



organIQ FAMILY

INTELLIGENT SOLUTIONS

CHT
SMART CHEMISTRY
WITH CHARACTER.

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INTELLIGENT SOLUTIONS organIQ

organIQ Family stands for state-of-the-art in ecological and economical behaviour on denim:

- Lowest water consumption
- Slightest water pollution
- All treatments at room temperature
- Very effective on highest ecological level
- Replaces pumice stones, potassium permanganate and chlorine bleaches and their neutralisation.

REVOLUTIONARY!

BLEACH

PATENTED

The organIQ BLEACH system is the first purely organic and completely degradable bleaching agent for denim.

Potassium permanganate can be completely replaced in the spraying procedure.

In case of application with fog systems stonewash and chlorine bleaches can be replaced. All with cold treatments, extremely low water consumption and least waste water pollution.

Ecology becomes economic – intelligent jeans finishing.

NEUTRAL

**APPLIED FOR
PATENT**

The first ecological alternative for the neutralisation of permanganate and chlorine bleaches.

Conventional neutralisation agents having a strong polluting impact on waste water, e.g. Na-metabisulphite or hydroxylammonium sulphate can be replaced by the same quantity at a ratio of 1:1 and at the same application temperature.

- 100% natural and completely biodegradable.
- without persistent components
- waste water is not additionally loaded with toxic substances by neutralisation.

BIOPOWER

organIQ BIOPOWER is the first cellulase for application by fogging systems.

With organIQ BIOPOWER even very fluffy material becomes smooth with an elegant character.

The abrasion obtained by the treatment is enormous and corresponds to a stonewash. Thus highly performing biopolish and stonewash effects are obtained.

A subsequent treatment with organIQ BLEACH T gets perfect with organIQ BIOPOWER.

Both together:

- NO Stones
- NO Permanganate
- NO Chlorine
- NO Neutralisation
- Same Effect.



organIQ BLEACH

organIQ BLEACH

Potassium permanganate

The spray application with potassium permanganate (KMnO₄) is the bleaching procedure which is the worldwide most used, most reliable and most proved bleaching procedures on denim fabrics. KMnO₄ is sprayed on pretreated jeans. Light parts or the popular 'used look' can be produced. It is an effective procedure which comes with a risk for the environment and health.

More than 5 tons of potassium permanganate (KMnO₄) are applied every day – an enormous waste water pollution.

The challenge:

- Manganese is a heavy metal and not biodegradable.
- Potassium permanganate (KMnO₄) belongs to the substances which pose a special risk for the environment due to the high fish toxicity.
- In many countries there are strict regulations or even an obligation to take into account that any misuse of KMnO₄ is avoided.
- CMR classification for KMnO₄ under evaluation at ECHA (European Chemical Agency). Reference: CLP Annex VI, No. 025:-022-00:-9



organIQ BLEACH

The challenge is to bleach jeans in an environmentally friendly way. The CHT Group has developed an intelligent alternative to KMnO₄. With the organIQ BLEACH System, the first purely organic bleaching agent for denim materials, the jeans bleaching becomes innovative. It is an effective and reproducible jeans treatment with advantages for the environment.

organIQ BLEACH is the innovative system, that perfectly combines economic effectiveness, product safety and environmental friendliness. An intelligent innovation of the CHT Group – we take care.

Advantages

- Pure organic bleaching agent
- Free from heavy metal, chlorine and AOX
- Completely biodegradable (> 99 % in compliance with OECD 301B)
- Without persistent components
- No risk for the environment
- No soiling of waste water with heavy metals
- No necessity of a where-used list according to valid legal requirements
- No need of neutralisation

organIQ BLEACH

Spray application



Application

The organIQ BLEACH system consists of two powdery components: organIQ BLEACH T und organIQ ASSIST. The mixing ratio is as follows:

9 parts organIQ BLEACH T
+ 1 part organIQ ASSIST

organIQ BLEACH T alone in solution is water-clear, which is why organIQ ASSIST is added in spray application to make it visible.

organIQ ASSIST has no affinity to fibres, so it can be easily rinsed out and is also completely biodegradable (according to OECD 301B).

The material of the spray gun should preferably be stainless steel. Materials such as copper or brass should be avoided.

The spray guns must not be used for organIQ and potassium permanganate, as even small residual amounts of potassium permanganate can deactivate organIQ BLEACH T.

If a spray gun contaminated with potassium permanganate has to be used, we recommend not only

neutralisation but also multiple rinsing with organIQ BLEACH solution.

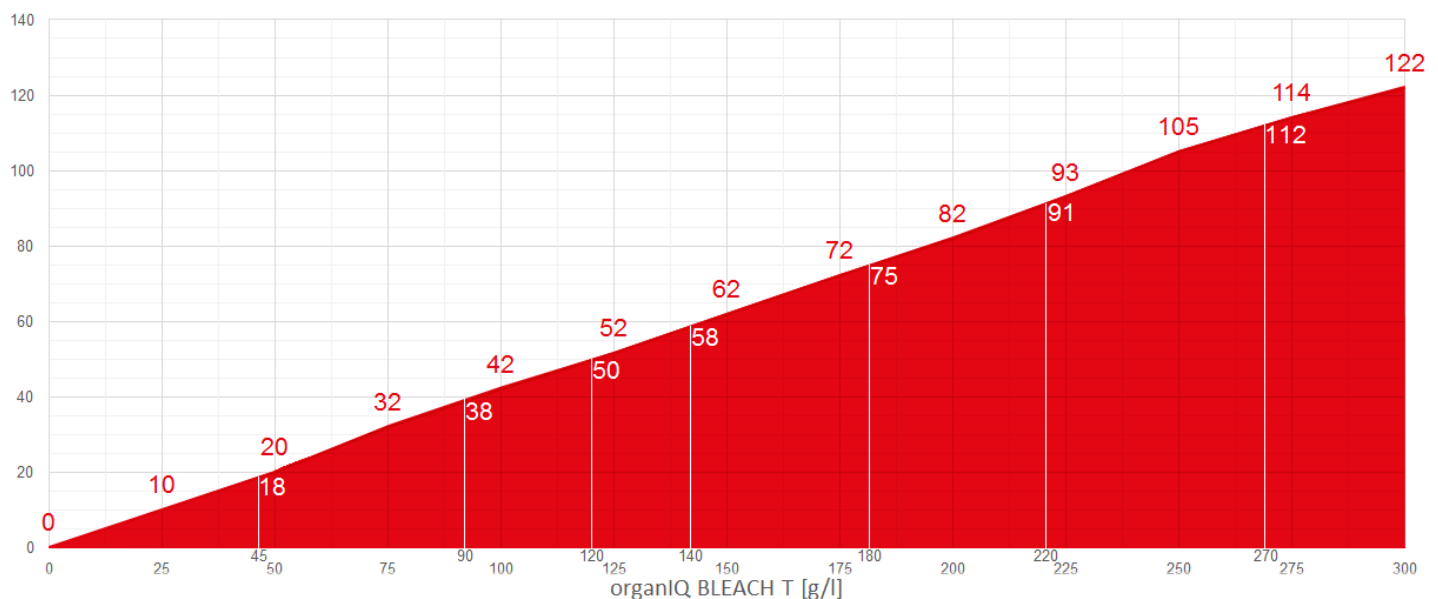
After simply dissolving the powder in cold water and adding the buffer organIQ BUFFER AO, the organIQ BLEACH solution is sprayed on as before KMnO_4 . After spraying, the bleaching effect is developed either in the air after about 45 minutes or in a tumble dryer or oven at 40 °C after 30 minutes.

After the development of the effect, it is simply rinsed or further, usual treatment steps such as stonewash etc. follow. Separate neutralisation is not necessary! As a result, no further rinsing baths are necessary.

A big ecological advantage of the organIQ BLEACH system is the good biodegradability of the bleaching agent in comparison to KMnO_4 .

Application solutions can be used in 3 to max. 4 hours without a significant loss of effect. After approx. 16-24 hours after the solution was prepared, the bleaching agent has decomposed completely.

organIQ BUFFER AO [g/l]



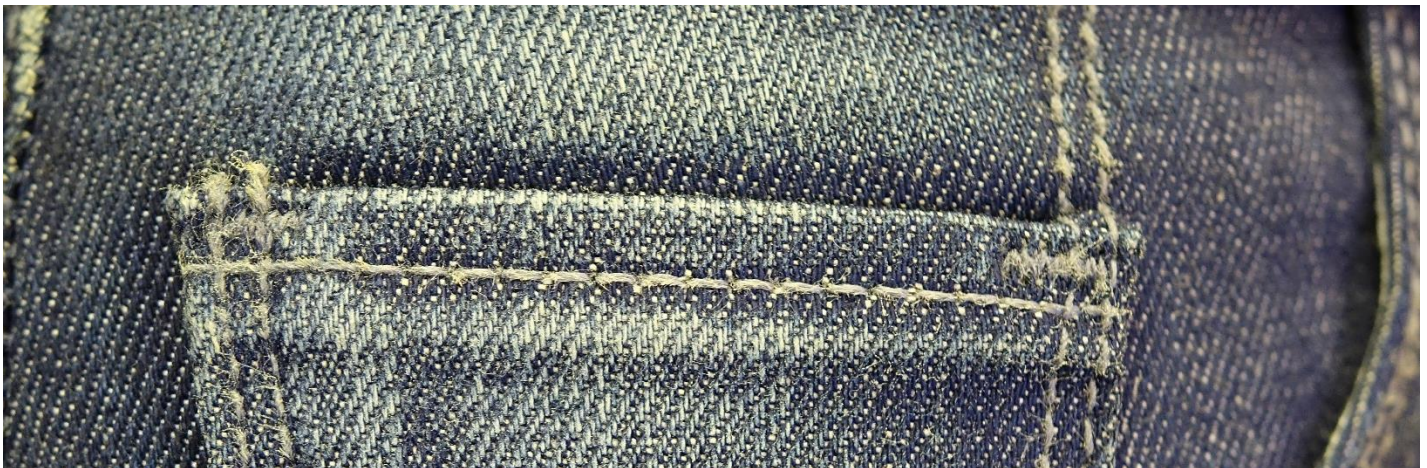
Stretch denim

There is the possibility that some goods with a high stretch content can be damaged. Due to the many factors to be taken into account, such as weaving, thickness or material composition, it is not possible to give an exact forecast.

Therefore it is necessary to carry out preliminary tests on fabrics with a stretch part.



The spraying of bleaching solution in 2 - 3 layers, instead of one, only can reduce the risk of an elastane damaging on stretch denim.



Trousers sprayed with organIQ BLEACH (incl. organIQ ASSIST).

Example recipe

A Pretreatment

e. g.: Scraping, desizing, stonewash

B Application by spraying

e. g.:

180 g/l organIQ BLEACH T

20 g/l organIQ ASSIST

75 g/l organIQ BUFFER AO

A pH of approx. 3.0 is adjusted by a buffer.

C Development

approx. 45 min in the air

or

30 min at 40 °C in tumbler or oven

D Rinsing process

5 min at 40 °C

dry in tumbler, if necessary

Depending on the desired bleaching intensity, up to a maximum of 300 g/l of the organIQ BLEACH system is used. A much stronger bleaching effect is achieved on sulphur-black fabric, therefore a pre-test should be carried out with half the usual concentration.

If the spray bleaching is carried out with the organIQ BLEACH system at the end of the entire process, followed only by a softener step, we recommend adding 0.5 g/l DENIMCOL WASH-CPD in the rinsing process.

organIQ BLEACH

Fog application



Technology of the future

The combination of modern technologies such as organIQ + fog application leads to ecological washing results with maximum efficiency = protection of resources.

These technologies are based on an extremely fine distribution of the product in form of fog in the washing machine. A very homogeneous distribution and a very low liquor pick-up are obtained. This provides a water and product saving process.



Various machine manufacturers already offer systems with such a technology. These fog systems can be installed on existing washing machines.

The fog, which is created by a very fine atomisation of the product, allows an extremely fine distribution in the drum and thus also on the fabric. This allows a very low humidity application of 25 - 100 %, which corresponds to a liquor ratio of 1:0.25 to 1:1.

Damage to stretch denim is practically non-existent here, as one of the further advantages is that, depending on the application of moisture, the mist only works on the surface without penetrating deeper into the fibre. This helps to preserve the fibre and thus achieve a more noble appearance.



Process

In order to make use of the full potential of organIQ BLEACH, it should be applied on dry goods which have been desized beforehand and subsequently treated with organIQ BIOPOWER.

Since all fog applications take place at low temperature, no additional energy supply is necessary. Together with the low liquor ratio a great saving potential can be formed.

The load of a conventional stonewash treatment cannot be achieved in this case, but it should not be chosen too low either. Too low loads increase the risk of stains and unevenness.

A development in the air or in the tumble dryer at 40°C, as with spray application, is often not necessary in the case of fog application.

Pretreatment

The bleaching result can be intensified with an optimal pretreatment of fabric:



Original material



Desized +
organIQ BLEACH



Desized +
organIQ BIOPOWER +
organIQ BLEACH

Machine loading

The machine loading has a big influence on the bleaching power and the possible stain formation. It has been shown that the larger the machine and the higher the machine load, the stronger the bleach and the less risk of staining. It has to be noted that a machine load similar to the conventional stonewash will hardly be obtained.

However, bleaching settings can therefore not be scaled up 1:1 from a sample machine to a larger production machine, but must be adjusted. Mostly by reducing the amount of bleaching agent.



Example recipe

- A** Scraping
- B** Desizing
10 min at 40 °C
- C** Enzyme treatment in fog machine on moist fabric
See organIQ BIOPOWER!
- D** Spray bleach with organIQ BLEACH
180 g/l organIQ BLEACH T
20 g/l organIQ ASSIST
75 g/l organIQ BUFFER AO
- E** organIQ BLEACH application in fog machine
Wetting degree 25 %
180 g/l organIQ BLEACH T
75 g/l organIQ BUFFER AO
A pH value of approx. 3.0
is adjusted by a buffer.
20 min of subsequent running
- F** Development (optional)
30 to 60 min in the air
or
20 min at 40 °C in tumbler or oven
- G** Rinsing
Depending on the fabric,
if necessary with up to
8 ml/l hydrogen peroxide
5 min at 40 °C
- H** Softener application in the fog machine on wet fabric
Wetting degree 25 %
80 g/l DENIMCOL SOFT-KRE
15 min of feeding
Dry in tumbler



NO!

PERMANGANATE!
NEUTRALISATION!
CHLORINE!
STONES!



organIQ BIOPOWER

organIQ BIOPOWER

Special product for fogging systems

Sustainable product applications in fog systems become more and more important in the field of garment. For biopolish as well as stonewash enzymes this application method is particularly interesting. However, the use of such enzymes has so far been very limited due to their high protein content and the resulting harmful effects on humans.

With organIQ BIOPOWER, a special enzyme with low protein content was developed, which has also been certified by an external institute as particularly suitable for the use in fog systems.

organIQ BIOPOWER makes it possible to achieve an authentic stonewash aspect without stones in a very economical way. At the same time the surface gets a biopolish effect providing a noble, evenly applied finish.

organIQ BIOPOWER can be applied directly on a moist fabric after desizing. In addition there is no removal of stones necessary and time can be saved.

It also serves as perfect pretreatment for the following organIQ BLEACH steps to obtain a stronger and more regular bleaching effect.

Comparison



Conventional stonewash
Liquor ratio 1:6
Stones 1:2
1.0 % Cellulase



Enzyme treatment by fog
Wetting degree 30 %
0.9 % organIQ BIOPOWER

Example recipe

A Desizing

- 1.0 % BEISOL T 2090-G
- 0.8 % DENIMCOL CLEAN-SMX
- 10 min at 40 °C

B Enzyme treatment by fog on dry or moist fabric

- Wetting degree of 30 %
- 30.0 g/l organIQ BIOPOWER
- 0.1 g/l Citric acid
- 30 min of subsequent running time
- Then rinse warm and cold
- Dry in tumbler

The application quantities of organIQ BIOPOWER depend on the desired effect or the desired stonewash aspect.

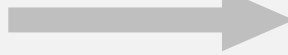
It is also decisive whether organIQ BIOPOWER is to be used for the effects alone or as a pretreatment for a subsequent organIQ BLEACH application.

Sample



Desized fabric

BLEACHING PROCESS



180 g/l organIQ BLEACH T



Desized fabric
+
organIQ BLEACH

ENZYME TREATMENT

30 g/l organIQ BIOPOWER



Desized fabric
+
organIQ BIOPOWER

BLEACHING PROCESS



180 g/l organIQ BLEACH T



Desized fabric
+
organIQ BIOPOWER
+
organIQ BLEACH



organIQ NEUTRAL

organIQ NEUTRAL

Sustainable neutralisation

organIQ NEUTRAL is a completely biodegradable reducing agent for neutralisation of potassium permanganate and chlorine, as well as ozone. By using organIQ NEUTRAL, the waste water is not contaminated with toxic substances other than permanganate, as it is the case with conventional neutralisers.

This ecological alternative can already be applied at lower temperatures and combined with other processes. On the contrary to conventional neutralisation agents, organIQ NEUTRAL does not

reduce the indigo in case of an overdose! A further backstaining is not produced and the fabric keeps its clear, salt and pepper effect with clear contrasts.

Advantages

- 100 % natural and completely biodegradable
- Without persistent components
- No additional contamination of the waste water by toxic substances
- No overdose possible



Recommendation for use

organIQ NEUTRAL can either be given as solid into the machine or it is prediluted in cold water.

The application quantity of organIQ NEUTRAL depends on the applied quantity of potassium permanganate.

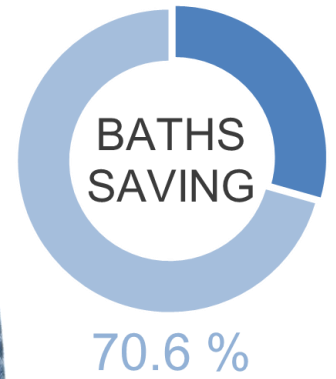
0.5 - 2.0 g/l organIQ NEUTRAL
The pH value should be checked, it should be at 4.5.
Adjust the pH if necessary!
10 min at 40 °C
Rinse

The following table shows an overview of the residual manganese values on the goods after neutralisation with the respective neutralising agents in comparison.

	KMnO ₄ on raw fabric (in %)	KMnO ₄ on stonewashed denim (in %)
After the bleaching process	100.0	100.0
After a rinsing process	99.6	88.9
After the neutralisation with sodium metabisulphite	13.8	27.6
After the neutralisation with organIQ NEUTRAL	8.9	17.7

Finish No. 3

CONVENTIONAL



1. Scraping on raw

2. Local spray bleach with 2 % KMnO_4 and 2 % DENIMCOL BOOST PP

3. Desizing & Neutralisation

BEISOL T 2090-G
DENIMCOL PEX
DENIMCOL CLEAN-SMX

4. Stonewash

BEIZYM SPELL-G
DENIMCOL CLEAN-SMX

5. Chlorine bleach

Sodium hypochlorite solution
Sodium metabisulfite
Hydrogen peroxide solution

6. Tinting

TUBANTIN dyestuff
Glauber's salt

7. Softening

DENIMCOL SOFT-KRE

17 Baths 21 Steps



STEPS
SAVING

38.1 %



FOG

1. Scraping on raw

2. Desizing

BEISOT T 2090-G
DENIMCOL CLEAN-SMX

3. Enzyme treatment by FOG

organIQ BIOPOWER
Citric acid

**4. Local spray bleach
with organIQ BLEACH**

organIQ BLEACH T
organIQ ASSIST
organIQ BUFFER AO

5. organIQ BLEACH by FOG

organIQ BLEACH T
organIQ BUFFER AO

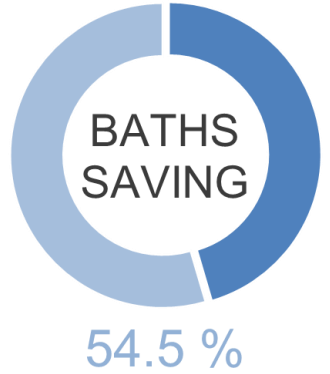
6. Softening & Tinting by FOG

DENIMCOL SOFT-KRE
TUBANTIN dyestuff
Glauber's salt

5 Baths **13 Steps**

Finish No. 5

CONVENTIONAL



1. Scraping on raw

- 2. Enzyme wash**
BEISOL T 2090-G
BEIZYM TOP PLUS
DENIMCOL CLEAN-SMX

- 3. Chlorine bleach**
Sodium hypochlorite solution
Sodium metabisulfite
Hydrogen peroxide solution

4. Destroys

- 5. Softening**
DENIMCOL SOFT-KRE

11 Baths 15 Steps



- 1. Scraping on raw
- 2. Enzyme wash
BEISOL T 2090-G
BEIZYM SPELL-G
DENIMCOL CLEAN-SMX
- 3. Destroys
- 5. Light organIQ BLEACH by FOG
organIQ BLEACH T
organIQ BUFFER AO
- 5. Softening by FOG
DENIMCOL SOFT-KRE

5 Baths 12 Steps



For further information please feel free to contact us by e-mail:

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