# DYE, CHEMICAL AND COLOR SALES DEPARTMENT

## REPRESENTATIVE'S CONFIDENTIAL PRICE LIST

EFFECTIVE FEBRUARY 10, 1921

Subject to change without notice

TERMS:

One per cent for each ten days from date of invoice, or thirty days net


**THE SHERWIN-WILLIAMS CO.**

FACTORIES: CLEVELAND, CHICAGO, NEWARK, SAN FRANCISCO (EMERYVILLE)

SALES OFFICES AND WAREHOUSES IN PRINCIPAL CITIES

D. C. & C.(E) L20 344

# DYES, CHEMICALS AND COLORS

# DYES, CHEMICALS AND COLORS—Continued

# FOREWORD

In offering our line of dyestuffs and intermediates described on following pages, we are adding a line of products for many additional diversified uses, an achievement which is all the more remarkable on account of the very short time which has elapsed since we have been engaged in the manufacture of dyestuffs derived from the chemical treatment of coal-tar, and the fact that in the past the production of these commodities has been practically unknown in the United States.

It was only after the most careful consideration and investigation of the exacting trade demands and requirements, that we entertained the proposal to undertake the manufacture of these very important products. Neither did we for a moment minimize the magnitude of our comparatively new undertaking, both from a production and sales viewpoint, as in the case of the former it involves the most intricate and complex chemical knowledge together with combined mechanical development, and in the case of the latter the opening of a field where trade previously had never been solicited by us.

Therefore, in presenting our newest line to the selling staff, we are assured that it is of the very finest quality and fits in perfect symmetry with our high grade paints and varnishes. We are particularly proud of our accomplishment and the manner in which these new products have been developed, true to the Sherwin-Williams standard of quality.

The prices shown in this price list are low limit "A" prices for open orders. Representatives must refer all contract or future delivery business to their managers, who can obtain latest market quotations from D. C. & C. Dept. All orders are accepted conditional on our ability to fill them.

All prices subject to change without notice.

No contracts covering delivery forward where quantities exceed normal purchases are to be made on basis of prices shown in this list. Contracts must be referred to Headquarters for acceptance.

# INTRODUCTION

Following we give a full account of the application, shade and fastness of Aniline colors we produce. Aniline dyes of our manufacture conform fully to the standards established in the dye industry, so far as fastness to light and other desirable qualities are concerned.

Our intention in preparing the technical information of each dye, as per following pages, is to render it easier for our representatives to select and suggest dyes suitable for their prospective customers so that they may conduct their own tests to determine adaptability of product to meet their individual requirements. At times it frequently occurs that one or another of the Aniline colors is used in large quantities for some special purpose, being fast enough for the article in question, although in some respects it is only moderately fast.

The brief description following covers, we believe, all the necessary general technical information required for the introduction of such materials as we are now producing, but should there be any additional information desired it will be furnished upon request.

This technical information will be supplemented with pages describing each color as we add additional dyes to our line, and the descriptions given herein will be revised from time to time as we determine new outlets for our dyes.

We request that all representatives advise us should they find avenues for our products which are not mentioned in the following description.

Dyeings of our goods will be furnished upon request, but it is customary and advisable when doing this, to obtain from your prospective customer some of the material which he wishes to color and in this way we can give him the best idea of results which can be produced.

# GENERAL INSTRUCTIONS

## STORAGE OF DYES

Colors should be kept in a cool, dry room which is not open to the direct rays of the sun.

Care must also be taken that they are not damaged by leakage of steam or water pipes.

Barrels or tins that have been opened should always be kept well covered, so as to prevent the colors from becoming adulterated with dust from other dyestuffs and from absorbing too much moisture from the air.

## DISSOLVING

Place the dye in a suitable wooden tub, pour over it a sufficient quantity of pure boiling water, and stir until no more lumps can be seen; allow to set for a few minutes and then pass through a fine wire or hair sieve or through a coarse cotton cloth into the dye bath. Any undissolved dye remaining behind in the sieve or in the dissolving vessel must be treated in the same manner with more hot water.

## CAUTIONS

1. As a rule, the best results will not be obtained if the dye is added to the hot water instead of proceeding as above.

2. The amount of water necessary for dissolving colors varies a great deal. With several products, one can only dissolve one-half pound in ten gallons of water, whereas as much as five pounds and in exceptional cases still more, can be dissolved in the same amount.

3. Care must be taken that only dyestuffs of similar chemical nature are dissolved together.

# DYE, CHEMICAL AND COLOR SALES DEPARTMENT

## CONSUMERS OF DYES, CHEMICALS AND DRY COLORS

### AGENTS S-W

Premier Non-Fading Reds
Chrome Yellows
Bismarck Brown, R and Y
Chrome Greens
Chinese Blue
Nigrosine Black

### ARTIFICIAL FLOWERS

Fuchsine, all grades
Scarlet 2 R R
Bismarck Brown, R and Y
Naphthol Yellow S
Fast Red A Extra
Brilliant Crimson No. 10
Alkali Blue 3 B Conc.

### ARTIFICIAL LEATHER

All Dry Colors and Dyes

### ARTISTS' COLORS

Chrome Greens
Para Lakes
Scarlet Lake
Graphic Lake
Scarlet 2 R R
Brilliant Crimson No. 10
Alizarine Yellow R N
Brilliant Orange 4 G R
Chrome Yellows
Helio Fast Red Lakes
Geranium Lake
Fuchsine, all grades
Chicago Fast Red 6B Extra
Alizarine Yellow G
Alizarine Brown 3 R
Alkali Blue 3 B Conc.
Naphthol Yellow S

### AUTOMOBILE MANUFACTURERS

American Blue (Prussian)
Scarlet Lakes
Helio Fast Red Toner
Chinese Blue
Para Toner
Para Lakes

### BAG (Jute)

Fast Red A Extra
Brilliant Crimson No. 10

### BAG (Paper)

Scarlet 2 R R
Fast Red A Extra
Fuchsine, all grades
Scarlet 2 R G
Brilliant Crimson No. 10
Naphthol Yellow S

### BAG (Woolen Cloth)

Scarlet 2 R R
Brilliant Orange 4 G R
Fast Red A Extra
Alizarine Brown 3 R
Alizarine Yellow G
Chrome Black J B
Acetic Acid
Scarlet 2 R G
Brilliant Crimson No. 10
Chicago Fast Red 6 B Extra
Alizarine Yellow R N
Chrome Black B
Alkali Blue 3 B Conc.
Lanafuchsine

### BARREL

Scarlet 2 R R
Fast Red A Extra
Brilliant Orange 4 G R
Brilliant Crimson No. 10
Methylene Blue
Methyl Violet
Scarlet 2 R G
Chicago Fast Red 6 B Extra
Chicago Fast Red 3 B Extra
Fuchsine, (all grades)
Malachite Green

### BILLIARD BALL

All Dry Colors
Lithopone

### BOOKBINDERS

All Dry Colors, particularly
Para Toners
Para Lakes
Chinese Blue
Bronze Blue
Scarlet 2 R R
Helio Toners
Helio Lakes
Milori Blue
Chrome Yellows
Brilliant Crimson No. 10
Chrome Greens

# CONSUMERS OF DYES, CHEMICALS AND DRY COLORS—Continued

## BROOM

Scarlet 2 R R | Malachite Green | Naphthol Yellow S

## BUTTON (Bone and Artificial)

Scarlet 2 R R | Fuchsine X | Chicago Fast Red 6 B Extra
Chicago Fast Red 8 B Extra | | Brilliant Crimson No. 10

## CARBON PAPER

Chinese Blue | Helio Fast Red Toner | Graphic Red Lake, double strength
Permanent Geranium Lake | Milori Blue |

## CAR BUILDERS

Chrome Yellows | Helio Fast Red Toner | Oriental Red
Para Toners | Chrome Greens |

## CARPET

Scarlet 2 R R | Fast Red A Extra | Brilliant Crimson No. 10
Chicago Fast Red 6B Extra | Lenafuchsine | Alkali Blue 3 B Conc.
Brilliant Orange 4 G R | Acid Claret B | Acetic Acid

## CELLULOID NOVELTIES

Fuchsine, all grades | Brilliant Orange 4 G R | Acetic Acid
Scarlet 2 R R | Alkali Blue 3 B Conc. |

## CHALK

Scarlet 2 R R | Chrome Yellows | Bismarck Brown
Chicago Fast Red 6B Extra | Lake Colors | Brilliant Crimson No. 10
Fuchsine, all grades | Scarlet 2 R G | Chrome Greens
Fast Red A Extra | Chicago Fast Red 8 B Extra | Chinese Blue

## CHEMICAL MANUFACTURERS

All Dyes | Acetic Acid | All Dry Colors

## COMB

Fuchsine, all grades | Acetic Acid | Alkali Blue 3 B Conc.
Brilliant Crimson No. 10 | Brilliant Orange 4 G R |

## COSMETICS

Fuchsine, all grades | Graphic Red Lake, Blue shade |
Helio Fast Red Lake | Helio Fast Red Toner | Graphic Red Lakes

## COTTON DYERS

Fuchsine, all grades | Acetic Acid | Bismarck Brown
Paranitraniline | Beta Naphthol | Mono-Sulphonic Acid
Para Phenylene Diamine | Toluidine M |

## COTTON PRINTERS

Fuchsine, all grades | Toluidine M | Alizarine Brown G
Paranitraniline | Para Phenylene Diamine | Alizarine Yellow R N
Alizarine Yellow G | Alkali Blue 3 B Conc. | Acetic Acid
Chrome Black B | Beta Naphthol | Chrome Black, J'B

(Chrome and Alizarine Colors used on Chromium Fluoride Mordant)

# CONSUMERS OF DYES, CHEMICALS AND DRY COLORS—Continued

## CRAYON

All Dry Colors

## DEALERS

Premier Non-Fading Reds
Chrome Yellows
Bismarck Brown R and Y
Chrome Greens
Chinese Blue
Nigrosine Black

## DOLL

English Vermilion
Chicago Fast Red 6 B Extra
Scarlet 2 R R
Brilliant Orange 4 G R

## DRY COLOR MANUFACTURERS

Naphthol Yellow S
Paranitraniline
Tolnidine M
Scarlet 2 R R
Graphic Red Pulp
Brilliant Crimson No. 10
Orange Y
Alkali Blue 3 B Conc.
Beta Naphthol
Mono Sulphonic Acid
Brilliant Orange 4 G R
Lake Red P Pulp
Acetic Acid

## DYERS AND CLEANERS

Union Dyes
Acetic Acid
Would use small quantities of all of our dyes.

## ENGRAVERS

Chinese Blue
Bronze Blue
Graphic Red Lake
Helio Toner
Milori Blue
Permanent Geranium Lake
Acetic Acid
English Vermilion

## FEATHER

Fast Red A Extra
Scarlet 2 R R
Brilliant Crimson No. 10
Naphthol Yellow S
Fuchsine, all grades
Brilliant Orange 4 G R
Acetic Acid

## FELT (Wool)

Lanafuchsine
Scarlet 2 R G
Fast Red A Extra
Alizarine Brown 3 R
Alizarine Yellow R N
Chrome Black J B
Scarlet 2 R R
Chicago Fast Red 6 B Extra
Brilliant Crimson No. 10
Alizarine Yellow G
Chrome Black B
Acetic Acid

## FILM

Scarlet 2 R R
Chicago Fast Red 6B Extra
Brilliant Crimson No. 10
Brilliant Orange 4 G R
Acetic Acid
Fuchsine X

## FUR

Universol D
Universol P
Universol D B
Universol G O
Universol X

## FURNITURE

Bismarck Brown R
Brilliant Crimson No. 10
Lanafuchsine
Scarlet 2 R R
Chicago Fast Red 6B Extra

## GLOVE

Scarlet 2 R R
Fast Red A Extra
Acetic Acid
Chicago Fast Red 6 B Extra
Bismarck Brown

# CONSUMERS OF DYES, CHEMICALS AND DRY COLORS—Continued

## HAT

Chrome Black B
Alizarine Yellow R N
Alizarine Brown 3 R
Scarlet 2 R R
Chicago Fast Red 6 B Extra
Acetic Acid
Chrome Black J B.
Alizarine Yellow G
Lanafuchsine
Brilliant Orange 4 G R
Brilliant Crimson No. 10

## HANDLE (Wooden)

All Dry Colors
Fast Red A Extra
Bismarck Brown
Scarlet 2 R R
Brilliant Crimson No. 10
Naphthol Yellow S

## IMPLEMENT MANUFACTURERS

Green Dry Colors
Red Dry Colors
Yellow Dry Colors

## INKS (Printing)

All Dry Color Lakes
Para Toner, L and D
C. P. Milori Blue
C. P. Chrome Yellows
Scarlet 2 R R
Graphic Red Pulp
Paranitraniline
Toluidine M
English Vermilion
Alkali Blue 2 R L
Helio Fast Red Toner
C. P. Bronze Blue
C. P. Chinese Blue
C. P. Chrome Greens
Brilliant Orange 4 G R
Lake Red C Pulp
Beta Naphthol
Fuchsine
Naphthol Yellow S

## INKS (Writing

Fuchsine, all grades
Bismarck Brown
Scarlet 2 R R
Soluble Blue
Ponceau 5 R

## LADDER

Yellow Dry Colors
Bismarck Brown
Brilliant Crimson No. 10
Naphthol Yellow S
Green Dry Colors
Scarlet 2 R R
Chicago Fast Red 6 B Extra

## LAUNDRIES

Soluble Blue
Acetic Acid

## LEATHER

Scarlet 2 R R
Leathermaker's Blue
Chrome Yellows
Alizarine Yellow G
Fast Red A Extra
Leather Brown A
Chicago Fast Red 6 B Extra
Chicago Fast Red 8 B Extra
Chinese Blue
Chrome Greens
Alizarine Yellow R N
Fuchsine
Acetic Acid

## LINOLEUM

Chrome Yellows
Para Toners L and D
Helio Fast Red Lake
Chrome Greens
Para Lakes, L and D
Sundry Lake Colors

## LITHOGRAPH CAN MANUFACTURERS

C. P. Yellows
Helio Fast Red Toners
Chrome Greens
Graphic Red Lake
Para Toners
All Lake Colors
C. P. Blues

## LITHOGRAPHERS (those making their own printing inks only)

All Dry Color Lakes
Para Toner, L and D
C. P. Milori Blue
C. P. Chrome Yellows
Scarlet 2 R R
Graphic Red Pulp
Paranitraniline
Toluidine M
English Vermilion
Naphthol Yellow S
Helio Fast Red Toner
C. P. Bronze Blue
C. P. Chinese Blue
C. P. Chrome Greens
Brilliant Orange 4 G R
Lake Red P Pulp
Beta Naphthol
Fuchsine
Naphthol Yellows
Alkali Blue

# CONSUMERS OF DYES, CHEMICALS AND DRY COLORS—Continued

## OIL CLOTH

C. P. Chrome Yellows
C. P. Milori Blue
C. P. Chinese Blue
Helio Fast Red Toner
C. P. Chrome Greens
C. P. Prussian Blue
All Red Lake Colors
Para Toner

## PAINT MANUFACTURERS

Para Toners, L and D
Oriental Red, L and D
Chrome Yellows
C. P. Chinese Blue
English Vermilion
Dry White Lead
Helio Fast Red Toner
Scarlet Lakes
Chrome Greens
C. P. Prussian Blue
Lithopone
Ozio

## PAPER (Manufacturers who dye in the beater)

Scarlet 2 R R
Bismarck Brown
Fast Red A Extra
Fuchsine
Naphthol Yellow S

## PAPER (Coated Paper)

All Dry Color Lakes
Chrome Greens
Fuchsine
Chicago Fast Red 6B Extra
Fast Red A Extra
Brilliant Orange 4 G R
Naphthol Yellow S
Chrome Yellows
C. P. Blues
Scarlet 2 R R
Brilliant Crimson No. 10
Chicago Fast Red 6B Extra
Scarlet 2 R G
Pulp Colors

## PAPER (Wall-Paper)

Fuchsine, all grades, in quantities
C. P. Chrome Greens
All Lake Colors and Toners
Chicago Fast Red 6B Extra
Brilliant Crimson No. 10
All shades of Pulp Colors
Bismarck Brown
C. P. Chrome Yellows
C. P. Blues
Scarlet 2 R R
Chicago Fast Red 6B Extra
Brilliant Orange 4 G R
Naphthol Yellow S

## PAPER (Tissue Paper)

Fuchsine, all grades
Brilliant Orange 4 G R
Brilliant Crimson No. 10
Scarlet 2 R R
Chicago Fast Red 6B Extra
Naphthol Yellow S

## PATENT LEATHER

Leathermaker's Blue
Chinese Blue

## PENCIL MANUFACTURERS

Chrome Greens
All Dry Reds
Fuchsine
Chrome Yellows
All Lake Colors
Naphthol Yellow S

## PICTURE FRAME

Bismarck Brown
Brilliant Crimson No. 10
Small quantities Dry Colors
Lanafuchsine
Scarlet 2 R R
Naphthol Yellow S
Fast Red 6 B Extra
Brilliant Orange 4 G R

## RUBBER GOODS

Helio Fast Red Toner
C. P. Milori Blue
Thorax
C. P. Chrome Yellows
English Vermilion
Formanilide

## RULER (Measuring Tape)

C. P. Chrome Yellows
Naphthol Yellow S

## SCENIC PAINTERS

All Dry Colors

# CONSUMERS OF DYES, CHEMICALS AND DRY COLORS—Continued

## SEALING WAX

Para Toners, L and D
Helio Fast Red Toner
Misc. Dry Colors

Para Lakes, L and D
Helio Fast Red Lake

English Vermilion
Lake Red C Dry

## SHADE CLOTH

C. P. Chrome Yellows
Limited quantity Red Dry Colors

Acetic Acid
C. P. Chrome Greens

C. P. Blues
Lithopone

## SHINGLE STAIN

C. P. Chrome Yellows
C. P. Prussian Blue

Small quantities Red Dry Colors P

C. P. Chrome Greens
C. P. Chinese Blue

## SHOE POLISH

Brilliant Orange 4 G R
Bismarck Brown

Burgundy Lake
Chicago Fast Red 6 B Extra

Naphthol Yellow S

## SILKS

Naphthol Yellow S
Fuchsine, all grades
Chicago Fast Red 6B Extra

Brilliant Crimson No. 10
Alkali Blue
Scarlet 2 R R

Brilliant Orange 4 G R
Fast Red A Extra

## SOAP

Scarlet 2 R R
Chicago Fast Red 8B Extra
Brilliant Orange 4 G R
Alizarine Yellow G

Alizarine Brown 3 R
Naphthol Yellow S
Chicago Fast Red 6B Extra
Scarlet 2 R G

Fuchsine, all grades
Alizarine Yellow R N
Bismarck Brown

## STAIN

Fuchsine

Scarlet 2 R R

Bismarck Brown

## STAMP PAD

Fuchsine, all grades
Helio Fast Red Toners

Milori Blue
Para Toners

Red Lake Colors
Chinese Blue

## STRAW GOODS

Fuchsine, all grades
Chicago Fast Red 8B Extra
Brilliant Crimson No. 10

Bismarck Brown R
Chicago Fast Red 6B Extra
Scarlet 2 R R

Fast Red A Extra
Naphthol Yellow S

## SWEEPING COMPOUND

Chrome Greens

Dry Reds

## TANNERIES

See LEATHER

## TOY

Fuchsine
Brilliant Crimson No. 10
Fast Red A Extra
Chrome Yellows

C. P. Chinese Blue
Naphthol Yellow S
Chicago Fast Red 6 B Extra
Scarlet 2 R R

Brilliant Orange 4 G R
Chrome Greens
All Dry Reds

## TYPEWRITER RIBBON

Fuchsine

Red Lakes

Milori Blue

# CONSUMERS OF DYES, CHEMICALS AND DRY COLORS—Continued

## WATER COLORS

| | | |
|---|---|---|
| Fuchsine | Alizarine Yellow R N | Fast Red A Extra |
| Brilliant Crimson No. 10 | Naphthol Yellow S | Alizarine Yellow G |
| Brilliant Orange 4 G R | Chicago Fast Red 6 B Extra | Alizarine Brown 3 R |

## WOODWORKING

| | | |
|---|---|---|
| Fuchsine | Dry Colors | Bismarck Brown R |
| Scarlet 2 R R | Naphthol Yellow S | Brilliant Crimson No. 10 |
| Chicago Fast Red 6B Extra | | |

## WOOLEN PIECE GOODS DYERS

| | | |
|---|---|---|
| Alizarine Yellow G | Fast Red A Extra | Lanafuchsine |
| Alizarine Brown 3 R | Brilliant Orange 4 G R | Chicago Fast Red 6B Extra |
| Chrome Black J B | Alizarine Yellow R N | Brilliant Crimson No. 10 |
| Scarlet 2 R R | Chrome Black B | Naphthol Yellow S |

## WOOLEN YARN DYERS

| | | |
|---|---|---|
| Brilliant Orange 4 G R | Alizarine Yellow R N | Lanafuchsine |
| Scarlet 2 R G | Chrome Black J B | Alizarine Yellow G |
| Brilliant Crimson No. 10 | Scarlet 2 R R | Chrome Black B |
| Chicago Fast Red 6B Extra | Fast Red A Extra | Naphthol Yellow S |
| Alizarine Brown 3 R | Chicago Fast Red 6B Extra | |

All large manufacturing institutions such as steel companies, packing houses, car builders and metal furniture manufacturers use quantities of Dry Colors, etc., for sundry purposes; and in calling on the manufacturing trade, these items should not be overlooked.

# GENERAL INFORMATION

The dyes of our manufacture as described on the following pages are distinguished as acid type and basic type.

The acid type dyes are principally used for the dyeing of wool and silk or animal textile fibers, not being used to any extent for the dyeing of cotton or other vegetable textile fibers. Acid type dyes are applied to wool and silk in acid baths prepared by the addition of sulphuric or acetic acid, and the addition of a percentage of Glauber salt (Sodium Sulphate).

Basic dyes are used chiefly for the dyeing of cotton and silk and are used only to a limited extent for wool dyeing, although more brilliant than the acid type, the shades are not as permanent or fast, but for certain silk dyeing, fastness of color is sacrificed to brightness. For cotton and other vegetable fibers, a mordant of a slightly acid character, such as tannic acid, is required.

# GENERAL THEORY OF DYEING

There are two main theories to explain the general process of dyeing:

Chemical theory—That dyeing involves a chemical reaction between the fiber and the dyestuff, and that a definite chemical compound known as a Color Lake is produced through this reaction.

Mechanical theory—Considers the effect of dyeing to be simply a deposit of colored particles in the substance of the fiber, and the combination so formed to be merely a mechanical mixture.

However, there are many factors influencing the process of dyeing, among which the most important is the chemical activity existing between the dye and the fiber, the heating of the dye bath, the presence of various chemicals (mordants) in the dye bath or fiber and the mass-relations between the fiber, the dye bath and the dye, so that either theory can be considered correct in one instance or the other.

The heat at which the dyeing is done plays a most important role, as the rapidity and degree of dyeing is nearly always greater in a hot dye bath than in a cold one, and the proper regulation of the temperature of the dye bath permits the dyer to so regulate the taking up of the dye by the fibers as to obtain even and well penetrated dyeings.

# GENERAL METHOD OF DYEING ACID COLORS ON WOOL

Prepare the dye bath, using approximately sixty times the amount of water as there is material to be dyed, that is to say, one pound of woolen yarn will require about seven and one-half gallons of water in the dye bath (one gallon of water weighs eight and one-third pounds). Add to the water Glauber salt to the weight of approximately 10 to 20 per cent of the weight of the fabric to be dyed and 1 to 4 per cent of sulphuric acid, the smaller percentage being used for light shades and the larger for very dark shades. For medium shades approximately 15 per cent of Glauber salt and 2 to 3 per cent of sulphuric acid are required.

Dissolve in warm water the percentage of dye required to produce the desired shade and add to the dye bath. Have the temperature of the bath about 40 to 50 degrees Centigrade (104 to 122 degrees Fahrenheit) and then immerse the wool, which should be wet at the time of immersion. By means of stirring rods (glass or wood) give the fabric a few turns in the dye bath so as to saturate thoroughly with the dye solution. Gradually heat the dye bath to the boiling point, stirring the fabric from time to time, so that it may dye evenly. Continue dyeing at the boiling point for from three-quarters to one hour, or until the desired shade is obtained. Then remove the fabric, squeeze out the dye liquor, rinse well in fresh water until no more color is removed from the fiber, then wring out and dry.

The above represents the general method for dyeing nearly all acid dyes on wool.

# GENERAL METHOD OF DYEING ACID COLORS ON SILK

For ten pounds of silk fabric, prepare the dye bath by the addition of boiled off liquor, which is the liquid secured in scouring the raw silk with strong soap solutions and consists of a solution of soap and natural silk glue. Prepare the dye bath with 10 to 15 gallons of boiled off liquor, 30 to 45 gallons of water, and just sufficient sulphuric or acetic acid to give the bath a slightly acid reaction. For this purpose the bath is usually tested with blue litmus paper.

Heat the bath to approximately 40 degrees Centigrade (104 degrees Fahrenheit), immerse the silk several times, then take it up and add the necessary quantity of dyestuff, which had previously been dissolved in warm water. Stir the bath well. Enter the silk again into the bath and turn it rapidly several times. Gradually raise the temperature to 60 degrees Centigrade (140 degrees Fahrenheit) and finish by dyeing at the boil, throwing up the goods to be dyed and boiling up the bath from time to time. Wash well in clear water and brighten by passing through a bath containing a very small percentage of tartaric or acetic acid.

Like wool, silk combines directly with the acid colors. Usually considerable of the boiled off liquor acidified with acetic acid is used in preparing the dye bath, which prevents as little loss in the weight of the silk during the dyeing as is possible, as the silk usually comes to the dyer still containing more or less of the natural silk glue, which would come off in the dye bath if there were not a considerable amount of the same substance present.

# GENERAL METHOD OF APPLYING BASIC DYES TO COTTON

As cotton does not possess acidic properties, it does not combine directly with the basic dyes, but requires an acid mordant to be added to the fiber in order for the dyeing to take place. Cotton readily absorbs tannic acid from solution and is, therefore, a very suitable mordant, the cotton being allowed to remain in the tannic acid bath at 50 to 70 degrees Centigrade (122 to 158 degrees Fahrenheit) for several hours, or over night for dark shades. Remove the cotton, squeezing out the water and pass into the dye bath with the addition of a little acetic acid or alum (one to two pounds). The dye which had previously been dissolved in warm water should now be entered, but not all at once, better results being obtained by adding three or four portions. Commence dyeing at approximately 35 to 40 degrees Centigrade (95 to 104 degrees Fahrenheit), and when the greater part of the dye has been taken up by the cotton, warm the bath gradually to approximately 60 degrees Centigrade (140 degrees Fahrenheit, and dye at that temperature for approximately one-half hour, or until the desired shade is obtained. Wash well and dry.

# GENERAL METHOD JUTE FIBER DYEING

## WITH ACID DYES

This method is particularly suitable when good fastness to light and also thorough penetration are required. Enter the jute fiber into a bath containing the necessary quantity of dyestuff and one per cent to three per cent of alum. Bring dye bath to a boil, keep at the boil for one-half hour and then work the goods for about thirty minutes as the bath cools down.

## WITH BASIC DYES

These dyes are used for jute dyeing where there is a demand for intense shades of greater brightness than obtained with the use of acid type dyes. Enter the fiber into a cold bath, adding the basic dye (which has been well dissolved) in small portions at a time, heat slowly to 140 degrees to 160 degrees Fahrenheit, then cool bath allowing material to dye for one-half hour longer.

# GENERAL METHOD STRAW DYEING

Dye the straw at the boil with the addition of one-half per cent to two per cent acetic acid, or one-half per cent to one per cent tartaric acid until sufficiently dyed, which on the average will be from one to three hours, depending on the shade. Then let the bath cool down and leave the material in for about one hour more.

For very intense shades the material can be left in the cooling bath over night.

When dyeing with acid type dyes the dissolved dye solution should be added at the beginning together with the acetic acid or tartaric acid.

With basic type dyes add all the acetic acid or tartaric acid at once at the beginning, but add the dyestuff solution in small portions at a time.

# GENERAL METHOD DYEING WOOD

## WITH ACID DYES

Add to the dye bath two per cent to three per cent acetic acid together with the dyestuff in solution, immersing the wood fiber or chip, which had previously been wet out in hot water, and boil for from one-quarter to one-half hours, afterwards letting the material remain for one to two hours in the cooling dye bath.

## WITH BASIC DYES

Add one per cent to two per cent acetic acid or alum, commencing the dyeing operation cold and raising the temperature to 160 degrees Fahrenheit, and then let the goods remain in the cooling bath from one-half to one hour.

# GENERAL METHOD DYEING OF FEATHERS

## WITH ACID DYES

Dye in a bath acidified with sulphuric acid (two per cent to five per cent on the weight of the goods) for about one-half to one hour at the boil. Rinse and dry.

## WITH BASIC DYES

Basic dyes are less employed for feather dyeing, but occasionally they are used and should be dyed at a temperature of from 100 degrees to 120 degrees Fahrenheit, without any further addition.

# GENERAL METHOD DYEING OF VEGETABLE IVORY AND HORN BUTTONS

## WITH ACID DYES

Dye for one hour at the boil with the addition of the necessary quantity of dye in solution and one-quarter to one-half pint acetic acid per 20 gallons of dye liquor.

## WITH BASIC DYES

Dye also in an acetic acid bath, the same as with acid dye for one hour at the boil. The quantity of liquor in the dye bath should be approximately fifteen times the weight of the material to be dyed.

# GENERAL METHOD DYEING OF NATURAL FLOWERS, LEAVES AND GRASSES

## WITH BASIC DYES

Dye at a temperature of from 140 degrees to 160 degrees Fahrenheit or at the boil with the addition of a little acetic acid, approximately one-quarter to one-half pint to 20 gallons of liquor.

Ordinarily basic dyes are used for this purpose on account of their brighter shades, but where brightness is secondary and fastness is the important factor, acid type dyes are used. In this case the goods must be prepared first by the well known patented processes of caustic alkali and then bleached with chlorine. After dyeing treat in a solution of magnesium chloride or calcium chloride of 16 degrees to 32 degrees Tw. to make them sufficiently pliable and dry in the air.

# GENERAL METHOD DYEING OF ARTIFICIAL FLOWERS AND PAPER

Dye by dipping in concentrated solution of the dye or by applying the dye by means of a brush.

# FUNCTIONS OF CHEMICALS EMPLOYED IN DYEING

## ACID AND BASIC DYES

Glauber salt (sodium sulphate)—Is extensively used as a leveling agent in wool dyeing. Calcined Glauber salt, which is free from water, is also employed at times, but is somewhat more difficult to dissolve. Forty-four parts of calcined Glauber salt are equivalent to one hundred parts of Glauber salt crystals.

Acetic acid—Used as a mordant or fixing agent. Also for leveling in the dyeing of wool, silk and cotton. It is also used for brightening silk.

Sulphuric acid (oil of vitriol)—Is used extensively in dyeing wool with acid dyes, and for this purpose it always should be used in conjunction with Glauber salt. In silk dyeing, it serves for acidifying the boiled off liquor baths and is used also somewhat for brightening silk. Other uses of sulphuric acid in the textile mills are for scouring yarn after bleaching with chlorine, for acid milling, for removing lime from yarn and for neutralizing caustic soda.

Tannic acid—Is used very regularly as a mordant for basic type dyes and comes on the market in the form of crystalline needles or a bulky pale yellow powder readily soluble in water.

# ACID TYPE DYES

## NAPHTHOL YELLOW S

Naphthol Yellow S is an acid type dye of a light canary shade, having a greenish undertone and is very readily soluble in water. It is particularly suitable for dyeing wool and silk, half wool, half silk, and feathers; also, coco and jute fibers.

Wool is dyed with Naphthol Yellow S after ordinary methods with the aid of Glauber salt and sulphuric acid. The goods can be entered very near the boil as this dye has particularly level dyeing properties. In wool dyeing it is used a great deal for combination shades, and finds considerable use for dyeing yarns, piece goods, light felts, woolen tissue and slubbing printing where normal fastness to light and washing is required.

Silk is dyed with Naphthol Yellow S in a boiled off liquor bath to which sulphuric acid has been added to produce a distinct acid reaction. It is also very extensively employed for the manufacture of Lake Colors, for wall-paper printing, surface coating of paper and for printing ink lakes.

In addition to the above-mentioned uses, it is employed by crepe and tissue paper stainers; also, wood stainers.

The fastness properties are fully equal to pre-war types, which were sold under the following competitive names:

Citronine A
Naphthol Gels Extra Concentrated
Sulfur Yellow S

## ORANGE Y

Orange Y is an acid type dye readily soluble in water producing a shade, when dyed on wool, that is just a trifle redder than our Brilliant Orange 4 G R, but not nearly as red as Scarlet 2 R G.

It dyes wool, silk, half silk, half wool and feathers; also jute and coco fiber. Possesses normal fastness to light, washing and milling, and compares equally in this respect to the competitive products.

In dyeing on the textile fiber, the bath should be started at 40 to 50 degrees Centigrade and gradually brought to a boil.

Orange Y may be recommended where self shades, and in some instances combination shades, are desired, on woolen yarn, woolen worsted piece goods, woolen hats and silk dyeing.

Owing to its unusual coloring power, Orange Y finds very extensive use in both the paper and lake trade. It will dye either sulphite or ground wood pulp a bright orange sufficient in strength and shade to make it one of the principal paper colors in use today. When used in the manufacture of Lake Colors, it may be precipitated by either the Alumina hydrate or barium chloride methods.

In the textile printing trade, Orange Y can be offered for printing piece goods and yarn printing by either the hand block or machine methods.

It is also used extensively for paper staining, such as tissue and crepe paper; also for calendar work as done by many of the big paper mills.

In addition to the above mentioned uses, it is employed extensively for leather dyeing, wood staining, and by shoe polish manufacturers in making tan polish pastes and cleaners.

It is sold under the following competitive names:

Orange D — Orange A
Orange Y — Orange II

## CROCEIN ORANGE G G

Crocein Orange GG belongs to that class of colors known as "easily leveling dyestuffs" and gives, when dyed on wool, a bright orange shade of very good fastness to light.

This product possesses the same excellent fastness to washing, milling, light, acids, cracking, steaming, etc., as the pre-war type. It is very easily soluble, easily dischargeable and dyes extremely level, for which property in combination with Lanafuchsine, this dye is extensively used in the textile trade. Furthermore, Orange GG does not change its original shade under artificial light.

## BRILLIANT ORANGE 4 G R S-W

Brilliant Orange 4 G R S-W is an acid type of dye, clearly soluble in water, which can be made into very strong solutions, remaining in solution for a considerable length of time without crystallising or geletinizing.

It dyes wool, silk, half wool, half silk, feathers, also jute and coco fiber. Is a fairly level dyeing product, but should not be used when the dye bath is started at a boil, as unlevel dyeing will result.

In dyeing this product on textile fiber the bath should be started at approximately 40 to 50 degrees Centigrade and gradually brought to a boil, in this way assuring best possible results.

Brilliant Orange 4 G R is moderately fast to light, comparing favorably with the average acid colors in this respect. It will also stand normal tests for scouring, milling, smutting or washing.

## BRILLIANT ORANGE 4 G R S-W—Continued

It is used to quite an extent by Lake Color manufacturers, also printing ink and wall-paper manufacturers preparing their own lake colors for producing a very bright Orange Lake, which is considerably more brilliant and permanent than the ordinary Orange Lake offered.

It is fairly fast to alkali and therefore desirable for coated paper work where the base is cut with ammonia, soda ash, or at times, caustic soda. Its solubility also makes it very desirable for manufacturers who color paper either by staining as the tissue and crepe paper trade does, or for calendar work as done by many of the big paper board mills. It can be used for coloring paper in the beater or hollander, but is not extensively used for this purpose.

It is known under the following names by different manufacturers:

| | |
|---|---|
| Ponceau 4 G R | Orange E N L |
| Brilliant Orange O | Brilliant Orange G |
| Orange G R Extra | Crocein Orange G R |
| Pyrotin Orange | Crocein Orange Y |

## SCARLET 2 R G S-W

Scarlet 2 R G S-W is an acid type of dye, slightly deeper and redder than Brilliant Orange 4 G R S-W, dissolves readily in water, forming an opalescent or rather turbid solution.

Is used very largely for dyeing wool, silk, half wool, half silk, feathers, jute and coco fiber.

Has excellent leveling properties in comparison with other acid Scarlets, and stands average tests for milling or scouring, smutting and washing, being also moderately fast to light.

In dyeing Scarlet 2 G R S-W on textile fiber the bath should be started at approximately 40 to 50 degrees Centigrade, being gradually brought to a boil, for only in this way will the best possible results be obtained.

Is used to quite an extent for direct printing of woolen material, wool felt hats, as well as for printing silk fabrics by both the hand and machine block methods. The Lake Color manufacturers are also in the market at times for this product, it producing a Lake Color carrying a distinctive yellow undertone desired for certain classes of work. Also used by the printing ink and wall-paper manufacturers who are equipped to strike their own Lake Colors. It is also used by manufacturers who color paper either by staining as the tissue and crepe paper trade does, or for calendar work as done by the large paper board and coated paper mills. It is used in but a limited way for coloring paper in the beater or hollander.

Is sold under the following competitive names:

| | |
|---|---|
| Brilliant Orange R | Orange N |
| Scarlet G R | Orange L |
| Scarlet R | Ponceau 2 G |
| Xylidine Orange 2 R | |

## SCARLET 2 R R S-W

Scarlet 2 R R S-W is an acid type of dye, deeper and bluer in tone than Scarlet 2 R G S-W, is easily and clearly soluble in water, also partially soluble in grain alcohol.

It dyes wool, silk, half wool, half silk, feathers, as well as coco and jute fiber. Is fairly level dyeing, but for coloring textile fiber the bath should be started at approximately 40 to 50 degrees Centigrade and gradually brought to a boil, insuring in this way best results.

Scarlet 2 R R is moderately fast to light and will stand average tests for smutting or washing, scouring and milling.

Is very largely used for direct printing of woolen material, wool felt hats, as well as for printing of silk fabrics either by machine or hand block methods. Is very extensively used by the Lake Color manufacturers, producing a Barium or Aluminum Lake, carrying a rich deep blue undertone, which is non-bleeding and fairly permanent. Also employed by printing ink and wall-paper manufacturers preparing their own Lake Colors.

In addition to the above mentioned uses, is employed by leather dyers, paper manufacturers for coloring and tinting paper and shoe polish manufacturers.

It is sold under the following competitive names:

| | |
|---|---|
| Ponceau 2 R | Brilliant Ponceau G R R |
| Ponceau G | Scarlet 2 R |
| Ponceau F R | Ponceau J |

## SCARLET 2 R R (Blue Shade)

Scarlet 2 R R, Blue Shade, is similar to Scarlet 2 R R, except that it gives a very blue shade desired for certain purposes.

## PONCEAU 5 R

Ponceau 5 R is a scarlet red powder, extremely soluble in water to a solid red solution.

This product possesses only fair leveling properties and the detail of temperature and amounts of acid used in its application should be observed.

Ponceau 5 R dyes wool from an Acid Glauber salt bath, silk from a broken acid bath and has a noticeable affinity for unmordanted or mordanted cotton, this last feature being a distinct disadvantage to the color where piece goods of a novelty effect produced by mixtures of wool and cotton are desired, that is, where the cotton or vegetable fiber must remain undyed. It is chiefly used in the dyeing of wool and silk for bright Ponceau shades and may be used in conjunction with Acid Oranges and Scarlets for the production of straight reds or mode shades of this character.

Fastness qualities are as follows:

| | | | |
|---|---|---|---|
| Crocking | Very good. | Bleeding | Poor. |
| Light | Fair plus. | Washing | Fair minus. |
| Ironing | Good. | Alkali | Fair minus. |
| Carbonizing | Very good. | Strong Alkali | Bad. |
| Stoving (Sulphur Dioxide) | Very bad. | Milling | Poor. |

Ponceau 5 R has no application in the lake, lithographic or ink trade, in view of its extreme solubility in water and tendency to bleed.

## SCARLET 3 R

The technical information given above on Ponceau 5 R applies also to Scarlet 3 R, the latter material, however, being of greater strength than Ponceau 5 R.

## CROCEIN SCARLET M O O

This dyestuff belongs to the class of colors known as Diazo dyestuffs and comes in the form of a brown powder and finds an extensive use in most every form of application including wool, silk, paper, leather, straw, celluloid and for lakes where fastness to light is not important. It is extremely soluble in water.

## CHICAGO FAST RED 6 B EX. S-W

Chicago Fast Red 6 B Ex. is an acid type of dye, which when dyed on wool, produces the present very popular Bordeaux shade; is considerably deeper and bluer than Scarlet 2 R R.

It dyes wool, silk, half wool, half silk, feathers, also coco and jute fiber. Has good leveling properties, comparing favorably in this respect with any of the competitive products. For best results in dyeing textiles the dye bath should be started at approximately 40 to 50 degrees Centigrade.

It possesses the same fastness to light, washing, milling, crocking, as any of the competitive products.

Is especially recommended for Claret or Russian Red shades on chromed or vegetable tanned calf skins.

This material is also suitable for paper calendar staining and for coating, but not generally used for beater dyeing.

Is very well suited for precipitation of a deep rich Burgundy shade Lake Color for wall-paper and printing ink work. Unlike most of our other dyes this material is not particularly recommended for textile printing.

It is sold under the following competitive names:

| | |
|---|---|
| Bordeaux B L | Fast Red P Ex. |
| Bordeaux Rex | Fast Red B |
| Bordeaux R | Aso Bordeaux |

## CHICAGO FAST RED 8 B EX. S-W

Chicago Fast Red 8 B Ex. S-W is an acid type of dye, which when dyed on wool or silk is slightly deeper and bluer than Chicago Fast Red 6 B Ex.

It dyes wool, silk, half wool, half silk, feathers, also coco and jute fiber. Has good leveling properties, comparing favorably in this respect with any of the competitive products. For best results in dyeing textile fabrics the dye bath should be started at approximately 40 to 50 degrees Centigrade.

It possesses the same fastness to light, washing, milling and crocking as Chicago Fast Red 6 B Ex.

Is well recommended for Deep Russian Red shades on chromed or vegetable tanned calf skins.

This material is also suitable for paper calendar staining and for coating work, being employed but to a limited extent for beater dyeing. Is also well suited for the manufacture of Lake Color for wall-paper and printing ink work.

This is an entirely new shade of dye, not having been offered before the war by any of the foreign manufacturers, nor are any of the domestic manufacturers offering this same product at the present time. There are consequently no competitive names.

## FAST RED A Ex. S-W

Fast Red A Ex. S-W is an acid type of dye bluer than Scarlet 2 R R, but not as dark nor blue as Chicago Fast Red 6 B Extra S-W. It is normally soluble, but preferably soft water should be used for dissolving, as hard water has a tendency to throw it out of solution.

It is extensively employed for the dyeing of wool, silk, half wool, half silk, feathers, jute and coco fiber.

Fast Red A Ex. has normal fastness properties and possesses the same fastness to washing, milling, light, acid and alkali as the competitive products listed below. Is not extensively employed in combination with other dyes for shading, as when used in this way has tendency to dye uneven. In dyeing Fast Red A Ex. S-W on textile fiber, the bath should be started at approximately 40 to 50 degrees Centigrade, bringing it gradually to a boil and in this way securing best possible results.

It is especially recommended for silk printing, also for the dyeing of wool and fur felt hats, chrome tanned leather as well as for coloring paper either by staining as the tissue and crepe paper trades do, or for calender or coated work. Is also used to some extent for dyeing paper in the beater or hollander and sold under the following competitive names:

Rocceline — Fast Red Concentrate
Fast Red A — Cardinal Red
Fast Red O

## BRILLIANT CRIMSON No. 10 S-W

Brilliant Crimson No. 10 S-W is an acid type of dye, slightly lighter than Chicago Fast Red 6 B Ex. and not quite as blue, but considerably bluer than Fast Red A Extra and easily soluble in water.

It dyes wool, silk, half wool, half silk, feathers, as well as jute and coco fiber. Is level dyeing, but for best results in dyeing textile fiber, the bath should be started at approximately 40 to 50 degrees Centigrade and gradually brought to a boil.

Brilliant Crimson No. 10 is normally fast to light, steaming, washing, scouring and milling. Dyes well in combination with other reds of the same type. Is desirable for printing of woolen and silk fabrics by machine or hand block style, also for printing of jute and coco fiber. Is extensively employed by Lake Color manufacturers, producing a Lake Color of very rich tone. Is also used by printing ink and wall-paper manufacturers preparing their own Lake Colors. Is in demand for paper staining such as tissue, crepe and coated paper. Not extensively used for feather dyeing.

Is sold under the following competitive names:

Amaranth — Naphthol Red O — Victoria Rubine O
Naphthol Red C, E B — Naphthylamin Red G — Wool Red
Azo Rubin S — Fast Red D — Wool Red Ex.

## LANAFUCHSINE Y

Lanafuchsine Y is an acid type of dye, giving a bluish red shade on wool, bluer and more intense than Scarlet 2 R R, but not quite as blue as either Brilliant Crimson No. 10 S-W or Chicago Fast Red 6 B Extra S-W.

Is primarily employed for textile dyeing on either wool, silk, half wool, half silk and feathers. One of its particular characteristics is the easy leveling properties, as well as its not changing from original shade under artificial light.

Is highly recommended for use in combination with orange, yellows and blue dyes for producing maple shades, but also finds extensive use as a straight dye without manipulation with other colors.

Lanafuchsine possesses the same fastness to washing, milling, light, acids, steaming, etc., as the hereinunder listed competitive products.

Is also particularly desirable for printing of textile fiber, either wool or silk. As advised above, is primarily intended for the textile trades and not very extensively used for Lake Color manufacture, leather dyeing or paper staining.

Is sold under the following competitive names:

Azo Grenadine S — Azo Corralline L 121 — Guinea Red 3 R
Amido Naphthol Red G — Erio Carmine A 2 R — Sorbine Red
Azo Acid Red B — Fast Acid Red S — Lanafuchsine S G

## LANAFUCHSINE B

Lanafuchsine B is similar in character and use to Lanafuchsine Y, but produces a shade distinctly bluer than Lanafuchsine Y.

## ACID CLARET B

Acid Claret B is an acid type dye freely soluble in hot water, and produces a bluish red color, a trifle lighter than Chicago Fast Red 6 B Extra.

It dyes wool, silk, half wool, half silk, feathers, and jute, as well as coco fibers. It is a fairly level dyeing product and should be entered in the bath at approximately 40 degrees to 50 degrees Centigrade, and gradually brought to a boil. Has excellent fastness to light, and will stand average tests for milling or washing.

It is used for direct printing of wool material as well as for printing silk fabrics. Particularly well adapted for dyeing woolen yarns, sweater yarns, carpet yarns, etc., being used either as a self shade or in combination with other acid type dyes.

Acid Claret B is sold under the following competitive names:

Bordeaux B — Acid Bordeaux — Bordeaux G
Maroon G — Azo Bordeaux

## ALKALI BLUE 2 R L CONCENTRATED

Alkali Blue 2 R L Concentrated is an acid type dye, which is soluble in hot water with a faint blue color. Solubility in alcohol is slight. Hydrochloric acid will effect a blue precipitate, and concentrated sulphuric acid a brown solution, which precipitates out blue on dilution with water.

Alkali Blue is employed to quite an extent for the dyeing of textiles, principally wool and silk, and also for cotton or calico printing.

The dyeing of Alkali Blue is different from the dyeing of all other acid coloring dyes. This is on account of the insolubility of the dyestuff in an acid bath, and the dyeing, therefore, consists in working the goods in an alkaline bath (therefore, the name ALKALI BLUE) which contains the dye in the form of a colorless lake, till the goods have taken up enough dyestuff, which then is developed with acid in a second bath. For dyeing Alkali Blue, therefore, two baths are needed.

## DIRECTIONS FOR DYEING WOOL

Start the dye bath with the required amount of color (for a full Blue about 2 per cent is necessary). Add to this 5 per cent to 10 per cent of borax or sodium silicate. For the acid or developing bath, about 4 per cent of sulphuric acid is needed and about the same amount of alum and zinc sulphate may be added to improve the fastness to rubbing.

Start the dye bath at about 40 degrees Centigrade and dye for 45 minutes. To match a certain sample take a small piece of the wool from the dye bath and develop it in acidified water, and if the wool has the desired shade the wool is to be taken from the dye bath and developed. The goods are wrung out and rinsed in order to wash out any superfluous adhering dye.

The wool when taken out has a grayish-blue appearance and is then put into the developing bath where it starts to color itself a pure blue almost immediately. The developing bath is made up with 150 to 200 grams of sulphuric acid for each 100 liters of water. It must not be warmer than 60 degrees Centigrade in order not to influence the brightness of the final color.

The dye baths are not exhausted and can be kept standing, using only one-third or one-half of the dye for each successive batch.

If it is desired to produce mixed shades with the use of Alkali Blue and other acid colors, the wool has to be dyed in the alkaline bath, first, and the dyestuff which is to be used for mixing, added to the developing bath.

Alkali Blue dyes beautiful pure blues, purer and less red than the so-called Soluble Blues. The color is fairly fast to light, milling and light acids, although not altogether fast against rubbing and are decolorized through the actions of alkalies. It is suitable for dyeing of all kinds of worsted yarn and clothing, for ladies' suiting, woolen felt hats, etc.

## DYEING OF SILK

The dyeing of silk takes place after exactly the same principle as outlined for the dyeing of wool. Add, however, the necessary amount of boiled-off liquor, or dye in a strongly frothing soap bath.

Among the most important uses of Alkali Blue is that for the manufacture of Lake Colors for printing ink and lithographic work, wall-paper, etc. It is also used extensively for toning high grade black printing inks and is sold under the following competitive names:

**Alkali Blue** **Nicholson Blue** **Fast Blue**

## ACID BROWN 3 R

Acid Brown 3 R is a dark brown or black powder easily soluble in water with a dark red-brown color.

It can be used for the production of fast brown, tan colors and many shades on wool and silk.

## CONCENTRATED ACID BLACK

This material corresponds to the pre-war Naphthol Blue-Black Concentrated. It is really a blue-black and for conversion to a jet-black requires the addition of about one per cent of orange to each five per cent of black. Competing products are

Heller & Merz Acid Black 10 B N

Neil Color & Chemical Company's Acid Black 10 B X

Newport Chemical Company's Extra Blue-Black, extra concentrated.

# FUCHSINE

Fuchsine belongs to the class of dyes known as Basic Type Dyes and yields a very brilliant red shade. It is furnished as follows:

## FUCHSINE CRYSTALS XXXX

The very best quality made. Comes in large diamond shaped crystals and is of extraordinary cleanliness of tone, producing the much desired yellow shade.

## FUCHSINE CRYSTALS XXX

Large crystals producing the bluish tone desired for some purposes.

## FUCHSINE CRYSTALS XX

Similar to Fuchsine XXXX in shade, but of smaller crystals.

## FUCHSINE AAA

Fuchsine AAA is in powder form and is of lower strength than crystals.

## FUCHSINE AA

Fuchsine AA is similar to Fuchsine AAA, but not so strong.

## COTTON DYEING

Is dyed on tannin mordanted cotton yarn as per dyeing formula given under general dyeing information. Also used extensively by the large cotton printers for ginghams, cretonnes, etc.

## SILK DYEING

Is very extensively used in the dyeing of natural and artificial silk fibers, being dyed in a boiled off liquor bath with acetic acid at from 40 degrees to 50 degrees Centigrade (104 degrees to 140 degrees Fahrenheit).

For changeable effects on artificial silk, Fuchsine Crystals are extensively employed in combination with greens and violets, these colors precipitating each other and in this way producing a fugitive or changeable effect.

## PAPER DYEING

Next to the textile trade Fuchsine Crystals find their biggest application in the paper industry. It is applied to the paper in three different ways, as follows:

### DYEING IN THE PULP

Dyeing of pulp is done in the beater. The sizing is added either before or at the time of dyeing. Fuchsine Crystals are dissolved and added to the pulp in the beater through a fine wire sieve. The color should be carefully dissolved, as any undissolved particles might cause spots. Fuchsine Crystals, being a basic dyestuff, would require no further additions to the dyeing operation.

Fuchsine Crystals are used to very good advantage with pulps composed of cotton, flax, hemp, jute, straw cellulose, bleached or unbleached stock and mixed fibers. It is also used on unsized pulp, but when so used full and deep shades cannot be obtained.

### DYEING AFTER THE DIP METHOD

This method is generally employed for coloring crepe papers and papers having a glossy surface, and consists of passing the finished fiber sheet through a slightly acidulated solution of the Fuchsine Crystals, and then drying the sheets on steam cylinders. Only light shades are obtained in this way.

### SURFACE COATING OR PRINTING OF PAPER

This process is generally employed on coated paper stock that is to be glossed afterwards, and also for wall-paper approximately 80 degrees Centigrade (176 degrees Fahrenheit), and before the solution is cold there is added to it a thin paste of china clay, which is stirred one-half hour and precipitated through 15 parts of 1:10 tannin solution and 17 parts of 1:5 tartar emetic solution. This paste is stirred until all of the dyestuff in the water has been taken up and is then filtered, dried and ground. The lake thus produced is rubbed with oil and calendered on the coated paper stock or printed on the wall-paper.

Another method of calendering dyestuff on coated paper is by mixing it with dextrine and tannin solution, bringing it to a paste, and calendering this paste on the stock. Then steaming the paper for ten minutes without pressure, and then calendering a paste made of chalk and tartar emetic solution over same to mordant the dye. After complete drying the paper is calendered again and polished.

This method, however, is rather expensive, and is used only on the finest grades of coated stock.

## TEXTILE PRINTING

Fuchsine Crystals are recommended for direct, resist and colored discharge printing of cotton goods, direct printing of cotton yarn; also, printing of jute and coco fiber, artificial and natural silk fibers, and silk warps and yarns.

## LEATHER DYEING

It finds an extensive use in the dyeing of leather, both sheep and calfskin, and is a component part of the new popular Cordovan shade for shoes.

## SPECIAL USES

Besides the above mentioned uses Fuchsine Crystals find extensive use in the coloring of straw, straw plaiting, straw hats, wood chip, jute, hemp, horn and stamp pad inks.

Our Fuchsine Crystals possess the same physical and chemical properties as the following named competing products as regards fastness to light, acids, alkali and all other characteristics:

| | |
|---|---|
| Magenta Crystals | Diamond Fuchsine |
| Brilliant Fuchsine | Fuchsine Crystals |

# SPIRIT BLUE

Spirit Blue is a basic type dye, not entirely soluble in water, but readily soluble in spirits—with a reddish blue shade.

Its application in the textile trade is confined almost entirely to silk. Where clean, brilliant shades on silk are desired, Spirit Blue is especially recommended. Silk should be dyed in a boiled off liquor bath, with the subsequent addition of the color solution.

Satisfactory results are obtained on wool or cotton, but it is necessary to prepare the material for the dye bath by immersion in a special mordant.

Spirit Blue enjoys a substantial consumption and finds a ready sale among sundry manufacturers who make spirit varnishes and lacquers, paraffine products and sealing wax. It is also used extensively for dyeing and coloring typewriter ribbons.

It has been sold under these competitive names:

| | | |
|---|---|---|
| Opal Blue | Spirit Blue S F C | Light Blue |

# FUR DYES

Our line of fur dyes is known as the "Universols" and comprises D, P, D B, X and G G. The properties of the Universols are similar to the pre-war fur dyes marketed under the name of "Ursols." The Universols are not dyestuffs in the ordinary sense of the word, but are oxidation colors, i. e., products which develop on the fiber by means of an after-treatment with oxidizing agents.

Most fur dyers have a system of their own and it would be presumptuous on our part to explain to them the method of using these colors. By means of different mordants, different color effects are obtained. Generally speaking, however, the shades are as follows:

| | |
|---|---|
| D, Black | P, Brown |
| X, Brown | G G, Light Brown. |
| | D B, Blue-black |

# SHERWILL UNION DYES

There has been a demand from practically every textile fabric, composed of cotton and wool, wool and silk and cotton and silk, with facility.

The dyeing procedure is simple, and if the directions on the inside of the color card which we furnish, covering this line, are carried out, there will be no difficulty in the use of these products.

The demand will be found among the retail trade, who sell to individuals who do their own dyeing, many dye-mills, cleaning and dyeing establishments who re-dye garments of every description.

# CHROME TYPE DYES

## CHROME BLACK B

Chrome Black B belongs to the class of dyes known as Chrome Dyes, giving when dyed on wool an intense blue-black shade. Its particular uses are for wool dyeing either as a self shade or in combination with other Chrome Colors, it producing dyeings of the best possible fastness to washing, light, acids, alkalies, milling, carbonizing, stoving, potting, decatising, crocking, steaming and cross dyeing. Its solubility and levelling properties are excellent and equal in every respect to the competing products. Furthermore, our material holds its original shade under artificial light.

## CHROME BLACK B B

Chrome Black B B is similar in every respect to Chrome Black B, except that the "B B" type is 20 per cent stronger.

## ALIZARINE ORANGE R N

Alizarine Orange will find a very extensive interest in all branches of textile printing and dyeing for the production of fast shades on silk, wool and cotton.

As this dyestuff belongs to the so-called Acid Chrome Colors, it has to be affixed to the fiber with the aid of a metallic mordant.

Alizarine Orange has the following fastness properties:

Fastness against rubbing, good; Fastness against light, good; Fastness against decatising, good; Fastness against stoving, fair.

Competing products:

Anthracine Yellow R N — Alizarine Yellow R — Mordant Yellow 3 R

## ALIZARINE BROWN 3 R

Alizarine Brown is a dark brown or black powder easily soluble in water with a dark red-brown color.

It can be used for the production of fast brown, tan, olive and gray shades on wool and silk.

It can be dyed as an ordinary acid type dye, but for the production of real fast shades should be dyed as a Chrome Color.

## ALIZARINE BROWN B

Technical information with regard to Alizarine Brown 3 R applies also to Alizarine Brown B, the difference between the two materials being that the "B" brand contains a certain admixture of Chrome Black B, as the material is required by some dyers in that form.

## ALIZARINE RED B

This product is a blue-red powder giving a yellowish-red solution in water and is almost entirely insoluble in alcohol.

It is one of the fastest colors for all practical purposes of its kind. It dyes wool from an acid bath, giving a yellow-red shade which on after-chroming produces a full and brilliant Bordeaux Red. It has little or no affinity for cotton or silk. Its chief application is found in high grade woolen dress goods, where it is used in conjunction with other Alizarine Colors for production of mode shades.

Its fastness qualities are as follows:

Crocking, very good; Light, good; Water, good; Washing, fairly good; Alkali, good; Milling, good.

## CONFIDENTIAL PRICES ON ACID TYPE DYES

Net Prices per Pound

| | 10s | | 100s | | barrels | |
|---|---|---|---|---|---|---|
| | A | B | A | B | A | B |
| Naphthol Yellow S, CP 194 | AYY | 2 05 | HDY | 2 00 | HRY | 1 90 |
| Scarlet 2 RG, CP 62 | HHY | 1 15 | HYT | 1 10 | DT | 1 05 |
| Scarlet 2 RR, CP 63 | HDT | 1 00 | DY | 95 | RY | 90 |
| Scarlet 2 RR Blue Shade, CP 196 | HYT | 1 10 | HYY | 1 05 | DY | 1 00 |
| Ponceau 5 R, CP 197 | HAT | 1 30 | HNY | 1 25 | HRY | 1 20 |
| Scarlet 3 R, CP 202 | HSY | 1 45 | HNT | 1 40 | HAT | 1 35 |
| Lanafuchsine Y, CP 97 | ASY | 2 05 | ANTT | 2 00 | AAY | 2 35 |
| Lanafuchsine B, CP 134 | HDT | 2 00 | HDY | 1 95 | HOT | 1 90 |
| Fast Red A Extra, CP 90 | HAY | 1 25 | HHT | 1 20 | HYT | 1 15 |
| Brilliant Crimson No. 10, CP 98 | HNT | 1 40 | HNY | 1 35 | HAY | 1 30 |
| Fast Red 6 B Extra, CP 107 | HHY | 1 45 | HYT | 1 40 | DT | 1 05 |
| Fast Red 8 B Extra, CP 100 | HHY | 1 15 | HYT | 1 10 | DT | 1 05 |
| Acid Claret B, CP 124 | HHY | 1 15 | HYT | 1 10 | DT | 1 05 |
| Crocein Scarlet MOO, CP 215 | HOY | 1 75 | HPT | 1 70 | HTY | 1 65 |
| Brilliant Orange 4 GR, CP 61 | HHY | 1 15 | HYT | 1 10 | DT | 1 05 |
| Crocein Orange GG, CP 183 | DY | 95 | RT | 90 | OT | 85 |
| Orange Y, CP 110 | OT | 80 | DY | 75 | FT | 70 |
| Alkali Blue 2 R L, CP 184 | TAY | 5 25 | TIH | 5 20 | BDY | 5 15 |
| Alkali Blue 3 B Conc. CP 208 | HST | 3 50 | TSY | 3 45 | NAT | 3 40 |
| Acid Brown 3 R, CP 151 | HHT | 1 20 | HHY | 1 15 | HYY | 1 10 |
| Conc. Acid Black, CP 133 | HHT | 1 60 | HTY | 1 55 | HSY | 1 50 |

25-lb. tins, 10c advance over barrel price.
5-lb. tins, 20c advance over barrel price.
1-lb. tins, 25c advance over barrel price.

## TOLUIDINE M

This material is technically known as Meta-Nitro-Para-Toluidine and has been assigned the trade name "Toluidine M" by us. It is an organic chemical classified as an intermediate and primarily used in the production of Helio Fast Red colors in combination with Beta Naphthol.

Our Helio Fast Red Toner and Helio Fast Red Lake are prepared from this Intermediate, the former being extensively employed by printing ink manufacturers, wall-paper printers, lithographers, paint manufacturers, rubber manufacturers, cotton piece goods printers, etc., while the Helio Fast Red Lake is primarily intended for printing ink manufacturers' use, although also employed in the manufacture of crayons and other special uses.

The Helio Fast Red colors have the following desirable characteristics, which make them such an important color to the trades: Brilliancy of color, being practically Vermilion in shade; very permanent, fast to light, acid, alkali and non-bleeding when used for cotton printing. Their fastness to washing and bleaching are particularly desired. One of the big uses for Helio Fast Reds are as a bulletin color.

Toluidine M is also employed in conjunction with Beta Naphthol for cotton piece goods and yarn coloring and printing.

## META-NITRO-PARA-TOLUIDINE

1:3:4 $CH_3\ C_6H_3\ (NO_2)\ NH_2 = 152.1$

### S-W SPECIFICATIONS

Melting point: 114°-116° C.
Residue after diazotising should be less than 5 per cent if diazotisation occupies more, than 30 minutes' time and the solution is frequently stirred.

## PARA PHENYLENE DIAMINE

The most important uses of this organic Intermediate are first for fur dyeing, being employed in quantities by practically every fur dyer, or used by the rubber manufacturers as an accelerator in the rubber compounding process.
Cotton printers use this to good advantage as an oxidizing agent for textile printing.

1:4 $C_6H_4(NH_2)_2 = 108.2$

### S-W SPECIFICATIONS

Transparent lumps.
When ground, the product is pure white.
99.9%-100% pure.
Soluble completely in water.
Less than .1 per cent insoluble in benzol.
Melting point: 140.5° C.

## PARA NITRO ACETANILID
## TECHNICAL

1:4 $NO_2\ C_6H_4\ NH\ COCH_3 = 180.2$

Para Nitro Acetanilid is a very important intermediate, large quantities of which are formed in the manufacture of Paranitraniline.
Accordingly, we shall always have available large stocks of the same for immediate distribution to manufacturers of Acid Black, who are the chief consumers of the same.
The Sherwin-Williams specifications for Para Nitro Acetanilid are as follows:
Light yellow powder.
Moisture less than 1.5%.
Melting point: 204°-207° C.

## TOBIAS ACID
### (Beta Naphthylamine-8-Sulphonic Acid)

$C_{10}H_9NO_3S$

### S-W SPECIFICATIONS

White or pinkish white crystals.
Crystallises with 1 molecule of $H_2O$.
The sodium salt is completely soluble in water.
Diazo, bright canary yellow.

## CONFIDENTIAL NET PRICES ON INTERMEDIATES

Net Prices per Pound

| | 10s | | 100s | | barrel | |
|---|---|---|---|---|---|---|
| | A | B | A | B | A | B |
| Beta Naphthol, CP 37 | FY | 65 | TY | 60 | ST | 55 |
| Paranitraniline, CP 30 | HHT | 1 20 | HHY | 1 15 | HYY | 1 10 |
| Mono Sulphonic Acid, CP 41 | ATT | 2 60 | ATY | 2 55 | AAT | 2 50 |
| Toluidine M, CP 42 | NRY | 3 85 | NOT | 3 80 | NTY | 3 75 |
| Para Phenylene Diamine, CP 120 | ARY | 2 85 | AOT | 2 80 | ATY | 2 75 |
| Tobias Acid, CP 95 | ATT | 2 60 | ATY | 2 55 | AAT | 2 50 |
| Para Nitro Acetanilid, CP 105 | AY | 85 | QT | 80 | TT | 75 |

25-lb. tins, 10c advance over barrel price.
5-lb. tins, 20c advance over barrel price.
1-lb. tins, 25c advance over barrel price.

Dry Colors and Fancy Lake Colors designed especially for printing ink and lithographic ink manufacturers. (Also extensively employed by sundry manufacturers.)

Our line of colors for printing ink and lithographing ink manufacturers comprises as broad a range of the principal shades employed as is possible to manufacture at the present time. Each color is especially designed for this particular purpose, being of a quality which will meet the most exacting demands of the finest printing ink manufacturers. Special blends and shades will be prepared where quantity justifies special manufacture.

## DESCRIPTION OF DRY COLORS PREPARED ESPECIALLY FOR PRINTING INK TRADE

Lake Colors referred to under this heading are coal-tar dyes struck on an Alumina Hydrate and at times in combination with Blanc Fixe in such proportions of each as are best adapted to meet the general requirements of this trade. Generally referred to by the printing ink manufacturers as their "Lake Base."

### PARA LAKES

These Lakes, each quality furnished in both light and deep shades, are termed Single and Double Strength, respectively. The Single Strength is furnished with a minimum of Para Toner content as used under present conditions for good grades of work.

For a stronger Para Lake we offer the Double Strength, which is the same shade, but twice as strong as the Single Strength. In point of color the dark has the distinctive blue undertone, whereas the light carries the yellow tint.

Para Lakes are moderately fast to light, heat and alkali, and on account of their very favorable price, represent a most economical Red and find a very wide and large distribution.

These materials are produced by striking the color on beforementioned Lake base with Paranitraniline and Beta Naphthol in the exact strength of each. In striking the deep shade to obtain the bluish undertone, a percentage of Monosulfonic Acid F is employed.

### PARA TONER, LIGHT AND DEEP

These are the same shades of Reds as Para Lakes L and D, Single and Double Strength, are produced in pure form, not precipitated on any base. To be furnished where the strongest Red of this shade and character is desired. Produced from Paranitraniline and Beta Naphthol and in the development of the deep shade a percentage of Monosulfonic Acid F is employed.

### HELIO FAST RED LAKE

A very light, bright Red of Toluidine type, noted particularly for its brilliancy, permanency and non-bleeding characteristics. Helio Lake possesses fastness to light, heat and alkali to a maximum degree. Has always been very popular on account of these desirable qualities, and is considerably in demand at the present time.

### HELIO FAST RED TONER

This is the same Red as employed in the manufacture of Helio Lake, but furnished in pure form, not let down on any inert base. To be furnished where the strongest color of this type is desired. This material is commonly referred to as Toluidine Toner, being manufactured from Meta-Nitro-Para-Toluidine in combination with Beta Napthol.

### BRILLIANT ORANGE LAKE

Superior in point of tone, quality and strength of shade to Orange Lakes offered. Particularly preferred on account of its brilliancy, density and tone. Yielded in striking our Brilliant Orange 4-G R'S-W dye in required strength directly on the Lake base.

### PERMANENT GERANIUM LAKE

A color of particular merit embodying all distinctive characteristics required in a high grade Lake color of this shade. Its permanency, light (practically Vermilion) shade with pinkish blue undertone, fastness to light, moderate heat, acids and alkali as well as superior tinctorial strength most highly recommends it for very fine grades of work. Prepared by striking the intermediate Paranitraniline, Ortho-Sulphonic Acid and Beta Naphtol of the Lake base by a special process developed by us, which has resulted in a color of exceptional merit.

## SCARLET LAKE Y

A light, bright Scarlet carrying the characteristic yellow tint particularly desired for certain classes of work. In point of color and strength is in accordance with that used for the best grades of work. Produced in striking our Scarlet 2 R. O S-W dye directly on the Lake base.

## SCARLET LAKE B

Of all Scarlet Lakes this is the most popular with the trade by reason of its embodying all essential characteristics for a high grade rich deep blue undertone, non-bleeding and permanent Scarlet. Prepared by striking the color on Lake base simultaneously with the production of Scarlet 3 R S-W dye.

## GRAPHIC RED R LAKE BLUE SHADE

To meet the most exacting demands of the trade for a medium Red of extra blue undertone, we designed this material, which is appreciably bluer in undertone than any similar Red produced at the present time. This Lake Color possesses excellent fastness to light, lime, water, acids and oil and has also good heat-resisting qualities. It is developed by manipulating diazotized Napthylene and Beta-Napthol.

## GRAPHIC RED LAKE DOUBLE STRENGTH No. 10247

The same shade as Graphic Red R Lake, blue shade Rx 10244, but twice the strength and is precipitated on a straight Aluminum Hydrate base.
Is one of the highest grade lakes produced, being what is termed a Lithol type, and can be employed for the very best grades of work.
It possesses the same characteristics as material mentioned above.

## DEEP CRIMSON LAKE

Slightly deeper than Eric Scarlet, particularly noted for its distinctly rich and clean claret tone, which is highly prised by the trade. Especial attention must also be directed to its opacity and depth of color. Prepared from our Fast Red T-Extra S-W dye.

## BURGUNDY LAKE

As the name implies, this material is of the characteristic Deep Wine or Rich Maroon tone necessary to conform to this present very popular shade. Is considerably deeper and more purple than any of the aforementioned Lake Colors. Produced fro, our Chicago Fast Red 6 B Extra S-W dye.

## BRONZE BLUE SPECIAL

Designed especially for the printing ink trade. On account of our superior manufacturing facilities and development process is of greater strength and bronzier tone than other Bronze Blues on the market. Carries the characteristic deep, rich, bronzy cast for which it is particularly desired by the printing ink trade for their very best grades of work.

## MILORI BLUE SPECIAL

This type of blue is also designed for printing ink manufacturers and is of the same quality and character as Bronze Blue excepting that in process of manufacture the same materials are manipulated in a slightly different manner, resulting the bronzy cast essential for most grades of work and producing the deep true blue tone often desired where this tone is necessary.

## C P LITHO GREENS

Furnished in chemically pure quality, which for clearness of tone, strength and permanency of color cannot be excelled.
The selection of methods which will make the tints a uniform Green, neither distinctly blue nor yellow, and the Green itself exceptionally clear is a matter which skill and long experience in manufacture alone can accomplish. This done, the union must be formed at the time the color is precipitated, that we may effect the closest possible intermingling or combination of the C P Prussian Blue and C P Chrome Yellow L, from which these Greens are manufactured. In this way only can a green which will not separate, float, or fade to blue or yellow, be prepared.

## C P PRIMROSE YELLOW

A very light greenish-toned shade of chemically pure nitrate Yellow of maximum strength and permanency. On account of its distinctive tone is preferred for certain grades of work.

## C P LITHO YELLOWS

Furnished chemically pure in a complete range of shades from the very lightest lemon or canary to the deepest orange which is really a red. Represents a type and quality of color which we have sold the printing ink trade for many years.

They all possess strength, beauty of tone, lightness of gravity and permanency of shade, in the highest possible degree, procured by special manufacturing facilities and observation of the greatest exactness of even the minor operations in their production.

# DRY COLORS FOR PRINTING INK AND SUNDRY MANUFACTURERS' USE

### Confidential Net Prices

### Net prices per pound

| | 100s | | bbls. | |
|---|---|---|---|---|
| | A | B | A | B |
| Para Lake—Light, Single Strength, Rex 10222 | NS | 57 | NA | 54 |
| Para Lake—Dark, Single Strength, Rex 10221 | NS | 57 | NA | 54 |
| Para Lake—Light, Double Strength, Rex 10224 | TS | 57 | TA | 54 |
| Para Lake—Dark, Double Strength, Rex 10225 | TS | 57 | TA | 54 |
| Para Toner—Light, Rex 10121 | HFT | 1 70 | HFY | 1 65 |
| Para Toner—Dark, Rex 10109 | HFT | 1 70 | HFY | 1 65 |
| Helio Fast Red Lake, Rex 10233 | DT | 1 00 | DY | 95 |
| Helio Fast Red Toner, Rex 10218 | NTY | 3 55 | NAT | 3 50 |
| Brilliant Orange Lake, Rex 10234 | TY | 53 | ST | 50 |
| Permanent Geranium Lake, Rex 10241 | HTY | 1 55 | HST | 1 50 |
| Scarlet Lake Y, Rex 10235 | TY | 53 | ST | 50 |
| Scarlet Lake B, Rex 10236 | TY | 53 | ST | 50 |
| Graphic Red R Lake, Blue Shade Rex 10244 | HYT | 1 10 | DT | 1 05 |
| Graphic Red Lake, Double Strength, Rex 10247 | HTY | 1 55 | HAY | 1 50 |
| Deep Crimson Lake, Rex 10237 | FY | 63 | TY | 60 |
| Burgundy Lake, Rex 10238 | FT | 68 | FY | 65 |
| C P Bronze Blue, Rex 11085-S | FT | 68 | FY | 65 |
| C P Milori Blue, Rex 11086-S | FT | 68 | FY | 65 |
| C P Litho Green L, Rex 11025 | NO | 40 | NT | 37 |
| C P Litho Green M, Rex 11077 | ND | 42 | NO | 39 |
| C P Litho Green D, Rex 11024 | SN | 46 | SN | 43 |
| C P Primrose Yellow, Rex 12204 | AT | 26 | AS | 25 |
| C P Litho Yellow LLL, Rex 12008 | AT | 26 | AS | 25 |
| C P Litho Yellow LL, Rex 12007 | AT | 26 | AS | 25 |
| C P Litho Yellow L, Rex 12009 | AF | 27 | AT | 26 |
| C P Litho Yellow M, Rex 12010 | AF | 27 | AT | 26 |
| C P Litho Yellow O, Rex 12011 | AF | 27 | AT | 26 |
| C P Litho Yellow DO, Rex 12012 | AF | 27 | AT | 26 |

# MANUFACTURED DRY COLORS

### For Sundry Manufacturers' Use

Our present substantially increased facilities for the manufacture of Dry Colors place us in a foremost position for supplying Dry Colors of high grade quality to the large sundry consuming trade. This end of our business is now developed to a point where special attention should be given the Dry Color consumers on each territory, as this is one of the best possible avenues for increasing your sales. Wherever possible we must adhere to the sale of our regularly listed Dry Colors, but wherever necessary and quantity warrants, we will manufacture special shades or blends.

## TURKEY RED D

A very strong rich-toned Scarlet shade that is very permanent, non-bleeding and has good heat-resisting qualities. Extensively employed by oilcloth, linoleum, paint, coated paper, artificial leather, lithographed can and other manufacturers.

## ORIENTAL REDS

These are Para Red precipitated on Barium Sulphate and Calcium Carbonate base, particularly intended for grinding purposes; are strong in tinctorial strength, clear toned and as permanent as any red of this type. Large consumers, paint, implement, wagon, toy, artificial leather manufacturers, etc.

## PREMIER NON-FADING REDS

Furnished in a light, medium and deep shade. Not quite so strong as the Oriental Red, but employed for the same purposes where, however, a somewhat lower priced color is required.

## HERCULES RED

A Toluidine type Red, particularly noted for its brilliancy, permanency, covering power and non-bleeding qualities, and therefore especially desired by wagon, implement, paint and lithographed can manufacturers.

## PARA TONERS

Described under Printing Ink Dry Colors. Largely used by paint, printing ink, wall-paper, and other manufacturers desiring strongest possible Red of this shade and character.

## HELIO FAST RED TONER

Described under Printing Ink Colors. Also largely employed by paint, printing ink, wall-paper, lithographed can, oilcloth, linoleum, rubber and toy balloon manufacturers.

## ENGLISH VERMILIONS

Our English Vermilions are the genuine Berger Vermilions manufactured by Lewis Berger & Sons, Ltd., London, England, and are known the world over for quality. Very largely employed by printing ink, paint, bank note, sealing wax, artificial teeth and rubber manufacturers.

## CHEMICALLY PURE CHROME YELLOWS

Listed under Printing Ink Dry Colors as C P Litho Yellows. The sale to miscellaneous manufacturers is very large and should not be overlooked. Principal consumers are paint, printing ink, paper, implement, rule, pencil, shade cloth, wall-paper, artificial leather, lithographed can, toy manufacturers, etc.

## HERCULES CHROME YELLOWS

Contain 75 per cent Chemically Pure Yellow and generally known as Commercially Pure Yellows. Sold by some manufacturers as Pure Yellows and purchased at times under assumption that they are Chemically Pure. In meeting competition on a so-called Chemically Pure Yellow at a very low price, do not hesitate to make *a comparative strength test by which you can readily determine the better product.* Employed by the same manufacturers as listed under Chemicaly Pure Chrome Yellows, but sold where a yellow of lower price is desired.

## No. 1 CHROME YELLOWS

33⅓ per cent Chemically Pure Chrome Yellow precipitated on Barium Sulphate base and sold where Yellows of a low price are desired. Some color manufacturers furnish Yellows of weaker tinctorial strength and in competing with these lower priced Yellows, strength tests should be made. Where desired and quality warrants we will prepare a cheaper Yellow, although for most general purposes a weaker Yellow is not employed. Purchased by the consumers as listed under Chemically Pure Chrome Yellows.

## CHEMICALLY PURE CHROME GREENS

Described under Printing Ink Colors as C P Litho Greens. Large quantities are consumed by paint, printing ink, shade cloth, paper, implement, wall-paper, oilcloth and pencil manufacturers.

## FRENCH CROWN GREENS

Contain 25 per cent Chemically Pure Chrome Green precipitated on Barium Sulphate and inert base. Owing to the great tinctorial strength of Greens, the average manufacturer purchases a green of this strength or that of the No. 1 Chrome Greens described hereinunder. Sold in large quantities to same classes of manufacturers as listed under Chemically Pure Chrome Greens.

## No. 1 CHROME GREENS

Contain 12½ per cent Chemically Pure Chrome Green precipitated on Barium Sulphate and inert base. Employed by the same manufacturers as listed under Chemically Pure Chrome Greens.

## WAGON BOX GREENS

A line containing seven per cent Chemically Pure Chrome Green, particularly adapted for wagon and implement manufacturers. Known as Yellow Top Greens, which are preferred for this work. Also purchased by such other consumers desiring a low-priced Green of good strength and quality.

## VERDELITE GREEN

Manufactured by a special process, which permits us to offer an olive-toned Green of exceptional strength and covering power at a very reasonable price.

## CHEMICALLY PURE PRUSSIAN AND CHINESE BLUES

Our line of Chemically Pure Blues are of a quality that cannot be surpassed. Particularly noted for their strength, tone and general characteristics. Chinese and Prussian Blues are extensively employed for paint grinding work, occasionally for printing ink, and also purchased in quantities by various sundry manufacturers such as leather, lithographed can, carbon paper, etc.

## SOLUBLE BLUE

This is a Prussian type of Blue, soluble in water (preferably distilled) and largely employed by laundry and paper trades, also bluing manufacturers. Due to the scarcity of Aniline Blues, these goods are now in very great demand.

In localities where the water is inclined to alkaline, the addition of approximately one per cent of preferably Oxalic Acid, although at times Acetic Acid is and can be employed, as compared with the weight of the Blue will tend to improve the solubility

## GRINDER'S AND PAINTER'S BLUE

This is a type of Chinese Blue particularly intended for the small paint grinder and sundry consumer.

# DRY COLORS (SUNDRY MANUFACTURERS' USE)

Net prices per pound

| | 100s | | bbls. | |
|---|---|---|---|---|
| | A | B | A | B |
| Turkey Red D, Rex 10180 | | | TA | 54 |
| Oriental Red L, Rex 10226 | AY | 21 | HD | 20 |
| Oriental Red D, Rex 10227 | AY | 21 | HD | 20 |
| Premier Non-Fading Red L, Rex 10167 | HN | 14 | HA | 13 |
| Premier Non-Fading Red M, Rex 10211 | HN | 14 | HA | 13 |
| Premier Non-Fading Red D, Rex 10145 | NS | 15 | HN | 14 |
| Hercules Red, Rex 10186 | AS | 25 | AN | 24 |
| Para Toner, Light, Rex 10121 | HOT | 1 80 | HFY | 1 75 |
| Para Toner, Dark, Rex 10109 | HOT | 1 80 | HFY | 1 75 |
| Helio Fast Red Toner Rex 10116 | NTY | 3 | NAT | 3 50 |
| C P Primrose Yellow, Rex 12204 | AT | 26 | AS | 25 |
| C P Chrome Yellow LLL, Rex 12008 | AT | 26 | AS | 25 |
| C P Chrome Yellow LL, Rex 12007 | AT | 26 | AS | 25 |
| C P Chrome Yellow L, Rex 12009 | AF | 27 | AT | 26 |
| C P Chrome Yellow M, Rex 12010 | AF | 27 | AT | 26 |
| C P Chrome Yellow O, Rex 12011 | AF | 27 | AT | 26 |
| C P Chrome Yellow DO, Rex 12012 | AF | 27 | AT | 26 |
| Hercules Chrome Yellow LL, Rex 12018 | HR | 19 | HO | 18 |
| Hercules Chrome Yellow L, Rex 12022 | HR | 19 | HO | 18 |
| Hercules Chrome Yellow M, Rex 12019 | HD | 20 | HR | 19 |
| Hercules Chrome Yellow O, Rex 12017 | HD | 20 | HR | 19 |
| Hercules Chrome Yellow DO, Rex 12020 | HD | 20 | HR | 19 |
| No. 1 Chrome Yellow L, Rex 12013 | NA | 13 | HH | 12 |
| No. 1 Chrome Yellow M, Rex 12015 | HN | 14 | HA | 13 |
| No. 1 Chrome Yellow O, Rex 12016 | HN | 14 | HA | 13 |
| C P Chrome Green L, Rex 11025 | NO | 40 | NT | 37 |
| C P Chrome Green M, Rex 11077 | ND | 42 | NO | 39 |
| C P Chrome Green D, Rex 11024 | SN | 46 | SN | 43 |

# DRY COLORS—Continued

| | 100s | | bbls. | |
|---|---|---|---|---|
| | A | B | A | B |
| C P Nitrate Chrome Green L (Blue Top) Rex 11212 | NF | 39 | NS | 36 |
| C P Nitrate Chrome Green M (Blue Top) Rex 11213 | NR | 41 | NF | 88 |
| C P Nitrate Chrome Green D (Blue Top) Rex 11214 | SA | 45 | SY | 42 |
| C P Nitrate Chrome Green DD (Blue Top) Rex 11215 | T | 54 | TY | 52 |
| French Crown Green LL, Rex 11200 | HN ½ | 14 ½ | HA ½ | 13 ½ |
| French Crown Green L, Rex 11201 | HN ¼ | 14 ¼ | HA ¼ | 13 ¼ |
| French Crown Green M, Rex 11202 | HS | 15 | HN | 14 |
| French Crown Green D, Rex 11203 | HT | 16 | HS | 15 |
| No. 1 Chrome Green L, Rex 11003 | HY | 11 | D | 10 |
| No. 1 Chrome Green M, Rex 11004 | HY | 11 | D | 10 |
| No. 1 Chrome Green D, Rex 11005 | HH | 12 | HY | 11 |
| Wagon Box Green L, Rex 11049 | D ½ | 10 ½ | R ½ | 09 ½ |
| Wagon Box Green M, Rex 11050 | HY | 11 | D | 10 |
| Wagon Box Green D, Rex 11051 | HY | 11 | D | 10 |
| C P American Blue, Rex 11047-S | FT | 70 | FY | 65 |
| C P Chinese Blue, Rex 11023-S | FT | 70 | FY | 65 |
| C P Soluble Blue, Rex 11084-S | FT | 70 | FY | 65 |
| Grinders' and Painters' Blue, Rex 11030-S | HN | 14 | HA | 18 |

# PIGMENTS, CHEMICALS, ETC.

Following we describe a number of very important Pigments, Chemicals, etc., manufactured by us, for which there is a very general demand on almost every territory:

## LEADED ZINC (OZLO)

S-W Leaded Zinc, which we have assigned the trade name "Ozlo," is an extremely fine, white pigment produced from Zinc Lead Ore. It is chemically combined in the process of manufacture, having just the proper proportions of Lead and Zinc to make it an ideal pigment for paint manufacturers, etc., and one that is very generally employed. In fineness it is similar to Zinc Oxide, and in whiteness compares very favorably with Zinc Oxide. Owing to the lead content the opacity of Ozlo is measurably greater than Zinc Oxide.

The process of producing Ozlo is very technical, requiring the closest observation of each operation by highly experienced technical men, to insure uniformity and purity, which are features very important to the trade and have resulted in the establishment of the enormous volume of business we are doing on this product.

Although primarily employed for paint manufacture, this pigment however, is extensively used by oilcloth, rubber, linoleum manufacturers, large tin decorators, implement and other manufacturers preparing their own paints.

Packed in 400-pound barrels.

## WHITE LEAD DRY

S-W White Lead Dry, otherwise known as Basic Carbonate of Lead or Corroded White Lead, is produced by the Old Dutch Process, which results in a Dry White Lead of superior quality. The process of manufacture is in outline as follows:

Metallic Lead in pig form is melted and cast into small perforated disks called "Buckles," which are placed in small earthen pots containing a small quantity of weak Acetic Acid, and from thirteen to sixteen buckles of Lead. These pots are then placed in rooms covered with boards and layers of tan bark placed between each tier. The rooms, which are technically called "stacks," are kept closed for from seventy-five to one hundred and twenty days, during which period the Lead corrodes, due to the carbonic acid gas generated by fermentation of the tan bark, together with the acid vapors and combine to almost completely corrode the Lead buckles into a white, flaky substance termed Basic Lead Carbonate. This material is then conveyed to a separating machine, which extracts the uncorroded particles, permitting the balance to pass through rolls for still finer pulverizing. It is then passed through screens for removing any further coarse particles, and finally washed through twenty washing tubs, where any extraneous or irrelevant matter previously escaped is removed. The material is then thoroughly dried and ready for market.

Furnished in barrels averaging approximately 500 pounds each.

## LITHOPONE

Lithopone is essentially a combination of precipitated Zinc Sulphide and Barium Sulphate, being produced by the simultaneous reaction on one another of a solution of Zinc Sulphate and Barium Sulphide; the two chemicals in solution but in the correct combined portions and when precipitated form a very intimate union. The process of manufacturing Lithopone, in order to produce material of the very finest quality such as ours, require a very careful selection of raw materials and the closest observation in the process of manufacture so as to develop each important characteristic of the goods to the fullest possible extent without it working to the detriment of any other characteristic.

The particular characteristics of Lithopone are its whiteness, fineness, body and opacity. The quality of our Lithopone is fully equal, if not superior, to any other grades available, which can readily be determined by a comparative examination.

Lithopone is very extensively used for the manufacture of interior flat wall finishes, interior enamels, by rubber tire and specialty manufacturers, shade cloth oilcloth, linoleum, soap and by shoe polish manufacturers for making white cleaners.

Furnished in barrels weighing 450 pounds.

## BLYSOL

Blysol is our trade name for Lead Acetate in liquid form. It is furnished in the highest concentrated strength possible. It is to be offered where the trade are now employing Lead Acetate, which is also known as Sugar of Lead, having a decided advantage over this material on account of it being supplied in liquid form and not requiring the long boiling necessary to dissolve Lead Acetage.

Blysol is made from the very purest form of Pig Lead and does not contain impurities such as are found in Lead Acetate which is made from Litharge. The percentage of lead in Blysol is practically as high as in commercial Sugar of Lead, being in the ratio of five parts of Sugar of Lead, being equivalent to six parts of Blysol.

Our ability to market this material in the highly concentrated liquid form of Lead Acetate and still keep it in liquid condition, is that the Lead Acetate contains water of crystalization, which the average consumer is not aware of, and as Blysol is furnished in liquid form, is inclined to believe it is necessarily weaker as Lead Acetate is supplied in dry crystal form. Blysol could be furnished in crystalized form and will not show an excess of water, so that really it represents Lead Acetate supplied in the most economical physical condition with relatively the same strength.

Blysol is supplied at 72 ½ degrees Baume, is always uniform in strength and quality. It is employed for manufacturing Chrome Yellows and Chrome Greens and also for coloring paper in the beater in conjunction with Bichromate of Soda or Chrome Liquor, which is subsequently described. It has a particular advantage when used for coloring paper in the beater in that the Blysol can be added cold without treatment in any way, whereas Lead Acetate must be dissolved in hot water, which often makes the shade of Yellow turn brown or dark by having the solution too hot, whereas in the case of Blysol it can be added cold and kept cool so that uniform shades of Yellow can be produced.

Furnished in wooden barrels weighing approximately 600 pounds.

## CHROME LIQUOR

Chrome Liquor is prepared from the mineral Chromite or the so-called Chrome Iron Ore. The ore is ground and mixed with a suitable flux, roasted and leeched. In this way the Chrome Liquor is separated from the ore and is run to a standard strength of 52 degrees Baume, being sold and generally used in this strength.

It is very extensively employed by dry color manufacturers, tanneries, paper factories, and in fact anywhere that Bichromate of Soda is used, Chrome Liquor can be employed equally as well. The advantage of Chrome Liquor is that it is in the Mono Chromate form and can readily be converted to Bichromate of Soda or used as Mono Chromate, according to the requirements of the formula in which it is employed. Cleaner and stronger colors can be made from Chrome Liquor, and being in the Mono Chromate form, is more flexible in its use by the expert color maker.

Another advantage in using Chrome Liquor is that we give the trade the benefit of the saving effected in evaporation, crystallization, conversion to Bichromate and drying of the crystals. All Bichromate of Soda goes through the form of Chrome Liquor and the process of converting it into Bichromate of Soda crystals as indicated above is quite an expensive operation, which can be saved by using Chrome Liquor.

Chrome Liquor can be shipped in either wooden barrels or iron drums or steel tank cars. The net weight of a 50-gallon barrel or steel drum is approximately 500 pounds.

Prices on application.

## ARSENIC ACID

Arsenic Acid is used most extensively in the manufacture of Lead and Calcium Arsenates. These products are, as you know, important insecticides. It is also used in the preparation of other arsenates and certain drug products, notably Salversan, but the quantity employed for such purposes is not as great as for insecticide work. Arsenic Acid is furnished in barrels containing 450 pounds net.

### Net Prices per pound

| | bbls. A | bbls. B |
|---|---|---|
| Leaded Zinc (Oxide) | ---- | ---- |
| White Lead Dry | ---- | ---- |
| Lithopone | ---- | ---- |
| Blysol | ---- | ---- |
| Arsenic Acid | ---- | ---- |

"A" prices effective on quantities of ten barrels up to car lots.

Prices for car lots should be especially applied for.

# ACETIC ACID

Acetic acids are employed by all classes of trade; the Glacial and 80 per cent Pure being used for pharmaceutical and preserving purposes, where the material must be chemically pure; the Commercial and Redistilled grades are employed for various manufacturing purposes such as the manufacture of dry colors, corrosion of white lead, manufacture of chemicals, dyes, by laundries, laundry supply houses, and for numerous sundry purposes

For your guidance we are giving you hereinunder a list of the Acetic Acid consumers and the strength and grade which they usually employ:

Comb manufacturers.....Glacial.
Wholesale druggists.....Glacial and 28 per cent Redistilled or Commercial.
Laundries.....28 and 56 per cent Redistilled or Commercial.
Laundry supply houses.....28 and 56 per cent Redistilled or Commercial.
Laboratory supply houses.....All grades.
Soap manufacturers.....70 per cent Commercial or 28 per cent Commercial
Photographers.....28 per cent Redistilled or Commercial
Photographic supply houses.....28 per cent Redistilled or Commercial.
Dry cleaners and dyers.....28 per cent Redistilled or Commercial.
Textile dyers.....28 and 56 per cent Redistilled or Commercial.
Manufacturers of medicinal preparations.....Glacial.
Corroders of white lead.....70 per cent Commercial and 28 per cent Redistilled or Commercial.
Dye manufacturers.....Glacial.
Dry color manufacturers.....70 per cent Commercial and 28 per cent Commercial or Redistilled.
Chemical manufacturers.....All grades.
Cellulose acetate manufacturers...Glacial.
Paris green manufacturers.....70 per cent Commercial and 28 per cent Commercial or Redistilled.
Celluloid manufacturers.....Glacial.

For pharmaceutical purposes, to avoid possible contamination from a wooden package, Glacial Acetic Acid is generally shipped only in glass carboys or glass demijohns, although generally for other purposes, such as chemical manufacture, etc., the Glacial and all other grades can be shipped in barrel packages.

Many consumers purchase 28 per cent Acetic Acid simply because they have accustomed themselves to buying this strength, but you will note that the price on the 56 per cent. which is just double strength, is proportionately lower, and by selling this strength the customer will not only save a part of the freight charges but the higher strength acid requires less handling, less storage space, fewer barrel charges on memorandum, and less expense in returning the containers, and all they need to do in using it is to add just again as much water to the 56 per cent as they do to the 28 per cent. This is very simple and many times where a man simply desires a barrel of 28 per cent, you can sell him a barrel of 56 per cent, which is equivalent to two barrels of the 28 per cent.

We find that some of the smaller consumers, such as photographers and photographic supply houses, have been accustomed to paying prices considerably higher than our "B" prices, and, therefore, in calling on this trade, who usually buy 28 per cent and 56 per cent, you can sometimes secure one or two cents per pound additional.

Our production of Acetic Acids comprises the following grades, opposite which are indicated the prices effective for each particular grade in various sized containers.

## "A" PRICES IN BARRELS

| GRADE | Single Bbls. | 5 to 10 Bbls. | Carloads |
|---|---|---|---|
| 99½% Glacial U S P | 12 40 | 12 15 | 11 90 |
| 80% Pure | 11 20 | 10 95 | 10 70 |
| 80% Redistilled | 10 20 | 9 95 | 9 70 |
| 56% Redistilled | 7 40 | 7 15 | 6 90 |
| 28% Redistilled | 4 16 | 3 91 | 3 66 |
| 80% Commercial | 9 41 | 9 16 | 8 91 |
| 70% Commercial | 8 32 | 8 07 | 7 82 |
| 56% Commercial | 6 85 | 6 60 | 6 35 |
| 28% Commercial* | 3 88 | 3 63 | 3 38 |

*f. o. b. Chicago and Bound Brook only.

## "A" PRICES IN CARBOYS

| GRADE | Single Carboys | 5 to 10 Carboys | Carloads |
|---|---|---|---|
| 99½% Glacial U S P | 12 90 | 12 65 | 12 40 |
| 80% Pure | 11 65 | 11 45 | 11 20 |
| 80% Redistilled | 10 70 | 10 46 | 10 20 |
| 56% Redistilled | 7 90 | 7 65 | 7 40 |
| 28% Redistilled | 4 66 | 4 41 | 4 16 |
| 80% Commercial | 9 91 | 9 66 | 9 41 |
| 70% Commercial | 8 82 | 8 57 | 8 32 |
| 56% Commercial | 7 35 | 7 10 | 6 85 |
| 28% Commercial* | 4 38 | 4 13 | 3 88 |

*f. o. b. Chicago and Bound Brook only.

## "A" PRICES IN DEMIJOHNS

| GRADE | Single Demijohns | 5 to 10 Demijohns | Carloads |
|---|---|---|---|
| 99½% Glacial U S P | 13 40 | 13 15 | 12 90 |
| 80% Pure | 12 20 | 11 95 | 11 70 |
| 80% Redistilled | 11 20 | 10 95 | 10 70 |
| 56% Redistilled | 8 40 | 8 15 | 7 90 |
| 28% Redistilled | 5 16 | 4 91 | 4 66 |
| 80% Commercial | 10 41 | 10 16 | 9 91 |
| 70% Commercial | 9 32 | 9 07 | 8 82 |
| 56% Commercial | 7 86 | 7 60 | 7 35 |
| 28% Commercial* | 4 88 | 4 63 | 4 38 |

*f. o. b. Chicago and Bound Brook only.

The above prices, *with the exception of 28% Commercial*, are f. o. b. Chicago, Bound Brook, Newark, St. Louis, Boston, Cleveland, Philadelphia and Cincinnati.

*The above prices on 28% Commercial in any quantity and any package are f. o. b. our Acetic Acid factories at Chicago and Bound Brook only.

In figuring delivered prices on 28% Commercial in any quantity or any package, the freight rate must be added to the selling price.

Packages on all grades are charged extra as follows:

| | |
|---|---|
| Barrels having net weight of 420 lbs. | $5 00 |
| Carboys having net weight of 100 lbs. | 5 00 |
| Glass wicker-covered demijohns having net weight of 45 lbs. | 2 00 |

Full credit will be allowed on all packages returned at buyer's expense to any of the above points, when received in good condition. Packages outstanding at the price previously in effect will be credited upon receipt at the charged price. Should any empty packages be outstanding longer than six months from date of shipment, the credit to be allowed shall be at our option. No allowance will be made for barrels returned which cannot be repaired, but where these are not damaged beyond repair, credit will be allowed on a basis of their actual condition.

We have experienced a little difficulty in the return of carboys, in that the crate is broken or that the glass stopper is lost, and we have arranged to make allowance for the returned parts of carboys in usable condition as follows:

| | |
|---|---|
| Carboys returned in good order and condition | $5 00 |
| Carboy bottle | 2 50 |
| Carboy case | 2 50 |
| If the carboy case and the carboy bottle are in good order but require repacking | 4 00 |

## CONTRACTS

Contracts for all grades should be closed on the base prices given in this price list, using our Acetic Acid contract form 40X60.

Contracts should be closed on the basis of Acetate of Lime at 3.50 per hundred pounds and for every 10 cents per hundred pounds advance or decline in the market of Acetate of Lime, the following differentials will apply:

| | |
|---|---|
| Glacial 99½% U S P | 17.8 cents per 100 lbs. |
| 80% | 14.3 cents per 100 lbs. |
| 70% | 12.5 cents per 100 lbs. |
| 56% | 10. cents per 100 lbs. |
| 28% | 5. cents per 100 lbs. |

The same differentials apply on the Redistilled as on the Commercial. For instance, an advance or decline of ten cents per hundred pounds of every advance or decline of ten cents per hundred pounds on Acetate of Lime will be made on 56 per cent either Commercial or Redistilled.

Acetic Acid is the only item on which you can accept contracts for a whole year with a guarantee against decline, so that the customer's interests are amply protected no matter how low the market price may go.

Your customer could desire no proposition more equitable than this, and you will not find it difficult to arrange with the various consumers for their requirements on a contract basis.

TERMS: 30 days net. One per cent for cash in 10 days

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