	
	1881	Bernthsen confirms Schützenberger's findings in identifying the real reduction agent sodium dithionite for indigo in Hydrosulfite
Paul Schützenberger isolates dithionite and gives it the name Hydrosulfite	1867	
	1852	Schönbein uses this solution for the reduction of indigo
Claude Louis Berthollet shows that no hydrogen is produced in this reaction	1789	
	1718	Georg Ernst Stahl unwittingly prepares dithionite for the first time



Fresh colors, fresh air

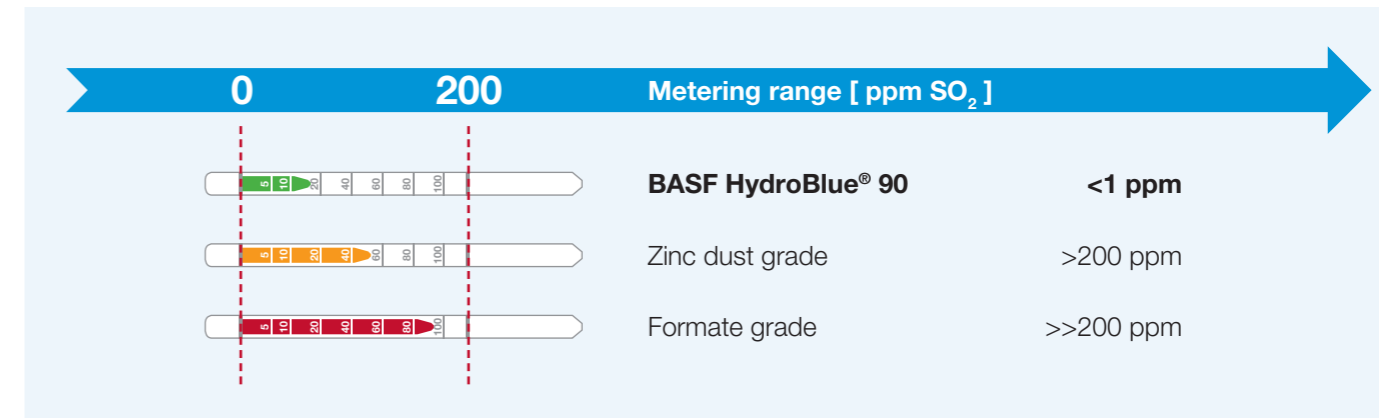
HydroBlue® 90 is an improved formate-based Hydrosulfite which even surpasses our excellent Hydrosulfite E in quality and efficiency. Over other formate-based products, HydroBlue® 90 offers a higher sodium dithionite content of 90% and unprecedented stability. This results in a groundbreaking consistency of dyeing results.

Workers and production facilities will tremendously benefit, too. Conventional Hydrosulfites contain and release considerable amounts of outgassed SO₂. Measurements show that HydroBlue® 90 contains at least 200 times less SO₂ than any other Hydrosulfite. As well it is odorless and dust-free.

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

Measurements certify the unparalleled stability of HydroBlue® 90. A comparison to other grades shows

that HydroBlue® 90 is the most stable Hydrosulfite on the market.



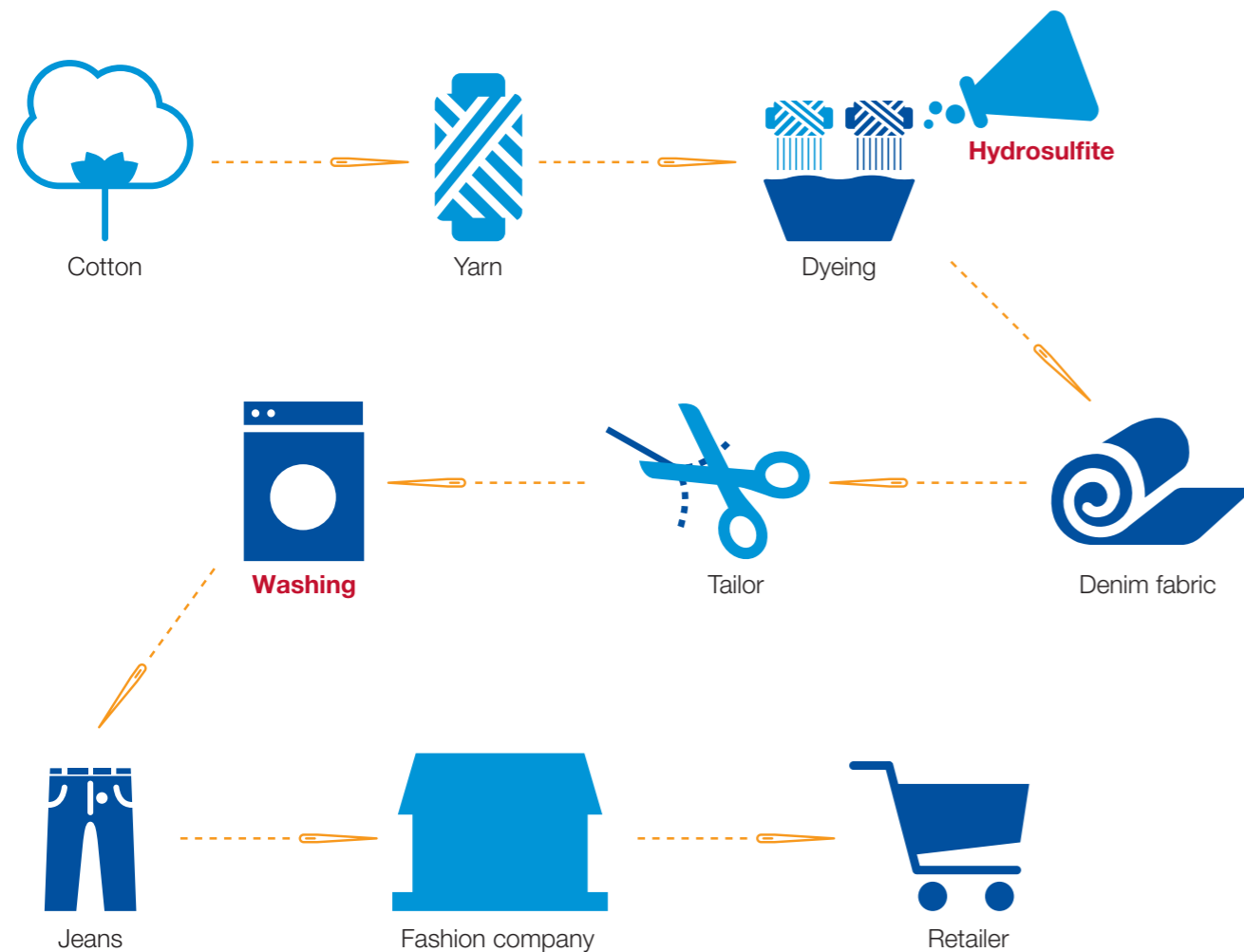
! Hydrosulfite is converted from SO₂ using a strong reduction agent. Less SO₂ means less decomposition and higher stability. Therefore, a sulfuric smell is an indicator of decomposition.

Stable
90% dithionite
odorless
dust-free

HydroBlue® 90 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® 90 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 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 turning to BASF for consistent product quality has a direct bearing on production results. We are currently the only company in the world to produce Hydrosulfite in an improved formate process. This has helped us to achieve the highest consistent product quality and stability yet available, named HydroBlue® 90.

Your benefits

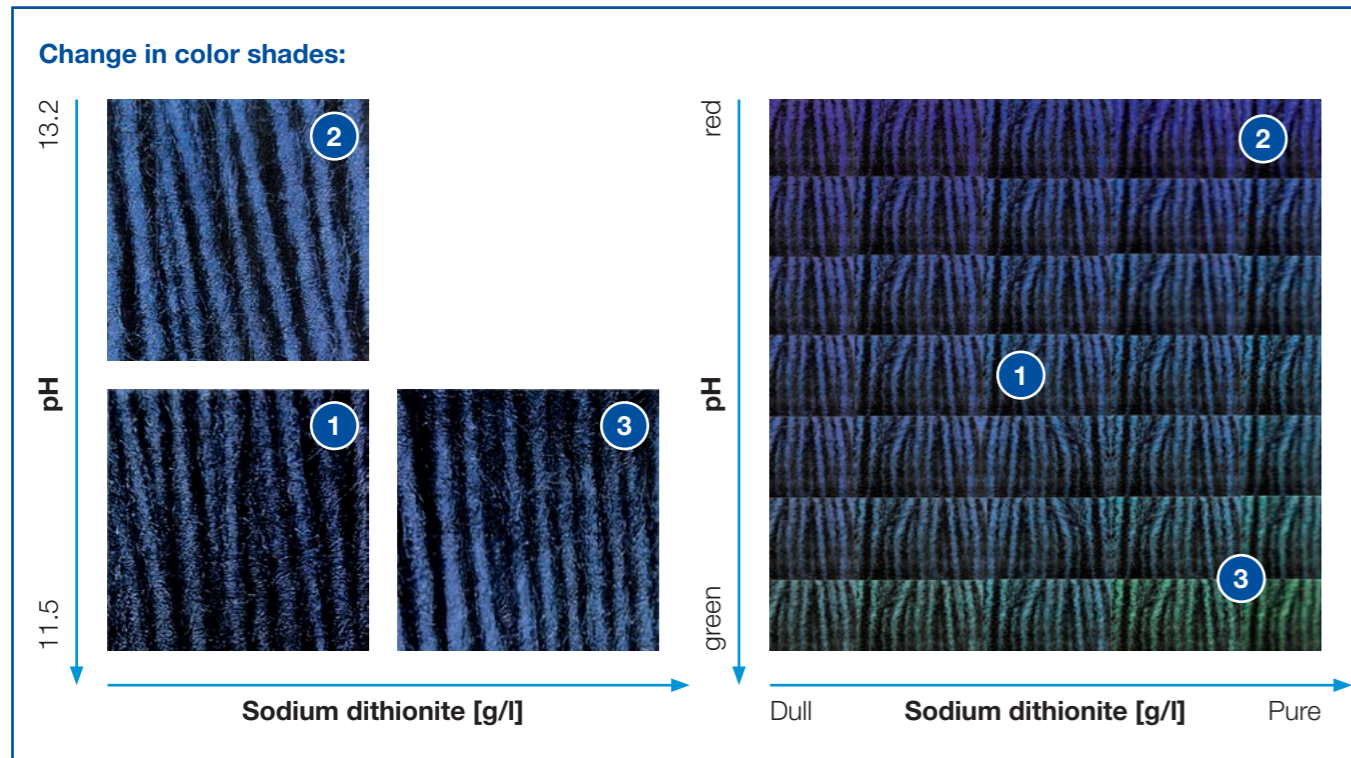
HydroBlue® 90 offers unique improvements and benefits to departments and people across areas of responsibility.

YOUR BENEFITS

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® 90 is stable, odorless (SO₂ max. 0.5 ppm), and dust-free. 	<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® 90 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/accidents because of improved EHS standards (stability, odorless, and dust-free). 	
Purchasing	<ul style="list-style-type: none"> Higher efficiency of HydroBlue® 90 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.
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/accidents because of improved EHS standards (stability, odorless and dust-free). 	

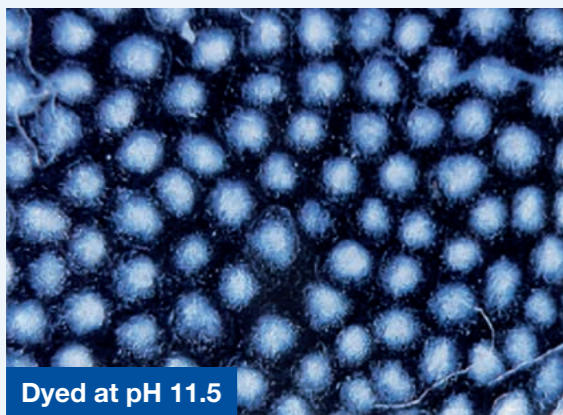


Influence of sodium dithionite – color shade

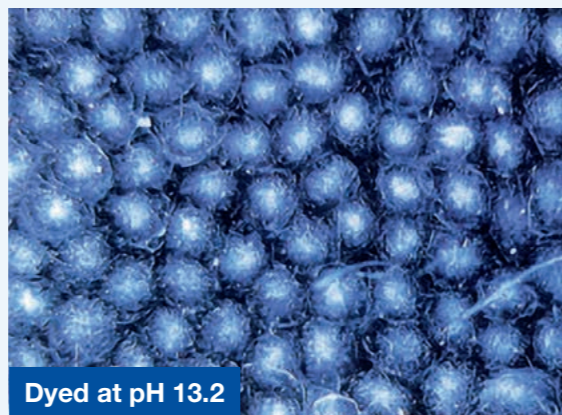


The indigo-dyed yarn may appear more greenish, reddish, dull, or pure depending on the ratio of sodium dithionite and caustic soda. The smallest variation in terms of sodium dithionite content can affect dyeing results, such as ring dyeing, fastness, and color fixation. Thanks to the stable sodium dithionite content in HydroBlue® 90, consistent dyeing results are ensured in order 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 HydroBlue® 90?

Find out here with 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



Guaranteed contents

Stable sodium dithionite content (90% without variation)



Complying to quality standards

Oeko-Tex Standard 100, GOTS 5.0, ZDHC, as well as fashion-specific RSL's such as Levis and Inditex



Highest yield of Hydrosulfite

Dithionite content: 90%



Safer handling

Odorless, dust-free, 50 kg drums with tension ring, unpressurized



Outstanding stability

Unparalleled 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





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