

White Batch	
1 $\frac{3}{4}$ cts	
Sand	1,000 lbs
Flour spar	150 "
Feldspar	150 "
lapis lazuli	50 "
Br Carb Soda	150 "
Soda	160 "
Zinc	80 "
China clay	50 "
Manganese	32 oz

White Glass	
Sand	100 lbs
Soda	40 "
Lead	20 "
Bones	25 "
Feldspar	25 "
Nitrate Potash	25 "
arsenic	7 "
Manganese	12 oz
D. Stone	

Opal	
Sand	600 lbs
Lead	225 "
Niter	35 "
Soda	80 "
Feldspar	95 "
Flour spar	95 "
Reds	60 "

Opal	
Sand	320 lbs
Soda	120 "
Niter	40 "
Lead	80 "
arsenic	50 "
Flour spar	60 "
Feldspar	30 "

Best Opal

Sand	1000	lbs
Soda	- 60	"
Glycer	- 75	"
Oxide zinc	175	"
Fluorspar	- 75	"
Cryolite	250	"
Manganese	4	oz

Opal

Sand	750	lbs
Lead	250	"
Soda	.65	"
Glycer	.75	"
Pearls	.92	"
Chalk	120	"
Fluorspar	.75	"
Powder Blue	2	oz
Manganese	2	oz

Opal Batch

For making opaque colors

Sand	240 ^{lbs}
Lead	100 "
Pearls	- 75 "
Bones	- 40 "
Arsenic	- 2 "
Witer	20 "

Opal

Sand	1200 ^{lbs}
Witer	- 400 "
Bones	- 100 "
China clay	- 150 "
arsenic	150 "
Soda	500 "
Manganese	- 2 "

To make green opal
add 4 ^{lbs} sulphate of
Copper & 8 ^{lbs} chromate
of Potash

Shade Batch White

		1.00	lbs
Sand	14.00 -	1.00	
Lead	390 -	28	"
Soda	200 -	18	"
Pearls	140 -	10	"
Fluorspar	200 -	18	"
Feldspar	160 -	11 1/2	"
Cryolite	40 -	3	"
Manganese	3 -	3 3/4	oz
Borax	4 -	4 1/2	oz
Antimony	4 -	4 1/2	oz
Water	1.00	7	lbs

White Batch

		5.00	lbs
Sand		5.00	"
Lead		100	"
Soda		180	"
Water		50	"
Lime		35	"
Cryolite		28	"

Result very good
 white but rather soft
 Could be made harder
 by taking out lead
 and adding lime
 Cost 2 1/4 cts

White Batch

	lbs
Sand	1.000
Fluorspar	150 "
Feldspar	150 "
Serpentine	50 "
Ba Carb Soda	150 "
Soda	160 "
Zinc	80 "
China clay	50
Manganese	32 oz

1 3/4. ¢

Opalescent

Sand	80 oz
Lead	80 "
Pearls	20 "
Witer	12 "
arsenic	2 "
Bones	2 1/2 "
Chloride Potassin	1/2 "
Copide Silver	1/2 "

This glass just requires sufficient arsenic Bones and silver to turn white when fired the second time the chloride of Potassin burns away and lets the color come out this can be made in several colors

1

Lead glass. Two

Sand	21.00	lbs
Pearls	6.00	"
Lead 700 if desired	8.50	"
Ziter	2.50	"
Manganese	- 2	"
arsenic	- 2	"

Lead

Sand	1.000	lbs
Lead	6.00	"
Pearls	3.00	"
Ziter	2.50	"
Manganese	- 12 oz	
arsenic	24	"

2 Bar.

2

Lead

Sand	2.000	lbs
Pi carb Soda	9.00	"
Lead	6.60	"
Ziter	2.00	"
Manganese	2	"
White oxide antimony	10.00	oz
arsenic	2	lbs
Cobalt	20.00	grs
Borax	6	lbs

Lead

Sand	18.00	lbs
Lead	3.00	"
Pearls	5.00	"
Ziter	2.00	"
arsenic	- 1	"
Manganese	- 1	"
Borax	- 4	"

2 oz mangn and 1/8 copperas for the first round. Second id. 1 oz mangn

1
 White Enamel
 Sand 100 lbs
 Soda 65 "
 Lime 20 "
 Arsenic 25 "
 Witer 10 "
 Common Salt 6 "
 - - - - -

2
 Sand 6.01 lbs
 Soda 3.60 "
 Lime 2.40 "
 Arsenic 60 "
 Witer 48 "
 Bone ash 125 "
 Common Salt 36 "
 Manganese 6 oz
 Fluorspar Judgmet

3
 Enamel
 Sand 700 lbs
 Pearls 260 "
 Lead 350 "
 Witer 70 "
 Arsenic 60 "
 Bone ash 60 "
 Per oxide Tin 40 oz
 Manganese 1 "
 Antimony 4 "
 - - -

Rem

White Enamel

Sand	-	1.00	lbs
Lead	-	60	"
Pearls	-	40	"
Witer	-	5	"
arsenic	-	14	"

or

Sand	1.00	"
Lead	80	"
Pearls	40	"
arsenic	10	"
Witer	5	"

Leigh.

White Enamel

Sand	3.00	lbs
Lead	3.00	"
Gullet or Diftings	6.00	"
Witer	2.00	"
arsenic	70	"

more transparent Green can be made by adding to each 100^{lbs} batch

12 oz. Copper scales 24 oz Iron scales and 8 oz

mettalic antimony all in fine powder

Copper produces a bluish green Iron antimony chromate Potash and chrome yellow a yellowish green varying Proportions every shade of Green may be obtained

Green Spangled Enamel

Gullet	80 <u>lbs</u>
White Enamel	40 ..
Borax	20 "
Fiter	10 "
Chromate of Potash	5 "

White glass	
Sand	70 <u>lbs</u>
Fiter	150 ..
Bones	.60 ..
arsenic	.90 ..
China Clay	80 ..

Alabaster

Sand	1350 <u>lbs</u> ..
Soda	700 ..
P. Soda	100 ..
Bones	88 "
Alum.	48 "
arsenic	56 "
manganese	1/2 "
magnesia	24 "

Ruby	30.cts Per lb
Sand	3.00 lbs
Lead	2.00 "
Pearlash	1.00 "
Witer	28- "
Manganese	4 oz
Purple of Cassius	4 "

Copper Rubbis	
Sand	1.00 lbs
Pearls	60 "
Saltpeter	4 "
Bozay	4 "
Table Salt	4 "
Spirit of Tin (chloride)	2 ^{lbs} 24 "
Tin ash	2 "
Iron scales	2 "
Turb. ss. oxide copper	2 1/2 "
Lead	16 "
Lime	16 "
Sal amoniac	4 "
Black oxide uranium	60 gms

About 6.¢ Per lb.

Rubie

Sand	75 lbs
Ziter	21 "
Pearls	10 "
Borax	18 "
Lead	18 "
Arsenic	1 "
Sal ammoniac	2 "
Tin	3 oz
Gold	60. lbs
(makes \$21)	

About 20 ~~¢~~ Per lbs

Gold Ruby

Sand	100 lbs
Lead	75 "
Pearls	35 "
Ziter	10 "
Manganese	2 oz
Purple of Cassius	2 "

Purple of Cassius is a precipitate of Gold thrown down from its ~~Solution~~ Solution by Tin

Gold Ruby 885

Sand	1.000	lb
Lead	640	"
Pearls	200	"
Water	100	"
Manganese	10	"
White Oxide Antimony	10	"
" " Tin	10	"
Arsenic	10	"

About 4 grains of gold
to each lb of batch
add the gold in
solution it will not be
so apt to be lost
Amberina is the same as
Ruby with the addition of
Sulphate of Iron or
Manganese

Gold Ruby very fine

Sand	1.00	lbs
Lead	100	"
Pearls	30	"
Nitrate of Potash	10	"
Borax	5	"
Antimony	8	oz
Manganese	3	oz

Fulminating Gold
rubbed in with Oil of
Turpentine $\frac{1}{2}$ oz

Fulminate of Gold is
prepared by dissolving Gold
in Nitro Muriatic Acid
and precipitating by
ammonia it is dangerous
to handle being very
Explosive

Bohemian Ruby

Sand	100	..
Lead	100	..
Pearls	30	..
Yitra	10	..
Purple of Cassius	1	oz
Antimony	4	..
Borax	10	..
Arsenic	4	..

Copper Ruby

Sand	10	lbs	..
Pearls	3	..	..
Lime	$\frac{1}{2}$	..	..
Soda	$\frac{1}{4}$	..	..
Borax	10	..	..

Canary

Sand	100 lbs
Lead	40 "
Beards	35 "
Water	20 "
Manganese	3 oz
Arsenic	1/2 lb
White Uranium	1 1/2 "
Borax	1 "
Antimony	4 "

To make orange
 color add Iron and if
 to be very fine Purple
 of Cassius will work
 with a good Lime
 Batch

Canary

Batch	200 lbs
Uranium	1 "

Old Gold

Sand	6.00	lbs
Soda	4.00	..
Lime	1.30	..
Borax	.75	..
Sulphate of Iron	.75	..

Amber

Sand	3.00	lbs
Soda	4.00	..
Lime	1.00	..
Charcoal	.36	oz

Amber Glass

Sand	1000 - 100 lbs
Soda	418 - 37% ^{25%}
Lime	145 - 13% ^{3/4} ..
Oats	7 - 11 oz

*1
From 2 to 2 1/2 lbs of oats
to the 100 lbs of common
Lime Batch will make
a nice amber but is
slow in plaining
a better Batch is the
following

Will take 12 to 18
Hours longer to
Plain than ordinary
Batch. manganese
2 oz will help this
Batch

Cheap Lead

Sand	12	00	lbs
Soda	3	60	"
Lime	2	00	"
Lead	1	16	"
Zifter	6	00	"
Arsenic	2	00	"
Manganese	4	00	"

Sand -	12,000	-	900	lbs
Soda -	15,00	-	224	"
Lime	12	00	-	90
Lead	11	00	-	45
Pearls	1	00	-	45
Manganese	5	00	-	2
Zifter	4	00	-	18
Antimony	11	00	-	5

Lead

Sand	2,000	lbs
Lead	9	00
Pearls	2	50
Soda	3	00
Zifter	1	50
Arsenic	5	1/2
Borax	4	00
Manganese	2	1/2

Smoked Glass

Produced by Chromium
It is a combination of
green and violet

Sand	100 lbs
Lead	40 "
Pearls	40 "
Witer	68 "
arsenic	1 "
Manganese	3 "
Chromium	2 "
Iron	1

Will work with
any good fine batch

Experiment

Batch 6 of
Pot chromate of Potash
1/2 of the glass a green
with a yellow cast
and containing sparks
looking like Gold
Powder

PHINCO

Radio Stations

~~WGN~~

WGN CHICAGO - 72 + 416-720

WLN CINCINNATI ^{WETA} 74

WSPD TOLEDO 20-25, LOCAL

WGA DETROIT 69

WKB DETROIT 54

KDMA PITTSBURG 49

WTAM CLEVELAND 42-44

WTIC HARTFORD 39 $\frac{1}{2}$

WOWO FORT WARE 34-36

WEAF NEW YORK 72

WHAS ROCHESTER, 36

WLS CHICAGO 57

KMOX ST. LOUIS 42 $\frac{1}{2}$

WGE SCHENECTADY, 64 $\frac{1}{2}$

Boys for Chicago

G. Geates

J. Geates

J. L. Marsh

L. McElroy

H. Foltz

M. McPherson

Paste

Boiled Lin Oil 1. Gal
Shoe Wax about 40. oz.
S. Pines

Stand for 15" Bowl

Height	$7\frac{1}{4}''$
Top Opening inside	$5\frac{1}{8}''$
Bottom	$10''$
Concave	$4\frac{1}{2}''$

18" Bowl

Height	$7\frac{1}{2}''$
Top Opening	$6\frac{1}{8}''$
Bottom	$12''$
Concave	$5\frac{1}{2}''$



H. C. Jones

1901 Jan 9
630 Bramhall Ave
Jersey City
N. J.

T. W. Woods

Piquette Ohio

April 2, O'Hara N. Y.
April Mrs. Kennedy N. Y.

Mr Beck

#424 Hancock St
Hindlay

W. Beck

60 Indiana St
Whiting W. Va

Good Lime Batch

	lbs
Sand	22.00
Soda	770 "
Lime	3.00 "
Zfiter	175 "
Fluor spar	5.0 "
Arsenic	1/2 "
Manganese	1 1/2 "
Powder blue	2.00
Antimony	1 "

Best Lime Batch

		lbs
Sand	- 16.00 -	100. "
Soda	- 5.00 -	33 "
Lime	1.75	114.3
Zfiter	- .75 -	
Manganese	. 1 1/2	
Arsenic	. 8	
Borax	6	
Powder Blue	1/2 oz.	

Best Crystall

	lbs
Sand	17.00
Soda	6.80 "
Lime	2.30 "
Zinc	80 "
Manganese	2 1/2 "
Arsenic	2 1/2 "
B. Powder Blue	2 oz.

Lime

	lbs
Sand	2.000
Soda	7.00 "
Zinc	150 "
Lime	230 "
arsenic	10 "
Manganese	4 "
Cobalt	10 grs

Lime

Crystall

	lbs
Sand	1.00
Soda	40 "
Lime	13 "
Zinc	8 "
Manganese	1.07
Arsenic	1.71
Cobalt	1.92

Sand	17.00 "
Soda	6.80 "
Lime	2.30 "
Manganese	2 1/2 "
Arsenic	2 1/2 "
Cobalt - about	18. grs

Zinc 80

Lime

	lbs
Sand	22.00
Soda common	9.00 "
Lime	3.00 "
Ziter	- 90 "
Fluorspar	- 8 "
Arsenic	9 "
Manganese	5 1/2 "
Zaffree	1.07

Manganese 5 1/2 first round
5 1/4 second

if cobalt is used 1/4 oz.
and no zaffree

White oxide antimony 6.07.
P.S. 10 lbs china clay

S. M. af.

cont

Lime

	lbs
Sand	14.00 "
Soda (Bicarb)	- 5.50 "
Lime	2.00 "
Ziter	1.00 "
Arsenic	- 12 "
Manganese	- 4 "
Zaffree	1.07

	lbs
Sand	12.00 "
Soda	4.80 "
Lime	2.00 "
Ziter	.80 "
arsenic	12 "
Manganese	3 "
Zaffree	1/2 oz.

Lime