

Engobes & Slips

WHITE SLIP cone 04-02

E.P.K. 5
Talc 45
Ball Clay 45
Frit 3124 5
To deflocculate add .25% sodium
silicate or Davan 7 to 40% water.
Bring consistency with water/
defloc solution.

R. FORBES WHITE SLIP cone 04-03

Ball Clay 50
Talc 20
Nepheline Syenite 20
Flint 10

BLACK SLIP cone 04-03

Lantz or Red Art 75
Manganese Dioxide 25
Black Stain 12
Black Iron Oxide 5

JOHN GILL'S WHITE SLIP cone 04-03

E.P.K. 12.5
Calcined Kaolin 12.5
Ball Clay 25.0
Frit 3124 20.0
Talc 5.0
Flint 20.0
Zircopax 5.0

Willoughby White Slip (Cone 9-11)

Soda Ash 5.56%
Whiting 16.67
Nepheline Syenite 22.22
Calcined Kaolin 16.67
Edgar Plastic Kaolin 5.56
Tennessee Ball Clay (10) 11.10
Flint (325 mesh) 22.22

100.00%

Add: Zircopax 11.10%

For color variations, add 5-25% Ma-
son stains.

White Engobe (Cone 8-10, reduction)

Dolomite 9.5%
Custer Feldspar 14.3
Kaolin 38.1
Kentucky Ball Clay (OM 4) 28.6
Flint 9.5
100.0%

Color variations are possible with these ad-
ditions:

1.5% Black Cobalt Oxide Blue
7% Red Iron Oxide Red
2% Black Cobalt Oxide, 5% Red Iron
Oxide and 6% Manganese
Dioxide Black

All-Temperature Slip

(Cone 04-10, oxidation or reduction)

Cornwall Stone 11.9%
Frit 3195 (Ferro) 2.4
Nepheline Syenite 11.9
Ball Clay 23.8
Kaolin 23.8
Flint 23.8
Opax 2.4
100.0%

Good white slip for wet clay to bisque;
oxides or stains may be added for a
wide range of colors.

All-Temperature Black

(Cone 04-10, oxidation or reduction)

Albany Slip Clay 72.73%
Ball Clay 27.27
100.00%
Add: Chrome Oxide 9.09%
Cobalt Carbonate 4.55%
Red Iron Oxide 4.55%

Orange-to-Brown

All-Temperature Slip

(Cone 04-10, oxidation or reduction)

A. P. Green Fireclay 100%

Ball mill for a finer texture, or just use
straight out of the bag.

St. JOHN'S BLACK

ALBANY SLIP * 65
NEPH SYN - 35
COBALT CARB - 5

(GOOD FOR DECORAT)

Doug Casebeer's Black Slip

Feldspar 25.0%
Ball Clay 25.0
Edgar Plastic Kaolin 25.0
Flint 25.0
100.0%
Add: Black Iron Oxide 5.0%
Cobalt Oxide 0.5%
Mason Stain 6600 15.0%
Calcined Kaolin 5.0%

Yellow-Brown Slip

Feldspar 50%
Ball Clay 50
100%
Add: Red Iron Oxide 50%

Black Slip

Alberta Slip 60.62
Kentucky Ball Clay (OM 4) 22.71
Chrome Oxide 7.50
Cobalt Carbonate 4.17
Red Iron Oxide 5.00
100.00

Rust Red Slip (Cone 3-4)

Gerstley Borate 25 parts
Red Iron Oxide 10
Kentucky Ball Clay (OM 4) .. 25
Edgar Plastic Kaolin 25
Flint 25
110 parts

Jim's Slip

Oxidation/Reduction

(technically a wash since it contains no
clay...breaks orange over celadon
and tenmoku glazes)

Rutile 100
Gerstley Borate 60
Iron Oxide 100

Korte's Slip (Cone 9)

Nepheline Syenite 50%
Red Iron Oxide 25
Rutile 25
100%

Conrad White Engobe - cone 04 to 7

Borax or Soda Ash.....	5%
Whiting.....	5%
Nepheline Syenite.....	10%
Potash feldspar.....	15%
EPK.....	20%
Kentucky Ball(OM 4).....	20%
Flint.....	25%

Note:

Can be used on greenware or bisque.

Cone 1 to 6 Engobe apply to bone dry ware

Kaolin.....	15%
Ball Clay.....	15%
Calcine Kaolin.....	20%
Nepheline Syenite.....	15%
Talc.....	5%
Flint.....	20%
Zircopax.....	5%
Borax.....	5%

Cone 6-11 Engobe LEATHERHARD

KAOLIN.....	25%
Ball Clay.....	25%
Feldspar.....	20%
Flint.....	20%
Zircopax.....	5%
Borax.....	5%

BLACK ENGOBE CONE 04

EPK.....	40
Flint.....	20
Gerstly Borate.....	10
Copper carb.....	2
Black Mason Stain.....	5
RIO.....	4
Manganese diox.....	1

E-13 White Engobe - cone 04 to 10

Edgar Plastic Kaolin(EPK).....	48%
Potash Feldspar.....	26%
Silica(Flint).....	26%

Base - BONA / GREENWARE

OM 4 (Ball clay)	25
EPK (kaolin)	30
Flint	25
F-4 (feldspar)	20
	100

BONA BASE COLORS

For colors add:

White	5LX Zircopax
Green	4 % Chrome
Blue	4 % Copper Carbon .5 % Chrome
Tizzy	10 % Copper Carb.
Pearly	15 % Rutile

BONA / GREENWARE

TIZZY

Ball Clay	30
Kaolin	25
Silica	25
Pot. Spar	20
Soda Ash	2%
Copper Carb.	8%

BONA / GREENWARE BLACK SLIP

Custer Spar	10
Ball Clay	20
Red Art	20
Mang. Diox.	5
Iron	5
Cobalt	2
Chrome	1

Archie Bray Black Slip(04-10

Redart	50
Ball Clay	25
Mang. Dioxide	15
Mason 158	12
Black Iron	12
Barium Carb.	10

WHITE (OR PLAIN) SLIP

KAOLIN	20
OM 4 BALL	20
NEPH SYN	25
FLINT	30
BORAX	5

Basic White Slip (Cone 10)

6 Tile Clay	20.0%
Kentucky Ball Clay (OM 4)	62.5
H. C. Spinks Foundry Hill Creme	12.5
Flint	5.0
	100.0%

IRON SLIP Δ 9-10

RED ART CLAY

RED IRON OXIDE

75 25

ipes: cone 04-03

Arbuckle

Base Slip (white)

ball clay	40
kaolin	20
neph sy	15
talc	15
frit 3124	10

Slip color suggestions

deep green: 3% chrome + 3% copper carb.
 yellow: 10% yellow body stain, e.g. Mason 6485 titanium yellow
 blue: 2% cobalt carbonate
 pink: 12-15% pink body stain, e.g. Mason 6020 pink
 black: 12-15% black stain or black oxide mix

04 White Slip (for w

EPK	-	12.5
alcined Kao.	-	12.5
3124	-	20
Talc	-	5
Flint	-	20
Zircopax	-	20 5
OM4	-	25

*** Archie Bray Black Slip**

- Red Art	50g
- OM4	25g
- Magnesium Dioxide	15g
- Black Stain	12g
- Black Iron	5g
- Barium Carb	pinch

UBL-35 Black Engobe

(Cone 6)

Black Stain 6600	30%
Frit 3134 (Ferro)	30
C&C Clay	40
	100%

UB-30 Cobalt Blue Engobe

(Cone 6)

Blue Stain 6313	10%
C&C Clay	50
Flint	40
	100%

UB-30 Mazerine Blue Engobe

(Cone 6)

Mazerine Stain 6300	20%
C&C Clay	60
Flint	20
	100%

WHITE SLIP

Silica	35
Cornwall Stone	15
Ball Clay	10
EPK	40
	100

Red Slip

(Cone 03)

Cedar Heights Goldart	10%
Cedar Heights Redart	90
	100%

Apply at the plastic to leather-hard stage.

Black Slip

(Cone 03)

Cedar Heights Redart	100%
Add: Copper Oxide	1%
Manganese Dioxide	3%
Red Iron Oxide	8%

Apply at the plastic to leather-hard stage.

UG-35 French Green Engobe

(Cone 6)

French Green Stain 6219	25%
Wollastonite	10
Frit 3134 (Ferro)	15
C&C Clay	50
	100%

UPR-13a Pansy Purple Engobe

(Cone 6)

Pansy Purple Stain 6385	30%
Wollastonite	10
Nepheline Syenite	10
C&C Clay	50
	100%

UR-27 Crimson Engobe

(Cone 6)

Crimson Stain 6006	20%
Wollastonite	20
Frit 3134 (Ferro)	20
C&C Clay	40
	100%

UG-41 Chartreuse Engobe

(Cone 6)

Chartreuse Stain 6236	30%
Frit 3134 (Ferro)	20
C&C Clay	50%
	100%

UP-34 Coral Engobe

(Cone 6)

Coral Stain 6090	30%
Wollastonite	10
Frit 3134 (Ferro)	10
C&C Clay	50
	100%

UPR-30 Lavender Engobe

(Cone 6)

Lavender Stain 6319	25%
Frit 3134 (Ferro)	35
C&C Clay	40
	100%

UP-49 Hot Pink Engobe

(Cone 6)

Pink Stain 6020	20%
Frit 3134 (Ferro)	40
C&C Clay	40
	100%

UY-28 Titanium Yellow Engobe

(Cone 6)

Titanium Yellow Stain 6485	30%
Frit 3134 (Ferro)	10
Nepheline Syenite	10
C&C Clay	50
	100%

Dave's Low Salt Slip

Lithium Carbonate	25
Ball Clay	25
Kaolin	25
Silica	25
	100%
Copper Carbonate	4%

UPR-31 Deep Orchid Engobe

(Cone 6)

Deep Orchid Stain 6303	30%
Wollastonite	10
Nepheline Syenite	10
C&C Clay	50
	100%

UG-34 Copper Green Engobe

(Cone 6)

Copper Carbonate	30%
Wollastonite	10
Nepheline Syenite	10
C&C Clay	40
Flint	10
	100%

Andrew Martin's Brushing Slip

(up to cone 10)

Ferro Frit 3110.....	30 %
Ball Clay	20
Mason Stain 6600 (black)	50
Total	100 %

Add: CMC

This is the slip I use for the mishima inlay areas on my work. Be sure to mix it thin enough that it fills in all of the fine lines. If using a coloring oxide (like iron oxide, manganese dioxide, chrome oxide, cobalt oxide, cobalt carbonate or copper carbonate, for example) instead of a commercial stain, the amount of colorant needed may be less than in the above recipe.

Rutile/Iron Slip

Feldspar	25%
Ball Clay	25
Kaolin	25
Flint	25
Total	100%
Add: Red Iron Oxide	25%
Rutile	50%

T. VOGEL - 1986

WHITE SLIP cone 04

Ball Clay.....	25
E.P.K.	25
Flint.....	25
Frit 3124.....	20
Zircopax.....	5
For various colors, add between 10 - 15% of Mason Stains.	

Black Oxide Mix

20 iron oxide
15 cobalt
10 manganese
5 chrome
mix by weight and use like a stain to color slips, glazes, etc.

John Conrad's White Engobe

(Cone 6)

Borax or Soda Ash	5%
Whiting	5
Nepheline Syenite	10
Potash Feldspar	15
Kaolin	20
Kentucky Ball Clay	20
Flint	25
Total	100%

Altered Conrad Engobe

(Cone 6)

Borax or Soda Ash	4%
Whiting	4
Nepheline Syenite	26
Potash Feldspar	12
Kaolin	17
Kentucky Ball Clay	17
Flint	20
Total	100%

Wright Off-White Slip

(Cone 5-10)

Nepheline Syenite.....	20%
Ball Clay	40
Kaolin.....	30
Flint.....	10
Total	100%
Add: Frit 3124	5%
Zircopax.....	5%

Dark Slip

(Cone 6)

Potash Feldspar	5%
Ball Clay	75
Kaolin	10
Flint	10
Total	100%
Add: Black Mason Stain	3%
Cobalt Oxide	2%
Red Iron Oxide	15%

Use on leather-hard clay. Vary the above colorants to yield dark blue, dark brown, etc. Add small amount of frit (such as Pemco P-54) if needed for fit.

Dry Borax Engobe

(Cone 06-6)

Borax	15%
Kaolin	55
Flint	30
Total	100%

Ash Engobe

Talc	15
Unwashed Ash	20
Cornwall Stone	25
Frit 3124	15
Ball Clay	25
Total	100

fwhite/tan: 7.5% tin oxide
pink/brown: 8% pink stain
1.5% nickel oxide

Suzanne Stevenson's

04 Vitreous Engobe	
Frit 3124	45
China Clay	12
Ball Clay	10
Whiting	3
Feldspar	8
Flint	12
Tin Oxide	10
Total	100

Waxy at cone 04; satin matte at cone 6

Black Pigment

Black Iron Oxide	35%
Chrome Oxide	8
Cobalt Oxide	30
Manganese Dioxide.....	13
Nickel Oxide	14
Total	100%

From Mary Barringer

Vitreous slip for cone 6 - 8

Nepheline Syenite	15
Ball Clay	25
EPK Kaolin	25
Frit 3124	10
Flint	25
Total	100

White Slip Base -- can be used on leather hard, green, or biscuit ware. Use oxides or stains to color.

Vitreous Engobe

(Cone 04-6)

Talc	15.3%
Ferro Frit 3110.....	18.4
Kentucky OM4 Ball Clay.....	15.3
EPK Kaolin	5.1
Glomax (Calcined Kaolin).....	25.5
Silica	20.4
Total	100.0%
Add: CMC	1.0%
Macaloid	1.0%
Add stains to the above base at a ratio of 1:1. Use this on bisque ware.	

Black Slip (Cone 6)

Black Iron (or Cobalt) Oxide	25 parts
Manganese Dioxide	75
Red Iron Oxide	50
Kingman Feldspar	100
Barnard Clay	500
Total	750 parts

White Slip Base (Cone 6)	
Frit 3124 (Ferro)	10.0 %
Nepheline Syenite	15.0
Ball Clay	25.0
Edgar Plastic Kaolin	25.0
Flint	25.0
	100.0 %

Color variations are mixed with the following additions:

<i>Black:</i>	
Black Stain	10.0 %
Red Iron Oxide	8.0 %

<i>Blue-Black:</i>	
Black Stain	10.0 %
Cobalt Carbonate	2.0 %

<i>Gray-Green:</i>	
Chrome	3.0 %
Copper Carbonate	3.0 %

<i>Light Green:</i>	
Copper Carbonate	5.0 %

<i>Strong Green:</i>	
Chrome	6.0 %

<i>Blue-Green:</i>	
Chrome	3.0 %
Cobalt Carbonate	1.5 %

<i>Teal:</i>	
Copper Carbonate	3.0 %
Teal Stain	6.0 %

<i>Medium Blue:</i>	
Cobalt Carbonate	1.0 %
Rutile	3.0 %

<i>Cream:</i>	
Rutile	5.0 %

<i>Yellow:</i>	
Yellow Stain	10.0 %

<i>Pink:</i>	
Pink Stain	10.0 %

Vitreous Black Slip (Cone 6)	
Borax	10.0 %
Nepheline Syenite	23.0
Kaolin	22.0
Ball Clay	23.0
Flint	22.0
	100.0 %

Add: Cobalt Oxide	1.0 %
Copper Oxide	4.5 %
Red Iron Oxide	4.5 %

Redart Slip (Cone 6)	
Lithium Carbonate	10 %
Spodumene	10
Cedar Heights Redart	80
	100 %
Add: Red Iron Oxide	2 %

Ash Engobe (Cone 6)	
Talc	15 %
Wood Ash (unwashed)	20
Cornwall Stone	25
Frit 3124 (Ferro)	15
Ball Clay	25
	100 %

For a white/tan variation, add 7.5% tin oxide; for pink/brown, add 1.5% nickel oxide and 8% pink stain.

Stevenson Vitreous Engobe (Cone 6)	
Whiting	3.33 %
Feldspar	8.88
Frit 3124 (Ferro)	50.00
Ball Clay	11.11
Kaolin	13.34
Flint	13.34
	100.00 %
Add: Tin Oxide	11.11 %

Glassy Slip (Cone 6)	
Gerstley Borate	5 %
Lithium Carbonate	80
Bentonite	15
	100 %

Dense White Engobe (Cone 6)	
Frit 3110 (Ferro)	10 %
Nepheline Syenite	20
Ball Clay	30
Zircopax	40
	100 %
Add: Bentonite	2 %
Macaloid	1 %

BLACK ENGOBE SLIP	
KAOLIN	40
SILICA	20
COLEMANITE	10
COPPER CARB.	2
MASON BLACK ST. #158	5
RED IRON OXIDE	4
MANGANESE DIOXIDE	1
	82

Chinese Ash Slip (Cone 6)	
Gerstley Borate	2.92 %
Wood Ash	48.54
Ball Clay	48.54
	100.00 %

RC Slip (Cone 6)	
Whiting	30.0 %
Kona F-4 Feldspar	20.0
Cedar Heights Redart	40.0
Flint	10.0
	100.0 %

Slip Variation #1	
Magnesium Carbonate	50 %
Gerstley Borate	50
	100 %

ENGOBE (SLIP) 6/06-02

BASE WHITE

25 EPK

25 BALL CLAY

20 FRIT 3124

5 TALC

20 FLINT

5 ZIRCOPAX

FOR BLACK - ADD 10% BLACK STAIN

TAN - 15% RUTILE

RED - 15% RED IRON OX.

GREY - 4% IRON CHROMATE

LOW FIRE SLIP cone 04

E.P.K.	25
Ball Clay	25
Gerstley Borate	25
Flint	25

S.A.C. White Slip (Cone 06-5)	
Opax	4.97 %
Frit 3110 (Ferro)	14.90
Kona F-4 Feldspar	9.94
Ball Clay	14.90
Bentonite	0.85
Flint	54.64
	100.00 %

Add a pinch of Epsom salts.

S.A.C. Black Slip (Cone 06-5)	
Cedar Heights Redart	100.00 %
Add: Black Copper	6.25 %
Cobalt Oxide	3.13 %
Manganese Dioxide	3.75 %
Red Iron Oxide	6.25 %

White Slip	
Edgar Plastic Kaolin	50 parts
Kentucky Ball Clay (OM 4)	50
Stoneware Clay Body*	10
	110 parts

*Omit grog for a smoother slip.

Black Slip	
Edgar Plastic Kaolin	5 parts
Kentucky Ball Clay (OM 4)	5
Stoneware Clay Body	90
Manganese Dioxide*	4
Red Iron Oxide	12
	116 parts

Tom Belden's Slip (Cone 06-04)	
Frit 3134 (Ferro) or P-57 (Permco)	40 %
Edgar Plastic Kaolin (EPK)	40
Flint	20
	100 %

For color variations, add up to 10% stain.

Barnacle Engobe (Cone 10-11, reduction)	
Kona F-4 Feldspar	12 %
Edgar Plastic Kaolin (EPK)	80
Flint (200 mesh)	8
	100 %
Add: Silicon Carbide	2-6 %

Apply by brushing onto bone-dry ware. Tends to settle; stir frequently when applying. Thickness will influence texture, as will glazes put near or overtop. Commercial stains mixed with water can be brushed over engobe before or after the bisque firing.

Porcelain Slip (Cone 1-10)	
Feldspar	20 %
Ball Clay	10
Kaolin	40
Flint	30
	100 %

Mary's Vitreous Engobe (Cone 04)	
Tin Oxide	10 %
Whiting	3
Feldspar	8
Frit 3124 (Ferro)	45
Ball Clay	10
Kaolin	12
Flint	12
	100 %

Adapted Vitreous Engobe (Cone 1)	
Tin Oxide	10 %
Whiting	3
Feldspar	8
Frit 3124 (Ferro)	35
Ball Clay	15
Kaolin	17
Flint	12

Red Pleather Engobe (Cone 02)	
Gerstley Borate	20 %
Redart	80
	100 %

Bartel Engobe Base (Cone 02)	
Borax	4.5 %
Gerstley Borate	9.1
Frit 3110	31.9
Ball Clay	13.6
Kaolin	27.3
Silica (Flint)	13.6
	100.0 %

This base is meant to be colored with commercial stains, not oxides.

Engobe Base (Cone 02)	
Borax	2.4 %
Gerstley Borate	4.9
Frit 3110	34.2
Ball clay	14.6
Kaolin	29.3
Silica (Flint)	14.6
	100.0 %

Kendall's Slip Cone 06 and higher	
Frit 3124 (Ferro)	20.47 %
EPK (Edgar Plastic Kaolin)	28.40
Ball Clay	28.40
Silica (Flint)	22.73
	100.0 %
Add: Zircopax	5.68 %

For use on leather-hard clay. Stains, as well as oxides such as cobalt, copper, etc., can be added for color.

Underglazes

Underglazes are ideal for air-brushed designs. Many low-fire underglazes are available commercially from manufacturers and suppliers. These airbrush wonderfully onto bisqueware.

During the firing process, underglazes melt somewhat, fusing to the clay surface, but do not melt like glazes and form fuzzy lines. Underglazes stay where they are sprayed or resisted, making crisp shapes.

I make underglazes from the clay body I'm using and tint them with commercially-prepared ceramic stains (see recipes). I mix my own colors this way except when I work at earthenware temperatures.

A fired glaze provides a transparent, durable, protective coating after glaze firing. To seal the underglaze, a clear glaze can be brushed, dipped, poured or sprayed over the entire surface of the work. I recommend spraying the clear glaze instead of pouring or brushing, because it may smear the underglaze decoration.

Kenney Low-fire Underglaze Base

Clay Body	25 %
Feldspar	15
Frit 3195	20
Flint (Silica)	10
Ceramic Stain	30
	100 %
Add: CMC	2 %
Bentonite	2 %

Kenney Mid-range Underglaze Base

Clay Body	30 %
Feldspar	20
Frit 3195	10
Kaolin (EPK)	10
Ceramic Stain	30
	100 %
Add: CMC	2 %
Bentonite	2 %

Mix ingredients with water and screen to 80 mesh before airbrushing.

If you use Westerwald #5510 Rose stain, replace clay body with Cornwall stone.

SLIP#1 BRINGLE SLIP

Feldspar	25.00
Ball Clay	20.00
Kaolin	20.00
Silica Flint	30.00
Borax	5.00
	100.00

Some tested colorants for this slip:

White	- 7.5% Zircopax
Bright Blue	- 2.5% Cobalt
Earthy Blue	- 1.5% Cobalt
	2.0% Chrome Oxide
Rust Brown	-25.0% Red Iron Oxide
Rusty-Yellow	-10.0% Red Iron Oxide
	20.0% Rutile
Orange	-20.0% Rutile

SLIP#2 BASIC WHITE SLIP

Feldspar	25.00	NOTE: Cracks where applied too thick. Medium white
Ball Clay	25.00	
Kaolin	25.00	
Silica Flint	25.00	
	100.00	

SLIP#3 KOMIWE WHITE SLIP

Kaolin	50.00	NOTE: Bright white
Flint	50.00	
	100.00	

SLIP#4 RUTILE IRON SLIP

Feldspar	25.00	NOTE: Nice recipe. Iron burns out in places.
Ball Clay	25.00	
Kaolin	25.00	
Silica Flint	25.00	
	100.00	
Add: Rutile	25.0%	
Red Iron Oxide	50.0%	

SLIP#5 DAVISON ALBANY OIL SLIP

Albany Clay	80.00	NOTE: Cone 9-10
Yellow Ochre	20.00	
	100.00	

SLIP#6 YELLOW OCHRE SLIP

Yellow Ochre	50.00	NOTE:
Clay Body	50.00	
	100.00	

SLIP#7 SENSKA SLIP

Feldspar	25.00	NOTE:
Ball Clay	20.00	
Kaolin	25.00	
Silica Flint	20.00	
Whiting	5.00	
Borax	5.00	
	100.00	

GENERAL NOTES:

*See mixing instructions.

SLIP#8 PATTIES BLACK SLIP

Kaolin	21.00	NOTE:
Ball Clay	21.00	
Nepheline Syenite	26.00	
Silica Flint	32.00	
	100.00	
Add: Manganese	8.0%	
Red Iron Oxide	12.0%	
Copper Carbonate	4.0%	

SLIP#9 VAULKAS SLIP

Kaolin	20.00	NOTE:
Ball Clay	20.00	
Nepheline Syenite	25.00	
Silica Flint	30.00	
Borax	5.00	
	100.00	

Add:

RED	- 60.0% Red Iron Oxide
BLUE	- 2.0% Cobalt
COPPER RED	- 2.0% Copper Carbonate
GREEN	- 3.0% Chrome Oxide

SLIP#10 HAMADA BLUE SLIP (See below)

SLIP #11 WHITE SLIP BASIC 1

Ball Clay	10.00	NOTE: 14.0% absorption
Kaolin	40.00	
Silica Flint	40.00	
Feldspar	10.00	
	100.00	

SLIP#12 WHITE SLIP BASIC 2

Ball Clay	8.40	NOTE: 6.0% absorption
Kaolin	33.30	
Silica Flint	33.30	
Feldspar	25.00	
	100.00	

SLIP#13 PORTER WHITE SLIP

Nepheline Syenite	8.00	NOTE: Cracked
Feldspar	21.20	
Kaolin	44.60	
Ball Clay	2.20	
Silica Flint	24.00	
	100.00	
Add: *Bentonite	3.5%	

VAL CUSHING HF3 WHITE SLIP

Cone 4-12

for wet to leather-hard application

Grolleg	30.0%
XX Saggar	30.0
Tile 6	10.0
Nepheline Syenite	15.0
Silica	15.0
TOTAL	100.0%
add Bentonite	2.0%

Kieffer mixes it thick enough so that when she slip-trails, the slip maintains dimension when dry, yet not so thick her hand aches when squeezing the slip-trailer. A very small amount of epsom salts can be added if the slip is inadvertently mixed too thin.

Ken's Engobe

(Cone 6)

Nepheline Syenite	30 %
Kaolin	20
Kentucky Ball Clay (OM 4)	20
Flint	30

SLIP-1

Base Slip
(Cone 04-03)

Talc (tremolitic)	10%
Bassichis CBF 200sc	18
Kentucky Ball Clay (OM 4)	40
Kentucky Stone	23
Flint (Novacite)	9
	100%

White Slip
(Cone 04-9)

Kaolin	34.00 gram
Ball Clay	20.00
Potash Feldspar	27.00
Silica	19.00
Zircopax	8.00
Soda Ash	.25
Sodium Silicate	.25

Blue Slip

Dolomite	12.42%
Gerstley Borate	4.58
Soda Feldspar	26.36
Albany Slip Clay	29.63
Edgar Plastic Kaolin	6.10
Flint	20.91
	100.00%
Add: Cobalt Oxide	8.71%

NEUMAN RED SLIP

Neuman Red	97
Lithium Carb.	3
F-3124	3
	103

C5 oxidation

Base Slip

(Cone 10, reduction)

Custer Feldspar	10.53%
6 Tile Clay	47.37
Kentucky Ball Clay (OM 4)	21.05
Flint	21.05
	100.00%

For use only on leather-hard ware. Color variations are possible. For blue, add 2% cobalt oxide; for red, add 8-10% red iron oxide.

Rhodes Crackle Slip

(Cone 10, reduction)

Borax	5%
Zircopax	5
Custer Feldspar	20
Calcined Kaolin	20
Edgar Plastic Kaolin (EPK)	15
Kentucky Ball Clay (OM 4)	15
Flint	20
	100%

For use on green- or bisqueware.

Shusterman White Slip

(Cone 10-11)

Soda Ash	4.85%
Custer Feldspar	19.42
Frit 3195 (Ferro)	7.77
6 Tile Clay	14.56
Edgar Plastic Kaolin	14.56
Tennessee Ball Clay (10)	19.42
Flint (325 mesh)	19.42
	100.00%
Add: Zircopax	9.71%

Shusterman Base Slip

(Cone 10-11)

Soda Ash	5.13%
Custer Feldspar	20.51
6 Tile Clay	12.82
Edgar Plastic Kaolin	12.82
Tennessee Ball Clay (10)	25.65
Flint (325 mesh)	20.51
Pyrophyllite	2.56
	100.00%

For color variations, add 10-20% high-temperature Mason stains; make pastel versions with the addition of Mason White Extender.

CASS BASS SLIP

Aardvark's	97
Cass Bass [dry]	
[no sand]	
Lithium Carb.	3
	100

C5 oxidation

White Slip

Borax	3.5 parts
Potash Feldspar	25.0
Kamee Kaolin	25.0
Kentucky Ball Clay (OM 4)	25.0
Flint	25.0
	103.5 parts

Color Active Slip

(Cone 10, reduction)

Borax	4.5%
Talc	4.5
Whiting	8.9
Feldspar	19.6
Ball Clay	12.5
Bentonite	1.8
Edgar Plastic Kaolin	32.1
Flint	16.1
	100.0%

Vitreous Slip

(Cone 6)

Custer Feldspar	10%
Nepheline Syenite	10
Ball Clay	30
Edgar Plastic Kaolin	20
Flint	30
	100%

For a warm color, add 1.5% red iron oxide and 4.5% rutile.

White Slip

(Cone 03-02)

Nepheline Syenite	18.75%
Ball Clay	25.00
Edgar Plastic Kaolin	25.00
Frit 3124 (Ferro)	6.25
Flint	25.00
	100.00%

White Slip

(Cone 06-04)

Talc	5.0%
Zircopax	5.0
Frit 3124 (Ferro)	20.0
Calcined Kaolin	12.5
Edgar Plastic Kaolin	12.5
Kentucky Ball Clay (OM 4)	25.0
Flint	20.0
	100.0%

DAVIS SLIP

F-3269	16
Lithium Carb.	3
Silica 200	27
OM-4	27
EPK	27
	100

C5 oxidation

Slip Base (wet leather application)

Kaolin (EPK or Georgia)	50
Ball Clay (OM #4)	15
Flint	15
Potash Feldspar (K-200)	10
Frit 3124	10
Bentonite	1%

WHITE SLIP cone 9-11

Flint	20 gr.
E.P.K.	25
Ball clay	20
Calcined Kaolin	5
Custer Feldspar	20
Borax	5
Zircopax	5-10

FOR BLACK SLIP ADD:

Black Stain	10gr.
Black Iron Oxide	2
Cobalt Oxide	0.5

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WHITE SLIP cone 3-10

Grolleg	20
E.P.K.	20
Tile #6	20
Jackson	10
Nepheline Syenite	15
Flint	15
Add colorants to this (cobalt 8%!) plus some Red Iron Oxide, some Chrome Oxide.	

White Slip

Cone 04-02

Talc	40%
Nepheline Syenite	10
Ball Clay	40
Silica (Flint)	10
	100%
Add: Zircopax	7%

Clays, Slips and Engobes**Vitreous Slip Base Cone 10**

Cone 06 Casting Slip	1000
Nepheline Syenite	85
Gerstley Borate	114
Dolomite	57
Barium Carbonate	57
	1313

White

Zircopax 19%	250
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Brown

Red Iron Oxide 6.8	90
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Ochre

Rutile 38.08%	500
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Red Iron Oxide .76	10
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Black

Black Stain 19%	250
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Red Iron Oxide 7.6	100
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Green

Cobalt Oxide .76%	10
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Chrome Oxide .76%	10
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Copper Carb. .76%	10
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Zircopax .76%	10
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Olive

Nickel Oxide 1.9%	25
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Chrome Oxide .76%	10
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Rutile 2.28%	30
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Zircopax .76%	10
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Blue

Zircopax 7.6%	100
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Cobalt Oxide 4.56%	60
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Red Iron Oxide .76%	10
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Purple

Cobalt Carb. 5.32%	70
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Reitz Slip

Kaolin	21
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Ball Clay	16
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Nepheline Syenite	26
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Silica	32
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Borax	5
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	100%
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Bentonite	3%
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Add Calgon**Kugler's Slip**

Kaolin	500
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Ball Clay	400
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Cornwall Stone	400
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Silica	500
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Zircopax	100
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Frit #P-54 or F3134	200
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Gerstley	100
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Good for salt or**underglaze****Cone 06 Underglaze base**

Ball Clay	500
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Talc	500
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Feldspar	500
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Wallastonite	400
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Frit # P-54 or F-3134	100
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Zircopax	100
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Colorants 5-10% Yellow 30%

Add one Tbls. Darvon for each 2000 Grams

Low Salt Slip Base

Gerstley Borate	25
Ball Clay	25
Kaolin	25
Silica	25
	100%

for Copper Slip add

Copper Carbonate	4-10%
or stains	4-10%

Fassbinder Stains

Iron Brown	5
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Red Iron Oxide	4
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Rutile	1
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Nepheline Syenite	1
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Orange Brown	
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Red Iron Oxide	3
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Rutile	1
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Nepheline Syenite	1
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Purple	
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Cobalt Carbonate	1
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Talc	1
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Light Blue	
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Cobalt Oxide	1
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Rutile	1
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Copper Carbonate	0.25
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Whiting	0.5
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Blue	
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Cobalt Oxide	4
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Rutile	1
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Copper Carbonate	0.5
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Red Iron Oxide	0.25
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Dark Blue	
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Cobalt Oxide	4
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Talc	1
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2.1 Manganese Blue	
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1.6 Manganese Dioxide	2
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2.6 Copper Carbonate	1
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3.2 Rutile	0.5
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0.5 Talc	0.5
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Dark Green	
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Copper Carbonate	2
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Red Iron Oxide	2
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Rutile	0.5
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Nepheline Syenite	1
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Green	
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Chrome Oxide	1.5
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Copper Carbonate	1
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Rutile	1
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Gerstley Borate	2
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Fire Brick

Fire Clay	90
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Silica Sand	100
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Crushed Soft Brick	9Gal.
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Black Stain

Manganese Dioxide	25
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Red Iron Oxide	25
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Copper Oxide	25
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Cobalt Oxide	25
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ENG#1 WHITE ENGOBE

Kaolin	34.00
Feldspar	17.00
Silica Flint	17.00
*Bentonite	3.40
Zircopax	28.60
	100.00

ENG#2 WHITE ENGOBE

Nepheline Syenite	20.00
Kaolin	25.00
Ball Clay	20.00
Silica Flint	30.00
Borax	5.00
	100.00

ENG#3 WHITE ENGOBE

Feldspar	34.00
Silica Flint	22.00
Kaolin	34.00
Whiting	4.00
Tin Oxide	4.00
Borax	2.00
	100.00

ENG#4 SUSAN PETERSON ENGOBE

Ball Clay	65.00
Silica Flint	20.00
Feldspar	15.00
	100.00

COLORANTS

To the base of the white engobes, the following percentages of oxides added will produce approximately these colors:

WHITE	-	Add:	10.0% Zircopax
ORANGE	-	Add:	40.0% Rutile
GREEN	-	Add:	20.0% Chrome Oxide
MEDIUM GREEN	-	Add:	15.0% Copper Carbonate 5.0% Chrome Oxide
BLUE	-	Add:	20.0% Cobalt Oxide
RUST	-	Add:	40.0% Red Iron Oxide
RUSTY-YELLOW	-	Add:	20.0% Red Iron Oxide 40.0% Rutile

Omit Ball Clay, substitute 10% Red Iron Oxide,

2.0% Cobalt Oxide,

10.0% Manganese Dioxide

3.0% Black Stain

Add: 6.0% Manganese Dioxide

2.0% Red Iron Oxide