

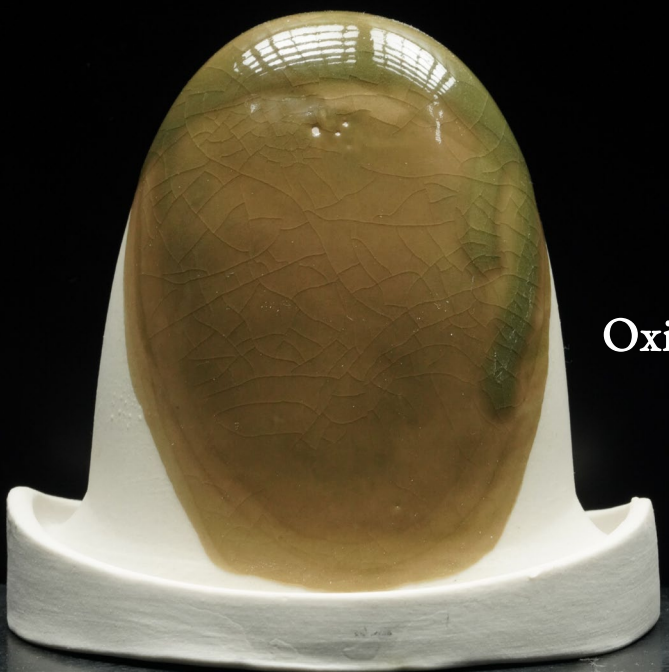
4321- Δ 10

Lab 1-Pick-A-Part

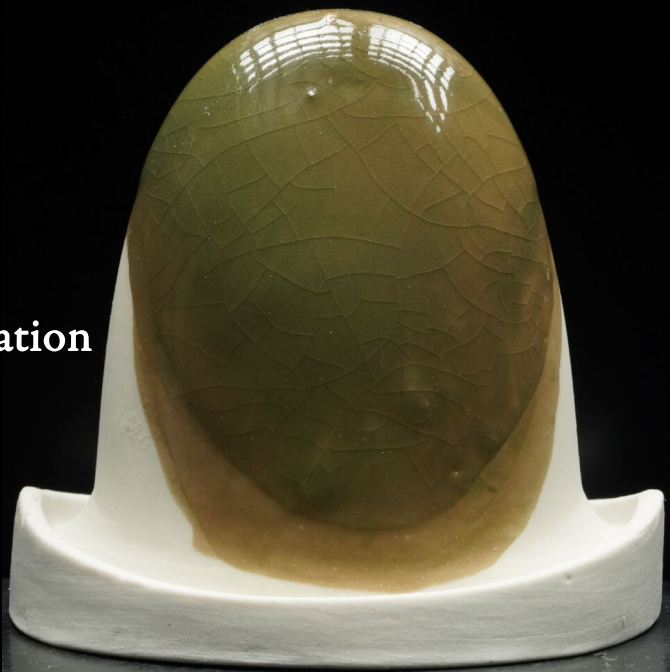
4321

Original
062322-1

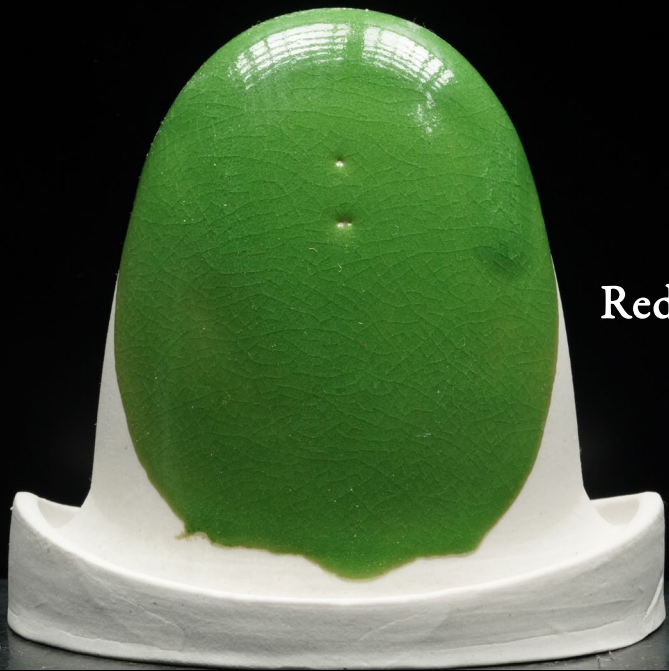
Neph Sy	40.00
Whiting	20.00
EPK	10.00
Flint	30.00
Chrome Oxide	1.00
Water	60



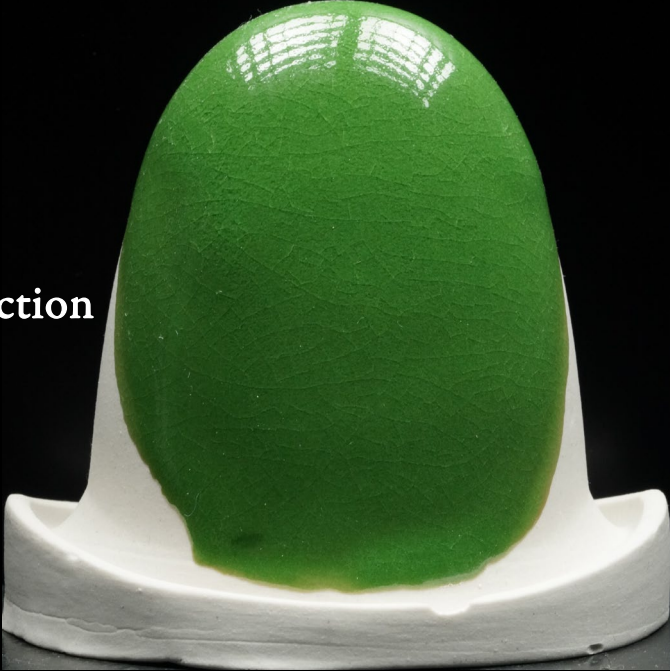
Oxidation



1-3 Second Dip

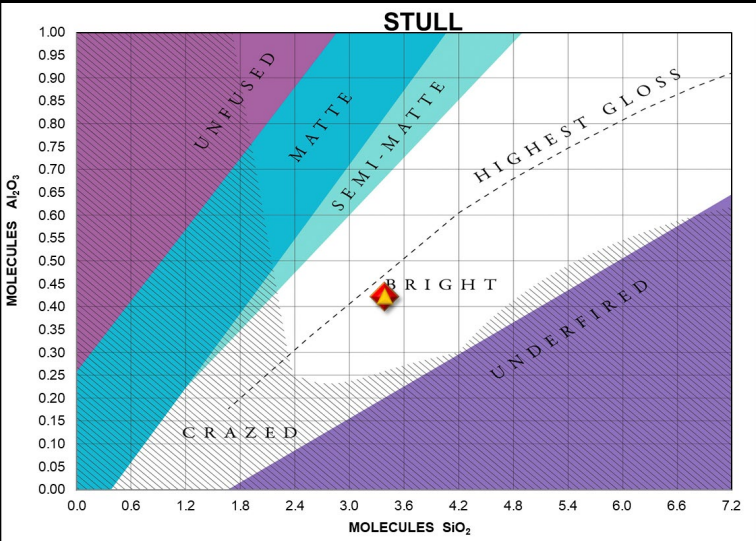


Reduction



UMF

SiO ₂ :Al ₂ O ₃ Ratio 7.99 : 1		Alkali Metals 0.29		Alkaline Earths 0.71	
SiO ₂ 3.39	Collective "Al ₂ O ₃ " 0.42	Na ₂ O 0.23	K ₂ O 0.07	MgO 0.00	CaO 0.70
B ₂ O ₃	Al ₂ O ₃ 0.42	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO	FeO 0.01
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



EUMF

SiO ₂ :Al ₂ O ₃ Ratio 7.99 : 1		Alkali Metals 0.29		Alkaline Earths 0.71	
SiO ₂ 3.39	Collective "Al ₂ O ₃ " 0.42	Na ₂ O 0.23	K ₂ O 0.07	MgO 0.00	CaO 0.70
B ₂ O ₃	Al ₂ O ₃ 0.42	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO	FeO 0.01
Cr ₂ O ₃ 0.02	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



Ceramic
Materials
Workshop

Lab 1-Oxidation



062322-1



062322-2



062322-3



062322-4



062322-5



062322-6



Original



w/o Neph Sy



w/o Whiting



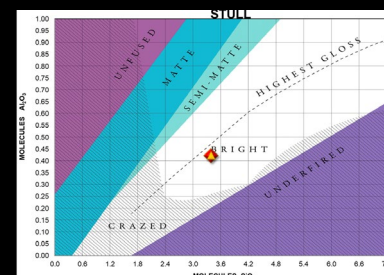
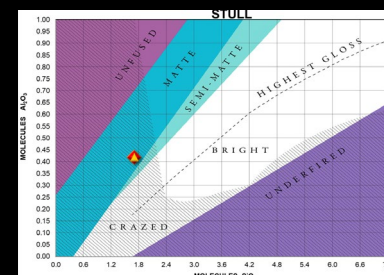
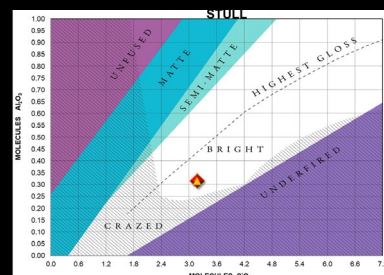
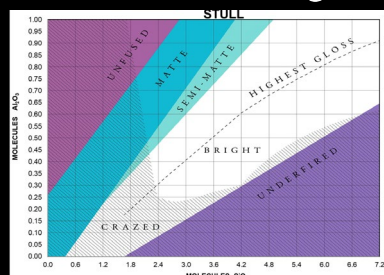
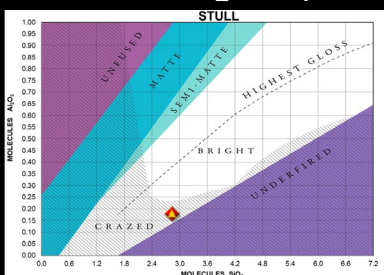
w/o Kaolin



w/o Flint



w/o Colorants

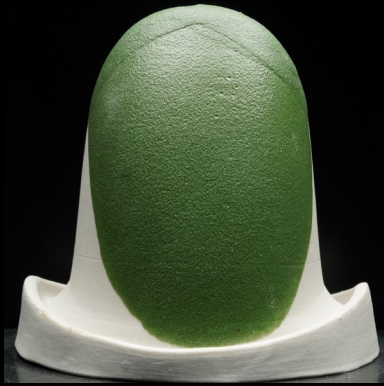


Ceramic
Materials
Workshop

Lab 1-Reduction



062322-1



062322-2



062322-3



062322-4



062322-5



062322-6



Original



w/o Neph Sy



w/o Whiting



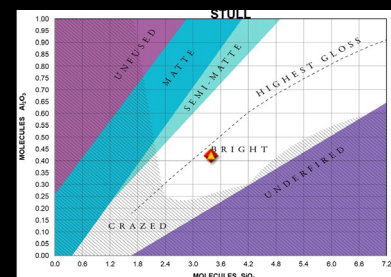
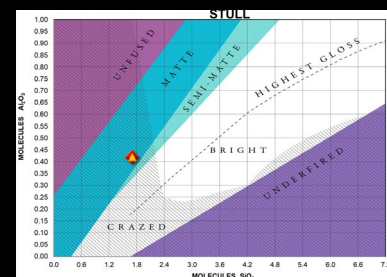
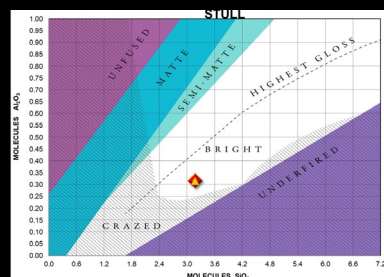
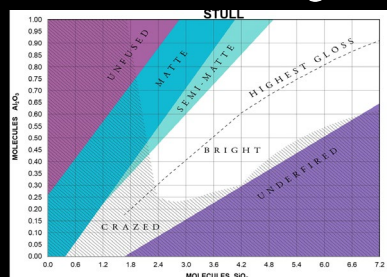
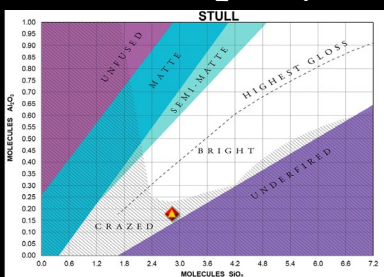
w/o Kaolin



w/o Flint



w/o Colorants

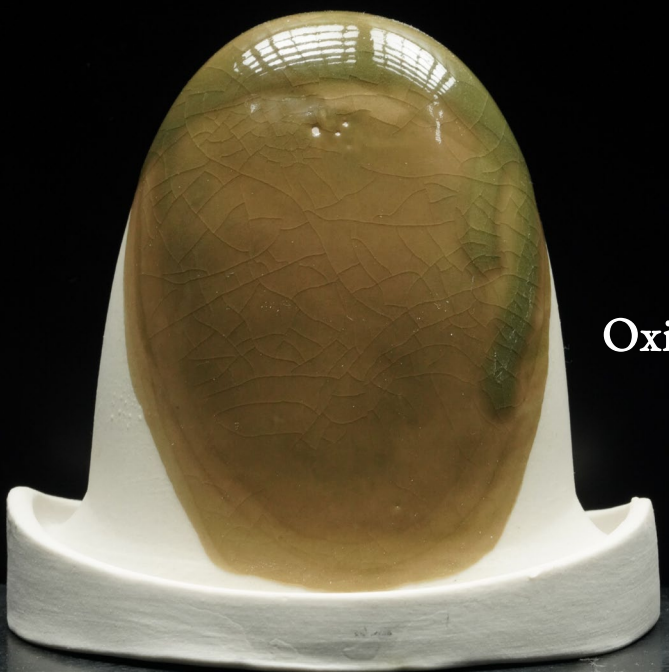


Ceramic
Materials
Workshop

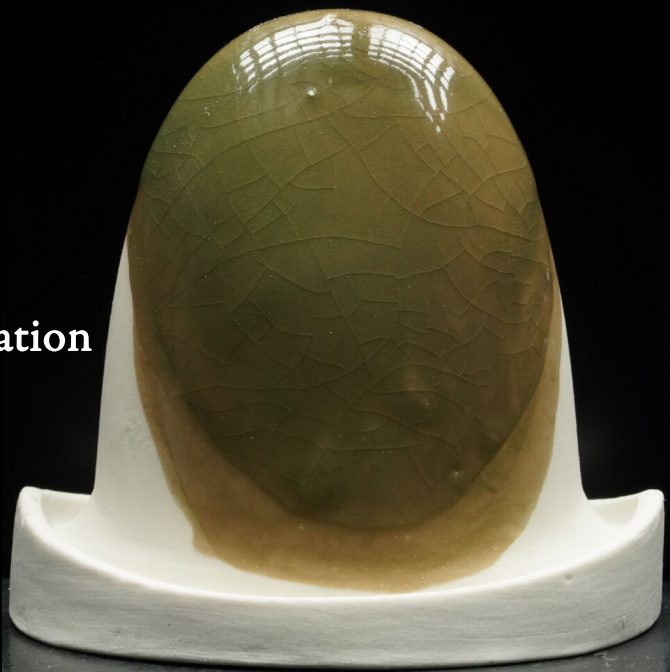
4321

Original
062322-1

Neph Sy	40.00
Whiting	20.00
EPK	10.00
Flint	30.00
Chrome Oxide	1.00
Water	60

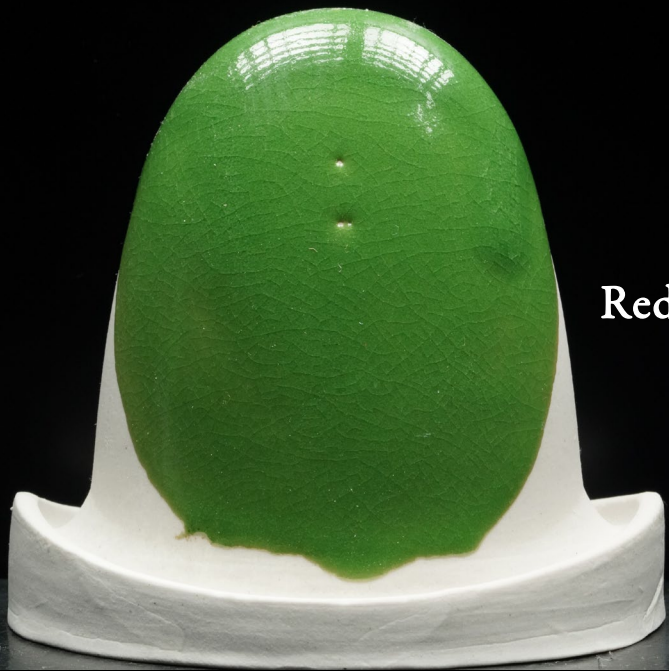


Oxidation

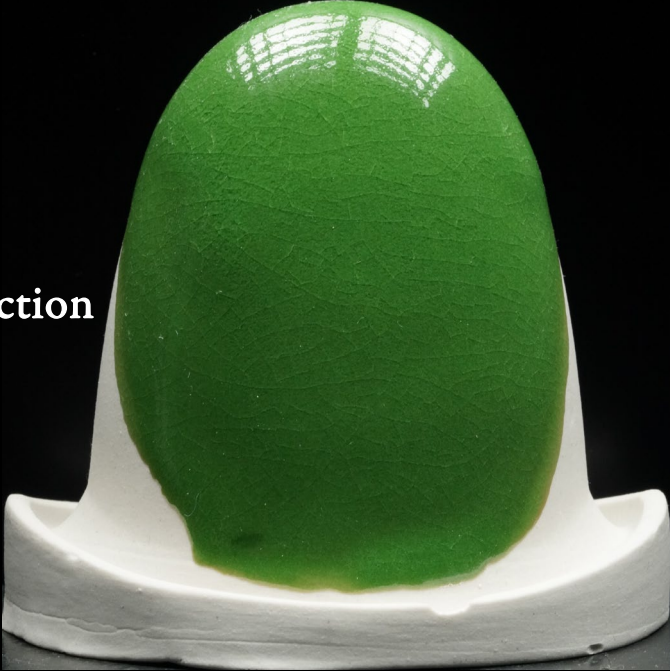


1-3 Second Dip

2-3 Second Dips

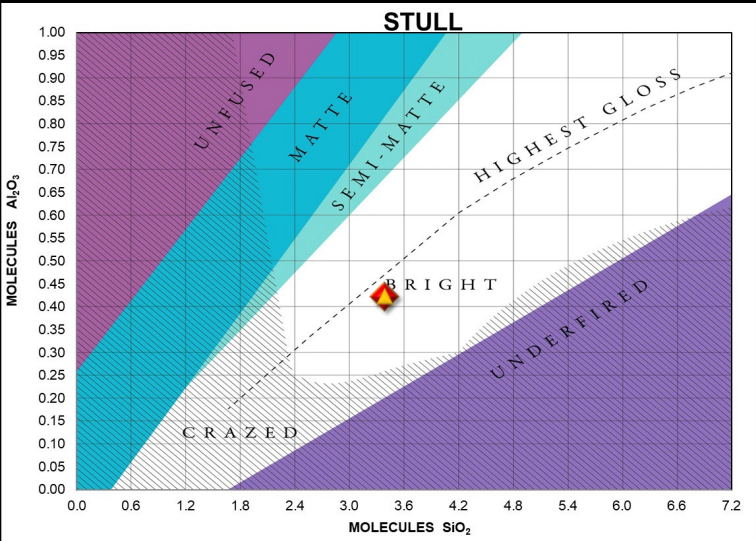


Reduction



UMF

SiO ₂ :Al ₂ O ₃ Ratio 7.99 : 1		Alkali Metals 0.29		Alkaline Earths 0.71	
SiO ₂ 3.39	Collective "Al ₂ O ₃ " 0.42	Na ₂ O 0.23	K ₂ O 0.07	MgO 0.00	CaO 0.70
B ₂ O ₃	Al ₂ O ₃ 0.42	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO	FeO 0.01
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



EUMF

SiO ₂ :Al ₂ O ₃ Ratio 7.99 : 1		Alkali Metals 0.29		Alkaline Earths 0.71	
SiO ₂ 3.39	Collective "Al ₂ O ₃ " 0.42	Na ₂ O 0.23	K ₂ O 0.07	MgO 0.00	CaO 0.70
B ₂ O ₃	Al ₂ O ₃ 0.42	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO	FeO 0.01
Cr ₂ O ₃ 0.02	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



Ceramic
Materials
Workshop

4321
w/o Alkali Metal
062322- 2

Neph Sy	
Whiting	33.33
EPK	16.67
Flint	50.00
Chrome Oxide	1.01
Water	60



1-3 Second Dip



2-3 Second Dips



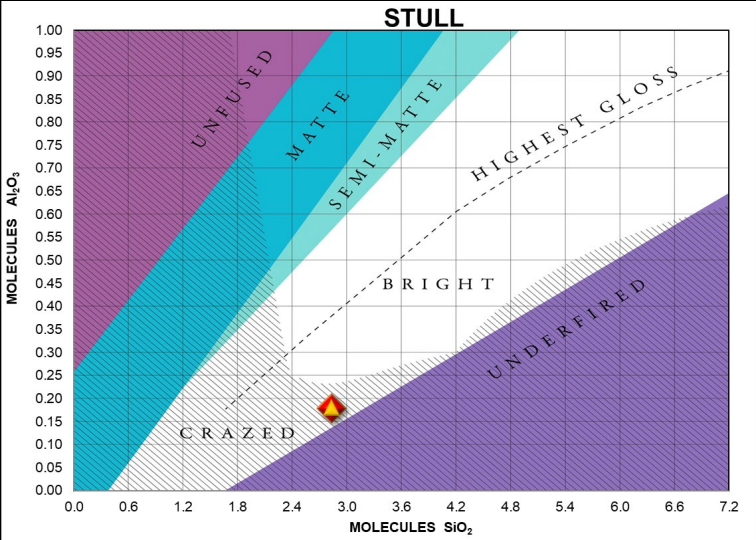
Reduction



Oxidation

UMF

SiO ₂ :Al ₂ O ₃ Ratio 15.64 : 1		Alkali Metals 0.00		Alkaline Earths 1.00	
SiO ₂ 2.83	Collective "Al ₂ O ₃ " 0.18	Na ₂ O	K ₂ O 0.00	MgO 0.00	CaO 0.99
B ₂ O ₃	Al ₂ O ₃ 0.18	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO	FeO 0.01
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



EUMF

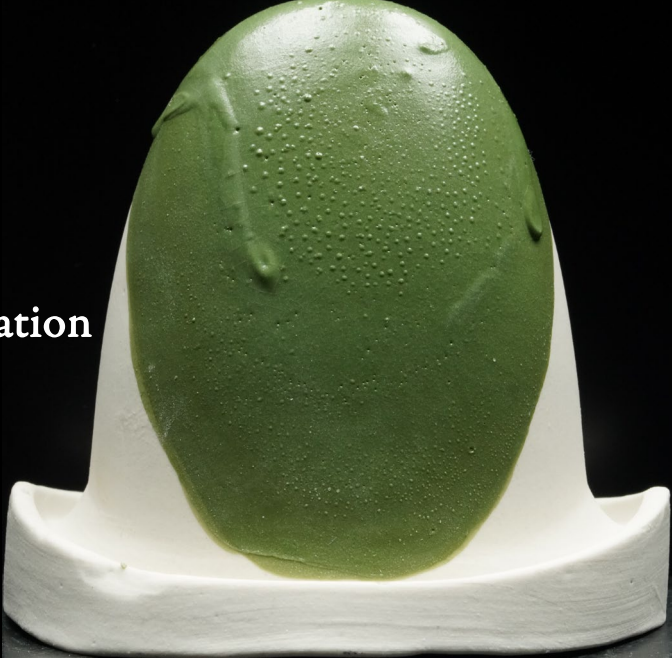
SiO ₂ :Al ₂ O ₃ Ratio 15.64 : 1		Alkali Metals 0.00		Alkaline Earths 1.00	
SiO ₂ 2.83	Collective "Al ₂ O ₃ " 0.18	Na ₂ O	K ₂ O 0.00	MgO 0.00	CaO 0.99
B ₂ O ₃	Al ₂ O ₃ 0.18	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO	FeO 0.01
Cr ₂ O ₃ 0.02	ZrO ₂	P ₂ O ₅		MnO ₂	CoO

4321
w/o Alkaline Earth
062322- 3

Neph Sy	50.00
Whiting	
EPK	12.50
Flint	37.50
Chrome Oxide	1.01
Water	60



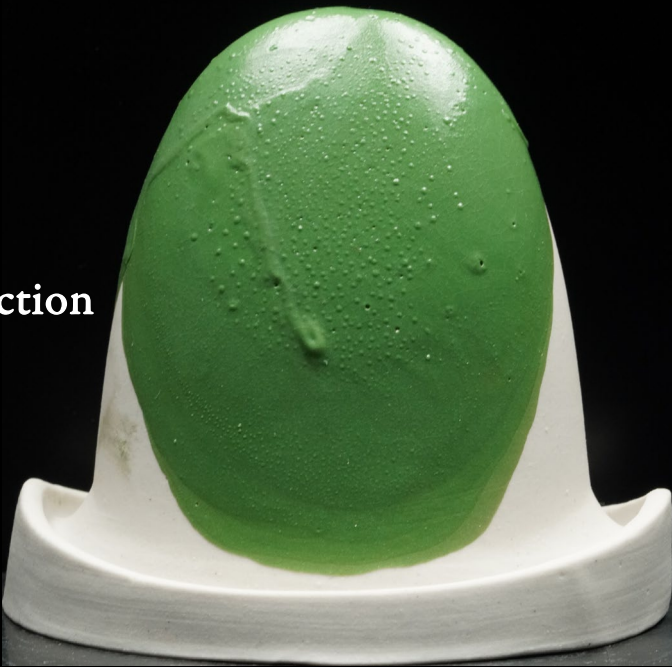
1-3 Second Dip



2-3 Second Dips



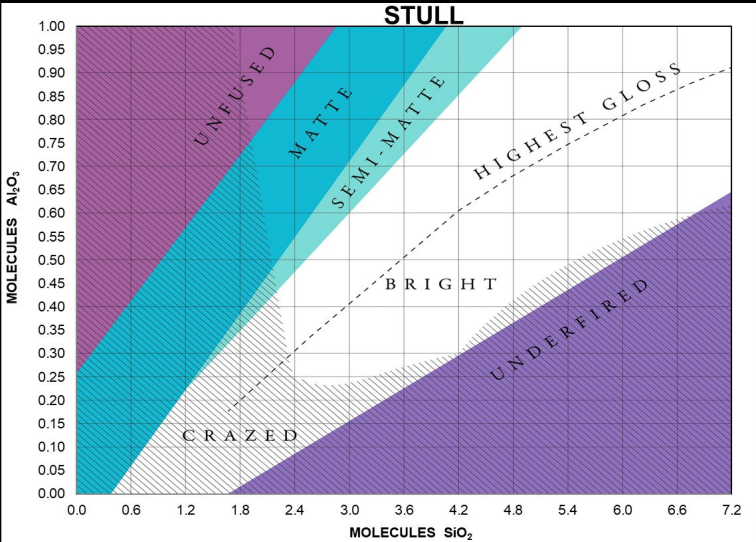
Reduction



Oxidation

UMF

SiO ₂ :Al ₂ O ₃ Ratio 8.00 :1		Alkali Metals 0.94		Alkaline Earths 0.06	
SiO ₂ 10.83	Collective "Al ₂ O ₃ " 1.35	Na ₂ O 0.73	K ₂ O 0.21	MgO 0.01	CaO 0.03
B ₂ O ₃	Al ₂ O ₃ 1.35	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.01	NiO	Bi ₂ O ₃	SnO ₂	ZnO	FeO 0.02
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



EUMF

SiO ₂ :Al ₂ O ₃ Ratio 8.00 :1		Alkali Metals 0.94		Alkaline Earths 0.06	
SiO ₂ 10.83	Collective "Al ₂ O ₃ " 1.35	Na ₂ O 0.73	K ₂ O 0.21	MgO 0.01	CaO 0.03
B ₂ O ₃	Al ₂ O ₃ 1.35	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.01	NiO	Bi ₂ O ₃	SnO ₂	ZnO	FeO 0.02
Cr ₂ O ₃ 0.06	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



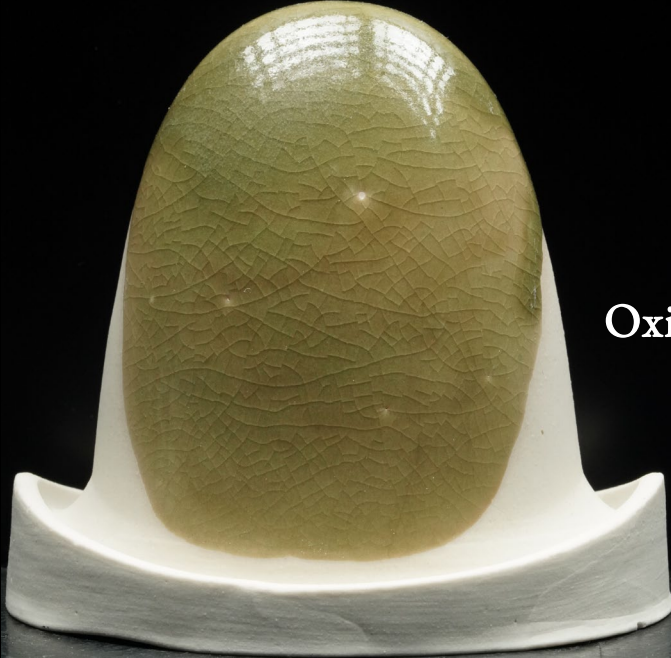
Ceramic
Materials
Workshop

4321

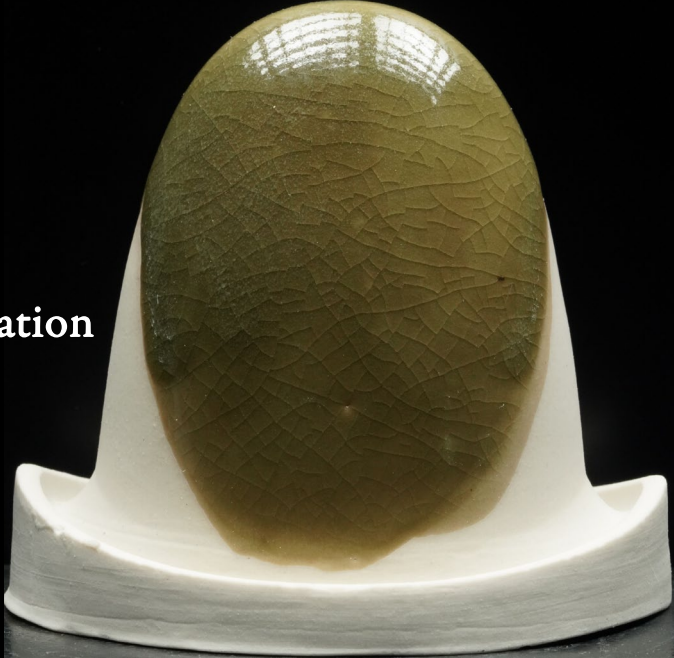
w/o Kaolin

062322-4

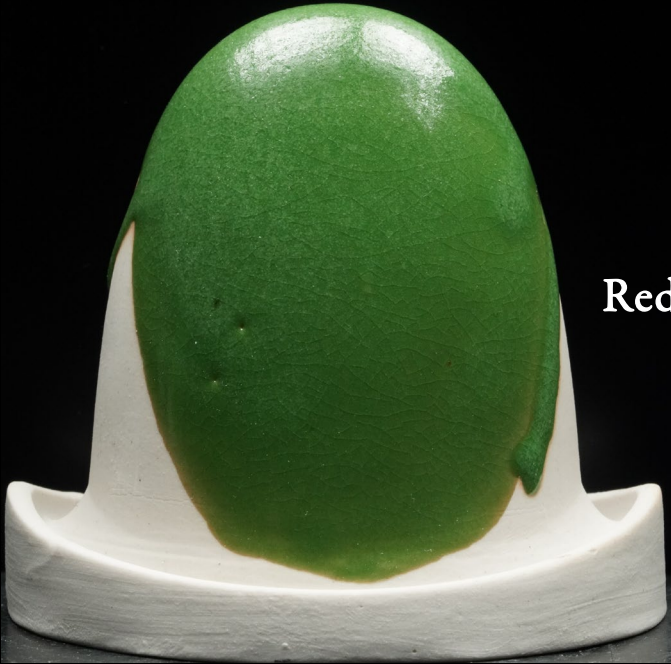
Neph Sy	43.54
Whiting	21.77
EPK	
Flint	32.66
Bentonite	2.02
Chrome Oxide	1.01
Water	60



1-3 Second Dip



2-3 Second Dips

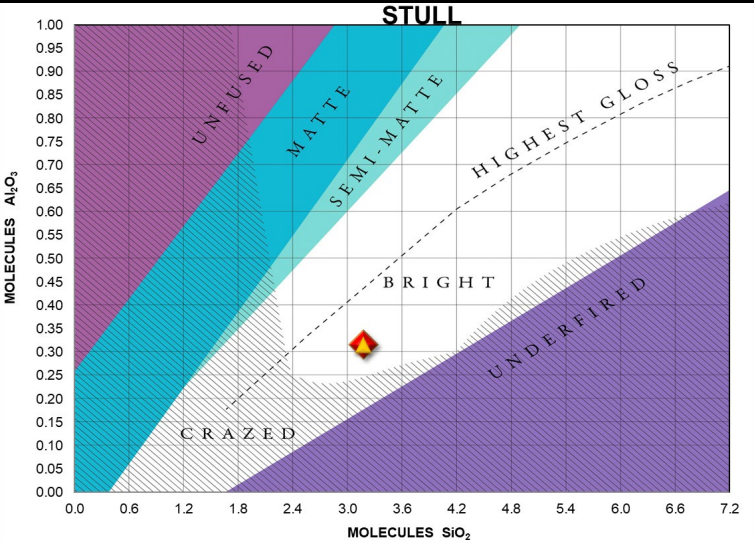


Oxidation

Reduction

UMF

SiO ₂ :Al ₂ O ₃ Ratio 10.05 : 1		Alkali Metals 0.30		Alkaline Earths 0.70	
SiO ₂ 3.18	Collective "Al ₂ O ₃ " 0.32	Na ₂ O 0.23	K ₂ O 0.06	MgO 0.00	CaO 0.70
B ₂ O ₃	Al ₂ O ₃ 0.32	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO	FeO 0.00
Cr ₂ O ₃ 0.02	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



EUMF

SiO ₂ :Al ₂ O ₃ Ratio 10.05 : 1		Alkali Metals 0.30		Alkaline Earths 0.70	
SiO ₂ 3.18	Collective "Al ₂ O ₃ " 0.32	Na ₂ O 0.23	K ₂ O 0.06	MgO 0.00	CaO 0.70
B ₂ O ₃	Al ₂ O ₃ 0.32	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO	FeO 0.00
Cr ₂ O ₃ 0.02	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



Ceramic
Materials
Workshop

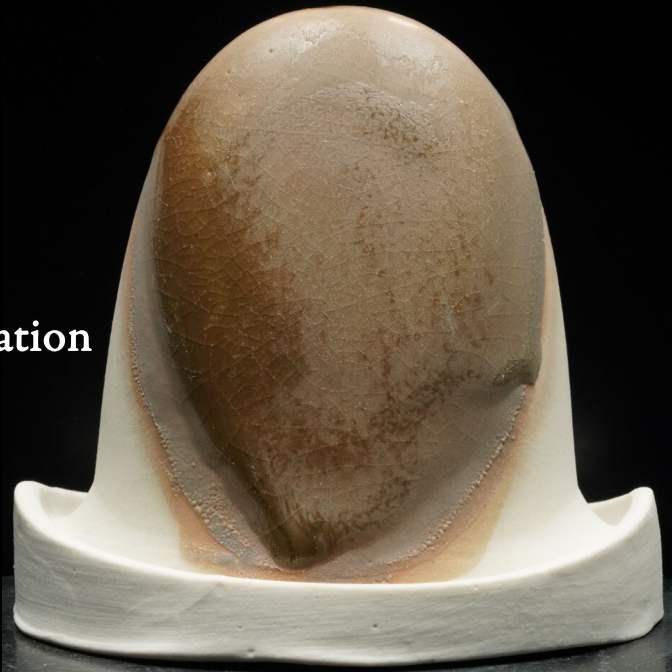
4321

w/o Silica
062322- 5

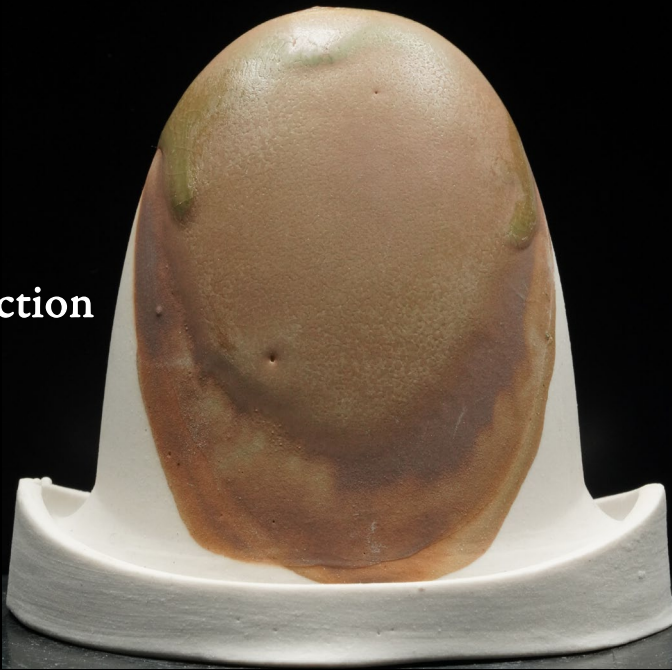
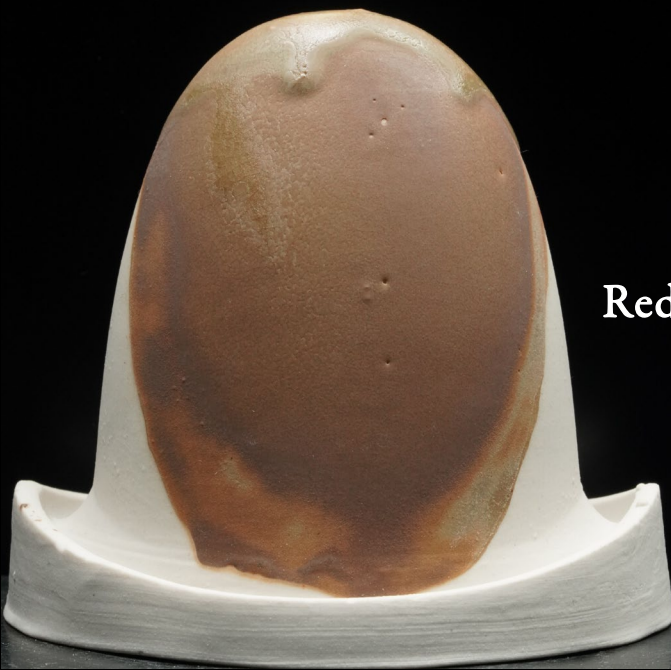
Neph Sy	57.14
Whiting	28.57
EPK	14.29
Flint	
Chrome Oxide	1.01
Water	60



1-3 Second Dip



2-3 Second Dips

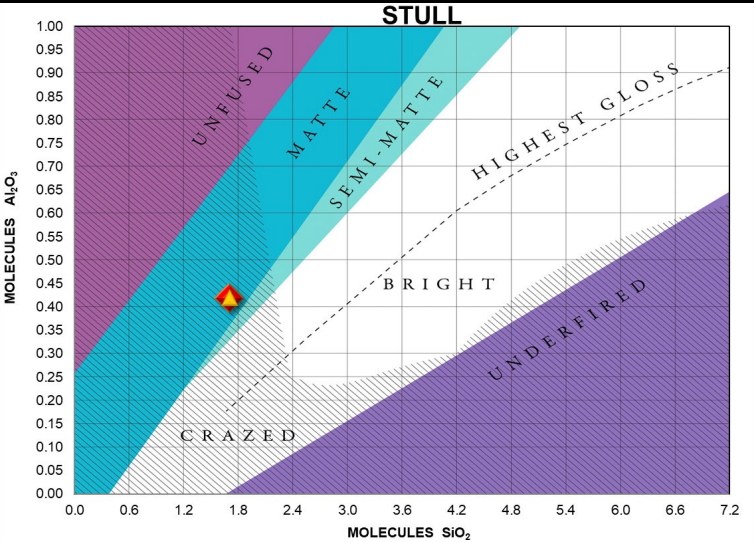


Oxidation

Reduction

UMF

SiO ₂ :Al ₂ O ₃ Ratio 4.06 : 1		Alkali Metals 0.29		Alkaline Earths 0.71	
SiO ₂ 1.70	Collective "Al ₂ O ₃ " 0.42	Na ₂ O 0.23	K ₂ O 0.07	MgO 0.00	CaO 0.70
B ₂ O ₃	Al ₂ O ₃ 0.42	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO	FeO 0.01
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



EUMF

SiO ₂ :Al ₂ O ₃ Ratio 4.06 : 1		Alkali Metals 0.29		Alkaline Earths 0.71	
SiO ₂ 1.70	Collective "Al ₂ O ₃ " 0.42	Na ₂ O 0.23	K ₂ O 0.07	MgO 0.00	CaO 0.70
B ₂ O ₃	Al ₂ O ₃ 0.42	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO	FeO 0.01
Cr ₂ O ₃ 0.02	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



Ceramic
Materials
Workshop

4321
w/o Colorants
062322- 6

Neph Sy	40.00
Whiting	20.00
EPK	10.00
Flint	30.00
Chrome Oxide	
Water	60



1-3 Second Dip



2-3 Second Dips



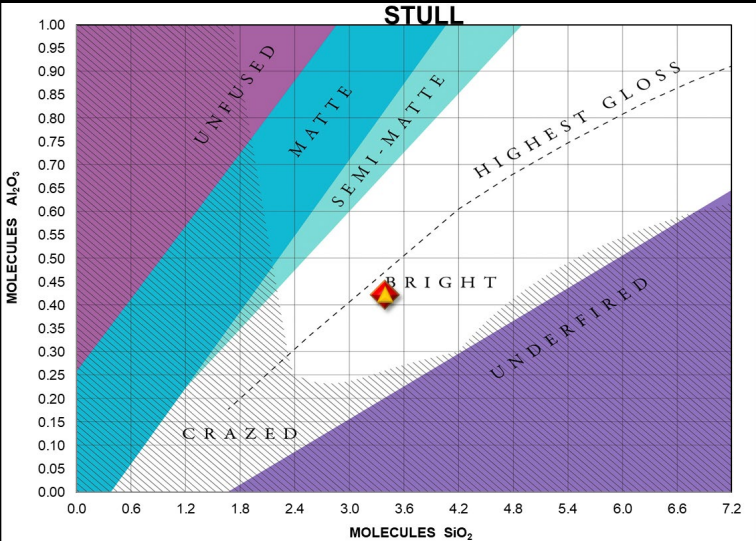
Reduction



Oxidation

UMF

SiO ₂ :Al ₂ O ₃ Ratio 7.99 : 1		Alkali Metals 0.29		Alkaline Earths 0.71	
SiO ₂ 3.39	Collective "Al ₂ O ₃ " 0.42	Na ₂ O 0.23	K ₂ O 0.07	MgO 0.00	CaO 0.70
B ₂ O ₃	Al ₂ O ₃ 0.42	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO	FeO 0.01
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



EUMF

SiO ₂ :Al ₂ O ₃ Ratio 7.99 : 1		Alkali Metals 0.29		Alkaline Earths 0.71	
SiO ₂ 3.39	Collective "Al ₂ O ₃ " 0.42	Na ₂ O 0.23	K ₂ O 0.07	MgO 0.00	CaO 0.70
B ₂ O ₃	Al ₂ O ₃ 0.42	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO	FeO 0.01
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



Ceramic
Materials
Workshop