NEW PRODUCTS

H. A. METZ & CO.

21 samples

FARBWERKE vorm. MEISTER LUCIUS & BRÜNING
Hoechst o. M.

Telegraphic-Address:
FARBWERKE HOECHSTMAIN.

Hoechst o. M., ...

Dear Sirs,

In circular No. 392 we have brought to your notice a perfectly new and advantageous Indigo printing method; to-day we have great pleasure in supplementing our former circular by a detailed description of the application and employment of the

Indigo printing process carried out with Hydrosulphite NF Hoechst

(Patents applied for in all civilized countries).

In investigating this process we have studied with great accuracy the precautions necessary in preparing printing pastes, in steaming and in finishing.

We have also attached to this circular a sketch of the quick steaming apparatus as employed by ourselves, and trust that guided by our description you will initiate your own trials and carry them to a successful issue.

We remain, Dear Sirs,

yours respectfully

Farbwerke vorm. Meister Lucius & Brüning.

H. A. METZ & CO.,
140-142 Oliver St.,
BOSTON.

Indigo printing process with Hydrosulphite NF Hoechst.

(Patent applied for).

By means of our new **alkaline Indigo printing process with Hydrosulphite NF Hoechst** very light to very dark Indigo shades are obtained on bleached **unprepared** cloth. Our Indigo 20% is very profitably worked in this process and likewise our brominated Indigoes MLB/R paste and MLB/RR paste (which moreover are more easily reduced) are suitable for our new method.

If **naphtholated material** is employed the Indigoblue can be combined with **insoluble Azo Colours**, which are so greatly distinguished for their beauty and fastness. In this case however as little oil-ingredients as possible must be added to the Naphthol prepare. On Turkey Red ground beautiful blue-discharges are obtained, whilst the alkaline Hydrosulphite paste — without Indigo — acts as a powerful white-discharge on Turkey Red. In addition to the patterns produced in our own printing department three more patterns are affixed to this circular which have been produced in large print works, and illustrate the practicability of our process carried out on a large scale.

The following particulars for carrying out this process are to be noted:

Preparing the printing paste: Hydrosulphite NF Hoechst is dissolved in hot water, the solution cooled and then added gradually to the alkaline thickening in a jacket-pan. To this, when properly cool, the Indigo paste is added. For dark shades **British Gum** is used for thickening. This must be **free from starch,** and when mixed with caustic soda, must produce a clear, supple paste. Light shades, also reduced colours, are thickened with best British gum or with gum arabic. The most suitable strength of the caustic soda is 76° Tw. This permits of the Indigo being fully exhausted, without mercerizing (crimping) the printed material too much. The printing pastes are very stable. Light colours are obtained by reducing the dark standard shades with alkaline gum thickening, to which is added a little Hydrosulphite NF and also some glycerine for equalizing purposes.

Light effects may also be obtained with printing pastes containing no alkali, but in this case the reducing agents are to be considerably increased. The light blue of pattern No. 12 has been printed in this manner; the effect may therefore be compared with that of pattern No. 11, which was produced with alkaline Indigo-printing colour.

With so-called Sulphur Resist Colours similar white effects are obtained under Steam Indigoblue as are also produced by the Glucose process.

Acid agents such as Lactic Acid, Sulphate of Alumina etc. enhance the efficacy of these Resists.

If however Red Prussiate is added, these Resists discharge or preserve the previously dyed Indigoblue only at those places, where there is an imprint of alkaline Indigo printing colour.

The **printing operation** is carried out in the usual manner; the consistency of the printing pastes depends upon the design and the depth of the engraving. Generally the colours ought to be as supple as possible. In two or multicoloured styles with light Indigo blotch it is advisable to employ 2 doctors for every roller, so as to avoid soiling the blotch with the other colours (surface adhesion).

It is important that the printed goods are always dried evenly and perfectly before steaming.

The **steaming operation** is the most essential part, but it does not present any great difficulties if a suitable installation is put up and all the conditions and particulars are observed.

The Indigo is always properly reduced and most profitably worked if the following conditions are adhered to:

1. The goods must be dried evenly and not too quickly before entering the steaming apparatus.
2. The steaming operation is carried on for 2—3 min. in an atmosphere of hot steam (212—216° F.) which is **free from air.**

These conditions are easily observed if a suitable steamer is at hand. We recommend the use of an ordinary Mather-Platt quick steaming chamber slightly altered according to the attached sketch. This alteration not only permits of the application of this apparatus for our Indigo printing process, but also for **discharging with Hydrosulphite NF Hoechst,** for **developing Steam Aniline Black** and **Diphenyl Black, for discharging tannin mordants with alkali,** and finally for **discharging with chlorate discharges.**

With reference to the **diagrams on page 6 and 7** we beg to point out, that:

The temperature of 212—216° F. is obtained by insulating the steamer (insulating pulp, air (s), wood covering); moreover the efficacy of the steam, which ought to be a priori sufficiently hot, is enhanced by affixing a steam dryer (a), superheating appliances (b), and eventually by attaching heating plates (f) to the bottom of the apparatus. It is very important to use sufficiently hot steam; if for certain reasons the pressure of the live steam (l) varies, it is advisable to use the high pressure heating steam (k) for superheating the live steam, or even to let it enter the steaming chamber so as to aid the latter.

In Indigo printing the above mentioned heating plates are not absolutely necessary, but for discharge prints and for developing Diphenyl Black they are most convenient.

The sketch clearly illustrates the circulation of the steam.

In order to keep the atmosphere in the steamer **free from air**, the steam ought to circulate well, and the goods ought to enter and leave the apparatus through narrow slots, which have a width of $^1/_4$—$^1/_8$ inch; if materials of variable thickness pass through the steam box, these slots are made to fit the different goods.

It is advisable to pass an endcloth, prepared with Hydrosulphite NF Hoechst, through the steamer previous to entering the printed goods, in order to do away with all traces of air in the steam chest.

The temperature of the steam ought to be controlled by a thermometer (p, dipping at least 6 inches into the steam box); furthermore it is advisable to affix 2 double windows (q) to the apparatus. These may eventually serve as manholes; they are lighted up from outside with electric light (g) so as to enable the man in charge to observe the process of reduction.

Finally we beg to mention 2 drying cylinders (d) over which the goods pass and thus get evenly heated before entering the steamer; also the heating plates (f) and the protecting board (o) to keep off dripping stains.

The installation of this Indigo steaming apparatus may be simplified according to local circumstances. If for instance the steam pressure does not vary, no superheating appliance nor heating plates will be required. In all cases however great attention must be paid 1) to making the slots through which the goods enter and leave the steam box, **as narrow as possible**; 2) to insulating the steamer well, and 3) to keeping it free from air.

Contrary to the Glucose-Indigo printing process the reduction by means of Hydrosulphite NF Hoechst is not dependant upon the moisture of the printed material and the steam, but requires hot steam of 212–216° F., containing little moisture.

If the steam box has been used for Aniline Blacks or for chlorate discharges, previous to passing Indigo-prints through it, it is necessary to let powerful steam circulate through the apparatus first, so as to free it from all oxidizing gasses.

The hot steam causes the Hydrosulphite NF Hoechst to react upon and reduce the Indigo, and the printed places will then show a brownish yellow appearance. In leaving the steaming apparatus the yellow will turn olive.

Contrary to the Alkali Glucose-printing method the time required for steaming is considerably lengthened, this longer steaming operation however is in no way injurious.

Directly after steaming the goods are washed and finished; they may however be kept in a cool dry place for a whole day if necessary.

The **washing and finishing operations** of the printed and steamed goods are carried on in the same manner as for the Glucose process; care must be taken to remove all the alkali by washing the pieces in running water.

The goods pass therefore through a full width washing machine with plentiful supply of water and corresponding outlet. Thus staining or bleeding into unprinted places is avoided.

The final fixation is brought about by the oxidation of Indigo white to Indigo blue, and it is therefore advantageous to further this process as much as possible: The goods are alternately passed through air and the broad washing machine, whilst the spray of squirting pipes is let play on the fabric. It is also advisable to arrange the machine in such a manner that in the latter portions of this machine the surface of the water is kept below the upper guiding rollers. Thus the wet pieces come regularly and freely into contact with air. After leaving the full width-washing machine the blue is generally developed to such an extent, that there is no more danger of staining the unprinted parts. The goods are therefore finally washed and soaped in rope form. If dried before soaping the effects turn darker.

The affixed patterns have been dried after washing and then soaped for 10 min. at 140° F. with soap solution 2:1000.

Directions for preparing the Printing Pastes.

Steam Indigo Blue F.

150 parts Hydrosulphite NF Hoechst are dissolved in
50 parts Hot water, then cooled down and added in several portions — whilst cooling — to
450 parts Alkaline British Gum Thickening 40. Then
150 parts Indigo MLB 20% paste pat., mixed with
200 parts Cold Alkaline British Gum Thickening 40, are added.

1000 parts.

Steam Indigo Blue FG

is prepared like Steam Indigo Blue F, but instead of Alkaline British Gum Thickening 40, 650 parts Alkaline Gum Thickening 40 are used.

Steam Indigo Blue FPR on Para Red.

230 parts Hydrosulphite NF Hoechst are dissolved in
70 parts Hot water and added gradually, whilst cooling continually, to
400 parts Alkaline British Gum Thickening 40. Then
150 parts Indigo MLB 20% paste pat., mixed with
150 parts Alkaline British Gum Thickening 40, are added.

1000 parts.

Steam Indigo Blue NF.

75 parts Indigo MLB 20% paste pat.
600 parts British Gum Thickening 1:1
200 parts Hydrosulphite NF Hoechst
125 parts Hot water

1000 parts.

Steam Indigo Blue FR.

75 parts Hydrosulphite NF Hoechst
75 parts Water
650 parts Alkaline Gum Thickening 40
200 parts Indigo MLB/R 20% paste pat.

1000 parts.

Steam Indigo Blue FRR

is prepared in the same manner as Steam Indigo Blue FR, but 200 parts Indigo MLB/RR 20% paste are added instead of MLB/R.

Alkaline British Gum Thickening 40.

100 parts British Gum **free from starch**
900 parts Soda lye 76° Tw.

Dissolve at 122–140° F. until the solution is perfectly clear.

Alkaline Gum Thickening 40.

400 parts Gum solution 1:2 (gomme industrielle)
600 parts Soda lye 100° Tw.

Reducing paste AF.

400 parts Gum solution 1:2 (gomme industrielle)
500 parts Soda lye 76° Tw., add cold
15 parts Glycerine
10 parts Hydrosulphite NF Hoechst
75 parts Water

1000 parts

Reducing paste NF.

100 parts Hydrosulphite NF Hoechst
300 parts Water
600 parts British Gum 1:1

1000 parts.

Naphthol Grounding.

15 parts Beta Naphthol R
30 parts Soda lye 36° Tw.
200 parts Hot water
600 parts Cold water
15 parts Para Soap PN, made up with water to

1000 parts.

Azophor Red Printing Paste.

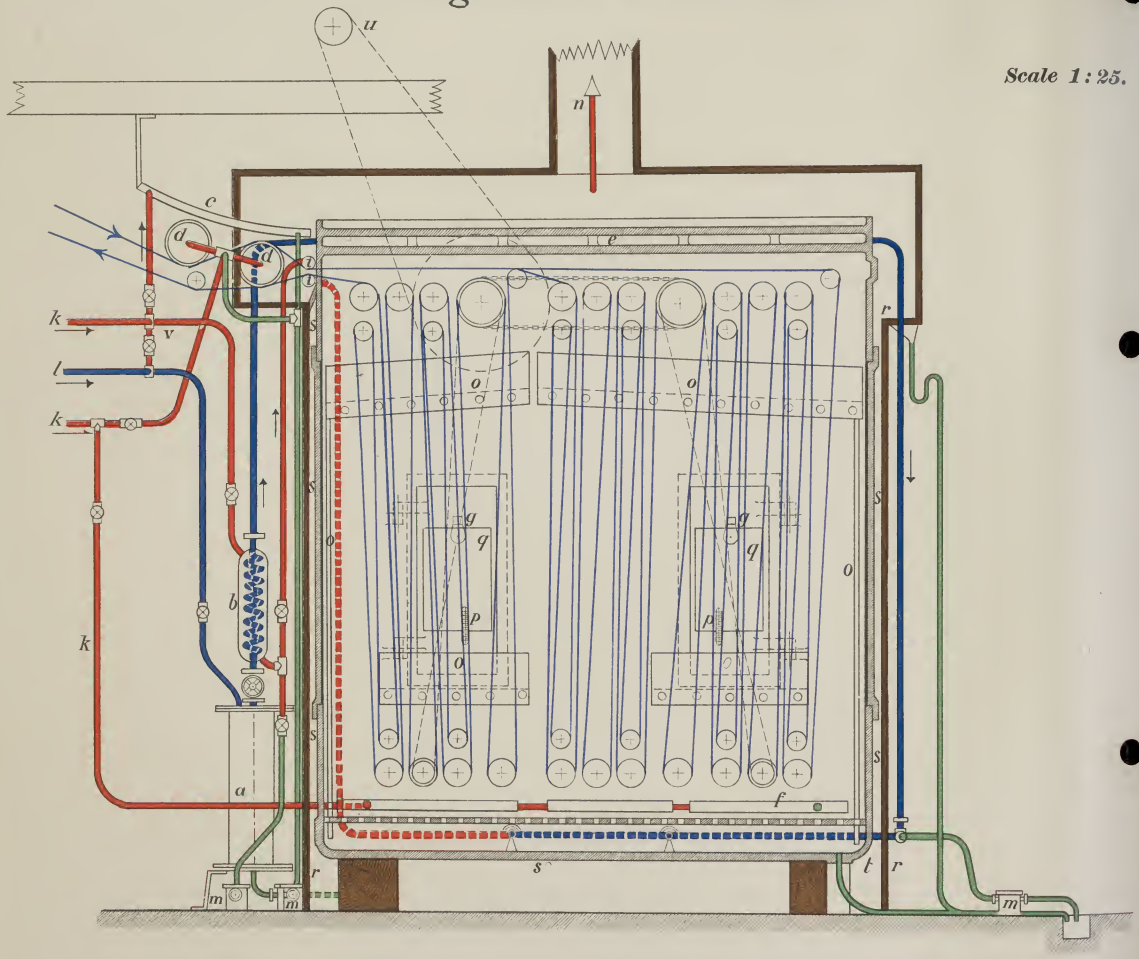
90 parts Azophor Red PN pat. are dissolved in
340 parts Cold water, and
500 parts Tragacanth 60:1000
30 parts Acetate of Soda cryst.
40 parts Nitrate of Ammonia cryst. added.

1000 parts.

Quick steaming installation

Longitudinal Vertical Section.

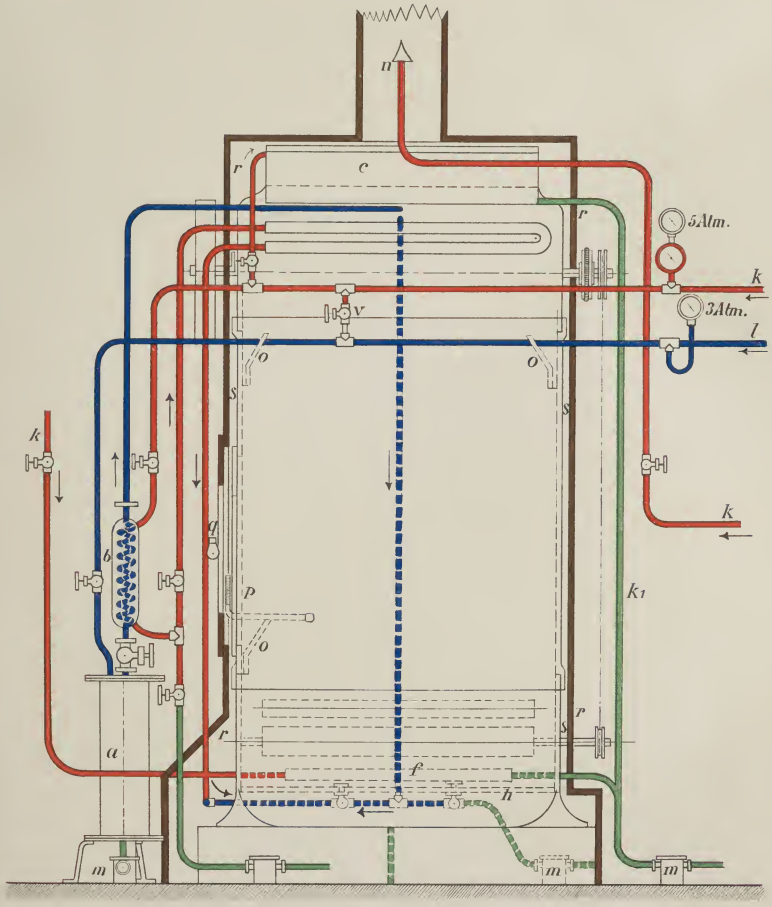
Scale 1 : 25.



a. steam dryer
b. superheating appliance
c. steam plate
d. drying cylinders
e. heatable cover-plates
f. heating plates
g. electric light
h. perforated bottom
i. copper pipes
k. heating steam
k1. condense pipes

for Indigo-prints.

Transverse Vertical Section.

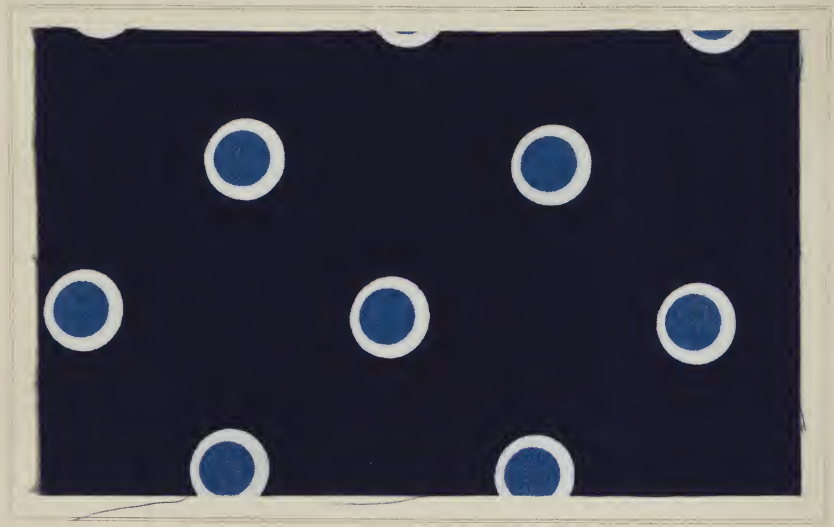


l. live steam
m. condenser
n. steam outlet
o. stainprotecting boards
p. thermometer
q. double windows

r. insulator (wood)
s. „ (air)
t. waste pipe with water valve
u. shaft, pulleys, driving gear
v. junction valve

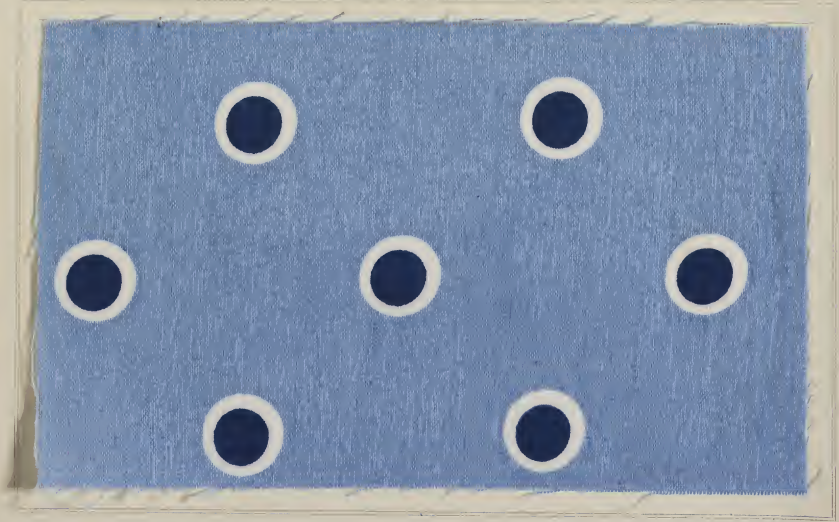
No. 1.

Steam Indigo Blue F G 1:3 (Reducing paste A F) — Steam Indigo Blue F.



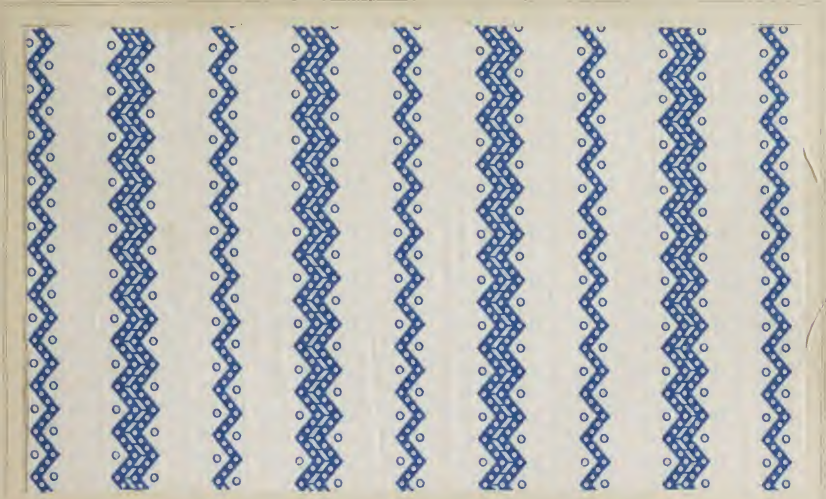
No. 2.

Steam Indigo Blue FG — Steam Indigo Blue F G 1:13 (Reducing paste A F).



No. 3.

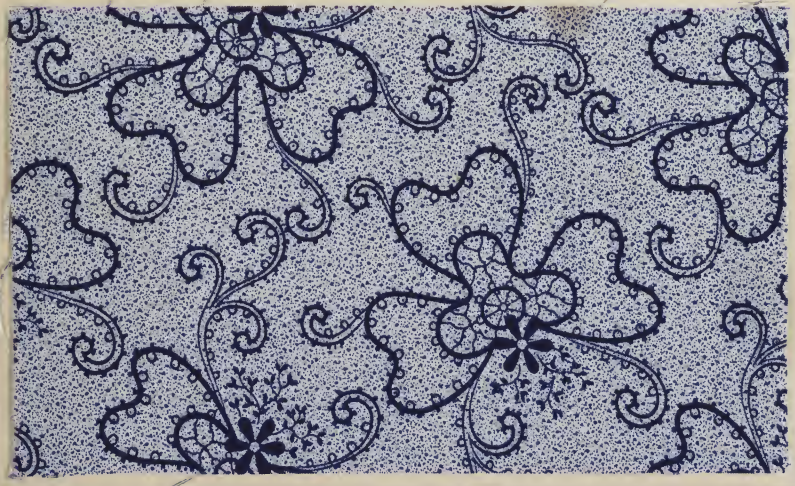
Steam Indigo Blue FG 1:3 (Reducing paste AF).



No. 4.

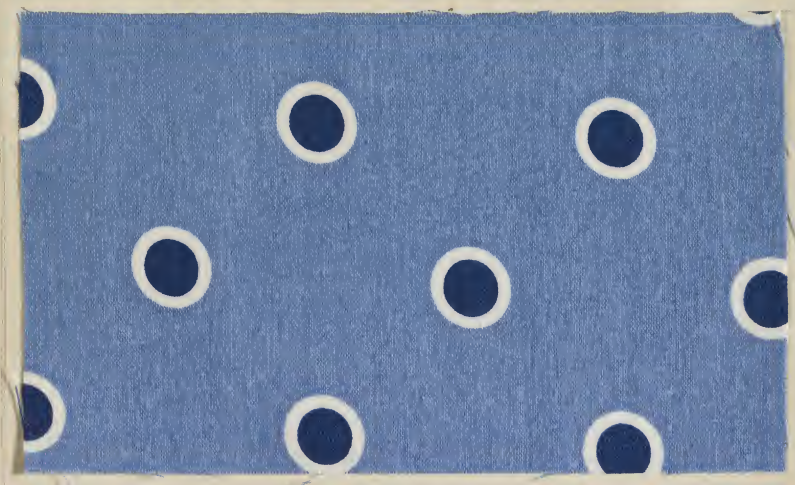
Steam Indigo Blue FRR.

Steam Indigo Blue FRR 1:1 (Reducing paste AF)



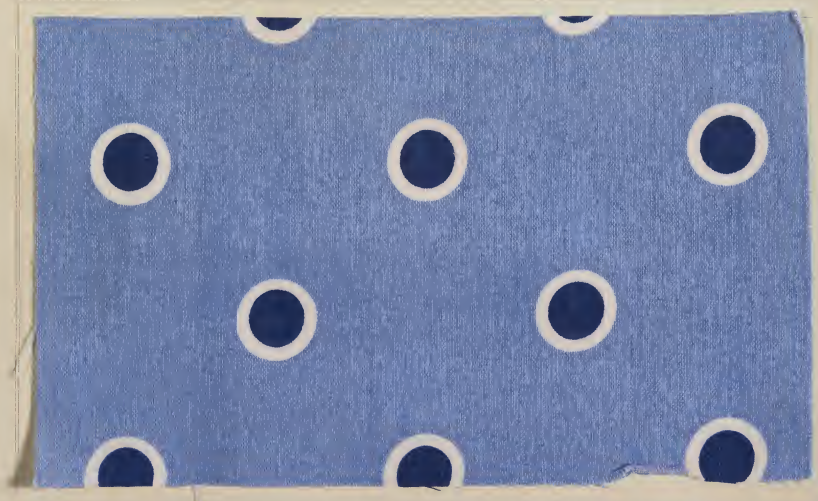
No. 5.

Steam Indigo Blue FR — Steam Indigo Blue FR 1:13 (Reducing paste AF).



No. 6.

Steam Indigo Blue FRR — Steam Indigo Blue FRR 1:13 (Reducing paste AF).



No. 7

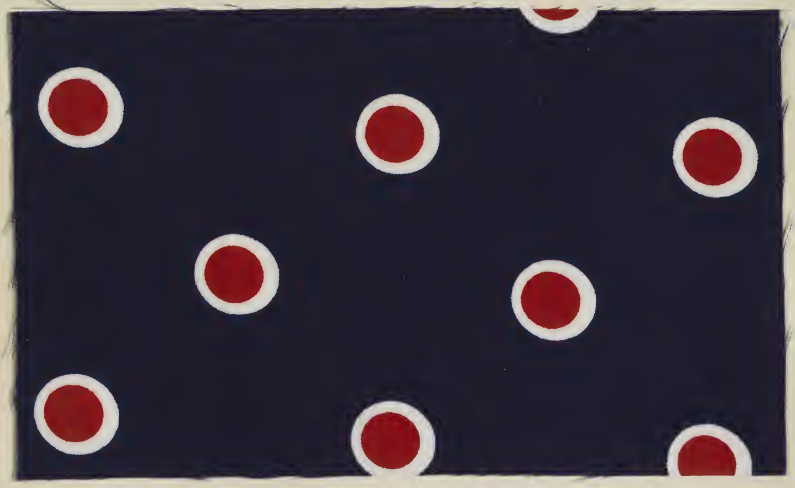
Turkey Red — Steam Indigo Blue F.

No. 8.

Paranitraniline Red — Steam Indigo Blue F P R.

No. 9.

Naphthol Grounding — Azophor Red Printing Paste — Steam Indigo Blue F.



No. 10.

(Pattern produced in a large printing establishment).

Naphthol Grounding — Azophor Red Printing Paste — Steam Indigo Blue F.

No. 11.

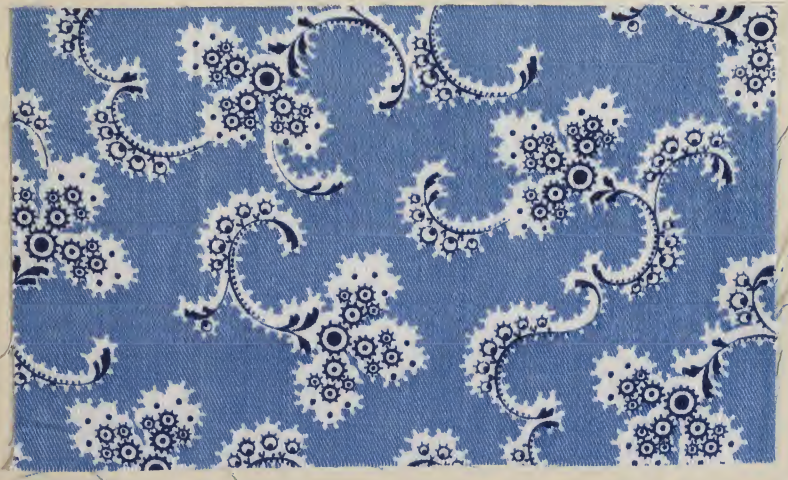
(Pattern produced in a large printing establishment)

Steam Indigo Blue F — Steam Indigo Blue F 1:9 (Reducing paste AF).

No. 12.

(Pattern produced in a large printing establishment.)

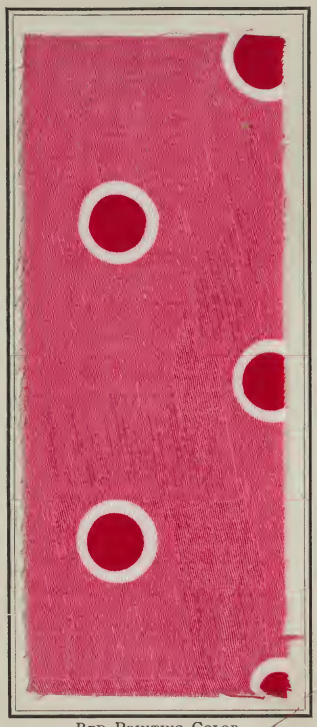
Steam Indigo Blue F — Steam Indigo Blue NF 1:9 (Reducing paste NF)



PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.



RED PRINTING COLOR.
ROSE PRINTING COLOR.

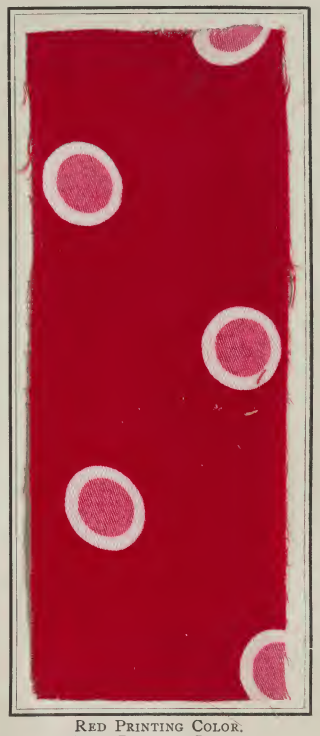
AZO ROSE B B.

This product is similar to Paranitraniline in general methods of application and in fastness.

In deep shades it produces a rich scarlet and in lighter shades a clear bright blue-red.

It is suitable for all classes of cotton printing.

Further information, samples and printing directions will be furnished by any of our offices upon application.



RED PRINTING COLOR.
ROSE PRINTING COLOR.

WHITE RESERVE—DYED.

H. A. METZ & CO.,

122 HUDSON STREET,

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PROVIDENCE, R. I.

CHICAGO, ILL.
CHARLOTTE, N. C.
ATLANTA, GA.

SAN FRANCISCO, CAL.
MONTREAL, CANADA.
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LABORATORIES: NEWARK, N. J.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

3% Amido Black Base I
Developed in Air at 105°F.

AMIDO BLACK BASE I PRINTED UPON COTTON YARN.

This new fast, ungreenable Black is admirably suited for printing upon cotton yarn. Its extreme fastness to all the ordinary reagents, the fact that it is ungreenable under all conditions, and that it leaves the fibre in its original soft, strong and pliable condition, makes it more advantageous for this line of work than the ordinary oxidized Aniline Black.

To interested parties, we will be pleased to send samples and detailed directions of its applications and uses.

3% Amido Black Base I
Steamed 1 Hour Without Pressure.

H. A. METZ & CO.,

122 HUDSON STREET,

NEW YORK.

Boston, Mass.
Philadelphia, Pa.
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LABORATORIES: NEWARK, N. J.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

AMIDO BLACK BASE I.

Dyeings produced with this product resemble in shade those produced with Oxidized Aniline Black, but they possess the advantage of being absolutely non-greenable, and the fibre is not in the least weakened by its use. Amido Black Base I is unequaled for the production of deep, absolutely fast blacks upon cotton, and we recommend its use for the production of blacks upon the highest grade goods.

To interested parties, we will be pleased to send full detailed directions regarding the application of this new product.

H. A. METZ & CO.,

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C. 1.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

AMIDO FAST BLACK ON NAPHTHOL PREPARATION.

On account of the fastness and beauty of the shade produced with Amido Fast Black, it is well suited for the illumination of azo colors produced upon the fibre.

Amido Fast Black has excellent fastness to light, washing, soap, and rubbing, and is particularly valuable for the production of large figures which are generally produced with Logwood Extract in the form of Noir reduit, etc. This color does not rub off nor stain the white.

Its method of application is extremely simple and on account of the fact that only a small quantity of acid is used, and as the goods have been previously treated with alkali, there is no danger of the fibre being tendered.

Further particulars, printing directions, and samples will be furnished upon application to any of our offices.

H. A. METZ & CO.,

122 HUDSON STREET,

NEW YORK.

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LABORATORIES: NEWARK, N. J.

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1-25-'06

PRINTING DIRECTIONS.

GROUNDING

1 lb. 11 ozs. Naphthol R,
8 " Boiling Water,
1 " 11 ozs. Caustic Soda 66½° Tw.
11 " Para Soap P N,
Make up with water to 12½ gallons.

BLACK PRINT COLOR

8 lbs. Amido Black Oil D O,
6 " Acetic Acid 12° Tw.
4 " 8 ozs. Lactic Acid Special,
3 " 8 " Muriatic Acid 34° Tw.
59 " 8 " Acid Starch Thickening,
3 " 8 " Sodium Chlorate,
10 " Water.
1 lb. 8 ozs. Copper Sulphide 30% paste,
2 " Water
1 lb. 8 ozs. Aluminium Chloride 53° Tw.
Make up with water to 100 lbs.

ACID STARCH THICKENING.

24 lbs. Wheat Starch
66 " Water
20 " Acetic Acid 50%
Boil for 10 minutes.

After printing, the goods are steamed for 2 min. in a Mather-Platt at 195° F., washed, and dried.

AZOPHOR RED P N—Black Print Color.

AZOPHOR ORANGE M N—Black Print Color.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

THIS CIRCULAR IS INTENDED FOR INSERTION IN THE BINDER PREVIOUSLY SENT YOU.

PHOSPHINE BASE L3G. PHOSPHINE BASE LO. PHOSPHINE BASE LOB.

These three bases are suitable for printing yellow to brown shades upon cotton without danger of weakening the fibre.

The colors are easy of application and possess excellent fastness.

Further particulars and samples will be furnished upon application to any of our offices.

H. A. METZ & CO.,

122 HUDSON STREET,

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TORONTO, CANADA.

LABORATORIES: NEWARK, N. J.

P.18
505

8-15-06.

PRINTING DIRECTIONS.

Phosphine Base L3B, LO and LOB must be dissolved warm with acetic acid, acetine, glycerine and tartaric acid. The solution is then stirred into the Acid Starch and finally the Tannin Solution is added.

After Printing, the goods should be steamed one hour without pressure.

SAMPLE I.

PHOSPHINE BASE L3G PRINT COLOR.

4 lbs. Phosphine Base L3G are dissolved warm in
13½ lbs. Acetic Acid 6° Be.
3 lbs. Acetine
9½ ozs. Tartaric Acid
3 lbs. Glycerine
The solution is then added with stirring into
J lbs. Acid Starch and
16 lbs. Acetic Acid Tannin Solution (1:1) then added.

Make up to 100 lbs.

AMIDO FAST BLACK

A
- 30 lbs. Acid Starch
- 3 lbs. Chlorate of Soda
- 6 lbs. Water
- 3½ lbs. Amido Black Base I are dissolved in
- 13 lbs. Acetic Acid 6° Be. and
- 4½ lbs. Lactic Acid Special

B
- 30 lbs. Acid Starch
- 1 lb. 12 ozs. Chloride of Alumina 30° Be.
- 1 lb. Copper Sulphide Paste 30%
- 1 lb. 6½ ozs. Developer C
- 6 lbs. Water

Make up to 100 lbs.
Before using, B is stirred into A

SAMPLE II.

PHOSPHINE BASE LO PRINT COLOR.

(The same as Phosphine Base L3G Print Color using Phosphine Base LO instead of Phosphine Base L3G)

AMIDO FAST BLACK.

(The same as directions given above)

GREEN PRINT COLOR.

1 lb. 9½ ozs. Auramine O
10 ozs. Brilliant Green crystals
7 lbs. Acetic Acid 6° Be.
2 lbs. Acetine
15½ lbs. Water
60 lbs. Acid Starch
3½ ozs. Tartaric Acid
3 lbs. Glycerine
10 lbs. Acetic Tannin solution (1:1)

Make up to 100 lbs.

SAMPLE III.

PHOSPHINE BASE LOB PRINT COLOR.

(Same as Phosphine Base L3G Print color diluted 3 to 1)

AMIDO FAST BLACK.

(Same as above)

SAMPLE IV.

PHOSPHINE BASE LOB PRINT COLOR.

(Same as Phosphine Base L3G Print Color using Phosphine Base LOB instead of Phosphine Base L3G)

BLUE PRINT COLOR.

- 1 lb. Thionine Blue GO
- 4 lbs. Acetic Acid 6° Be.
- 1 lb. Acetine
- 1 lb. 13 ozs. Water

60 lbs. Acid Starch
3⅕ ozs. Tartaric Acid
3 lbs. Glycerine
5 lbs. Acetic Tannin Solution (1:1)

Make up to 100 lbs.

ACID STARCH.

21 lbs. Wheat Starch
57 lbs. Water
22 lbs. Acetic Acid 6° Be.

Boil 10 minutes and cool

All of the above prints were steamed one hour without pressure, passed through a Tartar Emetic-Chalk bath, washed and soaped.

I.

Phosphine Base L3G Print Color—Amido Fast Black.

II.

Phosphine Base LO Print Color—Green Print Color—Amido Fast Black.

III.

Phosphine Base LOB Print Color—Amido Fast Black.

IV.

Phosphine Base LOB Print Color—Blue Print Color

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

CHROMOGLAUCINE BMJ SOLUTION
CHROMOGLAUCINE BMJ POWDER.

This new color is useful for the production of Alizarine Blue shades possesing excellent fastness.

The blue chrome lake can be formed either by padding or printing, and the color is particularly useful for the production of blue prints upon calico.

The solution and the powder are identical, the former having 15% the strength of the latter.

Further particulars, and samples will be furnished upon application to any of our offices.

H. A. METZ & CO.,

122 HUDSON STREET,

NEW YORK.

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PHILADELPHIA, PA.	CHARLOTTE, N. C.	MONTREAL, CANADA,
PROVIDENCE, R. I.	ATLANTA, GA.	TORONTO, CANADA.

LABORATORIES: NEWARK, N. J.

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7-30-06.

PRINTING DIRECTIONS.

It is advisable to use green chromium acetate in the production of the printing pastes and a fast lake is formed by a short steaming of from 5 to 10 minutes in a Mather-Platt machine. A longer steaming is not objectionable but steaming with excessive pressure for a long time reddens the shade somewhat.

The printing pastes are very stable. As Chromoglaucine VM has the same general properties as Chromoglaucine BMJ, the former can be used in combination for the production of redder shades. It can be printed or padded upon either bleached or prepared goods.

Its fastness to washing, soap, light and chlorine is equal to the best colors used in calico printing.

Chromoglaucine BMJ can be discharged with a chlorate discharge and with Hydrosulphite NF conc. as a color discharge on Azo colors.

Padding Liquor.

	1	11	111
Chromoglaucine BMJ solution	25 lbs.	12½ lbs.	
" VM paste		2 lbs.	4 lbs.
Water	50 lbs.	60 lbs.	70 lbs.
Hydrosulphite NF conc.	3¼ ozs.	3¼ ozs.	3¼ ozs.
Tragacanth (6:100)	5 lbs.	5 lbs.	5 lbs.
Formic Acid conc.	1½ lbs.	1½ lbs.	1½ lbs.
Glycerine	1½ lbs.	1½ lbs.	1½ lbs.
Water	10 lbs.	10 lbs.	10 lbs.
Green Chromium Acetate 33° Tw.	8 lbs.	8 lbs.	8 lbs.
	Make up to 100 lbs.		

The goods are padded upon a foulard, dried on the hot flue, printed, steamed 6 minutes in a Mather-Platt machine, washed and soaped.

Reserve Na 300.

30 lbs. Sodium Acetate Crystals
50 lbs. Tragacanth (6:100)
20 lbs. Water
Make up to 100 lbs.

Chlorate White Discharge.

A
- 7½ lbs. China Clay made into a paste with
- 7½ lbs. Water
- 20 lbs. Gum Water
- 14 lbs. Sodium Chlorate

B
- 10 lbs. Powdered Tartaric Acid
- 5 lbs. Water
- 10 lbs. Gum Water (1:2)

C
- 1 lb. 9⅔ ozs. Powdered Yellow Prussiate of Potash
- 4½ lbs. Water
- 20 lbs. Gum Water (1:2)

Make up to 100 lbs.

Discharge Blue BMJ.

20 lbs. Chromoglaucine BMJ. solution
40 lbs. Wheat Starch-Tragacanth Thickening
5 lbs. Green Chromium Acetate 33° Tw.
25 lbs. Hydrosulphite solution
10 lbs. Water
Make up to 100 lbs.

Green 5 GM.

3 lbs. Alizarine Yellow 5G Powder
26½ lbs. Hot Water
50 lbs. Wheat Starch-Tragacanth Thickening
5 lbs. Formic Acid conc.
cool and add
6½ lbs. Methylene Blue DBB
3 lbs. Water
12 lbs. Green Chromium Acetate 33° Tw.
Make up to 100 lbs.

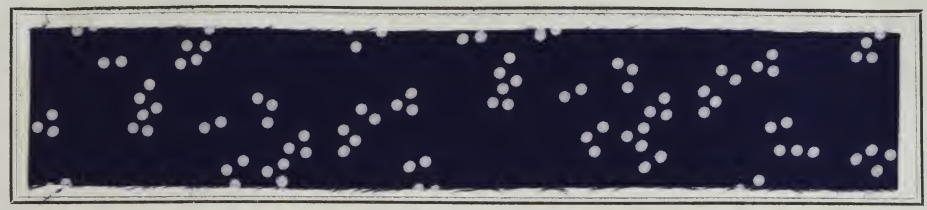
Blue B.

3 lbs Chromoglaucine BMJ Powder
22 lbs. Water
add to the following cold solution.
60 lbs. Wheat Starch-Tragacanth Thickening
5 lbs. Formic Acid conc.
10 lbs. Green Chromium Acetate 33° Tw.

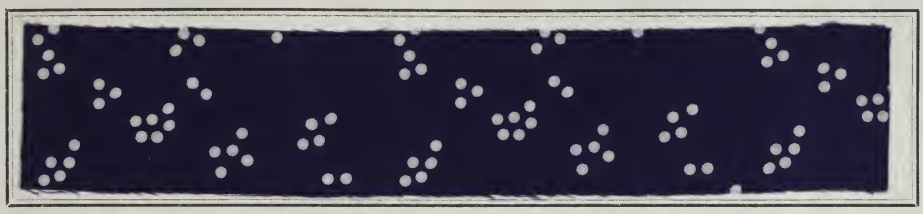
Hydrosulphite Solution.

22½ lbs. Hydrosulphite NF conc.
dissolved in
22½ lbs. water
cool and add
8 ozs. Formaldehyde 40%
add slowly
2 lbs. Acetic Acid 50%
2½ lbs. water

After printing the goods should be dried moderately, steamed for 4 minutes in the Mather-Platt machine at 210-215° F. without presence of air, allowed to lie in air until completely oxidized, washed and soaped. When using a continuous machine it is advisable to develop the colors in a chromium bath.

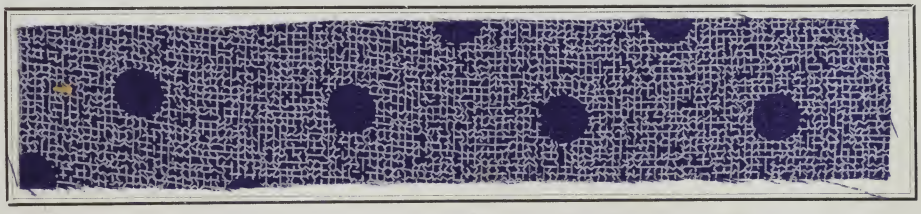


Padding Liquor I—Chlorate White Discharge.



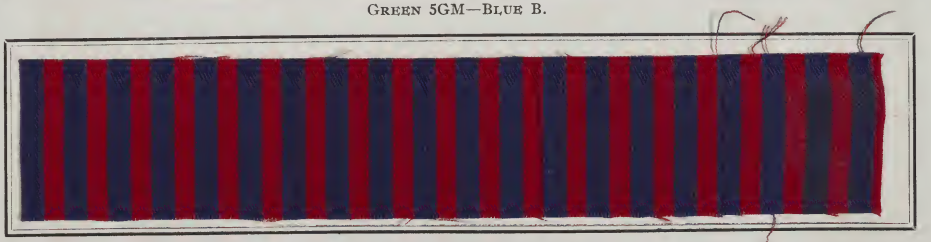
Padding Liquor II—Chlorate White Discharge.

Padding Liquor III—Chlorate White Discharge.



Padding Liquor II—Reserve Na 300—Chlorate White Discharge.

Green 5GM—Blue B.



Para Red—Discharge Blue BMJ.

THIS CIRCULAR IS INTENDED FOR INSERTION IN THE BINDER PREVIOUSLY SENT YOU.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

HYDROSULPHITE NF CONC. SPECIAL.

This new member of our group of Hydrosulphite compounds is especially adapted for the production of pure white discharge effects upon goods dyed with Alpha Naphthylamine Claret. It is also suitable for the discharging of Paranitraniline Red and for other colors which can be discharged with our Hydrosulphite NF conc.

In its general properties and method of application it resembles our Hydrosulphite NF conc. but attention is called to the fact that Starch Tragacanth thickening gives purer white effects than Gum Thickening.

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LABORATORIES: NEWARK, N. J.

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11-15-'06

DISCHARGING DIRECTIONS.

By using Para Soap PN in the grounding of Alpha Naphtylamine Claret, the discharge effect is improved. The use of Alpha Naphtylamine Salt S powder is recommended.

Paranitraniline Red is produced in the usual way upon a grounding containing 2 lbs. of Beta Naphthol R to 12 gallons of solution.

NAPHTHOL GROUNDING FOR CLARET.

2½ ibs. Beta Naphthol
2 lbs. Caustic Soda 40° Be.
5 lbs. Boiling Water
Dissolve and add slowly with constant stirring a mixture of
5 lbs. Tragacanth Paste (6:100)
8 ozs. Para Soap PN and 10 gallons water.
100 lbs.

DISCHARGE WHITE.

2½ lbs. Hydrosulphite NF conc. Special are dissolved with
1½ lbs. Water and
8 ozs. Glycerine, at temperature of about 122° F. and then stirred into
5½ lbs. Starch Tragacanth Thickening
10 lbs.

DEVELOPING BATH.

1 lb. 14¾ ozs. Alpha Naphtylamine Salt S Powder are made into a paste with
20 lbs. Cold Water and
1 lb. Sulphuric Acid 66° Be. and then add
20 lbs. of Ice. When the temperature is reduced to about 32° F., introduce slowly with constant stirring:
2 lbs. 9½ ozs. Sodium Nitrite solution (29:100). After allowing to stand ¼ hour, filter and before use add:
3 lbs. Sodium Acetate
100 lbs.

	DISCHARGE YELLOW.	DISCHARGE BLUE.	DISCHARGE GREEN.
Auramine conc.	2 lbs.	——	2 lbs. 6½ ozs.
Thionine Blue GO	——	9½ ozs.	9½ lbs.
Water	4 lbs.	19½ lbs.	7 lbs.
Glycerine	5 lbs.	5 lbs.	5 lbs.
Starch Tragacanth Thickening	35 lbs.	35 lbs.	35 lbs.
Tartaric Acid	3½ ozs.	3½ ozs.	3½ ozs.
Alcohol	5 lbs.	——	5 lbs.
Water Tannin Solution (1:1)	8 lbs.	3 lbs.	8 lbs.
Sodium Turkey Red Oil 50%	5 lbs.	5 lbs.	5 lbs.
Hydrosulphite NF conc. Special	17 lbs.	15 lbs.	15 lbs.
Gum Water (1:1)	17 lbs.	15 lbs.	15 lbs.
	100 lbs.	100 lbs.	100 lbs.

STARCH TRAGACANTH THICKENING.

7½ lbs. Wheat Starch
32½ lbs. Water
60 lbs. Tragacanth (6-100)
100 lbs. (Throughly boiled).

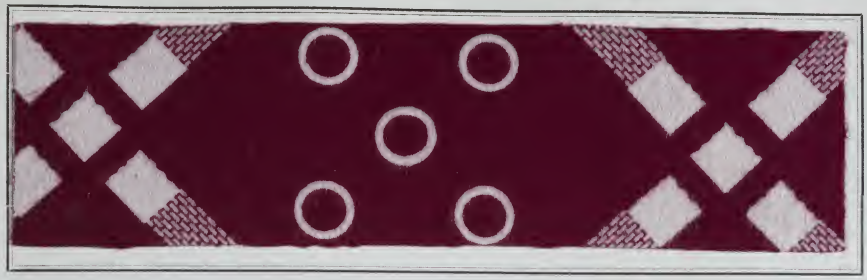
For multi-colored printing or where very fine designs are required upon dark shades the quantity of the discharge material should be increased.

METHOD FOR THE PRODUCTION OF COLORED DISCHARGE PASTES.

The dyestuff is mixed with the water, glycerine, starch tragacanth thickening and alcohol and warmed until dissolved. After cooling add slowly the tartaric acid, tannin solution, turkey red oil and finally add the cold solution of the Hydrosulphite NF conc. Special dissolved in the gum water.

After overprinting the discharge color, the goods are steamed for from 3 to 5 minutes in the Mather Platt at 212° F., washed and soaped. If the goods are not soaped, a passage through warm water before washing, will be necessary.

Colored discharges should be treated with an antimony salt bath before washing and soaping.



Alpha Naphtylamine Claret—Beta Naphthol (25:1000)
Discharge White

Alpha Naphtylamine Claret—Beta Naphthol (25:1000)
Discharge White—Discharge Yellow—Discharge Green—Discharge Blue

Para Nitraniline Red—Beta Naphthol R (20:1000)
Discharge White

Para Nitraniline Red—Beta Naphthol R (20:1000)
Discharge White—Discharge Yellow—Discharge Green—Discharge Blue

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

HYDROSULPHITE CL PAT.

This is a special brand of hydrosulphite for the production of white and colored discharges of indigo grounds.

It is well known, that the great advantage of Indigo hydrosulphite discharges in not tendering the cotton fibre is somewhat counterbalanced by the fact that the sensitiveness to the air of the indigo-white formed, interferes with the uniformity of the discharge.

This indigo-white is converted by Hydrosulphite CL in the presence of zinc oxide into an orange yellow compound, which is not affected by exposure to air and can be completely removed from the fibre by a hot aftertreatment with a weak alkaline solution. On this account the material which has been printed with the discharge color and steamed may be left to lie for a considerable time, without the purity of the white, which is obtained after the washing, suffering in the least.

Samples and prices will be furnished on application. to any of our offices.

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LABORATORIES: NEWARK, N. J.

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5-20-1910.

HYDROSULPHITE CL PAT.

METHOD OF APPLICATION, (Patent applied for).

Hydrosulphite CL is very easily soluble in water and is somewhat hygroscopic and must therefore be kept in closed vessels well protected from damp and warm air.

Method of Application.

The Indigo dyed material is printed with the following White Discharge CL 200, dried, and then steamed in the Mather-Platt for 3-5 min., at 212-217° F., with steam free from air. The orange yellow compound is stripped from the fibre and the white cleared by a passage through hot water, 194-203°F., to which 10-20 parts of soda lye 77° Tw., per 1000 parts have been added. The material is then washed at full width and dried.

DISCHARGE WHITE CL 200.

200	parts Hydrosulphite CL
100	parts Hot Water
160	parts Zinc Oxide paste 1:1
500	parts British Gum thickening 1:1
40	parts Anthraquinone paste 30%
1,000	parts

REDUCING PASTE

80	parts Zinc Oxide Paste 1:1
550	parts British Gum thickening 1:1
10	parts Glycerine
20	parts Anthraquinone paste 30%
340	parts Water
1000	parts.

Discharge White CL 200 discharges ordinary Indigo even very dark shades very well, but a good white cannot be obtained on dyeings with Halogen-Indigo or with Indigo MLB/T.

The printing color keeps well and may be kept for some time without any considerable change in its effectiveness. As even very full shades can be discharged with the above quantity of Hydrosulphite CL (200 parts), the amount need only be increased to 250 parts per 1000 in exceptional cases. For the preparation of weaker discharge colors from Discharge White CL 200 the above reducing paste is employed. The zinc oxide is necessary for the formation of the stable indigo-white compound and the quantity should not be reduced much even in the case of light Indigo dyeings. The Anthraquinone is not absolutely necessary but helps and quickens the reduction. The concentration and composition of the discharge colors is dependent on the engraving of the rollers, the steaming apparatus and the quality of the steam used. The printed material may be left to lie a few hours before steaming without being injured. The steam must be as free from air as possible but not too dry. If the pieces are dried too much after printing in the hot flue it is advisable to let them lie in the air a short time before steaming. If the steam is too dry, we recommend a slight addition of glycerine to the discharge colors. After steaming the discharged places should appear pure orange yellow. In this condition the pieces may be left to lie for days before clearing without the quality of the white suffering in any way.

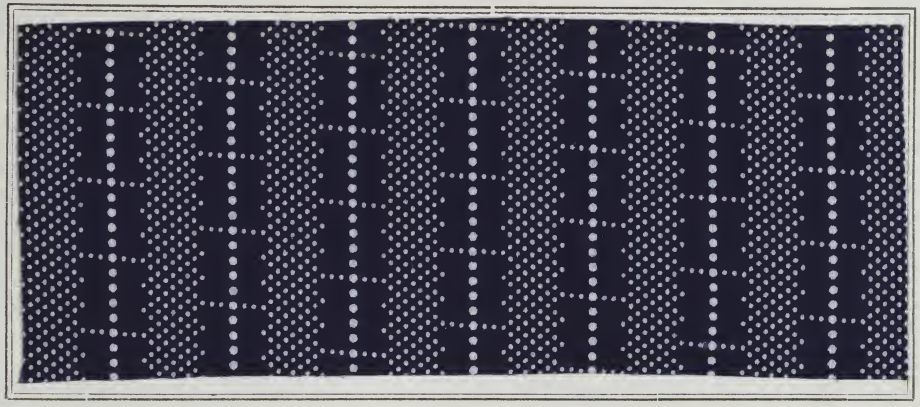
The kind of thickening is not very important. Artificial gums may be employed and also dextrine which is cheaper but does not thicken so well. The poor solubility of starch thickenings interfere with the clearing process. The yellow compound of zinc and indigo-white is also easily soluble in boiling water. In order to get the white thoroughly clean, the above mentioned passage through water of 194-203° F., with the addition of 10-20 parts of Soda Lye 77° Tw. per 1000 is most suitable. As the excess of hydrosulphite is not completely removed and destoyed in the steaming, it is advisable to reduce the quantity of this discharging agent in the printing colors to a minimum and give the material a short rinse in running hot water in order to prevent the harmful influence of the hydrosulphite, which is still on the fibre, from acting on the Indigo ground in the alkaline bath. After passing the clearing bath the material is run directly through cold water at full width, then squeezed and dried.

If the material is run quickly through an acid bath before the last washing the shade of the Indigo is brightened.

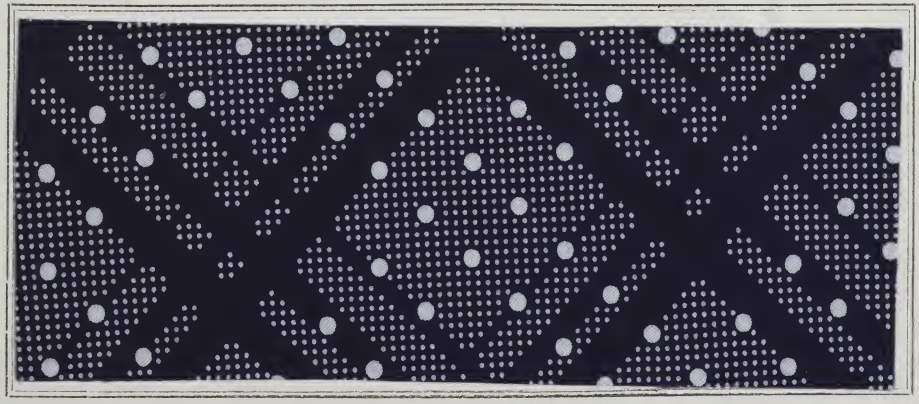
In place of soda lye, sodium silicate or other alkaline substances may be employed.

Discharge White CL Reduction 3 to 1

Discharge White CL Reduction 3 to 1



Discharge White CL 200



PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

RESISTS UNDER DISCHARGE WITH HYDROSULPHITE NF CONC. ON AZO COLOR GROUNDS.

This method of printing resist and discharges for white and colored effects is particularly valuable for Para Reds and Para Browns, the results being noticeable on account of the brilliancy of the colors.

Further particulars, and samples, will be furnished upon application to any of our offices.

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LABORATORIES: NEWARK, N. J.

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7-30-06.

RESIST AND DISCHARGE DIRECTIONS.

Acid oxidizing substances are used for the resist pastes, antimony salt being added in order that colored discharge effects can be produced with Hydrosulphite and the basic dyestuffs. For this purpose organic acids such as the salts of citric acid or tartaric acid as well as chlorate, persulphate, chromates, manganese peroxide and other oxidizing metallic salts, such as the salts of copper or iron, can be used; but the best results are obtained with citric acid or tartaric acid in combination with sodium chlorate. The latter substances are best suited for Para Reds, as by their use the shade is not changed. The best results are obtained on Para Brown R and G with alkaline copper solution. Oxidizable chrome dyestuffs, such as Chromoglaucine, Philochromine, etc., can be used with the citric acid and sodium chlorate resist.

The following resist pastes and discharge pastes give excellent results.

NF White Resist I.

for Para Red and Para Brown.

84 lbs. Gum Water
6 lbs. Citric Acid Crystals
10 lbs. Sodium Chlorate

Make up to 100 lbs.

NF White Resist II.

for Para Brown.

40 lbs. Burnt Starch Thickening (1:1)
20 lbs. Caustic Soda 40° Be.
heated, then cooled, and slowly stirred into
40 lbs. Alkaline Copper Solution

Make up to 100 lbs.

NF Yellow Resist

for Methylene Yellow H and Auramine Discharges.

50 lbs. Gum Water
10 lbs. Citric Acid
20 lbs. Tartar Emetic
20 lbs. Sodium Chlorate

Make up to 100 lbs.

NF Blue Resist

for Chromoglaucine, Philochromine, etc.

60 lbs. Gum Water
20 lbs. Citric Acid
20 lbs. Sodium Chlorate

Alkaline Copper Solution.

100 lbs. Copper Chloride Solution 40° Be.
50 lbs. Tartaric Acid
40 lbs. Glycerine
cool and add
120 lbs. Caustic Soda 40° Be.

Discharge White NF.

60 lbs. Gum Water
15 lbs. Hydrosulphite NF conc.
25 lbs. Water

Make up to 100 lbs.

Discharge Yellow NF.

2 lbs. Auramine conc.
3 lbs. Glycerine
1 lb. Acetine
16½ lbs. Hot Water
are dissolved with
40 lbs. Thickening for colored discharges, warmed until dissolved and add
6 lbs Carbolic Acid
8 lbs. Tannin Solution (1:1)
when cold pour in solution of
17 lbs. Hydrosulphite NF conc.
6 lbs. Water
8 ozs. Formaldehyde 40° Be.

Make up to 100 lbs.

In place of the Auramine, a similar quantity of Methylene Yellow H can be used.

Discharge Blue VM.

5 lbs. Chromoglaucine VM Paste Pat.
45 lbs. Tragacanth (6:100)
5 lbs. Green Chromium Acetate 33° Tw.
45 lbs. Hydrosulphite Solution

Make up to 100 lbs.

Hydrosulphite Solution.

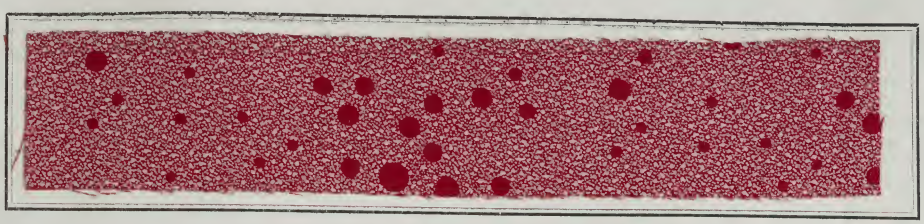
22 lbs. 5 ozs. Hydrosulphite NF conc.
65 lbs. Water are dissolved;
warm, cool and slowly add
8 ozs. Formaldehyde 40%
2 lbs. Acetic Acid 50%
10 lbs. Water

Make up to 100 lbs.

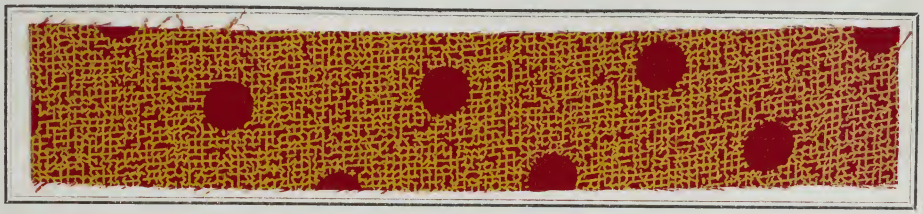
Thickening for Colored Discharges.

150 lbs. Wheat Starch
550 lbs. Water.
300 lbs. Tragacanth 6:100 are boiled together.

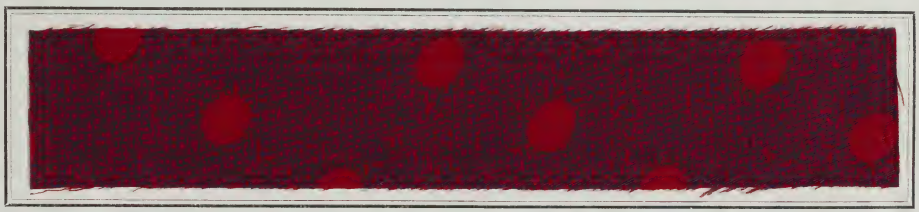
Make up to 125 gals.



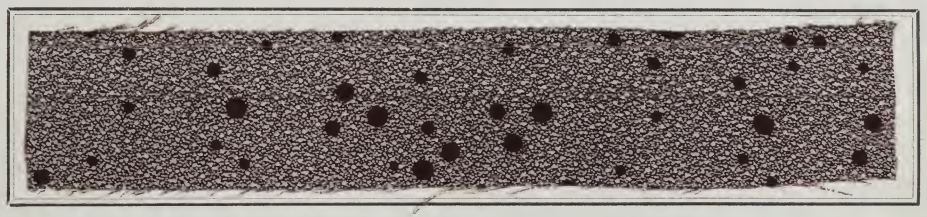
NF White Resist I—White Discharge NF—Para Red.



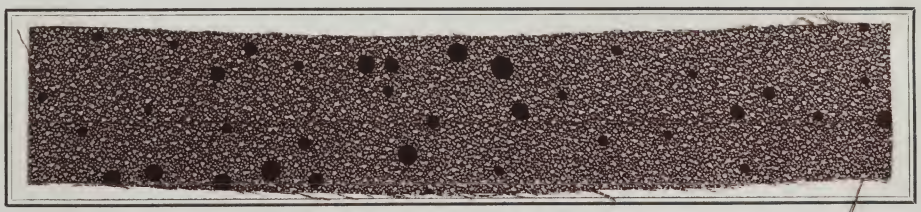
NF Yellow Resist—Discharge Yellow NF—Para Red.



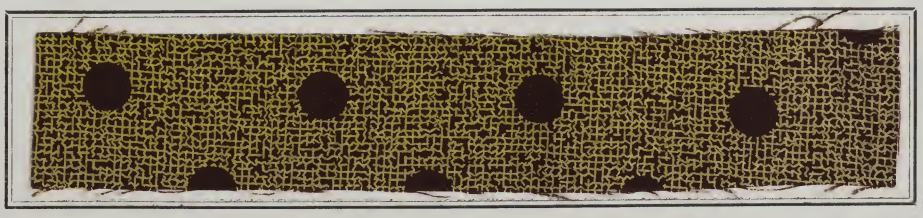
NF Blue Resist—Discharge Blue VM—Para Red.



NF White Resist I—Discharge White NF—Para Brown R.



NF White Resist II—Discharge White NF—Para Brown R.



NF Yellow Resist—Discharge Yellow NF—Para Brown.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

WOOL PRINTING BLACK N B.

On account of the fastness of this new wool color, it is well suited for printing upon chlored wool.

Wool Printing Black N B gives blue-black shades and can be mixed with Victoria Yellow for the production of deep blacks, and with Patent Blue or other similar blues and violets for the production of blue-black shades.

H. A. METZ & CO.,

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TORONTO, CANADA.

LABORATORIES: NEWARK, N. J.

PRINTING DIRECTIONS.

Wool Printing Black N B is soluble in hot water and is used with acid fixing re-agents, such as alum, tartaric acid, oxalic acid or oxalate of ammonia.

As a thickening material, a mixture of tragacanth and british gum or wheat starch and british gum should be used. It is essential that the color be thoroughly dissolved and that it be well washed after steaming. The best results are obtained upon chlored wool, after printing, the goods being treated with moist steam for 1½ to 2 hours and then thoroughly washed until the thickening and the unfixed dyestuff are entirely washed out and then dried.

BLACK.	I	II
Wheat Starch	2 lbs.	2 lbs.
Cold Water	2¼ gallons	2¼ gallons
British Gum	1 gallon 7 pints	1 gallon 7 pints
Acetic Acid 12° Tw.	5 pints	5 pints
Well mixed and add with thorough stirring		
Wool Printing Black N B	6 lbs.	5 lbs. 13 ozs.
Victoria Yellow Conc.	—	3 ozs.
Boiling Water	6¼ gallons	6¼ gallons
The mixture thoroughly boiled, cooled and when lukewarm, add		
Ammonium Oxalate	4 lbs.	4 lbs.
Sodium Chlorate	½ lb.	½ lb.

	ORANGE.	BLUE.
Flavazine O	7 ozs.	—
Orange II	4 "	—
Fast Acid Blue R Conc.	½ oz.	—
Patent Blue L	—	1½ ozs.
Boiling Water	5 gallons	5 gallons
Glycerine	1¼ lbs.	1¼ lbs.
Dissolved hot and add		
British Gum	19 lbs.	19 lbs.
Ammonium Oxalate	1¼ "	1¼ "

	GREEN.	VIOLET.
Chinoline Yellow O	15 ozs.	—
Naphthalene Green V	1¼ lbs.	—
Acid Violet 7 B N	—	1¼ lbs.
Boiling Water	4¾ gallons	4¾ gallons
Glycerine	1¼ lbs.	1¼ lbs.
Dissolve hot and add		
British Gum	19 lbs.	19 lbs.
Ammonium Oxalate	1¼ "	1¼ "

Black I
Orange
Blue

Black II
Violet
Green

THIS CIRCULAR IS INTENDED FOR INSERTION IN THE BINDER PREVIOUSLY SENT YOU.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

ALIZARINE YELLOW 5G POWD.

This new wool color is a valuable addition to our series of Alizarine Yellows on account of the clear greenish shades produced upon a chrome mordant.

It can be used alone for the production of greenish yellow shades or in mixtures with Methylene Blue for the production of green shades.

Further particulars, dyeing directions and samples, will be furnished upon application to any of our offices.

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MONTREAL, CANADA,
TORONTO, CANADA.

LABORATORIES: NEWARK, N. J.

P14
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1-25-'06

PRINTING DIRECTIONS

Alizarine Yellow 5G Powd. can be fixed upon a chrome mordant in the same manner as our other Alizarine Yellows. When dyed upon a discharged chrome mordant, the white is but slightly tinted.

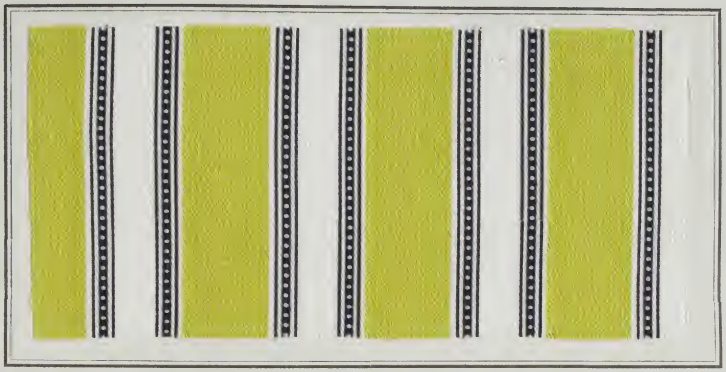
It can be used with basic dyestuffs for the production of basic lakes without the use of tannin, these mixtures possessing excellent fastness to washing and light, and hence being particularly valuable for calico printing.

Alizarine Yellow 5G Powd. is very soluble in hot water.

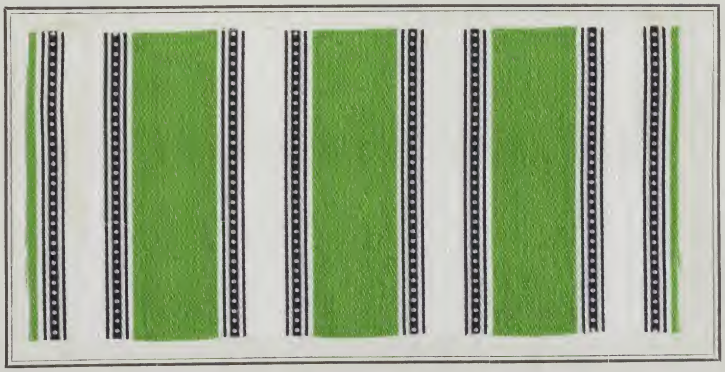
In the preparation of the printing paste, hot water should be poured over the dyestuff, warmed for a short time until a perfect solution is obtained, mixed with thickening and after cooling, the chrome mordant may be added.

Yellow Print Color.	*Green Print Color.*	
4 lbs.	4 lbs.	Alizarine Yellow 5 G Powd. are dissolved in
80 "	68 "	Hot Water. Warmed and mixed with
80 "	80 "	Wheat Starch—Tragacanth Thickening
10 "	10 "	Formic Acid Special
6 "	6 "	Glycerine
—	½ "	Methylene Blue D B B
—	6 "	Water
20	20 "	Green Chromium Acetate 32° Tw.
25 gallons.	25 gallons.	

The above is printed upon goods not previously prepared, steamed for about 1½ hours without pressure, washed and soaped for 10 minutes at 140° F.



AMIDO FAST BLACK—Yellow Print Color.



AMIDO FAST BLACK—Green Print Color.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

DARK BROWN SALT R
DARK BROWN SALT G

These new printing Salts have the general characteristics of our Brown Salt R and Brown Salt G, but the shades produced are somewhat darker in tone. They are suitable for the production of fast printing browns.

Further particulars can be obtained by application to any of our offices.

H. A. METZ & CO.,

122 HUDSON STREET,

NEW YORK.

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LABORATORIES: NEWARK, N. J.

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PRINTING DIRECTIONS

Dark Brown Salt R and Dark Brown Salt G are used in the same way as Brown Salt R and Brown Salt G. The goods are printed with a solution of Dark Brown Salt, dried and then developed by a passage through a diazotized Paranitraniline bath. As a full development is not produced immediately it is necessary to allow the goods to lie for some time before washing.

Both of these Salts are soluble in water to which should be added a small quantity of sodium acetate, in order to increase the coupling properties of the Salt and deepen the produced shade.

Hydrosulphite N F Conc. gives clear discharges upon both browns.

The attached samples were produced as follows:

GROUNDING

Brown Salt R	1 lb. 9½ oz.			
Dark Brown Salt R		1 lb. 9½ oz.		
Brown Salt G			1 lb. 9½ oz.	
Dark Brown Salt G				1 lb. 9½ oz.
Hot Water	6 gal.	6 gal.	6 gal.	6 gal.
Tragacanth Water (6: 100)	7½ lbs.	7½ lbs.	7½ lbs.	7½ lbs.
Add cold				
Sodium Acetate		5 oz.		5 oz.
Water	5½ gal.	5½ gal.	5½ gal.	5½ gal.

DEVELOPING BATH

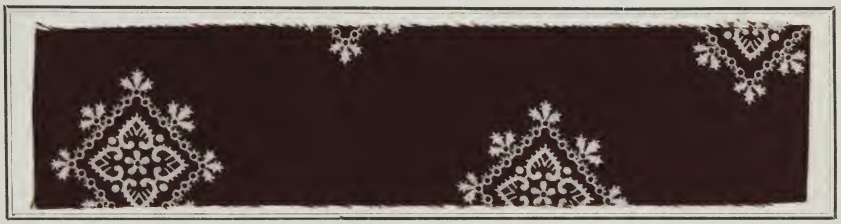
1 lb. 6½ oz. Paranitraniline Extra diazotized and diluted with water to 12 gallons. Before use, add 4 lbs. sodium acetate. After developing allow to lie ten minutes before washing, then wash and soap.

DISCHARGE WHITE

20 parts Hydrosulphite N. F. Conc.
20 parts Gum Water (1:1)
dissolve warm and then add
40 parts Starch Tragacanth Thickening
20 parts China Clay Paste (1:1)
100

Steam for 3½ minutes in Mather Platt. Wash and Soap. Treat with a weak chloring.

Grounding 1—Brown Salt R—Developing Bath—Discharge White.



Grounding 2—Dark Brown Salt R—Developing Bath—Discharge White.

Grounding 3—Brown Salt G—Developing Bath—Discharge White.

Grounding 4—Dark Brown Salt G—Developing Bath—Discharge White.

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PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

AUROFLAVINE KR.

This new basic dyestuff gives shades closely resembling those produced with the tin lake of Persian Berry.

Auroflavine KR can be used in direct printing for the production of bright yellow shades or for the production of color reserves under Prud'homme Aniline Black.

Further particulars and samples will be furnished upon application to any of our offices.

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LABORATORIES: NEWARK, N. J.

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PRINTING DIRECTIONS.

The tannin lake of Auroflavine KR is fast to reducing agents but is destroyed by oxidizing agents.

Auroflavine KR can be dissolved in water alone or with the addition of glycerine.

On account of the fastness to light, washing and chlorine of the produced dyeings, this color is valuable as a substitute for the tin lakes of Persian Berry.

Yellow Print Color

2 lbs. Auroflavine KR
14 lbs. 13 ozs. Water
3 lbs. Glycerine
10 lbs. Starch Tragacanth Thickening
heat until dissolved then add
2 lbs. Acetine
7 lbs. Acetic Acid 30%
50 lbs. Acid Starch Thickening
$3\frac{1}{5}$ ozs. Tartaric Acid
8 lbs. Acetic Tannin solution (1:1)
100 lbs.

White Reserve

50 lbs. Tragacanth (60:1000)
15 lbs. Acetate of Soda
$13\frac{1}{2}$ lbs. Bisulphite of Soda 36° Be.
$21\frac{1}{2}$ lbs. Water
100 lbs.

Orange Reserve

2 lbs. Auroflavine KR
3 lbs. Glycerine
15 lbs. Water
80 lbs. Thickening A
100 lbs.

Thickening A.

$12\frac{1}{2}$ lbs. Zinc Oxide
20 lbs. Magnesium Acetate 24° Be. ground well
$42\frac{1}{2}$ lbs. Tragacanth (60:1000)
$12\frac{1}{2}$ lbs. Starch Thickening
$12\frac{1}{2}$ lbs. Egg Albumen (1:1)
100 lbs.

Starch Tragacanth Thickening

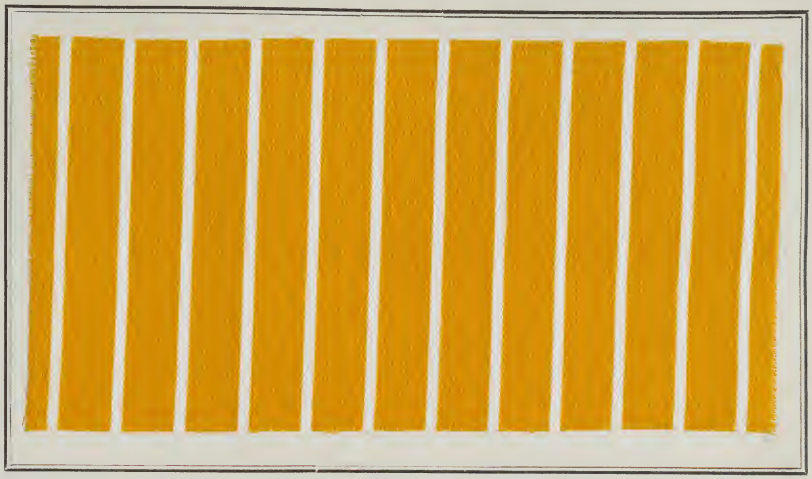
7 lbs. Wheat Starch
30 lbs. Water
63 lbs. Tragacanth (60:1000)
100 lbs.

Boil and cool

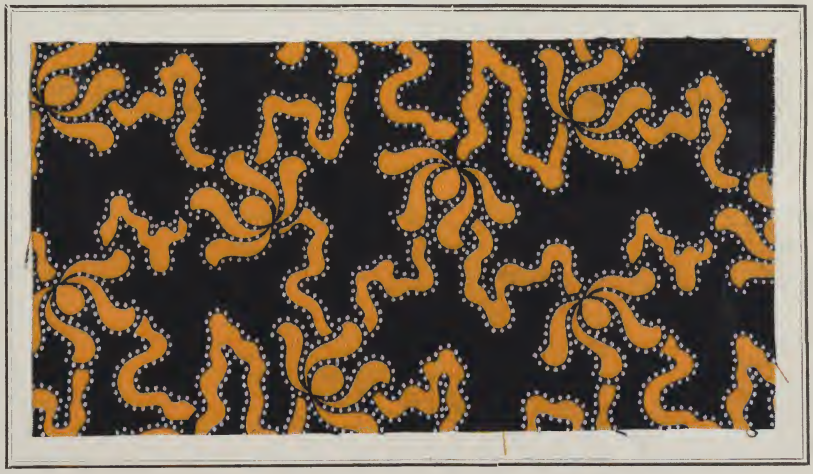
Acid Starch Thickening

21 lbs. Wheat Starch
57 lbs. Water
22 lbs. Acetic Acid 30%
100 lbs.

Boil and cool.



2% Auroflavine KR



2% Auroflavine KR---White Reserve---Orange Reserve--Aniline Black

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

BLACK AND RED EFFECTS WITH AMIDO FAST BLACK AND PARANITRANILINE RED

PRINTING DIRECTIONS

PREPARATION 25 N.

25 parts Beta Naphthol R
25 parts Caustic Soda 77° T w
20 parts Para Soap P N
3 parts Tartar Emetic
5 parts Glycerine

1000 parts

DEVELOPING BATH.

14 parts Paranitraniline diazotized and made up to 1000 parts.

BLACK D A P.

500 parts Tragacanth (60:1000)
100 parts China Clay (1:1)
57 parts Aniline Salt
16 parts Amido Black Base I
5 parts Nako Brown D
12 parts Aniline Oil
50 parts Acetic Acid 9° T w
20 parts Alumina Chloride 53° T w
{ 30 parts Sodium Chlorate
{ 70 parts Water
20 parts Copper Sulphide paste 30%
105 parts Water
15 parts Vanadium Solution (1:1000)

1000 parts

The goods are padded with Naphthol Grounding, dried, printed with the black printing paste, dried, steamed for 1 minute, passed through developing bath, soaped and washed.

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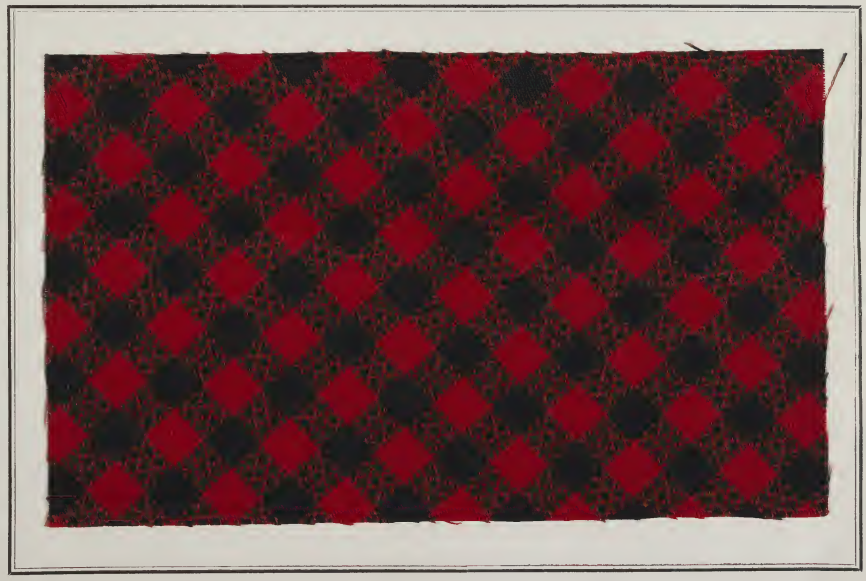
LABORATORIES: NEWARK, N. J.

Preparation 25 N—Black D A P—Paranitraniline Red



Preparation 25 N—Black D A P—Paranitraniline Red

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

NITROSO PROCESS

We take pleasure in presenting a method of producing Green, Olive and Brown shades by this process. The application of these fast colors is simple and inexpensive. They may be shaded with suitable basic colors without tannin and can be easily discharged with white and and colored resist colors.

Further particulars and samples will be furnished upon application to any of our offices.

H. A. METZ & CO.,

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DIRECTIONS.

A nitroso compound of resorcine can be easily produced by the following method, and may be used for the production of padding liquids without further purification:

Resorcine is dissolved in water and hyrochloric acid (with an addition of ice) thickened with gum tragacanth, and the exact amount of nitrite solution slowly added; after a short time the product turns yellow and is mixed with a solution of ammonia or caustic soda, previously thickened with tragacanth; the solution then becomes brownish. Ammonia solution is used for green and olive shades, and caustic soda solution is employed for brown shades.

For the production of green shades a solution of Red Prussiate, an alkalin solution of the colors for shading and a solution of sodium chlorate are added. For the production of brown shades the solution of Red Prussiate is replaced by an Ammonia-Copper solution. For shading purposes we recommend Azo Phosphine G O D, Janus Red B and other colors which are dischargeable with sulphites and hydrosulphites, as Malachite Green, Brilliant Green, New Magenta, etc. When using basic colors for shading, an addition of oil is necessary in order to obtain clear and stable padding liquids, as will be seen in our recipes.

Red Prussiate produces brighter shades of green than Yellow Prussiate; for cutch shades a neutral chromate is preferably used. Sodium Chlorate counteracts the injurious effect of the reducing resist paste and accelerates the developing of the color during the steaming.

The padded goods are dryed in the hot flue, printed, passed once or twice, for 5 minutes, through the Mather-Platt, and then steamed for $\frac{3}{4}$ hour under the pressure of $\frac{1}{4}$ atm. to develop the brown and fix the colored resists. The steaming process is of the greatest importance for good results, especially for brown shades, and must be continued until the color is thoroughly developed. Green and olive shades printed only with white resists are sufficiently fixed in the ager. The padding liquids and the padded goods may be retained for several days without deteriorating. After steaming the goods are washed and soaped in the usual manner.

The colored resists are prepared with Dianil Colors which withstand the action of sulphites, as Dianil Blue H 6 G, Toluylene Orange R, Dianil Brown 3 G O, Dianil Red R, Aurophenine, O, etc., or with Thiogene colors.

Recipes

for the preparation of the padding baths and resist colors.

	A.	B.	C.	D.	E.	F.
Tragacanth 60:1000	300 parts	300 parts	300 parts	300 parts	300 parts	300 parts
Resorcine	110 parts	110 parts	110 parts	164 parts	164 parts	164 parts
Water	100 parts	100 parts	100 parts	100 parts	100 parts	100 parts
Ice	700 parts	700 parts	700 parts	1000 parts	1000 parts	1000 parts
Hydrochloric acic 36° Tw.	235 parts	235 parts	235 parts	375 parts	375 parts	375 parts
	add slowly:					
Nitrite	140 parts	140 parts	140 parts	224 parts	224 parts	224 parts
Ice-Water	500 parts	500 parts	500 parts	750 parts	750 parts	750 parts
	allow to stand and the stir into:					
Tragacanth (60:1000)	400 parts	400 parts	400 parts	400 parts	400 parts	400 parts
Water	5000 parts	5000 parts	5000 parts	5000 parts	5000 parts	5000 parts
Ammonia 25%	315 parts	315 parts	315 parts	—	—	—
Caustic Soda 76° Tw.	—	—	—	415 parts	415 parts	415 parts
	then add:					
Red prussiate (250:1000)	1135 parts	910 parts	455 parts	—	—	—
Ammonia copper solution	—	200 parts	600 parts	400 parts	600 parts	600 parts
Neutral chromate	—	—	—	230 parts	—	—
	and the cold solution of:					
Azophosphine G O D	—	40 parts	40 parts	40 parts	—	—
Janus Red B	—	—	—	—	—	30 parts
Boiling Water	1000 parts	1000 parts	1000 parts	1000 parts	1000 parts	1000 parts
Para soap PN	100 parts	100 parts	100 parts	100 parts	100 parts	100 parts
Ammonia 25%	45 parts	45 parts	45 parts	45 parts	45 parts	45 parts
	before use add:					
Chlorate of soda (300:1000)	120 parts	120 parts	120 parts	120 parts	120 parts	120 parts
Make up with water to:	10000 parts	10000 parts	10000 parts	10000 parts	10000 parts	10000 parts

Ammonia-copper solution

50 parts Sulphate of copper cryst.
850 parts Water, dissolve and add
90 parts Ammonia 25%
1000 parts

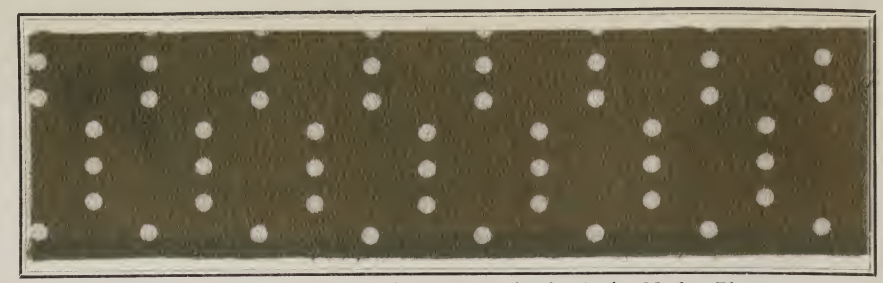
White Resists	I	II
British gum powder	220 parts	220 parts
Sulphite of potash 90° Tw.	250 parts	250 parts
Bisulphite of soda 80° Tw.	50 parts	50 parts
China clay 1:1	150 parts	150 parts
warm, cool and add		
Hydrosulphite NF conc (1:1)	—	100 parts
Water	180 parts	80 parts
Citrate of soda 48° Tw.	150 parts	150 parts
	1000 parts	1000 parts

Colored Resists	I	II	III	IV
Dianil Red R	50 parts	—	—	—
Toluylene Orange R	—	40 parts	—	—
Dianil Blue H 6 G	—	—	10 parts	—
Aurophenine 0	—	—	—	40 parts
Glycerine	50 parts	50 parts	50 parts	50 parts
Boiling Water	450 parts	410 parts	440 parts	420 parts
British gum powder	200 parts	250 parts	250 parts	250 parts
	warm, cool and add			
Sulphite of potash 90° Tw.	200 parts	200 parts	200 parts	200 parts
Bisulphite of soda 80° Tw	50 parts	50 parts	50 parts	50 parts
	1000 parts	1000 parts	1000 parts	1000 parts

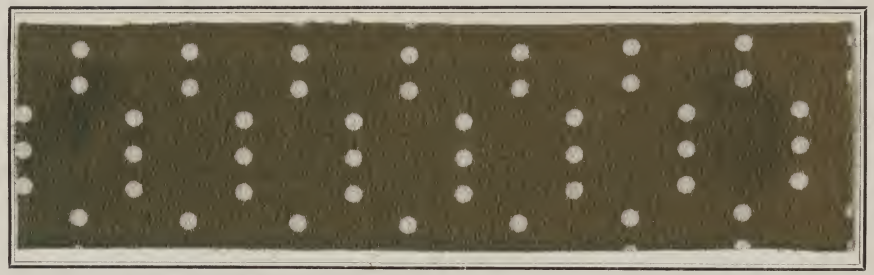
Neutral Chromate.

200 parts Bichromate of potash
650 parts Water
135 parts Ammonia 25%
make up with water to 1000 parts

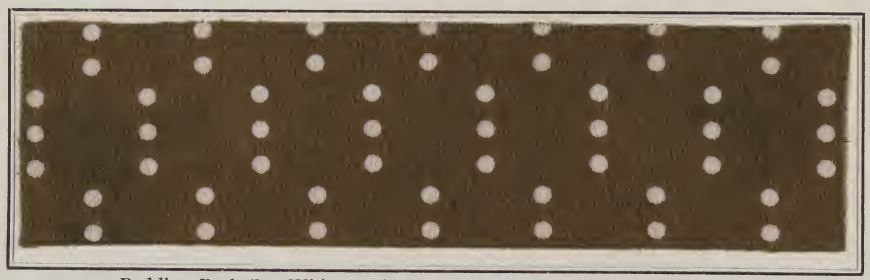
The bleached goods are padded in a three roller padding machine, dried in the flue, printed with the resists, aged once or twice for 3–5 minutes in the Mather Platt at 212–214° F., and then steamed for $\frac{3}{4}$ hour with a pressure of $\frac{1}{4}$ atmosphere. The goods are then well washed and, if necessary, soaped.



Padding Bath A. White Resist I, aged twice for 5 min. Mather-Platt.



Padding Bath B. White Resist I, aged twice for 5 min. Mather-Platt.



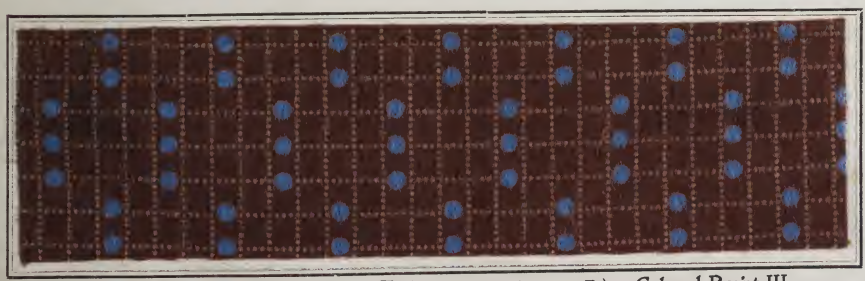
Padding Bath C. White Resist I, aged twice for 5 min. Mather-Platt.

Padding Bath B, aged 5 min. Mather-Platt. Steamed $\frac{3}{4}$ hour with $\frac{1}{4}$ atmosphere pressure
Colored Resist IV (Aurophenine 0) **Colored Resist I** (Dianil Red R).

Padding Bath D. **White Resist I,** aged 5 min. Mather-Platt steamed $\frac{3}{4}$ hour with $\frac{1}{4}$ atmosphere pressure.

Padding Bath E. **White Resist I,** (Treatment as above).

Padding Bath F. **White Resist II,** (Treatment as above).



Padding Bath F. **Colored Resist II,** (Toluylene Orange R). **Colored Resist III,** (Dianil Blue H 6 G) (Treatment as above).

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

AZO ORANGE N A.

This new color, when diazotised produces deep bright orange shades on a Beta Naphtho ground, which are noted on account of their fastness. It can be used as a direct printing color or it can be used for color resist and discharge work.

Additional information will be furnished by any of our offices upon application.

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LABORATORIES: NEWARK, N. J.

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Printing Directions

The use of ice is not necessary when diazotizing.
It is advisable to pass the goods through a weak acid bath after printing.

Pattern I.

Prepare 15 N.

150 parts Beta-Naphtol
300 " Caustic Soda 36° Tw.
200 " Para Soap P N
make up to 10 000 parts

Orange Printing Color N A.

5000 parts Tragacanth 60 : 1000
4750 " Diazo-solution N A I
250 " Acetate of Soda
10000 parts

Diazo-solution N A I.

168 parts Azo Orange NA are dissolved in
300 " Muriatic Acid 36° Tw.
4000 " Cold Water. Then
260 " Nitrite solution (290 : 1000) are added and made up to
4750 parts

After printing, the goods are dried, washed, and soaped.

Pattern II.

Wheat Starch-Tragacanth Thickening.

225 parts Wheat Starch
600 " Water
2100 " Tragacanth (60 : 1000)
boil for ½ hour

Black Printing Color.

1000 parts Thiogene Black MD conc.
1000 " Water
500 " Glycerine
500 " Caustic Soda 76° Tw.
1000 " Hydrosulphite NF conc. 1 : 1
5500 " Alkaline Thickening
500 " China Clay 1 : 1
10000 parts

Developing bath NA.

4750 parts Diazo-solution N A I
5000 " Water
250 " Acetate of Soda
10000 parts

Hydrosulphite White.

2250 parts Hydrosulphite NF conc.
2050 " Water
5000 " Wheat Starch-Tragacanth Thickening
300 " Anthraquinone paste
400 " Caustic Soda 76° Tw.
10000 parts

Alkaline Thickening.

1000 parts British gum
9000 " Caustic Soda 76° Tw.
heat up to 120 to 140° F until dissolved.

The goods are prepared with the prepare 15 N, dried, dyed in the developing bath N A, and printed with the Hydrosulphite White and the Black printing color; after steaming for 5 min in the Mather Platt, they are washed, and soaped.

Pattern III.

Prepare 15 N C.

250 parts Beta-Naphtol
280 " Caustic Soda 76° Tw.
200 " Para Soap P N
5000 " Water
30 " Tartar emetic
100 " Glycerine
4000 " Water
make up to 10 000 parts

Diazo Solution N A II.

168 parts Azo Orange NA are made into a paste with
300 " Muriatic Acid 36° Tw. and
300 " Water and well ground. Then
500 " Cold water and
260 " Nitrite solution (290 : 1000) are slowly added.

	Orange Discharge C	White Discharge C
Wheat Flour	1150 parts	1300 parts
Water	2500 "	2900 "
Sodium chlorate boil, cool, and add	2550 "	2550 "
Alumina chlorate 42° Tw	420 "	420 "
Red Prussiate	230 "	230 "
Water and when quite cold	800 "	800 "
Diazo solution N A II	1500 "	— "
Acetate of soda	250 "	— "
Tartaric acid (powder)	300 "	1500 "
Lizarol D conc.	300 "	300 "
	10000 parts	10000 parts

The indigo dyed cloth is prepared with the prepare 15 NC, printed with the discharge pastes, dried, and steamed for 4 min in the Mather Platt. The cloth is then treated for 10 min. at 140° F. in a bath containing 10 parts silicate of soda per 1000 parts water, and finally washed and soaped.

Pattern IV.

Prepare 25 N.

50 parts Potato Starch
5000 " Water; boil, cool and when luke-warm add
250 " Beta-Naphtol
250 " Caustic Soda 76° Tw.
60 " Potass. Sulphite 90° Tw and
make up with water to 10 000 parts

Orange Resist Paste.

8200 parts Standard white P
1500 " Diazo solution N A II
300 " Acetate of Soda
10000 parts

Standard White P.

1500 parts Senegal-gum 1 : 1
600 " Industrial gum powder
2200 " Nitrate of lead (solid), heat until dissolved, then add
3900 " Sulphate of lead 60% paste
1800 " Sulphate of Zinc.
heat again and make up to
10000 parts

The prepared cloth is printed with the resist paste, dried, and dyed in a zinc-lime indigo vat. It is finally washed, soured, and again washed.

Prepare 15N. — Orange Printing Color NA.

Prepare 15N. — Developing Bath NA. — Hydrosulphite White. — Black Printing Color.

Indigo Blue. — Prepare 15NC. — White Discharge C. — Orange Discharge C.

Prepare 25N. — Orange Resist Paste. — Dyed with Indigo MLB paste 20% pat.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

INDIGO DYED SHADES DISCHARGED WITH HYDROSULPHITE NF CONC.

This process is based on the effect of the addition of anthraquinone to indigo hydrosulphite discharge pastes.

The great advantage over the oxidation discharges is that tendering of the fibre is impossible as the reducing agents will not cause the formation of oxycellulose, thus rendering its use possible on the thinnest material.

Samples and priecs will be furnished on application to any of our offices.

H. A. METZ & CO.,

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LABORATORIES: NEWARK N. J.

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1-15-1910.

INDIGO-HYDROSULPHITE DISCHARGE.

The printing paste is prepared as follows:—

125—200	parts	Hydrosulphite NF conc. are stirred into
655—580	"	Hot British Gum thickening, and after cooling
150	"	Zinc White Paste 1 : 1,
50	"	Anthraquinone Paste 30%,
20	"	Acetine (neutralized with Soda) are added.
1,000	parts	

The amount of hydrosulphite in the discharge depends upon the depth of the indigo shade.

After printing, the goods are well dried and then steamed for 3 minutes at 216-218° F., in the Mather-Platt, which must be free from air. The washing of the steamed goods is best carried out at full width in the washing machine in a boiling bath containing 10 parts Silicate of Soda 66° Tw., to 1,000 parts water and 3 parts Formaldehyde 40%. The passage through the washing machine should take ¾-1½ minutes and the goods then well rinsed.

Instead of washing with silicate of soda, quick-lime (5 parts per 1000) or caustic soda solution may be used, although the silicate has the least effect on the indigo bottom.

It is advisable to steam and finish the printed goods as quickly as possible, but if this cannot be done immediately, the material must be protected not only before, but also after steaming, against moist air, by winding on rolls and keeping in a warm dry room 85° to 100° F. After steaming the white is cleared at above by passing the pieces through an alkaline bath.

Although the indigo is readily converted into a leuco-compound by hydrosulphite, still the discharged places are apt to show a bluish tint if the reduced compound is not completely removed from the printed parts, or if the indigo-white is partly reoxidised to blue before the steamed pieces are washed. The addition of anthroquinone to the printing paste aids the discharging effect of hydrosulphite and prevents the indigo-white from being too quickly reoxidised.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

VIRIDONE FE.

The new color is especially recommended for the production of fast green shades on naphthol grounds. The method of application is simple and it may be used with other colors suitable for naphthol preparations.

Samples and prices will be forwarded on application to any of our offices.

H. A. METZ & CO.,

122 HUDSON STREET,

NEW YORK.

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LABORATORIES: NEWARK N. J.

P 29.
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VIRIDONE FE.

This product is a gray powder which is easily soluble in water. The printing pastes are prepared with pyrolignite of iron with some sulphocyanide of iron, the addition of acetic acid and sodium bisulphite increases the stability of the pastes and improves the shade.

After printing, the color is fixed by passing through the Mather-Platt. They are then finished as usual.

The following formulas are used on the attached patterns:

6% PRINTING PASTE.

Viridone FE	60 parts
Water	245 "
Acetic Acid 9° Tw.	50 "
Thickening WT	470 "
Glycerine	30 "
Olive Oil	15 "
Pyrolignite of Iron 15° Tw	80 "
Sulphocyanide of Iron 15° Tw.	40 "
Sodium Bisulphite 71½° Tw	10 "
	1000 parts

AZOPHOR RED PN.

Azophor Red PN	90 parts
Cold Water	400 "
Let stand for ½ hr.. then filter and add to	
Thickening M	550 "
Acetate of Soda cryst	30 "
make up to	1000 parts

THICKENING WT.

Wheat Starch	70 parts
Water	300 "
Tragacanth (60:1000)	630 "
	1000 parts

THICKENING M.

Corn Starch	1800 parts
Water	7850 "
Castor Oil	350 "
	10000 parts

Heat to 85° F. stir for 10 min. and then cool down.

NAPHTHOL PREPARATION.

Beta Naphthol R	20 parts
Soda lye 36° Tw	40 "
Hot Water	200 "
Para Soap PN	15 "
Tartar Emetic	3 "
Glycerine	20 "
Make up to	1000 parts

NITROSO STANDARD.

Resorcine	13 parts
Tragacanth	30 "
Ice	100 "
Muriatic Acid 36° Tw.	26 "
Sodium Nitrite	26.3 "
Strain and make up to	200 parts

NITROSO BROWN.

Nitroso Standard	200 parts
Thickening WT	500 "
Soda lye 76° Tw	20 "
Ammonia	20 "
Ammonium Chloride	25 "
Nako Brown D	5 "
Water	130 "
Shading Color NF	100 "
	1000 parts

SHADING COLOR NF.

New Magenta O	5 parts
Water	375 "
Thickening WT	600 "
Para Soap PN	10 "
Ammonia	10 "
	1000 parts

6% Viridone FE, Nitroso Brown, Azophor Red PN, Naphthol Preparation.

6% Viridone FE, Azophor Red PN, Naphthol Preparation.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

6% Thiogene Yellow G G.

6% Thiogene Yellow G.

THIOGENE YELLOW G G AND THIOGENE YELLOW G.

These new sulphur yellows possess excellent fastness and on account of their easy solubility and good level-dyeing properties, are suitable for the dyeing of direct shades upon loose cotton, yarn, piece goods, chains, cops and cross spools, and for the production of compound shades in combination with our Thiogene Oranges and Thiogene Browns.

Thiogene Yellow G G produces shades of yellow with a greenish tone while those from Thiogene Yellow G are considerably redder.

The color should be dissolved with an equal amount of sodium sulphide and the solution added to the dyebath containing 5 lbs. calcined soda and 30 to 40 lbs. salt to the 100 lbs. of goods. The bath should be boiled, the steam shut off and the dyeing operation performed for 1 hour at a temperature of 175° to 185° F. In a standing kettle, ⅓ of the original quantity of dyestuff should be employed with an equal amount of sodium sulphide, 1½ to 2 lbs. calcined soda and 3 to 5 lbs. salt per 100 lbs. of goods.

An after-treatment with copper salts gives dyeings of very great fastness, the shades in this event being of a brown tone.

The presence of copper and brass must be avoided, the dye-vessels must be of wood or iron and the steam pipes of iron or lead.

6% Thiogene Yellow G G.

6% Thiogene Yellow G.

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LABORATORIES: NEWARK, N. J.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

6% Thiogene Orange R G.

6% Thiogene Orange R R.

THIOGENE ORANGE R G and THIOGENE ORANGE R R.

These new sulphur oranges possess good solubility and excellent level dyeing properties, and are therefore particularly valuable for the dyeing of cotton piece-goods. They are also suitable for the dyeing of loose cotton, yarn, warps, cops, etc., and can be employed as a simple color, or in combination with our other Thiogene Colors.

The color is dissolved with an equal quantity of sodium sulphide and then added to the dyebath containing the calcined soda and salt. The dyebath should be brought to the boil, the steam shut off, the goods entered and the dyeing operation continued for one hour at a temperature of 175°–185° F. In a standing kettle, ⅓ of the original quantity of color is sufficient, the calcined soda and sodium sulphide being reduced proportionately. The amount of salt to be added in a standing kettle depends upon the age of the kettle, and is finally entirely omitted. The following are the proportions for a dyebath under average conditions:

	1st Bath	2d Bath	3d Bath	4th and following Baths
Dyestuff, ...	10 lbs.	8 lbs.	6½ lbs.	6 lbs.
Sodium Sulphide Crystals, . .	10 "	8 "	6½ "	6 "
Calcined Soda, ...	5 "	3 "	2 "	1½ "
Salt, ...	40 "	20 "	5 "	3 "

All of the above quantities are for 100 lbs. of goods.

On account of the excellent fastness of the direct dyeings, an after-treatment with a metallic salt is not necessary, although the use of copper sulphate for this purpose increases the light fastness considerably, at the same time producing a brown shade.

As in the case of all sulphur colors, the dye kettle should be made of wood or iron, and the steam pipes of iron or lead. The presence of copper and brass is objectionable and should be avoided.

6% Thiogene Orange R G.

6% Thiogene Orange R R.

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LABORATORIES: NEWARK, N. J.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY

THIOGENE YELLOW 5G.

THIOGENE YELLOW 5G CONC.

This is a new sulphur yellow which gives brighter and greener shades of yellow than the other members of the Thiogene group. The concentrated strength is two and one half times that of the 5G. This color is very fast against all injurious influences but will not stand chlorine bleach.

Samples and prices will be furnished on application to any of our offices.

H. A. METZ & CO.,

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LABORATORIES: NEWARK, N. J.

C80
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DYEING DIRECTIONS.

Thiogene Yellow 5G is dissolved in boiling water with twice its weight of sodium sulphide. The 5G conc., requires proportionately more sulphide. The dyestuff solution is added to the dyebath which has been made up with the necessary amount of Sodium Carbonate and Salt.

The material is dyed for one hour at 200° F., squeezed out, washed and finished as usual. In standing baths only about two-thirds of the original quantity of dye-stuff is required.

An aftertreatment with 1 to 2 lbs. of acetic acid makes the shade clear.

THIOGENE YELLOW 5G

THIOGENE YELLOW 5G CONC.

10	lbs.	THIOGENE YELLOW 5G . . .	(6½)	4 lbs. THIOGENE YELLOW 5G CONC.	(2 lbs. 10 oz.)
20	"	SODIUM SULPHIDE	(13)	16 " SODIUM SULPHIDE	(10)
5	"	SODIUM CARBONATE DRY . .	(1)	4 " SODIUM CARBONATE DRY . . .	(1)
35	"	SALT	(5)	25 " SALT	(3)

JIGGER DYEING.

4	lbs.	THIOGENE YELLOW 5G CONC.	(2 lbs. 10 oz.)	10 lbs. THIOGENE YELLOW 5G . . .	(6½)
16	"	SODIUM SULPHIDE	(10)	20 " SODIUM SULPHIDE	(13)
4	"	SODIUM CARBONATE DRY . . .	(--)	5 " SODIUM CARBONATE DRY . .	(--)
15	"	GLAUBER'S SALT	(—)	20 " GLAUBER'S SALT	(—)

The above quantities are for 100 lbs. material in fresh baths. The figures in brackets are for standing baths.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

THIS CIRCULAR IS INTENDED FOR INSERTION IN THE BINDER PREVIOUSLY SENT YOU.

THIOGENE CATECHU R.

This new direct dyeing color resembles the Thiogene Browns in its general characteristics and when used in combination with the latter can be employed for the production of the ordinary Catechu shades. It has level dyeing properties and excellent solubility and is therefore suited for the dyeing of all classes of cotton goods. It can also be used for the production of discharge whites.

Further particulars, dyeing directions and samples will be furnished upon application to any of our offices.

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MONTREAL, CANADA,
TORONTO, CANADA.

LABORATORIES: NEWARK, N. J.

C 30
472

DYEING DIRECTIONS.

The Thiogene Catechu R is dissolved in boiling water with the necessary quantity of sodium sulphide and then added to the dye bath containing soda and salt.

A standing kettle requires 3/5 of the quantity of color that is used in the first bath and the amount of sodium sulphide should be equal to the amount of dyestuff. In place of ordinary salt, an equal quantity of calcined Glauber's salt or twice the quantity of crystallized Glauber's salt may be used, and instead of crystallized sodium sulphide, half the quantity of calcined sodium sulphide may be employed.

Loose cotton is introduced into the boiling bath, thoroughly boiled for ¼ of an hour and the dyeing operation continued for ¾ to 1 hour at a temperature near the boil.

In the dyeing of yarn, steam is shut off, goods introduced and dyed at a temperature near the boil for ¾ of an hour.

Piece-goods are best dyed on the jigger, in which case the solution of the dyestuff should be added in two ends and a piece of goods weighing about 125 to 150 lbs. should have about ten runs at a temperature just below the boil. If the goods are previously wet out and are dyed in a very short bath, the addition of salt is not necessary.

In the use of dyeing machines, the amount of salt depends upon the amount of dye liquor, the solution being filtered and the dyeing done at a temperature near the boil.

After dyeing, the goods must be thoroughly washed.

A clear list is obtained in piece-goods dyed upon the jigger.

An after-treatment with metallic salts produces a somewhat darker shade, but is not necessary except where extraordinary fastness to soda is required.

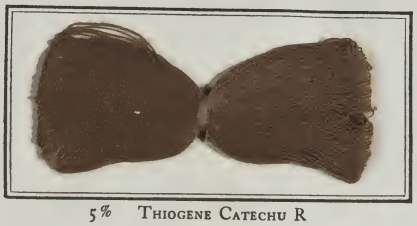
DISCHARGING DIRECTIONS.

In order to obtain uniform and good discharges, the goods must be very thoroughly washed after dyeing and then treated with 3% acetic acid. The goods are dried well but not over dried and then steamed for 5 minutes in a Mather-Platt at 212° F.

Should the discharge not be perfectly clear, the goods should be steamed in a closed apparatus for about ½ hour without pressure. After steaming, pass the goods through a bath of caustic soda, (½ oz. of caustic soda 72° Tw. per gallon,) at 100° F. and soap for 5 minutes.

Discharge White.

9 lbs. No. 11 Gum
23 lbs. Chlorate of Alumina 42° Tw. dissolved by gently heating, then add
6 lbs. Chlorate of soda, powdered, and after cooling
2 lbs. Red Prussiate of Potash.



5% Thiogene Catechu R
7½% Sodium Sulphide Crystals
2½% Calcined Soda
20% Common Salt

15% Thiogene Catechu R.
22½% Sodium Sulphide Crystals
5% Calcined Soda
40% Common Salt

10% Thiogene Catechu R
15% Sodium Sulphide Crystals
4% Calcined Soda
10% Common Salt

10% Thiogene Catechu R
15% Sodium Sulphide Crystals
4% Calcined Soda
10% Common Salt

Chlorate Discharge reduced 2:1

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

THIOGENE KHAKI N CONC.

This is a new Thiogene color which in shade and fastness is similar to the mineral Khaki shade. This dyestuff is very soluble and is suitable for use on all vegetable fibres in any stage of manufacture. It dyes level and penetrates well and can be used for padding and resist colors. It is recommended for the production of fast shades on loose cotton, yarn, roving, warps and pieces and can be used on linen, ramie, and other vegetable fibre.

Samples and prices can be obtained by application to any of our offices.

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LABORATORIES: NEWARK, N. J.

DYEING DIRECTIONS.

The dyebath is prepared with the required amount of Soda and Salt. The dyestuff is dissolved with the Sodium Sulphide in hot water, added to the dyebath and the whole boiled up.

Raw Cotton is dyed at the boil for $\frac{1}{4}$ of an hour and then the bath kept at 200° F., for $\frac{3}{4}$ of an hour. For yarn, the steam is turned off and the yarn worked according to the depth of shade for $\frac{1}{2}$ to $\frac{3}{4}$ of an hour.

Piece goods may be dyed in the jigger or in the padding machine. As it is customary to use concentrated dyebaths with this method of dyeing, the addition of salt to the old bath is unnecessary, but Turkey Red Oil should be used to obtain thorough penetration. After dyeing, the goods are well rinsed in all cases.

Thiogene Khaki N Conc. can be used as a straight color, or can be combined with the other Thiogene colors for producing any desired shade. The direct shade is sufficiently fast for most purposes, but by aftertreating with Chome and Copper the general fastness and especially the fastness to light is increased. In padding with this dyestuff twice as much Sodium Sulphide crystals as dyestuff is used, but when used in more diluted baths, the amount of Sulphide is increased to three or four times.

The following are the directions for the attached samples:

I. Piece Goods (on the jigger.)

	No. 1	No. 2	No. 3	No. 4
Thiogene Khaki N. Conc.	1 lb.	2 lbs.	3 lbs.	4 lbs.
Sodium Sulphide crystals	4 lbs.	8 lbs.	9 lbs.	16 lbs.
Soda Calc. 58% Alkali	2 lbs.	4 lbs.	5 lbs.	5 lbs.
Turkey Red Oil	$1\frac{1}{2}$ lbs.	$1\frac{1}{2}$ lbs.	$1\frac{1}{2}$ lbs.	$1\frac{1}{2}$ lbs.
Common Salt (Glauber's Salt Calc.)	—	1 lb.	$2\frac{1}{2}$ lbs.	5 lbs.

For old baths and deep shades, $\frac{3}{4}$ of the dyestuff and 3 times the amount of Sodium Sulphide crystals, 1 lb. of Soda calc. and $\frac{1}{2}$ lb. of Turkey Red Oil are used.

Nos. 5, 6, 7 and 8 were dyed in the same manner as 1, 2, 3 and 4, and were aftertreated at 195° F., with

$\frac{3}{4}$—$1\frac{1}{2}$% Bichromate,
$\frac{3}{4}$—$1\frac{1}{2}$% Copper Sulphate
3% Acetic Acid

They were well rinsed afterwards?

II. Cotton Yarn (No. 9 and 10)

2 lbs. Thiogene Khaki N Conc.
8 lbs. Sulphide of Soda Crystals
5 lbs. Soda calc. 58% Alkali
15 lbs. Common Salt, (Glauber's Salt calc.)

No. 10 was aftertreated, after dyeing and rinsing, for 20 min. at 195° F., with

1 lb. Bichromate,
1 lb. Copper Sulphate
3 lbs. Acetic Acid,

and then well rinsed.

III. Linen Yarn (No. 11)

2 lbs. Thiogene Khaki N Conc.
8 lbs. Sulphide of Soda crystals,
5 lbs. Soda calc. 58% Alkali
15 lbs. Common Salt (Glauber's Salt calc.)

All weights given refer to 100 lbs. goods. Instead of Common Salt the same amount of calc. and double the amount of crystallised Glauber's Salt may be used.

Printing Recipe (Pattern No. 12)

White Resist

200 parts Cadmium Nitrate
200 " Kaolin paste 1:1
450 " British Gum 1:2
150 " Water
1000 parts.

Padding Bath.

10 parts Thiogene Khaki N Conc.
20 " Glucose
20 " Soda Lye 76° Tw.

make up to 1000 parts.

Padded at 176° F., then soured warm, washed, soaped and rinsed again.

No. 1

No. 2

No. 3

No. 4

No. 5

No. 6

No. 7

No. 8

No. 9

No. 10

No. 11

No. 12

THIS CIRCULAR IS INTENDED FOR INSERTION IN THE BINDER PREVIOUSLY SENT YOU.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

THIOGENE BROWN 3 R.

This is a very red shade of brown which can be used either alone or in combination with the other Thiogene colors.

It is recommended on account of its low price as suitable color for the production of browns and other combination shades where a good body of red is desired.

Samples and prices will be furnished on application to any of our offices.

H. A. METZ & CO.,

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LABORATORIES: NEWARK, N. J.

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6-10-1910.

METHOD OF APPLICATION.

The color is dissolved in boiling water with an equal weight of Sodium Sulphide.

The solution is added to the dyebath which has been prepared with the necessary quantities of soda and salt.

The material is dyed for one hour at, or near boiling, it is then well squeezed and washed.

When standing kettles are used only two thirds of the original quantities of the various materials are required, the addition of salt being regulated to keep the specific gravity of the dyebath constant.

10 lbs. **Thiogene Brown 3R** . (6½)
10 lbs. Sodium Sulphide cryst . (6½)
5 lbs. 58% Alkali . . . . (1)
35 lbs. Common Salt . . . . (5)

8 lbs. **Thiogene Brown 3R** . (5½)
8 lbs. Sodium Sulphide cryst . (5½)
5 lbs. 58% Alkali . . . . (1)
30 lbs. Common Salt . . . . (5)

10 lbs. **Thiogene Brown 3R** . (6½)
10 lbs. Sodium Sulphide cryst . (6½)
2½ lbs. 58% Alkali . . . . (½)
15 lbs. Glauber's salt cryst. . (—)

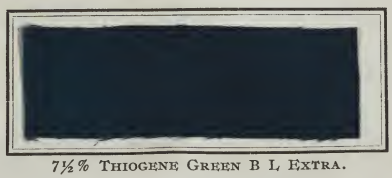
10 lbs. **Thiogene Brown 3R** . (6½)
10 lbs. Sodium Sulphide cryst . (6½)
5 lbs. 58% Alkali . . . . . (1)
35 lbs Common Salt . . . . (5)

The weights given refer to 100 lbs. of material and for first baths. The bracketed figures represent the proper additions to standing baths.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.



7½% Thiogene Green B L Extra.

7½% Thiogene Green G L Extra.

THIOGENE GREEN B L EXTRA AND THIOGENE GREEN G L EXTRA.

These two new sulphur colors give clear green shades of excellent fastness to light and storing. On account of their good solubility, they are well adapted for dyeing all classes of cotton goods either in the ordinary dyeing vats or in dyeing machines.

The following formula should be employed in the dyeing of yarn:

THIOGENE GREEN B L EXTRA.

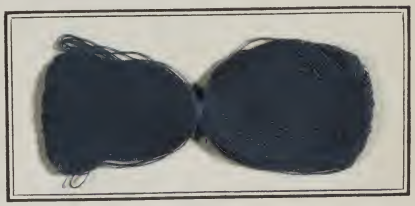
	1st bath.	2nd bath.	3rd and following baths.
Thiogene Green B L Extra,	15 lbs.	11 lbs.	9 lbs.
Sodium Sulphide Crystals,	10 "	7½ "	6 "
Calcined Soda,	5 "	3 "	1½ "
Common Salt,	30 "	10 "	5 "

THIOGENE GREEN G L EXTRA.

Thiogene Green G L Extra,	15 lbs.	11 lbs.	9 lbs.
Sodium Sulphide Crystals,	15 "	11 "	9 "
Calcined Soda,	5 "	3 "	1½ "
Common Salt,	30 "	10 "	5 "

The above quantities are for 100 lbs. yarn.

9% Thiogene Green B L Extra.



9% Thiogene Green G L Extra.

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LABORATORIES: NEWARK, N. J.

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PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

THIOGENE GREEN G

The shade of this new sulphur direct dyeing cotton green is between those produced with our Thiogene Green B and Thiogene Green 2G. It can be used alone or in combination with our other Thiogene colors for the dyeing of cotton in all its forms and is particularly noticeable on account of its fastness to light and storing.

Further particulars and samples will be furnished upon application to any of our offices.

H. A. METZ & CO.,

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PROVIDENCE, R. I.	ATLANTA, GA.	TORONTO, CANADA.

LABORATORIES: NEWARK, N. J.

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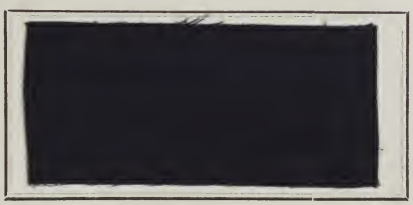
DYEING DIRECTIONS

The color is dissolved in boiling water with twice its weight of sodium sulphide crystals. This solution is added to the dyebath containing soda and salt, and the goods are dyed about one hour at the boil. After dyeing, the goods are squeezed, allowed to lie in the air and well rinsed.

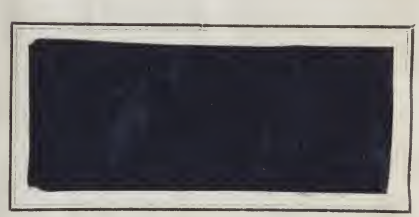
The amount of dyestuff necessary in a standing bath is about two-thirds of that required for the ordinary bath.

10 lbs. Thiogene Green G (6½ lbs.)
20 lbs. Sodium Sulphide, Crystals (13 lbs.)
5 lbs. Sodium Carbonate (1 lb.)
35 lbs. Salt (5 lbs.)

7 lbs. Thiogene Green G (4½ lbs)
14 lbs. Sodium Sulphide, Crystals (9 lbs.)
4 lbs. Sodium Carbonate (1 lb.)
25 lbs. Salt (4 lbs.)



7 lbs. Thiogene Green G (4½ lbs.)
14 lbs. Sodium Sulphide, Crystals (9 lbs.)
4 lbs. Sodium Carbonate (1 lb.)
10 lbs. Salt (0)



10 lbs. Thiogene Green G (6½ lbs.)
20 lbs. Sodium Sulphide, Crystals (13 lbs.)
5 lbs. Sodium Carbonate (1 lb.)
35 lbs. Salt (5 lbs.)

The above quantities are for the first bath in dyeing 100 lbs. goods. The numbers in brackets represent the amounts necessary in a standing bath.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

Thiogene New Blue 2 RL.

This is a new member of the Thiogene group to which the older New Blues BL and JL belong. It has the same characteristics as these, but the shade is redder and deeper.

Samples and prices will be furnished on application to any of our offices.

H. A. METZ & CO.,

122 HUDSON STREET,

NEW YORK.

Boston Mass.	Chicago, Ill.	San Francisco, Cal.
Philadelphia, Pa.	Charlotte, N. C.	Montreal, Canada.
Providence, R. I.	Atlanta, Ga.	Toronto, Canada.

LABORATORIES: NEWARK, N. J.

C75
605

7-15-'10.

Dyeing Directions.

Thiogene New Blue 2 RL is dissolved with the required amount of sodium sulphide in boiling water. The solution is added to the dyebath which contains the necessary amount of sodium carbonate and salt. The material is entered and dyed at 200° F., for 1 hour. It is then squeezed, or wrung out, washed and finished as usual.

Thiogene New Blue 2 R L (patent applied for).

10 lbs. **Thiogene New Blue 2 R L** . . (5)
10 lbs. Sodium sulphide cryst . . . . (5)
5 lbs. Sodium carbonate, dry . . . (1)
40 lbs. Common salt . . . . . (5)

8 lbs. **Thiogene New Blue 2 R L** . . (5)
8 lbs. Sodium sulphide cryst . . . . (5)
4 lbs. Sodium carbonate, dry . . . . (1)
30 lbs. Common salt . . . . . (5)

Jigger dyeing.

8 lbs. **Thiogene New Blue 2 R L** . . (5)
8 lbs. Sodium sulphide cryst . . . . (5)
3 lbs. Sodium carbonate, dry . . . (0.5)
20 lbs. Glauber's salt cryst. . . . . (—)

10 lbs. **Thiogene New Blue 2 R L** . . (5)
10 lbs. Sodium sulphide cryst. . . . (5)
5 lbs. Sodium carbonate, dry . . . (1)
40 lbs. Common salt . . . . . (5)

The figures given are for 100 lbs. of goods and the first bath. The bracketed figures are the additions for standing baths.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

THIOGENE CYANINE G.

This new sulphur color gives clear, bright blue shades without an after-treatment. It dissolves readily and on account of the fact that it does not oxidize easily, produces level dyeings.

It possesses excellent fastness to light and is particularly fast to chlorine.

It is well suited for the dyeing of all classes of cotton goods where clear bright blues and good fastness are desired.

Further particulars, dyeing directions and samples will be furnished upon application to any of our offices.

H. A. METZ & CO.,

122 HUDSON STREET,

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LABORATORIES: NEWARK, N. J.

DYEING DIRECTIONS.

Thiogene Cyanine G is dissolved with sodium sulphide and boiling water, and the solution added to the dyebath containing the salt and soda. The dyeing operation is continued for one hour at a temperature near the boiling point. After dyeing, the goods are squeezed and thoroughly washed.

It is not necessary to develop the dyeings by allowing them to hang or by steaming. On account of the excellent solubility of the dyestuff it can be used in dyeing machines.

It is essential that the dyeings be thoroughly washed before drying.

Piece goods can be dyed on the jigger or can be padded on a foulard machine, the padded results being slightly redder.

PADDING LIQUOR.

6 ozs. Thiogene Cyanine G,
12 " Sodium Sulphide Crystals,
2½ " Calcined Soda,
9 " Glauber Salt Crystals,
1¼ " Glycerine,
3½ " Dextrine.

All of the above quantities being for each gallon of padding solution.

DISCHARGE PRINTING.

After printing, dry well but do not over-dry and immediately age for 5 minutes in an aniline ager at 210° F.

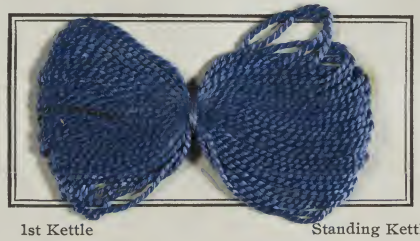
For fine patterns it may be advisable to steam ½ hour without pressure after ageing. After the ageing or steaming, pass the goods through a solution containing ½ oz. Caustic Soda 72° Tw. per gallon at 120° to 140° F. and wash.

Discharge White.

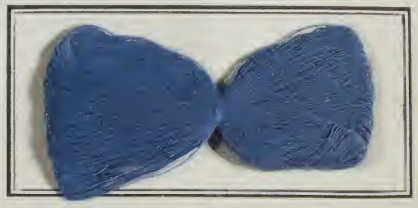
9 lbs. No. 11 Gum
23 lbs. Chlorate of Alumina 42° Tw.
dissolve by gently heating,
then add
6 lbs. Chlorate of Soda, powdered, and after cooling
2 lbs. Red Prussiate of Potash.

Chlorate of Alumina.

20 lbs. Sulphate of Alumina
dissolved hot in
13 lbs. Water
30 lbs. Chlorate of Barium
dissolved in
35 lbs. Water.
Mix the two solutions, allow to settle and use the clear liquor after reducing to 42° Tw.



1st Kettle		Standing Kettle
2 lbs.	THIOGENE CYANINE G.	1¼ lbs.
4 "	SODIUM SULPHIDE CRYSTALS	1¼ "
3 lb.	CALCINED SODA	1 lb.
10 lbs.	COMMON SALT	1 "



1st Kettle		Standing Kettle
4 lbs.	THIOGENE CYANINE G.	2½ lbs.
6 "	SODIUM SULPHIDE CRYSTALS	2½ "
3 "	CALCINED SODA	1 lb.
25 "	COMMON SALT	5 lbs.

1st Kettle		Standing Kettle
4 lbs.	THIOGENE CYANINE G.	2½ lbs.
6 "	SODIUM SULPHIDE CRYSTALS	2½ "
3 "	CALCINED SODA	½ lb.
10 "	COMMON SALT	2 lbs.

4 lbs. THIOGENE CYANINE G.
Chlorate Discharge
Discharge White reduced 2:1

All of the above quantities are for 100 lbs. of goods.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

THIOGENE CYANINE O.

This new sulphur color gives clear bright blue shades without an after-treatment, dissolves readily and on account of the fact that it does not oxidize easily, produces level dyeings.

It gives shades having excellent fastness to light and chlorine and it has all of the properties of our Thiogene Cyanine G, from which it differs only in the fact that it is slightly redder in shade.

It is well suited for the dyeing of all classes of cotton goods where clear bright blues and good fastness are desired, and as it is readily discharged by chlorate discharge, it is suitable for discharge printing.

Further particulars, dyeing directions and samples will be furnished upon application to any of our offices.

H. A. METZ & CO.,

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LABORATORIES: NEWARK, N. J.

C42
493

4-30-'06

DYEING DIRECTIONS.

Thiogene Cyanine O is dyed in the same manner as the other sulphur colors, the dyestuff being dissolved with sodium sulphide and boiling water and the solution added to the dyebath containing the salt and soda. The dyeing operation is continued for one hour at a temperature near the boiling point. After dyeing the goods are squeezed and thoroughly washed.

DISCHARGE PRINTING.

The dyed goods which have been thoroughly dried, are printed with the Discharge White and then dried well, care being taken not to over-dry them. The goods are then immediately aged for 5 minutes in the Mather Platt at 212° F.

If fine patterns are desired, it may be advisable to steam one-half hour without pressure after ageing. After the ageing or steaming the goods should be passed through a solution containing ½ oz. Caustic Soda 72° Tw. per gallon, at 120° to 140° F. and washed.

DISCHARGE WHITE I.

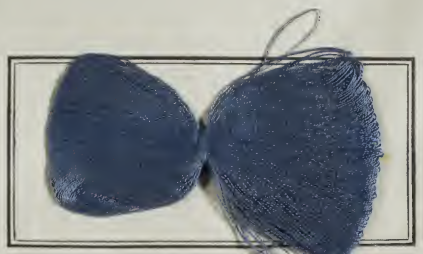
22½ lbs. British Gum
57½ lbs. Chlorate of Alumina 42° Tw. dissolve by heating gently, then add
15 lbs. Chlorate of Soda, powdered and after cooling: add
5 lbs. Red Prussiate of Potash.

CHLORATE OF ALUMINA.

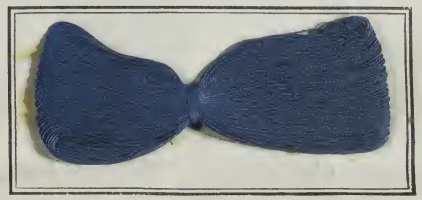
I.—20 lbs. Sulphate of Alumina dissolved hot in
13 lbs. of Water

II.—30 lbs. of Chlorate of Barium
35 lbs. of Water.

Mix the two solutions, allow to settle and use the clear liquor after reducing to 42° Tw.

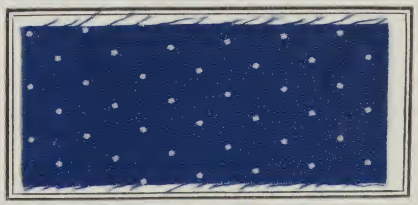


2 lbs. Thiogene Cyanine O (1½ lbs.)
3 lbs. Sodium Sulphide Crystals (2 lbs.)
3 lbs. Calcined Soda (1 lb.)
10 lbs. Salt (1 lb.)



6 lbs. Thiogene Cyanine O (4 lbs.)
9 lbs. Sodium Sulphide Crystals (6 lbs.)
4 lbs. Calcined Soda (1 lb.)
25 lbs. Salt (5 lbs.)

4 lbs. Thiogene Cyanine O (2 lbs.)
6 lbs. Sodium Sulphide Crystals (4 lbs).
3 lbs. Calcined Soda (1 lb.)
10 lbs Salt (—)



5 lbs. Thiogene Cyanine O (3 2/5 lbs.)
Clorate Discharge
Discharge White I reduced 2:1

The above quantities are for 100 lbs. goods in the first bath, the amounts in parenthesis being the quantities necessary in a standing bath.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

Thiogene Deep Blue B conc., B extra conc.

Thiogene Deep Blue BR conc. BR extra conc.

These dyestuffs give deep indigo blue shades of excellent fastness. They are very useful for dyeing dark blues at a moderate cost.

They are recommended for dyeing cotton and other vegetable fibres in all stages of manufacture and work well in dyeing machines.

The "extra conc." marks are double the strength of the conc.

Samples and prices will be furnished on application to any of our offices.

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LABORATORIES: NEWARK, N. J.

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6-10-1910.

DYEING DIRECTIONS.

These dyestuffs are made into a paste with the necessary Carbonate of Soda and water. The Sodium Sulphide is added to this and the whole dissolved with boiling water and the solution is added to the dyebath with the salt. The material is entered near the boil and dyed boiling for one hour. After dyeing, it is squeezed or wrung out, washed and dried.

Steaming, or an aftertreatment with hydrogen peroxide brightens the shades and aftertreating with bichromate, or bichromate and copper sulphate will increase the fastness to washing without materially altering the shade.

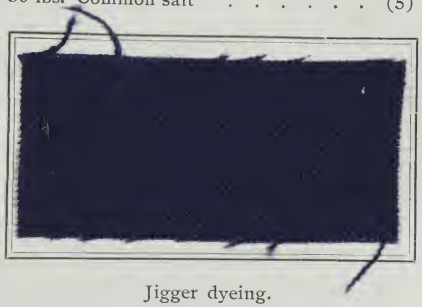
These colors can also be used for dyeing in cold baths when necessary.

Thiogene Deep Blue B conc. and B extra conc.

Thiogene Deep Blue B R conc. and B R extra conc.

10 lbs. **Thiogene Deep Blue B conc.** . (6)
10 lbs. Sodium Sulphide cryst. . . . (6)
5 lbs. Sodium Carbonate, dry . . . (1)
30 lbs. Common salt . . . . . (5)

10 lbs. **Thiogene Deep Blue B R conc.** (6)
10 lbs. Sodium Sulphide cryst. . . . (6)
5 lbs. Sodium Carbonate, dry . . . (1)
30 lbs. Common salt . . . . , . . (5)



Jigger dyeing.

10 lbs. **Thiogene Deep Blue B conc.** . (6)
10 lbs. Sodium Sulphide cryst. . . . (6)
5 lbs. Sodium Carbonate, dry . . . (0.5)
15 lbs. Glauber's salt cryst. . . . . (—)

Jigger dyeing

10 lbs. **Thiogene Deep Blue B R conc.** (6)
10 lbs. Sodium Sulphide cryst . . . . (6)
5 lbs. Sodium Carbonate, dry. . . . (0.5)
15 lbs. Glauber's salt cryst . . . . . (—)

10 lbs. **Thiogene Deep Blue B. conc .** . (6)
10 lbs. Sodium Sulphide cryst. . . . . (6)
5 lbs. Sodium Carbonate, dry. . . . (1)
30 lbs. Common Salt . . . . . (5)

10 lbs. **Thiogene Deep Blue B R conc .** (6)
10 lbs. Sodium Sulphide cryst. . . . . (6)
5 lbs. Sodium Carbonate, dry . . . . (1)
30 lbs. Common salt . . . . . (5)

The first figures refer to 100 lbs. material and first baths; those in brackets refer to standing baths.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN. GERMANY.

THIOGENE NEW BLUE J L

This new member of the Thiogene group of direct dyeing cotton colors produces clear blue shades which are considerably faster to milling and washing than the ordinary direct dyeing cotton blues. They are suitable for dyeing all classes of vegetable fibres and especially suitable for use in mechanical dyeing apparatus.

H. A. METZ & CO.,

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LABORATORIES: NEWARK, N. J.

C 52
558
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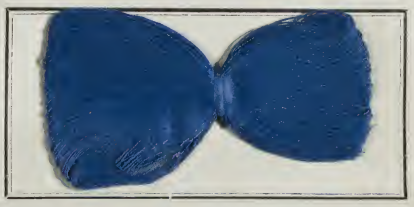
THIS CIRCULAR IS INTENDED FOR INSERTION IN THE BINDER PREVIOUSLY SENT YOU.

DYEING DIRECTIONS

Thiogene New Blue J L is dyed in a manner suitable for members of the Thiogene group of dyestuffs with the addition of sodium sulphide, soda ash and common salt, After dyeing, the material is squeezed, well rinsed. A wringing, oxidizing or after-treatment is not required as the color is developed during the washing process. Dyeings of this color are discharged with chlorate discharge but are not destroyed by Hydrosulphite or tin salt discharges.

2 lbs. Thiogene New Blue J L (1 lb.)
3 lbs. Sodium Sulphide Crystals (1 lb.)
2½ lbs. Soda Ash (8 oz.)
15 lbs. Common Salt (3 lbs.)



10 lbs. Thiogene New Blue J L (4 lbs.)
10 lbs Sodium Sulphide Crystals (4 lbs)
5 lbs. Soda Ash (1 lb.)
40 lbs. Common Salt (5 lbs.)

Padding Bath
20 parts Thiogene New Blue J L
20 parts Sodium Sulphide Crystals
2 parts Thiogene Oil 50%
15 parts Dextrine
to 1000 parts dye liquor

Jigger Dyeing
10 lbs. Thiogene New Blue J L (4½ lbs.)
12 lbs. Sodium Sulphide Crystals (5 lbs)
5 lbs. Soda Ash (1 lb.)
10 lbs. Common Salt (0)

The above weights refer to 100 lbs. material for the first bath—the bracketed figures are the quantities for standing baths.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

THIOGENE BLACK M A EXTRA STRONG
THIOGENE BLACK B B EXTRA STRONG
THIOGENE BLACK B R EXTRA STRONG

These new Sulphur Blacks produce very full and bloomy shades upon cotton, and may be employed alone or in combination with our other Thiogene colors. They are valuable for the dyeing of all classes of cotton goods, and on account of their solubility we would, specially recommend them for warp dyeing.

Dyeing directions and samples may be obtained upon application to any of our offices.

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LABORATORIES: NEWARK, N. J.

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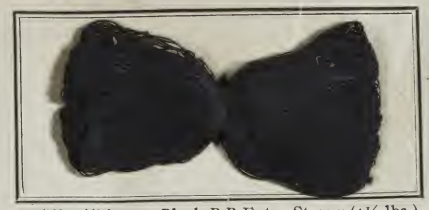
1 lb. Thiogene Black B B Extra Strong



7½ lbs. Thiogene Black B B Extra Strong (4½ lbs.)

DYEING DIRECTIONS

The dyestuff is dissolved, together with sodium sulphide, in boiling water, and this solution is then poured into a boiling dyebath previously prepared with the necessary amount of salt and soda The dyeing is continued for one hour at a temperature near the boil, and the goods well washed immediately after dyeing. It is advisable to squeeze the material before it leaves the dyebath.

Loose Cotton: Proportions of material to dye liquor 1:20 For dyeing in an open vessel:

	1st bath	2nd bath	3rd and following bath
Thiogene Black I Extra Strong	7½ lbs.	5½ lbs.	4½ lbs.
Sodium Sulphide Crystals	22½ lbs.	11 lbs.	9 lbs.
Soda Calcined	9 lbs.	2 lbs.	1 lb.
Common Salt	40 lbs.	10 lbs.	5 lbs.

When dyeing in a dyeing machine the amount of salt is reduced to 1/3—1/2 of the above mentioned weights, according to the volume of the dye liquor; the latter should indicate 9—12° Tw., at 59° F.

Cotton yarn (weaving yarn, knitting yarns, cops, warps.)

When dyeing in an open vessel the same particulars are applicable as for dyeing loose cotton. The amount of salt is also reduced in the same way when the dyeing operation is carried out in a machine.

For mercerized yarns, all ingredients are reduced by 10—15%.

Linen Yarn.

For dyeing in an open vessel.

	1st bath	2nd bath	3rd and following bath
Thiogene Black I Extra Strong	5 lbs.	3½ lbs.	2¾ lbs.
Sodium Sulphide Crystals	15 lbs.	7 lbs.	5 lbs.
Soda Calcined	5 lbs	1 lb.	1 lb.
Common Salt	25 lbs.	7½ lbs.	2 lbs.

When dyeing in a machine the salt additions are reduced.

Piece Goods.

For dyeing on the Jigger

(About 65 gallons dye liquid):

	1st bath	2nd bath	3rd and following bath
Thiogene Black M Extra Strong	7 lbs.	5 lbs.	4½ lbs.
Sodium Sulphide Crystals	17½ lbs.	10 lbs.	9 lbs.
Soda Calcined	5 lbs.	2 lbs.	1 lb.
Tukey Red Oil	1 pint	¼ pint	¼ pint

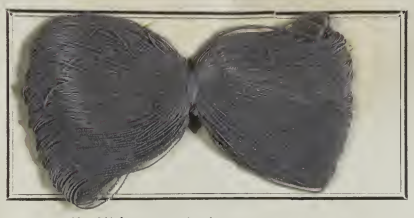
For mercerized piece goods only 80% of the above named additions are necessary.

Instead of common salt an equal amount of calcined or double the amount of crystallized Glauber's salt may be used.

The weights given refer to 100 lbs. material.

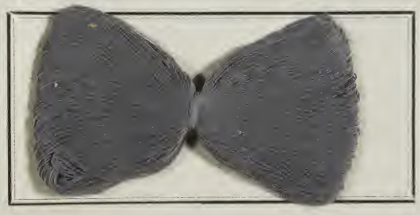
7½ lbs. Thiogene Black B B Extra Sttong (4½ lbs.)

6 lbs. Thiogene Black B B Extra Strong (3 3/5 lbs.)



1 lb. Thiogene Black M A extra strong

7½ lbs. Thiogene Black M A extra strong (4½ lbs.)

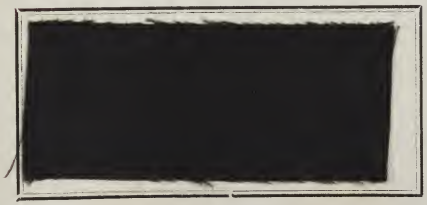


1 lb. Thiogene Black B R extra strong

7½ lbs. Thiogene Black B R extra strong (4½ lbs,)

8 lbs. Thiogene Black B R extra strong (5 lbs)

4 lbs Thiogene Black M A extra strong (2½ lbs.)



6 lbs. Thiogene Black M A extra strong (3 3/5 lbs.)

7 lbs. Thiogene Black B R extra strong (4 lbs.)

The above quantities refer to the amount necessary in the first bath, the quantities in brackets refer to the amounts necessary in the standing bath.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

INDIGO M L B/T POWD.
AND
INDIGO M L B/T 20% PASTE
FOR
PRINTING AND DISCHARGING.

In a former circular, $\frac{C\ 24,}{462}$ the method of dyeing this Indigo upon yarn and piece-goods, was described and in this circular methods are given for its use in printing and discharging.

The shade is greener and purer and possesses better fastness to light and chlorine than does that produced with Indigo M L B. On this account, it is especially useful in calico printing, where it can be used either by vat dyeing and discharging or by blotch printing.

The bright green-blue tone shows to best advantage in medium and light shades, and in combination with Indigo M L B it gives blues which are superior to the ordinary Indigoes in brightness.

Further particulars, dyeing directions and samples will be furnished upon application to any of our offices.

H. A. METZ & CO.,

122 HUDSON STREET,

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LABORATORIES: NEWARK, N. J.

DYEING AND PRINTING DIRECTIONS.

As stated in Circular $\frac{C\ 24,}{462}$ the dyeing is done by the usual process of vat dyeing, and the following recipes are particularly recommended:

Zinc Lime Vat.

5 lbs. Indigo MLB/T Powd. or
25 " Indigo MLB/T 20% Paste
3 " Zinc Dust
10-12 " Lime

Hydrosulphite Vat.

5 lbs. Indigo MLB/T Powd. or
25 " Indigo MLB/T 20% Paste
15 pints Caustic Soda 77° Tw.
35-38 " Hydrosulphite O

Zinc Bisulphite Caustic Vat.

5 lbs. Indigo MLB/T Powd. or
25 " Indigo MLB/T 20% Paste
12 pints Bisulphite of Soda 71-77° Tw.
2½ lbs. Zinc Dust
12 pints Caustic Soda 77° Tw.

Indigo M L B / T is rather difficult to discharge, owing to its great stability to chlorine and oxidizing agents. Concentrated chromate discharges give a fair white only in very light shades, but the customary chlorate discharge gives satisfactory whites even in medium and dark shades.

For printing Indigo M L B / T we recommend the glucose process and the alkaline printing method with Hydrosulphite N F. We recommend Thiogene Black as a suitable black for use in connection with this Indigo.

The following recipes were the ones employed for printing and discharging the results shown in the attached samples:

Chlorate Discharge.

9 lbs. Starch Tragacanth Thickening W T
4 " Chlorate of Soda, Dissolve warm, cool, then add
2 " China Clay pasted with
2 " Water
1 lb. Yellow Prussiate of Potash powder, and just before use
2 lbs. Citric Acid powder

Reducing Paste for Chlorate Discharge.

9 lbs. Starch Tragacanth Thickening
1½ " China Clay pasted with
1½ " Water
8 " Water

Starch Tragacanth Thickening W T.

3 lbs. Wheat Starch
9 " Water
14 " Tragacanth Solution (8ozs. to the gallon)

Light Blue T 50.

2 lbs. 14 ozs. Hydrosulphite N F
6 " Water, dissolve, cool and stir slowly into
22 " Alkaline Thickening G S, then add
1 lb. 9 ozs. Indigo MLB/T 20% Paste

Light Blue T 50 (3:1.)

15 lbs. Light Blue T 50
4 " Alkaline Thickening G S
1 lb. Water

Alkaline Thickening G S.

1 lb. No. 11 Gum
3 lbs. Caustic Soda 77° Tw.

Alkaline Thickening.

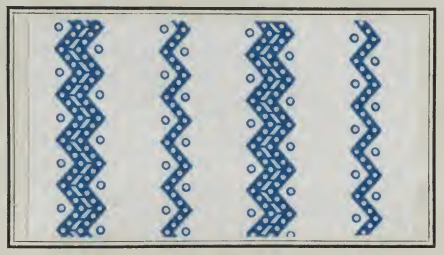
1 lb. No. 11 Gum
9 lbs. Caustic Soda 77° Tw

Black B B Conc.

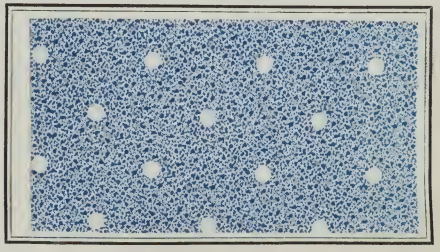
4 lbs. Thiogene Black B B Conc.
4 " Water
4 " Alkaline Thickening
4 " Caustic Soda 77° Tw.
4 " Hydrosulphite N F
1 lb. Water
2 lbs. Bisulphite of Soda 66° Tw.
17 " Alkaline Thickening

The goods printed with the Chlorate Discharge were passed through the ager at 210° F. for 3 minutes, then 1 minute through diluted Caustic Soda (1-2½ liquid ozs. of Caustic Soda 36° Tw. per gallon) and washed.

The goods printed with Hydrosulphite printing colors were well dried and steamed 3 minutes in the ager at a temperature of 210° to 212° F. and then washed in the open state, soured, well washed and dried.



Light Blue T 50.



Light Blue T 50.
Discharge, Reduction 2:3.

Dyed with Indigo MLB/T
in Hydrosulphite Vat.
Discharge, Reduction 2:1.

Light Blue T 50.
Discharge, Reduction 3:1.
Black B B Conc.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

INDIGO M L B / 2B PASTE 20%

This new member of the Indigo M L B series differs somewhat in shade and properties from the older brand. On wool it produces extremely bright and pure shades. On cotton the fastness of Indigo M L B / 2B equals that of Indigo M L B / 2R, but the shade is somewhat brighter and greener. It surpasses Indigo M L B in regard to purity of shade, affinity for the fibre, and fastness to washing while in fastness to light it equals that of the older brands.

Samples and further information may be obtained upon application to any of our offices.

H. A. METZ & CO.,

122 HUDSON STREET,

NEW YORK.

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LABORATORIES: NEWARK, N. J.

DYEING DIRECTIONS.

INDIGO M L B/2B ON WOOL.

Standard solution.

16 lbs. Indigo M L B/2B paste 20% are mixed with
6½ lbs Caustic Soda 76° Tw., and then
5 lbs. Hydrosulphite conc. powder dissolved in 5 gallons water are added,
and the whole heated to 120—130 F. until a perfect solution is obtained.

Dye vat.

For dyeing 60 lbs. of wool, a vat of 800 gallons capacity is filled with water, heated to 120° F., and 2 gallons of a freshly prepared solution of glue containing 2 lbs. dry glue are added. Then the standard solution is added, according to requirements; the vat to contain 6—12 lbs. Indigo M L B/2B paste. Hard water is corrected with ¼ lb. 58% alkali and 4 oz. Hydrosulphite conc. powder to 120 gallons of water and the clear liquid drawn off.

The wool is dyed in the usual manner, in dips of 20—30 minutes duration. After passing through squeezing rollers, the wool is allowed to oxidize. Dark shades are dyed in three dips, medium and light shades in two.

The vat is worked in the same way as the ordinary Indigo-Hydrosulphite vat. Should, however, the liquid become cloudy more Hydrosulphite and soda lye are added, and the liquid warmed up.

Indigo M L B/2B may also be used in a fermentation vat in the same manner as Indigo M L B.

INDIGO M L B/2B ON COTTON.

For dyeing cotton and other vegetable fibres with Indigo M L B/2 B, the Hydrosulphite vat produces the most satisfactory results. For this purpose the following stock solution is prepared:

Standard solution.

16 lbs. Indigo M L B/2B paste 20% are made into a paste with
2 gallons hot water and
1¼ gallons soda lye 76° Tw. and
3¾ lbs. Hydrosulphite conc. powder, dissolved in 3½ gallons water
and heated to 120° F. until dissolved.

Dye vat.

The dye vat is set in the usual manner. The dye vessel is filled with cold water; then about ⅓ lb. Hydrosulphite conc. powder and finally the standard solution is added: the dye vat to contain ½—1 lb. Indigo M L B 2/B paste for every 12 gallons of liquid, according to the shade required.

When dyeing in a machine the vat liquid must be made more concentrated, but the amount of Caustic Soda may be reduced by one half.

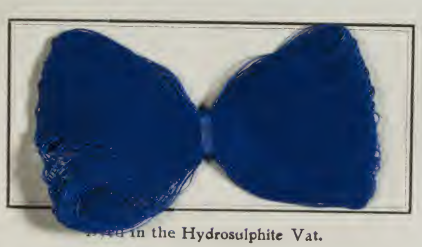
The dyeing is carried out in the usual manner at the ordinary temperature but dyeing at a higher temperature improves the penetration. As Indigo M L B/2B does not lose its affinity for the fibre in a warm vat, the temperature is raised when dyeing in machines or on a jigger. In the latter case, however, rather more Hydrosulphite has to be used in preparing the solution. The most suitable temperature is from 100—120° F. The vat liquor ought to be clear and of brownish-yellow appearance. When leaving the vat, the goods will show a pure amber color. Dips of about 20 minutes are given, then the goods are squeezed, oxidized by skying ,and finally washed and dried. Should the vat become cloudy, some soda lye and, if necessary, some Hydrosulphite is added.

Indigo M L B/2B yields bright blue shades on cotton, which turn a little redder when soaped hot. In comparison with Indigo ML,B, the shades obtained with Indigo M L B/2B are much brighter and purer; they excel in brightness even those obtained with Indigo M L B/2R.

Indigo M L B/2B exhausts the vats much better than Indigo M L B, it penetrates better and is faster to rubbing, washing and bleeding. The fastness to light is the same as that of Indigo M L B, while the fastness to chlorine is also slightly more satisfactory.

The loose wool was dyed in the
Hydrosulphite Vat.

The loose wool was dyed in the
Hydrosulphite Vat.



...d in the **Hydrosulphite Vat.**

Dyed in the **Hydrosulphite Vat.**

The loose cotton was dyed in the
Hydrosulphite-Soda Vat.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

INDIGO MLB/6B

This product which belongs to the Indigo group yields brilliant fast greenish blue shades and is recommended for direct printing with Hydrosulphite. It is also useful for blue discharges on Dianil and Azo colors and for resists under Aniline Black and Nitroso Blue.

The glucose process is not suitable for this color and it will not give white discharges with Chlorates or Hydrosulphite.

Samples and prices will be furnished on application to any of our offices.

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LABORATORIES: NEWARK, N. J.

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INDIGO MLB/6B

Printing Directions.

In the preparation of the printing pastes, care must be taken that an injurious excess of alkali is avoided as this will redden the shade so far that the characteristic greenish blue tone will be lost.

The oxidation of the leuco compound formed on steaming and washing takes place slowly and a sufficient time must be allowed for this before soaping and it may be necessary to pass through a bichromate bath. The prints must finally be passed through hot water or soap to develope the proper greenish blue shade.

Blue 6B Printing Paste.

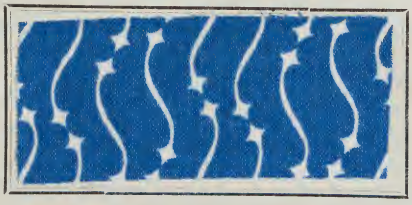
10 lbs.	Indigo M L B/6 B 20% paste
7½ "	Glycerine
5 "	Soda Lye 40° Bé.
5 "	Glucose
50 "	British Gum Solution 1—1
	Mix together and keep at 105° F. until
	the reduction is complete as shown by the gold yellow color.
	Then cool and add
6 lbs.	Potassium Sulphite 45° Bé
5 "	Olive Oil
5 "	Hydrosulphite N F Conc. 1:1
5 "	Sodium Aluminate 20 Bé
1½ "	Water
	This gives 100 lbs. printing paste.

Reducing Paste.

35 lbs.	British Gum
47½ "	Water
5 "	Glycerine
10 "	Potassium Sulphite 45° Bé.
2½ "	Olive Oil

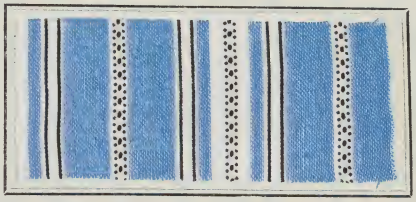
Warm until solution is complete and stir well together.
After printing, steam 3 minutes in Mather-Platt, wash, oxidize, soap, wash well and finish as usual.

1



Blue 6B Printing Paste

2



Blue 6B Printing Paste 3-7 reduced
Amido Fast Black

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN. GERMANY.

INDIGO MLB/6B

This is a new vat color of the Indigo group which yields brilliant greenish blue shades of remarkable fastness to water, acids, alkalies and chlorine and also to light. It has great affinity for all classes of vegetable fibre and it is also useful for silk dyeing.

The hyrosulphite vat is used in its application to vegetable fibres and the color can be applied in any condition of material whether raw stock, roving, yarn, or piece goods.

Being very soluble in the reduced form it can also be used in dyeing-machines, oxidizing agents being used to develope the color after dyeing.

Samples and prices will be furnished on application to any of our offices.

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LABORATORIES: NEWARK, N. J.

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DIRECTIONS.

Making the Vat.

On account of the ease of reduction, Indigo M L B/6 B can be reduced directly in the dye vat. The preparation of stock liquor is not necessary.

The setting of the vat is as follows:

The bath is filled up, heated to 140° and the proper amounts of Caustic Soda Solution, soda, oil and hydrosulphite M L B conc, powder added. The whole is then stirred well together and the dyestuff thinned with water slowly added. When it is all in the vat is raked up and allowed to stand. The reduction proceeds quickly and is complete when the solution is of a gold-yellow color.

The proportions of the various materials in setting the vats is as follows for differing concentrations in 120 gallons:

Indigo MLB6/B 20% Paste lbs.	Caustic Soda Sol. 40° Bé. lbs.	Alkali 58% lbs.	Helindoil lbs.	Hydrosulphite MLB conc. powder lbs.
1	2	2	1	1
5	5	5	2	1½
10	6	6	4	2½

DYEING DIRECTIONS.

I Yarn Dyeing.

After the preparation of the vat in the method above described the boiled out yarn is passed through at 140° F. It should be well squeezed and allowed to oxidize. The color is then fully developed by either treating with boiling soap and soda or other alkalies, or with bichromate and acetic acid at 140° F. The aftertreatment with soap gives the most brilliant shades; those with bichromate are greener.

After dyeing the vat is re-set as usual, about three-fifths of the original qnantity of dyestuff and hydrosulphite being required.

II Piece Dyeing in the jigger.

The vat is prepared as above and the boiled material is given four or six ends—at 140° F. The bath should be clear yellow and the goods should be the same color as they come from the bath. The goods after dyeing are squeezed out, oxidized by a skying arrangement then washed and soaped or chromed.

III Raw Cotton, Cops and Spools in machines.

The vat liquor is made up according to the desired shade and the material dyed according to the method necessary for the kind of machine. After dyeing the color must be developed with oxidizing agents, bichromate being the most available. The dyed material is treated for one half hour at 140° F. with 1 to 2 per cent Bichromate ½ to 1 per cent Acetic Acid and then thoroughly washed and dried.

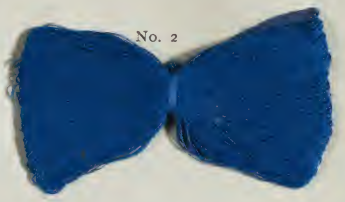
Raw Cotton can also be dyed in an open kettle if this is fitted with squeeze rolls.

On account of its affinity for vegetable fibres which is much greater than that of Indigo, the baths are exhausted much better and the dyeing operation rendered much simpler as any desired shade can be obtained in one run.

No. 1

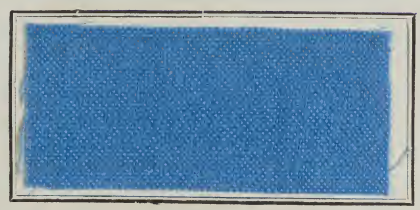
3½% Indigo M L B/6B 20% paste

No. 2



12% Indigo M L B/6B 20% paste

No. 3



2 4/10% Indigo M L B/6B 20% paste

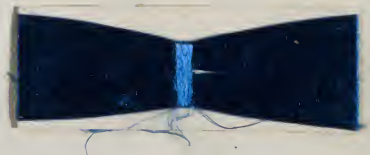
No. 4

12% Indigo M L B/6B 20% paste

No. 5

Dyed in machine with ½% solution
Indigo M L B/6B 20% paste

No. 6
Silk



Indigo M L B/6B 20% paste
¼% Solution

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

HELINDONE YELLOW 3 GN PASTE.

This dyestuff gives brilliant greenish yellow shades when used as a direct printing color in hydrosulphite pastes. It is not discharged by chlorates or chromates, and on account of its resistance is suitable for the production of yellow discharges on Alphanaphthylamine claret, or Paranitraniline red.

Samples and prices will be furnished on application to any of our offices.

H. A. METZ & CO.,

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Providence, R. I.	Atlanta, Ga.	Toronto. Canada.

LABORATORIES: NEWARK N. J.

P32
590

1-10-1910.

HELINDONE YELLOW 3 GN PASTE.

The printing paste is prepared as follows:—

15 Parts Helindone Yellow 3 GN Paste
10 " Glycerine
6 " Caustic Soda Solution 40° Bè.
3 " Hydrosulphite MLB conc. powder
3 " Dissolving Salt B
15 " Water
20 " British Gum powder.
Mix together and heat to 140° F.
until the reduction is complete as shown by the blood-red color; then cool and add
3 parts Olive Oil.
10 " Hydrosulphite MLB conc. powder
15 " Potassium Sulphite 45° Bè.

After printing and drying, the material is steamed for 4 minutes in the Mather-Platt, free from air at 216° F. The goods are then rinsed, chromed and soaped at the boil if desired.

An excess of alkali in the printing pastes should be avoided, as it is injurious to the color, but the addition of Dissolving Salt B to the paste increases the solubility of the color and so yields fuller shades. It is important not to decrease the proportion of hydrosulphite, especially in the preparation of colored discharge pastes.

THIS CIRCULAR IS INTENDED FOR INSERTION IN THE BINDER PREVIOUSLY SENT YOU.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

HELINDONE YELLOW 3 G N PASTE.

This is a new Helindone color of remarkable interest on account of its pure yellow shade. Like the other members of the group it resists the action of light and chlorine and is fast to boiling, washing and soaping.

It can be used in combination with Indigo MLB, and MLB/T for the production of fast green shades.

Helindone Yellow 3 G N can be used in dyeing machines and also dyed in the jigger as in its reduced form it is very soluble.

It recommended for dyeing brilliant fast yellows on cotton and other vegetable fibres in any convenient form.

Samples and prices will be furnished on application to any of our offices.

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LABORATORIES: NEWARK N. J.

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590

1-1-1910.

HELINDONE YELLOW 3 G N PASTE.

The stock liquor is prepared as follows:—

20 lbs. Helindone Yellow 3 G N Paste
are thinned with
10 gallons Water, then are added
1¼ gallons Caustic Soda Solution 40° Bé.
8 lbs. Hydrosulphite MLB conc. powder.

The reduction as shown by the perfect solution and red color is complete in ¼ to ½ hour, and the stock liquor is ready for use.

Vat Dyeing:—In yarn dyeing the proportion of water in the dyebath should be twenty times the weight of the material. As soft water is necessary for the preparation of the vats, it is advisable to correct hard water before using. According to the degree of hardness 8 to 10 ozs. of Soda Ash and 4 to 6 ozs., of Hydrosulphite MLB conc. powder are added for each 200 gallons of water, the sediment allowed to settle and the clear water used.

For 100 pound lots, 250 gallons of water are necessary, and in this is dissolved 70 pounds of common salt or 140 pounds of Glauber's Salt. After this the necessary amount of stock solution is added and the whole well stirred. The yarn is then entered on bent sticks, and is worked for ½ hour under the surface of the dyebath and then evenly wrung out or squeezed. It is then allowed to oxidize for ½ hour and the color developed by treating with boiling soap (2 parts per 1,000) for twenty minutes. This is necessary to obtain the brilliant shade and fastness to light. If convenient, steaming under pressure will give the same result.

About sixty per cent. of the original quantity of dyestuff is required in standing baths.

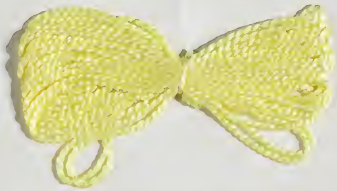
In working Helindone Yellow 3 G N in combination with Indigo, or Indigo MLB/T, no salt or Glauber's Salt should be used as the dyestuffs will then exhaust evenly, and in addition the Indigo and Helindone Yellow 3 G N should be reduced separately and the stock liquors only mixed. After dyeing and oxidizing the greens are developed by treating with boiling water for ½ hour without soap.

Jigger Dyeing:—The box is filled with water corrected as above and the necessary addition of salt is made and finally the stock solution which should contain twice the amount of hydrosulphite required for vat-dyeing.

The material is given 4 to 6 ends at a temperature of 85°F. During the operation the liquor should remain clear with a blood-red color, and the cloth as it leaves the bath, an orange color which changes to yellow on standing. After dyeing the goods are well squeezed, oxidized by skying and soaped for ½ hour in boiling soap solution, (2 parts to 1000 water).

Machine Dyeing:—Raw cotton can be dyed in a suitable machine, but the best results are obtained by using the style which has a perforated cage and squeeze rolls, ordinarily used for dyeing indigo on raw wool. The vat liquor is prepared as for yarn. Helindone Yellow 3 G N can also be used in circulating machines for dyeing cotton in any stage of manufacture. In these cases the proportions of liquor are regulated by special conditions.

1% Helindone Yellow 3 G N Paste.



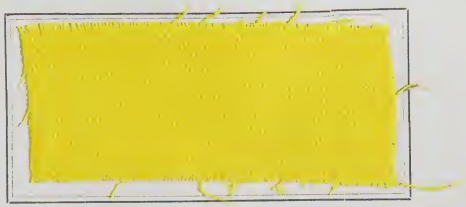
1% Helindone Yellow 3 G N Paste.

4% Helindone Yellow 3 G N Paste.

4% Helindone Yellow 3 G N Paste.

12% Helindone Yellow 3 G N Paste.

12% Helindone Yellow 3 G N Paste.



10% Helindone Yellow 3 G N Paste.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

HELINDONE ORANGE R PAT. PASTE.

This is a new member of the Helindone group of colors and is remarkable for its brilliant orange shade. Like the Red 3 B Pat., it is extremely fast to washing, light, chlorine and acids.

It is recommended in calico printing for the production of fast orange shades great brilliancy and for the production of orange discharges with hydrosulphites on Azo Color grounds.

Samples and prices will be furnished on application to any of our offices.

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LABORATORIES: NEWARK, N. J.

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Helindone Orange R Pat. Paste.

PRINTING DIRECTIONS.

20 lbs. Helindone Orange R Pat. Paste,
5 " Glycerine,
5 " Caustic Soda solution 76° Tw.,
2 " 6 oz. Hydrosulphite M L B Conc. Powder,
40 " British Gum 2 – 1 solution,
9 " 10 oz. Water.

Warm on water-bath until reduction is complete, then cool and add,

8 Lbs. Hydrosulphite N F Conc. 1 – 1 solution,
10 " Potassium Sulphite 90° Tw.

The material is printed, steamed from 6 to 10 minutes in the Mather-Platt free from air at 212° to 215° F., washed and soaped. The shade may be rendered more brilliant by an after treatment with chlorine or chrome.

Salt.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

HELINDONE ORANGE R PAT. PASTE.

This is a new member of the vat dyeing Helindone Group. Like the Red 3 B pat., it gives brilliant shades on cotton which are remarkable for their fastness. It can be used in combination with other vat colors such as Indigo M L B, Indigo M L B/6 B and when combined with Helindone Red 3 B pat., gives bright scarlet shades which in fastness in every respect surpass any other cotton reds.

It is recommended for all classes of cotton dyeing where extreme fastness is essential.

Samples and prices will be furnished on application to any of our offices.

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LABORATORIES: NEWARK, N. J.

C. 64
581
9-30-'09

THIS CIRCULAR IS INTENDED FOR INSERTION IN THE BINDER PREVIOUSLY SENT YOU

DYEING DIRECTIONS.

20 lbs. Helindone Orange R Pat. paste,
4 gallons Water,
2½ lbs. Caustic Solution 76° Tw.,
2 lbs. 58% Alkali,
2 lbs. Hydrosulphite M L B Conc. Powder.

Mix together and heat to 150° F until the reduction is complete and the dyestuff in solution.

The vats are prepared in the usual way. 3 to 10 ozs., of soda ash and ¾ oz. Hydrosulphite MLB conc. powder are added to each 200 gallons of water. Helindoil may also be used to soften the water and may be used to advantage in the preparation of the stock liquor. 4 Lbs. of Helindoil will be sufficient in the above formula.

The dyebath is heated to 100°—140°—and the necessary quantity of stock liquor added. The temperature of the dyebath should be kept at 100° to 140° and the desired shade obtained in two to four dips. The material is wrung or squeezed out evenly, oxidized in the air and the color developed by boiling in soap for 20 minutes. This treatment is necessary to obtain the full orange shade.

When the vats are allowed to cool, the color is liable to precipitate, but by the addition of a small quantity of soda and hydrosulphite and heating, the color will redissolve. An excess of caustic soda should be avoided but if the vat is deficient in alkali, Sodium Carbonate (58% Alkali)may be added without danger.

12% Helindone Orange R pat. paste.

20% Helindone Orange R pat. paste.

18% Helindone Orange R pat. paste.
Mercerized yarn.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

Helindone Orange D. pat. Paste.

This is a new orange of the Helindone group which is somewhat duller in shade than the R, but is valuable on account of its strength and unusual fastness. It is suitable for use in combination with other members of the group for the production of fast shades on all classes of material.

Samples and prices will be furnished on application to any of our offices.

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LABORATORIES: NEWARK, N. J.

C79
621

9-1-'10

PREPARATION OF THE STOCK LIQUOR.

10 lbs. Helindone Orange D Paste,

3¼ " Caustic Soda Solution 40° Bé.

12 " Glue Solution 1—10.

1¼ " Hydrosulphite MLB conc. powder.

12 gallons Water.

Mix together and warm to 140°. The solution should be perfect at the end of ¼ hour. The color should be yellow olive.

The dyebath is prepared as usual for these colors; hard water being corrected by the addition of 8 to 10 ounces Soda Ash and 4 to 6 ounces Hydrosulphite MLB conc. powder. The necessary stock liquor is added and the material dyed at 140° in dips of ½ hour each.

After dyeing the material is well squeezed, or wrung out, oxidized and the color finally developed by soaping for ½ hour at the boil.

PADDING LIQUOR.

7½ gallons Water.

2½ lbs. Helindoil.

2½ " Solution Salt B.

4 " Caustic Soda Solution 40° Bé.

1 " 13 oz. Anthraquinone paste.

1 " 10 " Hydrosulphite MLB conc. powder,
Dissolve together, then add

5 " Helindone Orange D Paste,

Warm to 140° — and stir frequently until the reduction is complete. When the solution is perfect add the whole to

21¼ gallons Cold Water, in which has been dissolved

12 ounces Hydrosulphite NF conc.

Make up to 30 Gallons.

The material is given two runs on the padding machine through the cold solution, dryed on cans, or the hot flue, steamed 3 minutes in Mather-Platt and soaped at the boil for 20 minutes.

12% Helindone Orange D pat. paste.

36% Helindone Orange D pat. paste.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

HELINDONE SCARLET S PASTE.

This member of the Helindone group yields brilliant scarlet shades of very great fastness to light, washing, soaping and chlorine.

Its use is recommended in calico printing for the production of bright scarlet shades either as direct prints or as a hydrosulphite discharge color on suitable grounds. The shades cannot be discharged by means of either chlorates or chromates.

Samples and prices will be furnished on application to any of our offices.

H. A. METZ & CO.,

122 HUDSON STREET,

NEW YORK.

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LABORATORIES: NEWARK N. J.

HELINDONE SCARLET S PASTE.

PRINTING DIRECTIONS.

The printing pastes are prepared as follows:—It should be noted that in the preparation of these for direct prints, it is advisable to have the dyestuff in a perfectly reduced condition before using.

250	parts	Helindone Scarlet S paste are mixed with
80	"	Glycerine
65	"	Soda Lye 76° Tw.
33	"	Hydrosulphite MLB conc. powder
25	"	Dissolving Salt B
242	"	Water
200	"	British Gum
		Warm to 140° F. and keep at that temperature until the dyestuff is completely reduced. Then add cold
25	"	Olive Oil
40	"	Hydrosulphite N F conc. powder dissolved in
40	"	Water.

If necessary to make reductions of the printing paste, the following should be used:—

REDUCING PASTE.

500	parts	British Gum,
410	"	Water
50	"	Glycerine
15	"	Hydrosulphite N F conc.
25	"	Olive Oil
1000	"	

Warm together until dissolved.

After printing the material is steamed twice for 3 minutes each, or once for 5 minutes in the Mather-Platt at 212°-216° with moist steam free from air. It is then washed and to properly develope the color, chromed at 140° (3 parts Bichromate to 1000 water) washed again and soaped for 10 minutes at the boil.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

HELINDONE SCARLET S PASTE.

This is a new member of the Helindone group of vat dyeing colors which yields brilliant scarlet shades on all kinds of vegetable fibres. It is dyed in the same way as the other dyestuffs of the group and can be used in combination with them. It is especially recommended for the production of full scarlet shades which are very fast to light, washing and soaping and also resist chlorine bleach well.

It can be applied to the fibre in any stage of manufacture.

Samples and prices will be furnished on application to any of our offices.

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LABORATORIES: NEWARK N. J.

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HELINDONE SCARLET S PASTE.

DYEING DIRECTIONS.

Preparation of the Stock Liquor.

25 lbs. Helindone Scarlet S Paste, are thinned with
6 gallons water, and then
5½ lbs. Caustic Soda Solution 40° Bé.
2½ " Helindoil added, the mixture is well stirred, and
3 " Hydrosulphite MLB conc. powder is finally added.

The temperature is kept at 130° to 140° until the reduction is complete as shown by the olive green color and perfect solution.

Vat Dyeing :—In yarn dyeing the proportions of water in the dye bath should be twenty times the weight of the material. As soft water is necessary for the preparation of the vats, it is advisable to correct hard water before using. According to the degree of hardness, 8 to 10 ozs. of Soda Ash and 4 to 6 oz. of Hydrosulphite MLB conc. powder are added to every 200 gallons of water, the sediment allowed to settle and the clear water used.

For 50 lb. lots of yarn the bath is started with 25 lbs. Helindone Scarlet S Paste properly reduced. The kettle is well raked and the yarn entered. Bent sticks are used and the material is worked ½ hour. It is then wrung out evenly and the color developed by soaping for ½ hour at the boil in a solution of soap 2—parts to 1000—water. This is necessary to obtain the bright scarlet shade. The shade may also be developed by steaming if convenient. For tapestry work an aftertreatment with 2% copper sulphate will be found of advantage.

Jigger Dyeing :—The box is filled with water corrected as above and the required amount of stock liquor, but an additional amount of hydrosulphite is necessary. The material is given 4 to 6 ends. During the operation the liquor should have a yellow-olive color and the cloth on the roll, a dirty yellow. After dyeing, the goods are well squeezed, oxidized by skying and then soaped for ½ hour in a boiling soap solution, 2 parts to 1000.

For dyeing in machines, the proportions of the dye bath are the same as for yarn and any suitable arrangement of machinery can be used, especially the forms used for indigo dyeing.

25% Helindone Scarlet S Paste.

25% Helindone Scarlet S Paste.
(Aftertreated with copper)

20% Helindone Scarlet S Paste.

25% Helindone Scarlet S Paste

25% Helindone Scarlet S Paste.
Dyed in cops.

20% Helindone Scarlet S Paste.
Dyed in jigger.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

HELINDONE FAST SCARLET R PAT. PASTE.

This product which gives remarkably fast and brilliant shades of scarlet can be used for direct printing by means of hydrosulphite printing pastes.

It is also suitable for the production of colored discharges on Azo color grounds.

Samples and prices will be furnished on application to any of our offices.

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LABORATORIES: NEWARK N. J.

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1-1-1910.

HELINDONE FAST SCARLET R PAT. PASTE.

Preparation of Printing Paste:—

40 parts Helindone Fast Scarlet R Paste,
are mixed with
10 " Glycerine
8 " Caustic Soda Solution 40 Bè.
4 " Hydrosulphite MLB conc. powder.
3 " Dissolving Salt B.
18 " British Gum powder.
4 " Water.

The mixture is heated to 140° F., and when the reduction is complete as shown by the yellow olive color the whole is cooled and the following added:—

3 parts Olive Oil.
5 to 10 " Hydrosulphite N F conc.
dissolved in
5 to 10 " Gum solution 1 to 2.

After printing, steam with moist steam twice for three minutes, or once for five minutes in the Mather-Platt free from air. Then wash, chrome for 20 minutes (1 part Bichromate to 1000 water) at 140°F. wash again and soap.

The printing pastes should be made up in this way by reducing the dyestuff and forming the leuco compound before adding the formaldehyde hydrosulphite for printing. The quantity of Hydrosulphite N F conc. necessary depends on the efficiency of the steaming apparatus.

Care must be taken to avoid an excess of alkali in the printing pastes as this renders the color insoluble and prevents its combining with the fibre.

Helindone Fast Scarlet R can be used in combination with other Helindone colors, or similar working dyestuffs for the production of any desired shade.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

HELINDONE FAST SCARLET R PAT. PASTE.

This member of the Helindone group of dyestuffs gives brilliant scarlet shades which closely resemble the yellower shades of Turkey Red. It is dyed like the other colors of the group in the hydrosulphite vat and can be applied to any variety of vegetable fibre in any convenient stage of manufacture. The shades possess great resistance to injurious influences and are fast to light, washing, soaping and chlorine bleach.

Samples and prices will be furnished on application to any of our offices.

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HELINDONE FAST SCARLET R PAT. PASTE.

The Stock Liquor is prepared as follows:—

40 lbs. Helindone Fast Scarlet R Paste are thinned with
7 gallons of hot water and
11 lbs. Caustic Soda 40° Bé.
4 " Helindoil added.
Stir well together and gradually add
6 " Hydrosulphite MLB conc. powder,
Keep at a temperature of 150° F until the solution is perfect, which requires about 15 minutes.

VAT DYEING:—In yarn dyeing the proportions of water in the dye bath should be twenty times the weight of the material. As soft water is necessary for the preparation of the vats, it is advisable to correct hard water before using. According to the degree of hardness 8 to 10 ozs. of Soda Ash and 4 to 6 oz. Hydrosulphite MLB conc. powder are added to every 200 gallons of water, the sediment allowed to settle and the clear water used.

For 50 lb. lots of yarn the bath is started with the necessary quantity of Helindone Fast Scarlet R Paste properly reduced. The kettle is well raked and the yarn entered. Bent sticks are used and the material is worked ½ hour. Itis then wrung out evenly and the color developed by soaping for ½ hour at the boil in a solution of soap 2 parts to 1000 water. This is necessary to obtain the bright scarlet shade. The shade may also be developed by steaming if convenient. For standing baths only half of the original quantity of dyestuff is required.

JIGGER DYEING:—The box is filled with water corrected as above and the required amount of stock liquor, but an additional amount of hydrosulphite is necessary. The material is given 4 to 6 ends. During the operation the liquor should have a yellow olive color and the cloth on the roll a dirty yellow. After dyeing the goods are well squeezed, oxidized by skying and then soaped for ½ hour in boiling soap solution 2 parts to 1000 water.

For dyeing in machines the proportions of the dye bath are the same as for yarn and any suitable arrangement of machinery can be used.

For pinks, 3 per cent of color is sufficient while for full scarlet shades 40% is necessary.

3% Helindone Fast Scarlet R Pat. Paste

3% Helindone Fast Scarlet R Pat. Paste

11% Helindone Fast Scarlet R Pat. Paste

11% Helindone Fast Scarlet R Pat. Paste

40% Helindone Fast Scarlet R Pat. Paste

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

HELINDONE RED B PAT. PASTE.

This is a new member of the Helindone group, which dyes brilliant bluish red shades which are equal in fastness to those produced with the older Red 3 B.

It is especially suited for shading the Helindone Scarlets, and in combination with the Orange R for the production of any desired shade of Turkey Red. It may also be combined with any of the indigoes and other helindones.

Samples and prices will be furnished on application to any of our offices.

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LABORATORIES: NEWARK N. J.

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1-20-1910.

HELINDONE RED B PAT. PASTE.

The stock liquor is prepared as follows:

10 lbs. Helindone Red B Paste.
are mixed with
12 gallons water
and then
2 lbs. Helindoil and
5½ " Caustic Soda solution 40 Be. added.
2½ " Hydrosulphite MLB conc. powder
are finally stirred in and the mixture heated to 140° F. The reduction is complete in ½ hour as shown by a greenish-yellow vat and perfect solution.

Vat Dyeing:—The water should be softened if necessary in the usual way with soda and hydrosulphite. The water in the dyebath should be twenty times the weight of the material, and it is heated to 130° F. before adding the required amount of stock liquor. After raking up, the bath should be greenish-yellow in color. The yarn is dyed on bent sticks; it is worked in the liquor for ½ hour. then wrung out evenly and oxidized for sometime before soaping. To finally develop the color, the material is soaped for ½ hour in boiling soap solution, 2 parts to 1000 water. Steaming under pressure will also produce the same result.

In running standing kettles, half the original quantity of stock liquor is required.

Jigger Dyeing:—The dyebath is prepared with the necessary amount of water, softened if desirable, and the required amount of stock liquor added. This must be prepared with double the amount of hydrosulphite used for vat dyeing The material is dyed at 130° F., and is given 4 to 6 ends. The liquor must be clear and of a greenish yellow tint, while the goods should be olive yellow. After dyeing, they are squeezed out, oxidized by skying and finally soaped for ½ hour at the boil with 2 parts soap per 1000 water.

Raw Cotton:—The stock solution is prepared as for vat dyeing. The most suitable machine is the one ordinarily used for dyeing indigo on wool. In machines of the circulating type, the dye bath is prepared according to the necessity of the special condition.

20% Helindone Red B Pat. Paste.

20% Helindone Red B Pat. Paste.

20% Helindone Red B Pat. Paste.

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PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

HELINDONE RED B PAT. PASTE.

This product has all the advantages of the older Red 3B, but the shade is not so blue.

It can be used for direct printing with Hydrosulphite pastes and also for red discharges on azo grounds.

Helindone Red B paste can be combined with any other similar colors for the production of compound shades.

Samples and prices will be furnished on application to any of our offices.

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LABORATORIES: NEWARK, N. J.

HELINDONE RED B PAT. PASTE.

Preparation of the Printing Paste:

15 parts Helindone Red B paste,
are mixed with
10 " Glycerine
5 " Hydrosulphite MLB conc. powder
25 " Potassium Sulphite 45° Bé.
16 " British Gum Powder
14 " Water

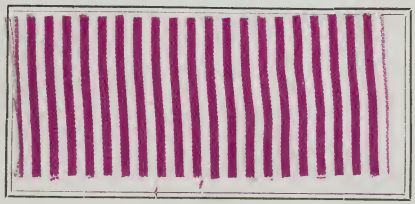
Warm to 140° until the reduction is complete, as shown by the greenish yellow color and perfect solution. Then cool and add:

5 " Olive Oil
10 " Hydrosulphite NF conc. 1-1 solution

After printing, the goods are steamed with moist steam twice for three minutes in the Mather-Platt free from air, then washed, chromed if necessary, washed again and soaped for 10 minutes 2 parts soap per 1000 water.

The printing pastes should be made in this way by reducing the dyestuff and forming the leuco compound before adding the Formaldehyde Hydrosulphite for printing. The quantity of Hydrosulphite NF conc., necessary depends on the efficiency of the steamer.

Helindone Red B paste may be used alone or in combination with other Helindone colors and halogen indigoes, but in making up combination pastes an excessive quantity of caustic alkali is to be avoided.



PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

HELINDONE BROWN G PAT. PASTE.

This, which is the first brown color of the Helindone group, is recommended for printing fast brown shades on all classes of material. It is applied by means of hydrosulphite printing pastes.

It is also suitable for brown discharges on azo grounds and aniline black resists.

Samples and prices will be furnished on application to any of our offices.

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LABORATORIES: NEWARK, N. J.

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HELINDONE BROWN G PAT. PASTE.

Preparation of Printing Paste:

30 parts Helindone Brown G paste,
are mixed with
8 " Clycerine
8 " Caustic Soda Solution 40° Bé.
4 " Hydrosulphite MLB conc. powd.
6 " Dissolving Salt 1—1 solution
20 " British Gum Powder
11 " Water.

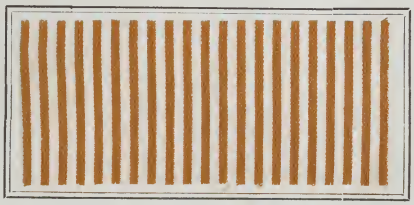
Heat carefully to 140° F., and when the reduction is complete as shown by the yellow color and perfect solution, the whole is cooled and the following added:

3 parts Olive Oil
10 " Hydrosulphite NF conc. 1—1.

After printing, the goods are steamed with moist steam twice for three minutes in the Mather-Platt free from air, then washed, chromed if necessary, washed again and soaped for 10 minutes 2 parts soap per 1000 water.

The printing pastes should be made in this way by reducing the dyestuff and forming the leuco compound before adding the Formaldehyde Hydrosulphite for printing. The quantity of Hydrosulphite NF conc., necessary depends on the efficiency of the steamer.

Helindone Brown G paste may be used alone or in combination with other Helindone colors and halogen indigoes, but in making up combination pastes an excessive quantity of caustic alkali is to be avoided.



PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

HELINDONE RED 3 B 20% PASTE.

This new Red is a member of thenew vat dyeing and printing colors and produces bright magenta shades of extreme fastness. It is very fast to rubbing and ironing, and stands washing and chlorine well, is exceptionally fast to light and acid, and will stand boiling in an open kier. These qualities render Helindone Red 3 B Paste one of the fastest colors available for cotton printing.

Further printing directions and samples may be obtained by application to any of our offices.

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LABORATORIES: NEWARK, N. J.

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THIS CIRCULAR IS INTENDED FOR INSERTION IN THE BINDER PREVIOUSLY SENT YOU.

PRINTING DIRECTIONS.

Helindone Red 3B 20% paste for calico printing.

Helindone Red 3B 20% is not dischargeable by the chromate or chlorate discharge processes. With Hydrosulphite N F conc. however, discharge effects can be obtained on Helindone 3B, Red but the white is not quite pure. On the other hand, by means of resist styles a pure white can be produced, but it is advisable to add a small amount of benzyl-sulphanilic acid (sodium salt) to the padding liquid, for this will act as a solvent for the leuko compound when it is formed.

Helindone Red 3B is suitable for colored Hydrosulphite discharges on direct colors. An excess of strong caustic alkali must be avoided in the printing paste, as the alkali causes the color to appear lighter in shade. For that reason the glucose process is not satisfactory. In preparing printing pastes a considerable amount of glycerine and sulphite of potassium are added together with the Hydrosulphite N F conc., part of which is previously used for the reduction of the dyestuff.

After printing, the cloth is dried(not too sharply), steamed 3 minutes in the Mather Platt (which must be free from air) at 212° F., and finally well washed and soaped at the boil.

Resist ZK.

300 parts Chloride of Zinc
400 parts British Gum thickening 1 : 1
100 parts Water
200 parts Kaoline 1 : 1
1000 parts

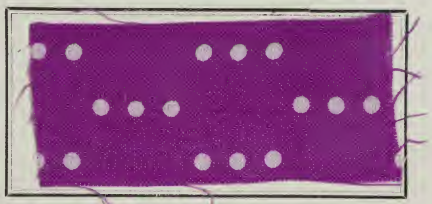
Padding Bath H 3B/50

50 parts Helindone Red 3B 20% are made into a paste with hot water, then
20 parts Caustic Soda 76° Tw.
10 parts Benzyl Sulphanilic Acid (sodium salt)
100 parts Water are added
20 parts Hydrosulphite M L B conc. powder and
make up to 1000 parts

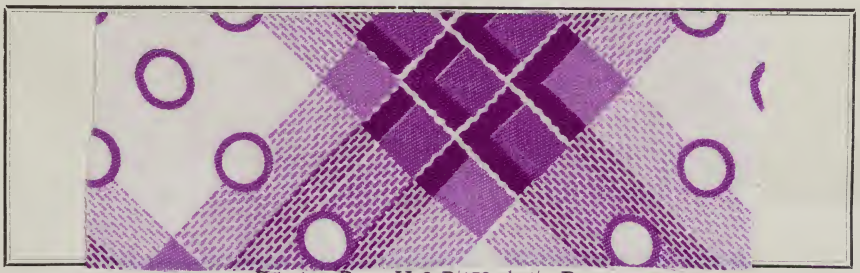
The goods are printed with the resist, then padded at 140° F., well squeezed, washed, passed through an acid bath, washed again and soaped hot.

Printing Paste H 3B 150

150 parts Helindone Red 3B 20% paste
60 parts Glycerine
50 parts Hydrosulphite N F conc. 1 : 1
250 parts Sulphite of Potassium 90° Tw.
100 parts British Gum thickening 1 : 1
are heated until the whole shows a greenish appearance. After cooling:
100 parts Hydrosulphite N F conc. 1 : 1
50 parts Olive Oil
240 parts British Gum thickening 1 : 1 are added.
1000 parts.



Resist Z K—Padding Bath H 3B/50



Printing Paste H 3 B/150: $\frac{1}{4}$, $\frac{1}{11}$ Pure

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

HELINDONE RED 3 B 20% PASTE.

Helindone Red 3 B 20% paste is a member of the new class of vat colors, which is distinguished by a bright magenta shade.

Helindone Red 3 B 20% paste is exceedingly fast, and its pure shade and fastness to water, washing, chlorine and light, render it especially valuable for cotton dyeing and calico printing.

Combinations of Helindone Red 3 B 20% paste with Indigo M L, B/2R or Indigo M L, B/2B are of great interest for the production of fast violet, lilac and heliotrope shades by way of vat dyeing. Bright crimson and claret reds can also be obtained by topping Helidone Red 3B with Alizarine.

Helindone Red 3 B paste is very fast to rubbing and ironing, stands washing and chlorine well, and is exceptionally fast to light and acid and will stand boiling in an open kier.

These qualities render Helindone Red 3 B paste one of the fastest colors available for cotton dyeing. It can therefore be used for dyeing vegetable fibers wherever high demands are made as regards fastness to light, wearing and washing, especially for shirting, blouse and dress-goods, tablecloths, curtains, decorative materials etc. and can be used for these goods either alone or in combination with Indigo ML,B/2B for heliotrope and violet shades. Bright and extremely fast claret and crimson shades can be obtained by dyeing the yarn with Helindone Red 3B first, and then topping it with Alizarine new red or old red. It can be used for the dyeing of loose cotton, yarn (in hanks, cops, cheeses or warps) and for piece dyeing.

Further dyeing directions and samples may be obtained by applying to any of our offices.

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LABORATORIES: NEWARK, N. J.

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DYEING DIRECTIONS.

Cotton and other vegetable fibers are dyed as follows:—

Standard Solution.

20 lbs. **Helindone** Red 3 B 20% paste are made into a paste with
3 gallons of water and
5 pints of Caustic Soda 76° Tw., and then
4 lbs. of Hydrosulphite M L B conc. powder
are added and the whole heated to 120° F., until the solution shows a green color.

As it is necessary to employ soft water for the preparation of the vats, it is advisable to correct hard water previously to its being used. According to the degree of hardness, 8—10 ozs. Soda Ash and ½—1 oz. of Hydrosulphite ML,B conc' powder are added to every 200 gallons of water, the sediment allowed to settle and then the clear water drawn off. Monopole soap and Turkey red oil may likewise be used to soften the water and it is advisable to add these ingredients when preparing the standard solutions. 2 lbs. of Monopole soap or 4 lbs. of Turkey red oil will be found sufficient for the quantities given in the above recipe.

The dye vat is heated to 100°—140° F., and then the standard solution added: generally, the dye vat contains ½ oz. to 1½ oz. of Helindone Red 3 B paste, per gallon, according to the desired shade. The goods are dyed at a temperature of 100—140° F. The temperature depends upon the concentration of the vat: 120° F. is suitable for concentrated vats, 100 F. for diluted vats. The desired shade should be obtained in 2 to 4 dips. The first dip is usually of 20 minutes duration. The following dips may be considerably shorter. The yarn is then wrung evenly, allowed to oxidize by the action of the air, and is then soaped for a quarter of an hour at the boil (2 parts of soap per 1000). This manipulation brightens the shade considerably and makes it yellower. When the vats are allowed to cool over night, the color is liable to precipitate, but on re-heating and by a gradual addition of caustic soda and Hydrosulphite, the dye liquid becomes clear again. An excess of caustic soda must be avoided as this also causes the color to precipitate.

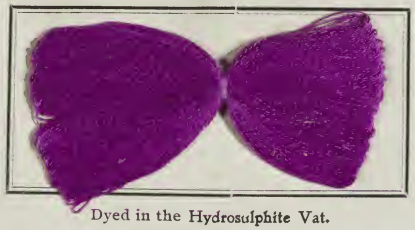
Helindone Red 3 B 20% Paste on Wool and Silk.

Helindone Red 3B is used on wool and silk in vats set in the manner usual for these fibres. For wool dyeing the standard solution is prepared as follows:—

20 lbs Helindone Red 3B 20% paste
5 pints Caustic Soda 76° Tw. and
4 lbs. Hydrosulphite ML,B conc. powder
are heated to 120° to 130° F. until dissolved; the dye vats are prepared and worked in the usual manner.

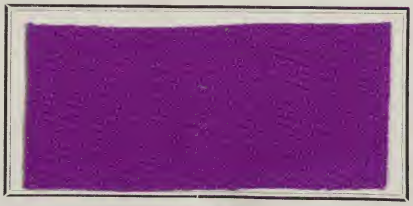
The fastness to light, alkali and milling of Helindone Red 3B on wool is satisfactory. The shade, however, is not perfectly oxidized by the action of the atmosphere: it remains somewhat dull until developed by a treatment in boiling acidulated water or by wet steam. But since this manipulation turns the shade considerably brighter and yellower, the eventual change must be taken into consideration when dyeing to pattern.

On silk the pure shade of the dyestuff is, after oxidation by air, developed by passing through a boiling soap bath. It is fast to rubbing, light and water, and is therefore very suitable for producing fast reds in self shades. In combination with Indigo M L B/2B is may be used for lilac and heliotrope shades, fast to water and light.



Dyed in the **Hydrosulphite Vat.**

Dyed in the **Hydrosulphite Vat.**



Dyed in the **Hydrosulphite Vat** on a **Jigger.**

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY

HELINDONE VIOLET D PASTE

This is a new Helindone dyestuff which gives a medium shade of violet of good fastness to washing, light and wearing. It dyes level, covers well and is comparatively low in price.

It can be used in conbination with other Helindones for all varieties of vegetable fibres in any convenient form.

Samples and prices will be furnished on application to any of our offices.

H. A. METZ & CO.,

122 HUDSON STREET,

NEW YORK.

BOSTON MASS.	CHICAGO, ILL.	SAN FRANCISCO, CAL.
PHILADELPHIA, PA.	CHARLOTTE, N. C.	MONTREAL, CANADA.
PROVIDENCE, R. I.	ATLANTA, GA.	TORONTO, CANADA.

LABORATORIES: NEWARK, N. J.

C81
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11-20-'10

HELINDONE VIOLET D PASTE

The stock liquor is prepared as follows:

10 lbs. Helindone D Paste are mixed with
12 gals. Hot Water.
To this add
5½ lbs. Caustic Soda 40° Bé.
3½ lbs. Helindoil.
Stir well together and mix in slowly
3 lbs. Hydrosulphite MLB conc. powder.
Warm to 120° to 130° F., until the reduction is complete, which requires about ½ hour. The reduced vat is olive brown in color.

VAT DYEING: For dyeing yarn the proportion of water should be twenty times the weight of the material. It should be corrected by the addition of 6½ oz. Hydrosulphite MLB conc. powder, and 8 to 10 ozs. Soda Ash, and the clear liquor used. The temperature is raised to 105° F., and the necessary amount of stock liquor added. The dye liquor should be olive brown, quickly turning to blue violet on exposure to air. The yarn is dyed for ½ hour on bent sticks; straight sticks may be used, but more hydrosulphite is then required. After dyeing it is well squeezed and allowed to oxidize. The color is finally developed by soaping at the boil for ½ hour with 2 parts Soap per 1000 Water.

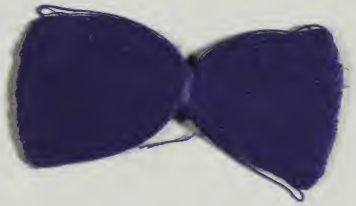
By using old baths the amount of dyestuff may be reduced 20 per cent.

JIGGER DYEING: The box is prepared with water corrected as above, and the necessary amount of stock liquor, but this must contain twice as much hydrosulphite as that for yarn.

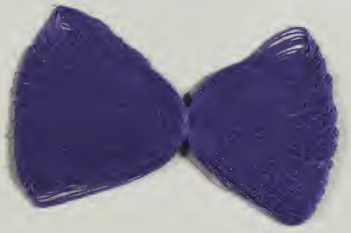
The material is given 4 to 6 ends at 105° F. During the operation must remain clear and olive brown in color and sufficient hydrosulphite must be used to maintain this condition. After dyeing the goods should be skyed, then rinsed and soaped.

RAW COTTON: The vat is prepared as for yarn, but a suitable machine must be provided. This color can be used in any machine that is adapted for Indigo dyeing.

6% Helindone Violet D.



30% Helindone Violet D.



10% Helindone Violet D.

20% Helindone Violet D.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

HELINDONE BROWN G PAT. PASTE.

This, which is the first brown dyestuff of the Helindone group yields shades equal in fastness to the other colors that are especially remarkable in this regard.

It can be combined with the other Helindones for the production of a line of combination shades on vegetable fibres which meet the severest requirements.

Samples and prices will be furnished on application to any of our offices.

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LABORATORIES: NEWARK N. J.

C70
594

1-15-1910.

HELINDONE BROWN G PAT. PASTE.

The stock liquor is prepared as follows:

10 lbs. Helindone Brown G paste,
are mixed with
6 gallons water
and then
1 lb. Helindoil
2 " Caustic Soda Solution 40 Be.
are added. Then
1¼ " Hydrosulphite MLB conc. powder
are gradually stirred in and
the mixture heated to 135° F.
At the end of ½ hour the reduction should be complete as shown by the yellow color and perfect solution.

Vat Dyeing:—In dyeing yarn, the proportion of water in the dyebath should be twenty times the weight of the material. The water should be corrected as for the other Helindone colors. The dyebath is made up with the necessary amount of stock liquor, the bath raked up, and if it is in proper condition, should be of yellowish brown color. The yarn is dyed on bent sticks, being worked for ½ hour, squeezed out evenly and allowed to oxidize. The color is then developed by soaping for ½ hour with boiling soap, 2 parts to 1000 water. The shade may also be developed by boiling in water, or by steaming.

In standing bath sixty per cent. of the original amount of dyestuff is required.

Jigger Dyeing:—The stock liquor is added to the box which contains the necessary quantity of water, but the proportions of the hydrosulphite must be doubled. The material is given 4 to 6 ends at 130° F. The dyebath should be clear with a yellow color, and the goods on leaving the liquid should also be yellow. After dyeing, the material is well squeezed, oxidized by skying and then soaped at the boil for ½ hour, washed and dried.

Raw Cotton:—The same stock solution is used as for yarn. The machine best suited for handling this material is the type used for dyeing indigo on wool consisting of a kettle with an inner perforated cage and squeeze rolls. Machines of the circulating type can also be used, but the proportions of the several materials in the stock liquor must be regulated to suit the conditions.

20% Helindone Brown G Paste.

20% Helindone Brown G Paste.

20% Helindone Brown G Paste.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

Helindone Brown 3 GN Paste.

In printing with this Helindone dyestuff, strongly alkaline pastes are required. It is therefore suitable for use in combination with Helindone Yellow 3 GN and the various marks of Indigo. It resists the action of both oxidizing and reducing discharges and can, on this account, be used for colored hydrosulphite discharges and resists under Aniline Black.

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PROVIDENCE, R. I.	ATLANTA, GA.	TORONTO, CANADA.

LABORATORIES: NEWARK, N. J.

PRINTING DIRECTIONS.

PRINTING PASTE.

15 parts Helindone Brown 3 GN paste

are mixed with

70 parts Alkaline Thickening.

12 " Hydrosulphite NF conc. 1:1.

$\frac{3}{100}$ " Caustic Soda Solution 40° Bé.

ALKALINE THICKENING.

12 parts British gum powder.

$\frac{88}{100}$ " Caustic Soda Solution 40° Bé

After printing and drying, the goods are steamed twice for three minutes in the Mather-Platt at 212° to 216° F., with moist steam free from air, then rinsed and soaped at the boil for ten minutes.

15% Helindone Brown 3 GN Paste.

PRODUCT OF

FARBWERKE vorm. MEISTER LUCIUS & BRUENING,

HOECHST-ON-THE-MAIN, GERMANY.

Helindone Gray BB pat. paste.

This new Helindone color is suitable for both direct and discharge prints and can also be used for gray colored discharges with hydrosulphite discharge pastes. The resulting shades are fast to washing, soaping and light.

Samples and prices will be furnished on application to any of our offices.

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LABORATORIES: NEWARK, N. J.

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7-20-'10

PRINTING DIRECTION.

In printing with Helindone Gray BB paste, the deepest and most satisfactory shades are obtained on glucose prepared material with strongly alkaline printing pastes. It can also be applied by means of strongly alkaline pastes with Hydrosulphite NF conc., or with weaker alkaline pastes if the dyestuff is previously reduced by means of Hydrosulphite MLB conc. powder, but the tinctorial results are not so satisfactory.

Helindone Gray BB can be discharged by means of Hydrosulphite NF conc. and Discharge Base I in combination.

Printing paste for Glucose prepared material.

75	parts	Alkaline Thickening,
10	"	Caustic Soda Solution 40° Bé.
15	"	Helindone Gray BB paste,
100		

ALKALINE THICKENING.

88	parts	Caustic Soda Solution 40° Bé.
12	"	British Gum powder
100		

REDUCING PASTE.

40	parts	Gum Solution 1:2
20	"	Caustic Soda Solution 40° Bé.
1½	"	Anthraquinone paste
5	"	Glycerine
33½	"	Water
100		

After printing the goods are steamed ¾ minute, then well washed and soaped at the boil.

ALKALINE PRINTING PASTE BY REDUCTION.

15	parts	Helindone Gray BB paste.
10	"	Glycerine
6	"	Caustic Soda Solution 40 Bé.
3	"	Hydrosulphite NF conc. powder,
6	"	Dissolving Salt B 1:1
20	"	British Gum powder,
27	"	Water

Mix together at 140° F., until the reduction is complete, then add,

3	parts	Olive Oil
10	"	Hydrosulphite NF conc. 1:1
100		

After printing, the goods are steamed, 4 to 5 minutes in the Mather-Platt, free from air, then washed and soaped at the boil.

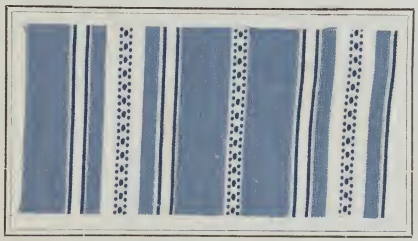
PADDING BATH.

20	parts	Helindone Gray BB paste,
700	"	Water,
25	"	Caustic Soda Solution 40 Bé.
10	"	Helindoil
1	"	Anthraquinone paste,
		Mix together and add slowly,
5	"	Hydrosulphite NF conc. powder,
6	"	Hydrosulphite NF conc. 1:1
1000		

DISCHARGE WHITE.

10	parts	Zinc White
26	"	Water,
50	"	British Gum 1:1
8	"	Hydrosulphite NF conc. 1:1
4	"	Anthraquinone paste,
2	"	Discharge Base I.
100		

The goods are padded cold, dried, then printed with Discharge White, steamed for 3 minutes, washed and soaped. When using Aniline or Amido Fast Black with the White, the padded goods must be steamed and washed before printing.



2½% and 15%
Helindone Gray BB printing paste on Glucose
prepared material.

Padded with 2% Helindone Gray BB
Printed with
Discharge White and Amido Fast Black.