

Freckles- Δ 6

Lab 1-Pick-A-Part

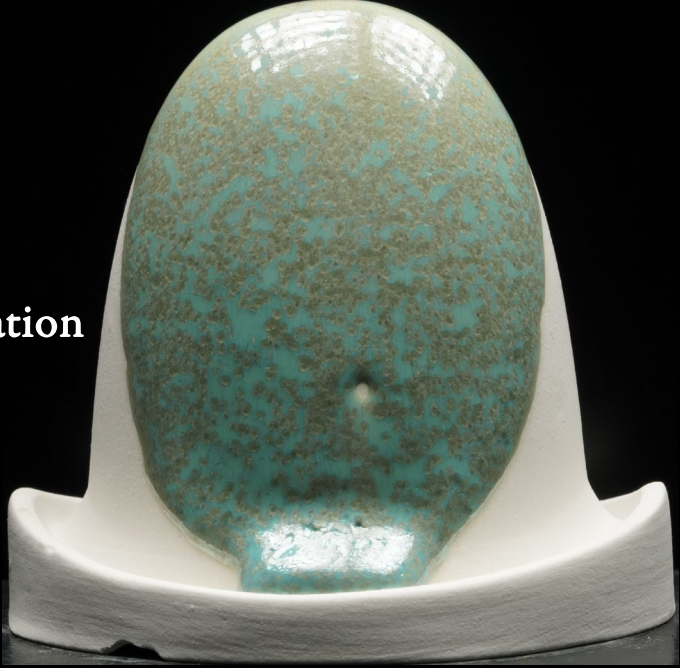
Freckles

Original
071022-1

Neph Sy	38.96
Whiting	8.99
Zinc Oxide	16.98
EPK	4.99
Flint	27.97
Bentonite	2.11
Copper Carbonate	1.48
Light Rutile	4.00
Water	60



1-3 Second Dip



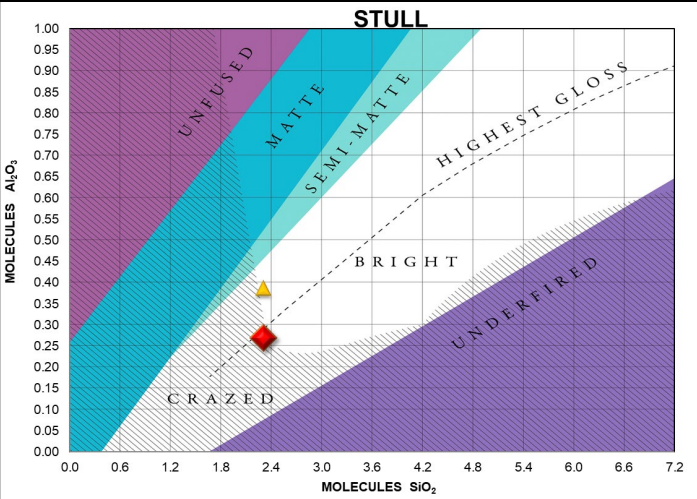
2-3 Second Dips



Reduction

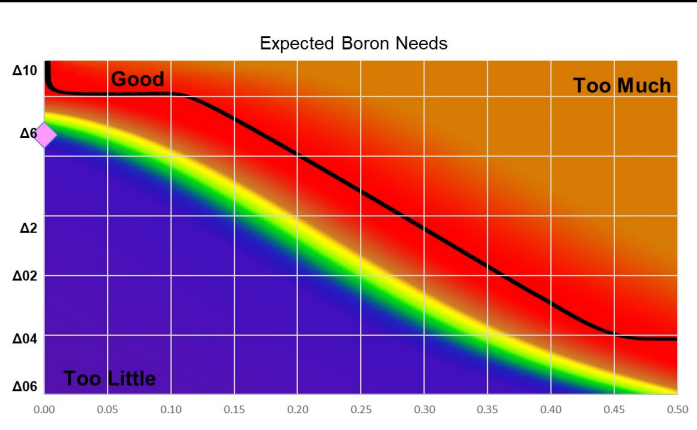
UMF

SiO ₂ :Al ₂ O ₃ Ratio 8.58 : 1		Alkali Metals 0.22		Alkaline Earths 0.78	
SiO ₂ 2.38	Collective "Al ₂ O ₃ " 0.28	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.24
B ₂ O ₃	Al ₂ O ₃ 0.28	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.54	FeO 0.00
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



EUMF

SiO ₂ :Al ₂ O ₃ Ratio 5.95 : 1		Alkali Metals 0.24		Alkaline Earths 0.76	
SiO ₂ 2.31	Collective "Al ₂ O ₃ " 0.39	Na ₂ O 0.16	K ₂ O 0.05	MgO 0.00	CaO 0.23
B ₂ O ₃	Al ₂ O ₃ 0.27	Li ₂ O	CuO 0.03	SrO	BaO
TiO ₂ 0.12	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.52	FeO 0.00
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



Ceramic
Materials
Workshop

Lab 1-Oxidation



071022-1



071022-2



071022-7

1-3 Second Dip



071022-51



071022-3



071022-6



Original



w/o Neph Sy



w/o Whiting

2-3 Second Dips



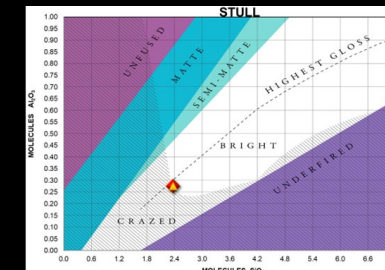
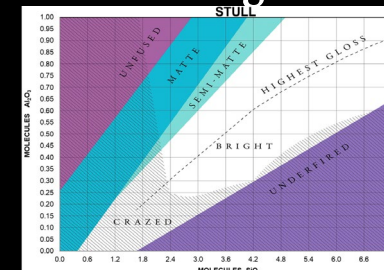
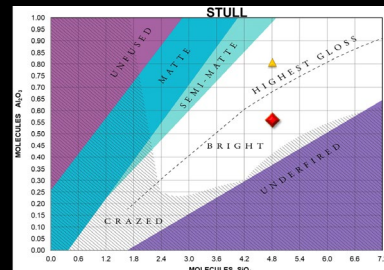
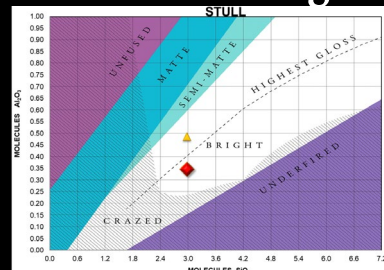
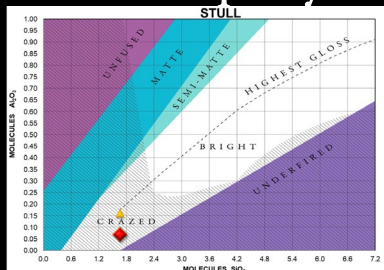
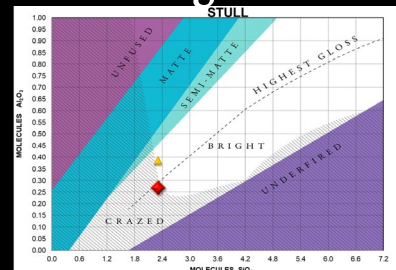
w/o Zinc Ox



w/o Whiting & Zinc



w/o Colorants



Ceramic
Materials
Workshop

Lab 1-Oxidation

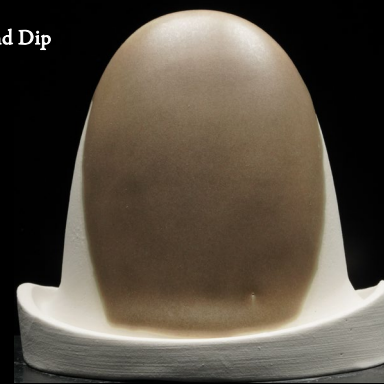


071022-1



071022-4

1-3 Second Dip



071022-5

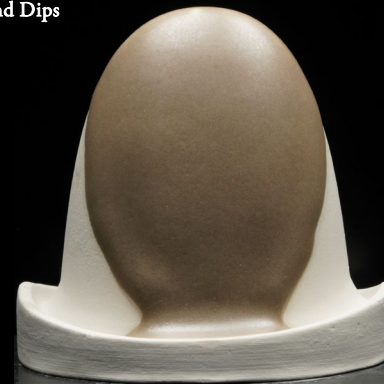
2-3 Second Dips



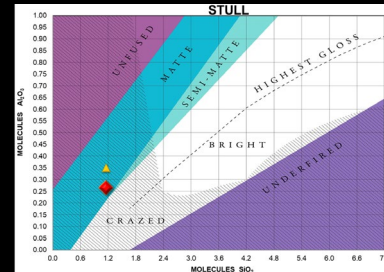
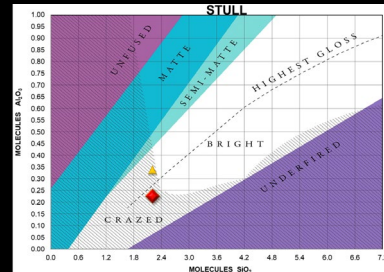
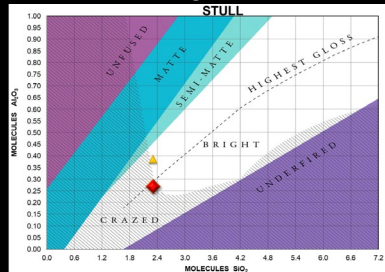
Original



w/o Kaolin



w/o Silica



Ceramic
Materials
Workshop

Lab 1-Reduction



071022-1



071022-2



071022-7

1-3 Second Dip



071022-51



071022-3



071022-6



Original



w/o Neph Sy



w/o Whiting

2-3 Second Dips



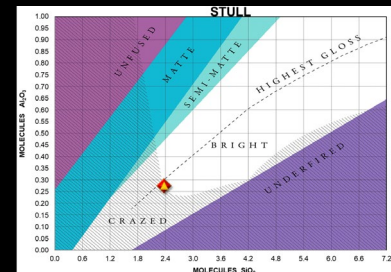
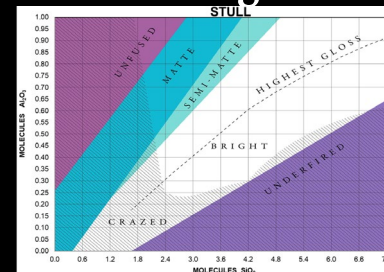
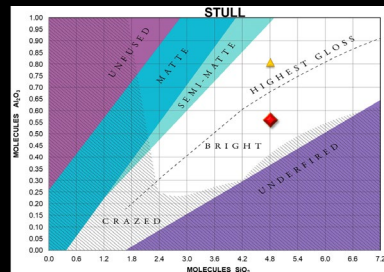
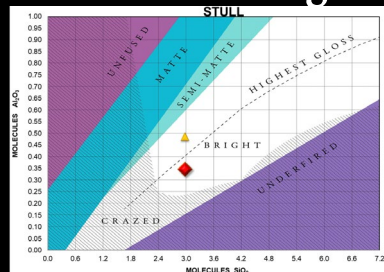
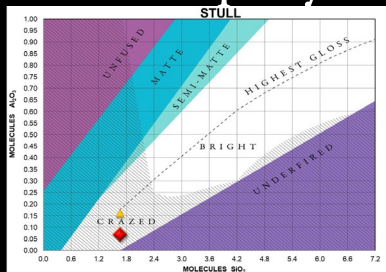
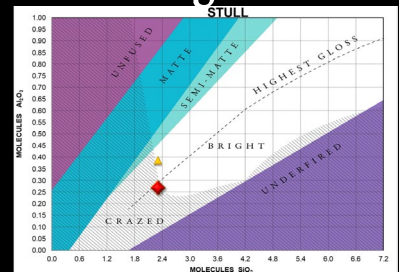
w/o Zinc Ox



w/o Whiting & Zinc



w/o Colorants



Ceramic
Materials
Workshop

ceramicmaterialsworkshop.com

Lab 1-Reduction



071022-1



071022-4



071022-5

1-3 Second Dip



Original

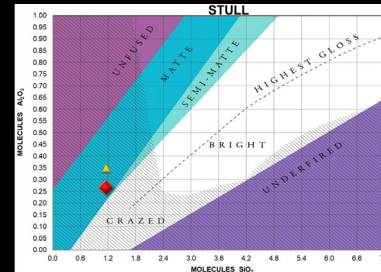
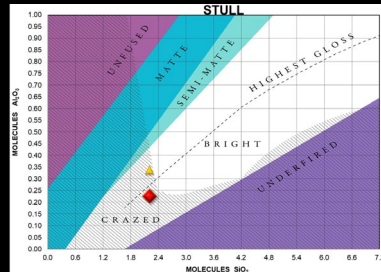
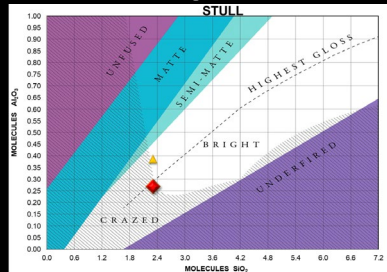


w/o Kaolin



w/o Silica

2-3 Second Dips



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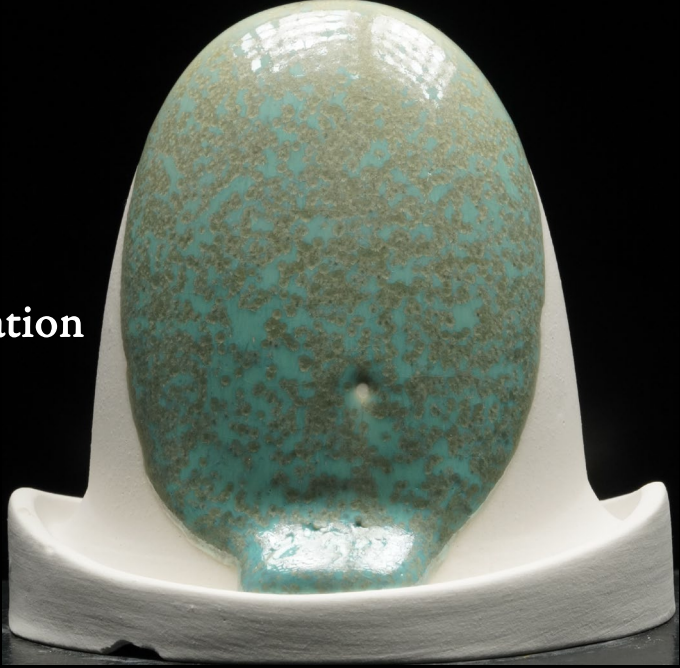
Freckles

Original
071022-1

Neph Sy	38.96
Whiting	8.99
Zinc Oxide	16.98
EPK	4.99
Flint	27.97
Bentonite	2.11
Copper Carbonate	1.48
Light Rutile	4.00
Water	60



1-3 Second Dip



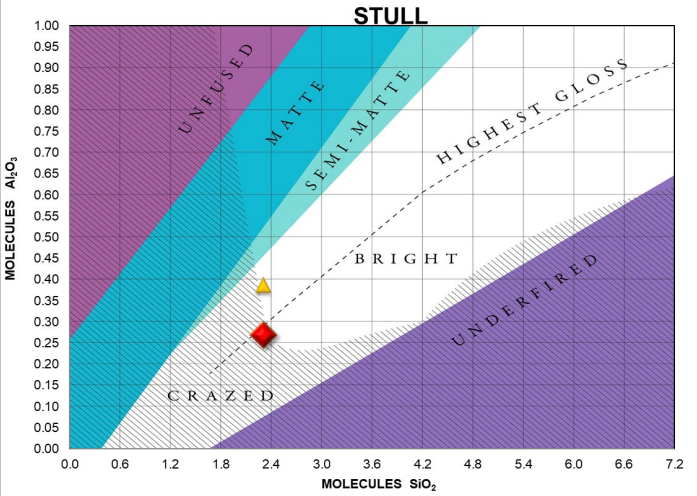
2-3 Second Dips



Reduction

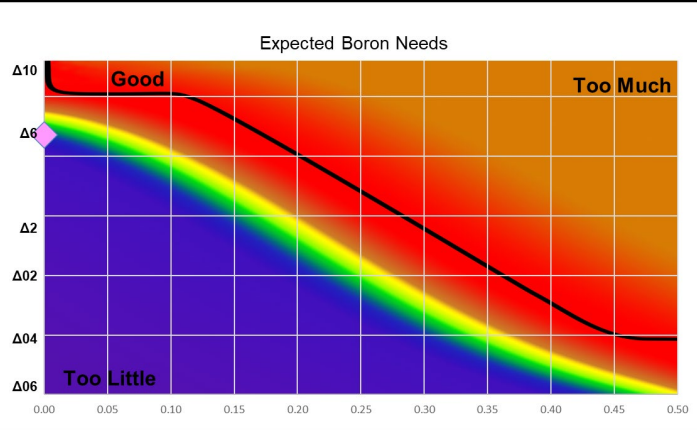
UMF

SiO ₂ :Al ₂ O ₃ Ratio 8.58 : 1		Alkali Metals 0.22		Alkaline Earths 0.78	
SiO ₂ 2.38	Collective "Al ₂ O ₃ " 0.28	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.24
B ₂ O ₃	Al ₂ O ₃ 0.28	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.54	FeO 0.00
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



EUMF

SiO ₂ :Al ₂ O ₃ Ratio 5.95 : 1		Alkali Metals 0.24		Alkaline Earths 0.76	
SiO ₂ 2.31	Collective "Al ₂ O ₃ " 0.39	Na ₂ O 0.16	K ₂ O 0.05	MgO 0.00	CaO 0.23
B ₂ O ₃	Al ₂ O ₃ 0.27	Li ₂ O	CuO 0.03	SrO	BaO
TiO ₂ 0.12	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.52	FeO 0.00
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



Ceramic
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Freckles

w/o Alkali Metal
071022-2

Neph Sy	
Whiting	14.93
Zinc Oxide	28.21
EPK	8.30
Flint	46.46
Bentonite	2.11
Copper Carbonate	1.48
Light Rutile	4.01
Water	70



1-3 Second Dip



2-3 Second Dips

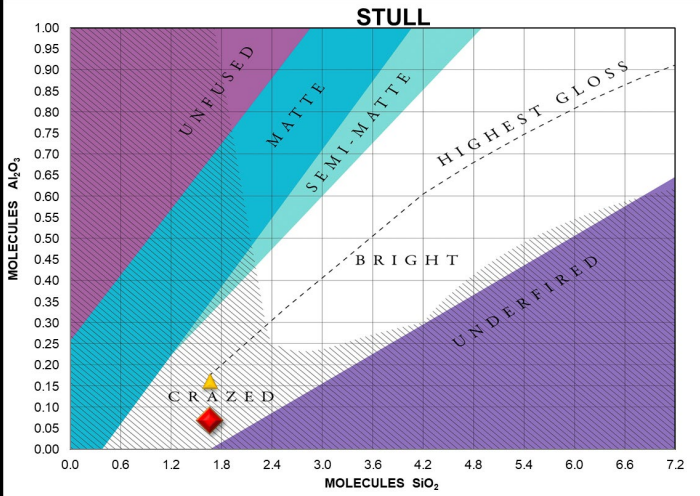


Reduction



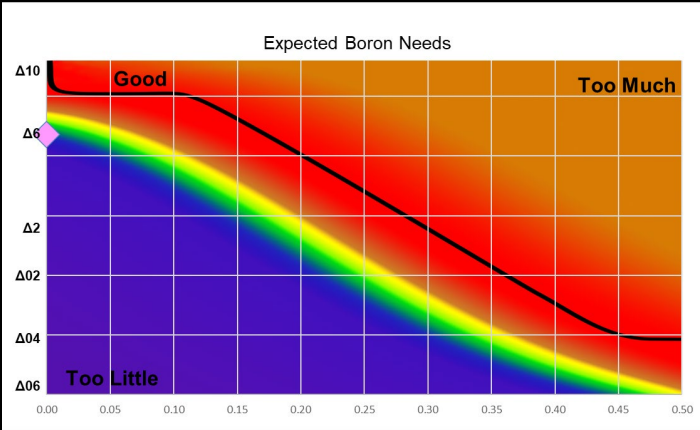
UMF

SiO ₂ :Al ₂ O ₃ Ratio 23.83 : 1		Alkali Metals 0.00		Alkaline Earths 1.00	
SiO ₂ 1.70	Collective "Al ₂ O ₃ " 0.07	Na ₂ O 0.00	K ₂ O 0.00	MgO 0.00	CaO 0.30
B ₂ O ₃	Al ₂ O ₃ 0.07	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.69	FeO 0.00
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



EUMF

SiO ₂ :Al ₂ O ₃ Ratio 10.21 : 1		Alkali Metals 0.03		Alkaline Earths 0.97	
SiO ₂ 1.66	Collective "Al ₂ O ₃ " 0.16	Na ₂ O 0.00	K ₂ O 0.00	MgO 0.00	CaO 0.29
B ₂ O ₃	Al ₂ O ₃ 0.07	Li ₂ O	CuO 0.02	SrO	BaO
TiO ₂ 0.09	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.68	FeO 0.00
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



Ceramic
Materials
Workshop

Freckles

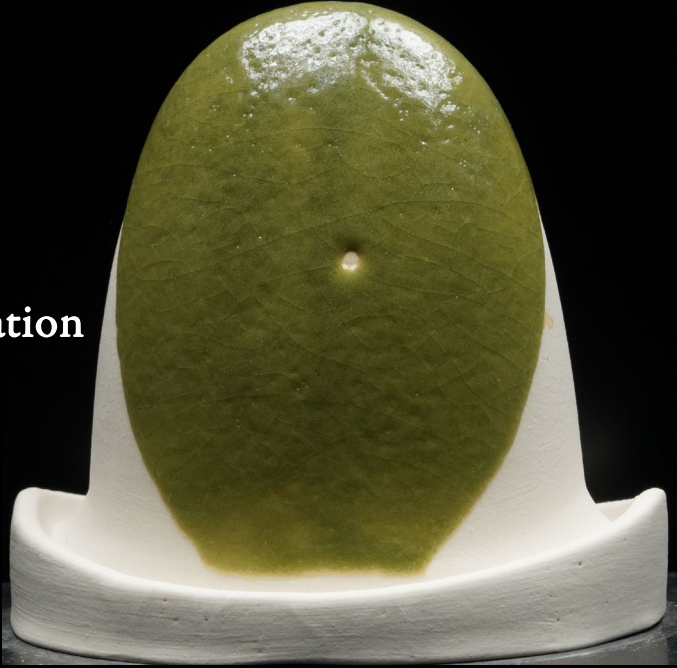
w/o Zinc Oxide

071022-51

Neph Sy	46.92
Whiting	10.83
Zinc Oxide	
EPK	6.02
Flint	33.69
Bentonite	2.54
Copper Carbonate	1.78
Light Rutile	4.82
Water	60



1-3 Second Dip



2-3 Second Dips

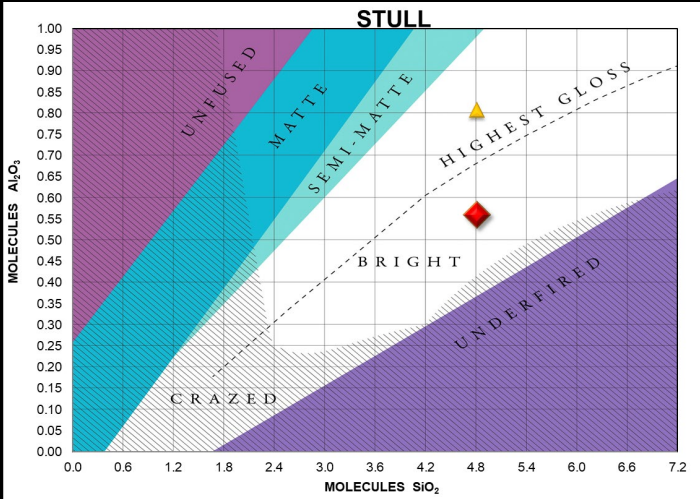


Reduction



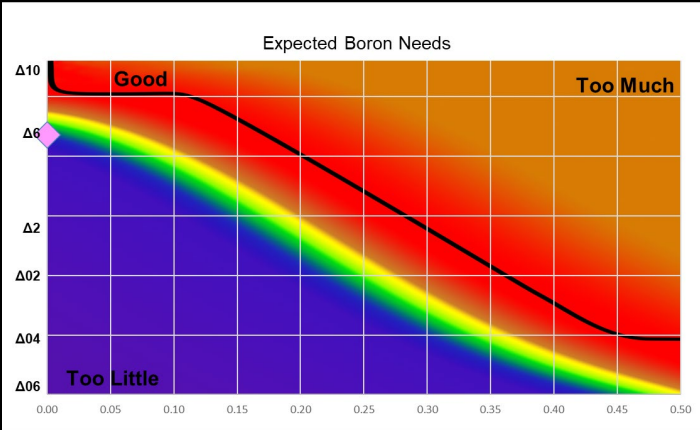
UMF

SiO ₂ :Al ₂ O ₃ Ratio 8.58 : 1		Alkali Metals 0.47		Alkaline Earths 0.53	
SiO ₂ 5.14	Collective "Al ₂ O ₃ " 0.60	Na ₂ O 0.36	K ₂ O 0.10	MgO 0.01	CaO 0.51
B ₂ O ₃	Al ₂ O ₃ 0.60	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 5.95 : 1		Alkali Metals 0.50		Alkaline Earths 0.50	
SiO ₂ 4.81	Collective "Al ₂ O ₃ " 0.81	Na ₂ O 0.34	K ₂ O 0.10	MgO 0.01	CaO 0.48
B ₂ O ₃	Al ₂ O ₃ 0.56	Li ₂ O	CuO 0.06	SrO	BaO
TiO ₂ 0.25	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

Freckles

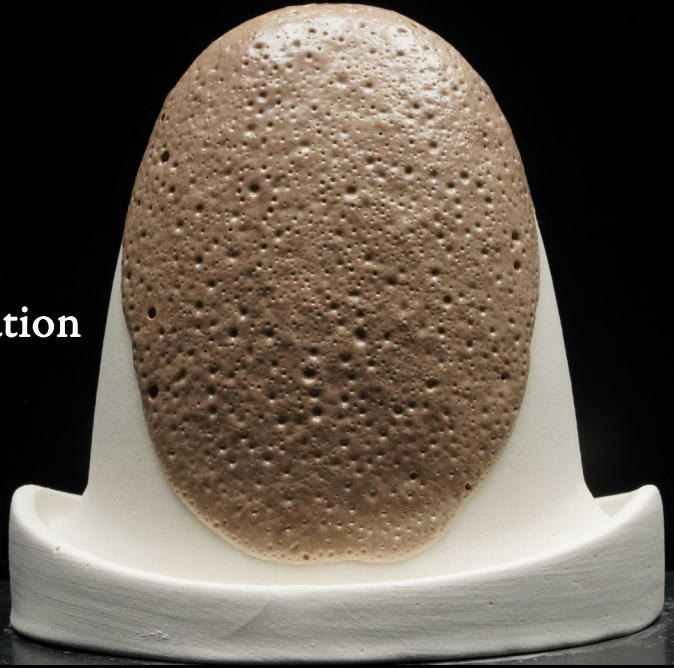
w/o Whiting

071022-7

Neph Sy	42.89
Whiting	
Zinc Oxide	18.70
EPK	5.50
Flint	30.79
Bentonite	2.12
Copper Carbonate	1.48
Light Rutile	4.01
Water	60



1-3 Second Dip



2-3 Second Dips

Oxidation



1-3 Second Dip

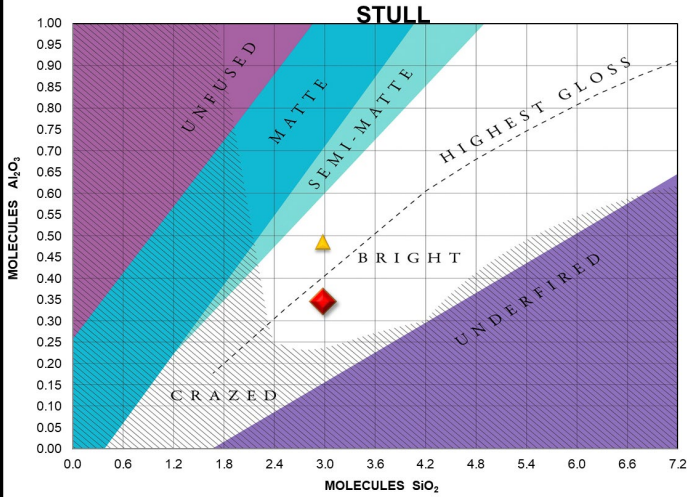


2-3 Second Dips

Reduction

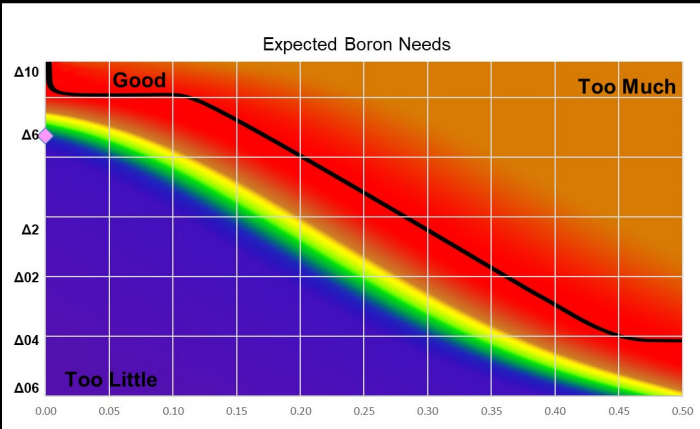
UMF

SiO ₂ :Al ₂ O ₃ Ratio 8.59 : 1		Alkali Metals 0.28		Alkaline Earths 0.72	
SiO ₂ 3.09	Collective "Al ₂ O ₃ " 0.36	Na ₂ O 0.22	K ₂ O 0.06	MgO 0.01	CaO 0.01
B ₂ O ₃	Al ₂ O ₃ 0.36	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.70	FeO 0.01
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



EUMF

SiO ₂ :Al ₂ O ₃ Ratio 6.12 : 1		Alkali Metals 0.31		Alkaline Earths 0.69	
SiO ₂ 2.98	Collective "Al ₂ O ₃ " 0.49	Na ₂ O 0.21	K ₂ O 0.06	MgO 0.01	CaO 0.01
B ₂ O ₃	Al ₂ O ₃ 0.35	Li ₂ O	CuO 0.04	SrO	BaO
TiO ₂ 0.14	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.67	FeO 0.01
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



Ceramic
Materials
Workshop

Freckles

w/o Alkaline Earth

071022-3

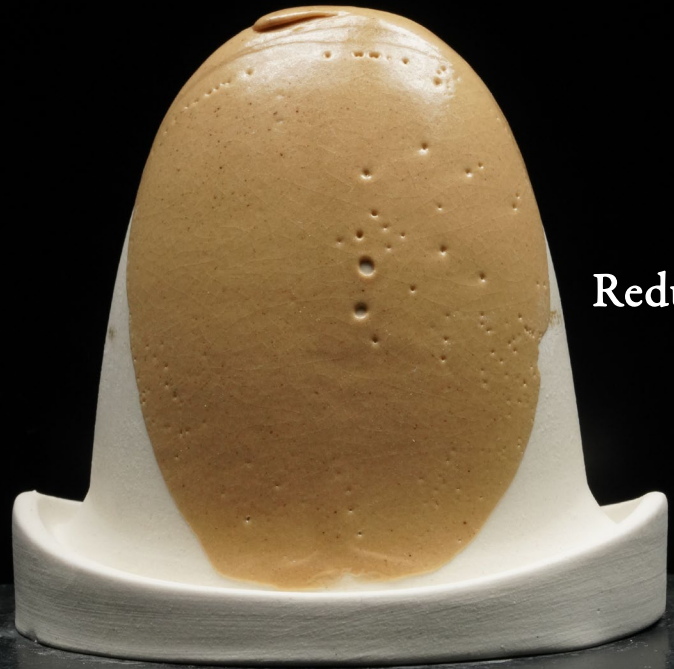
Neph Sy	50.25
Whiting	
Zinc Oxide	
EPK	6.44
Flint	36.07
Bentonite	2.04
Copper Carbonate	1.40
Light Rutile	3.80
Water	60



1-3 Second Dip



2-3 Second Dips



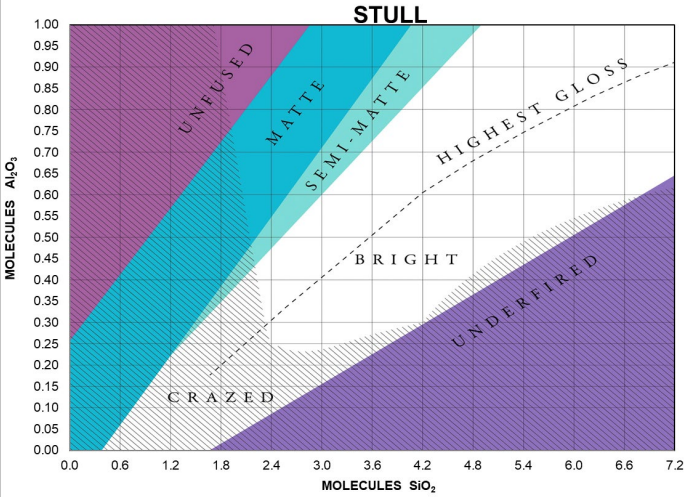
Reduction



Reduction

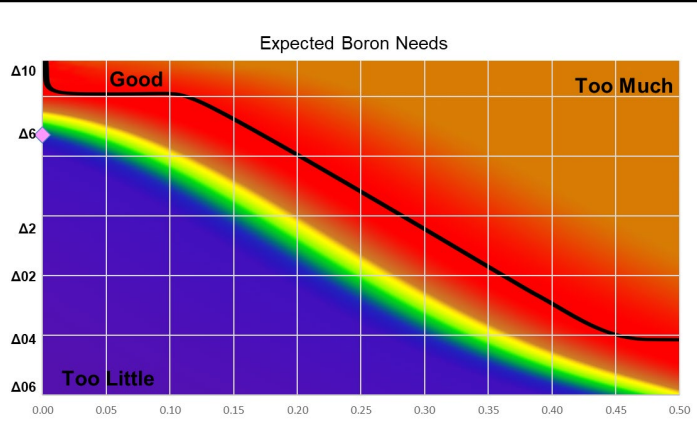
UMF

SiO ₂ :Al ₂ O ₃ Ratio 8.61 : 1		Alkali Metals 0.94		Alkaline Earths 0.06	
SiO ₂ 10.26	Collective "Al ₂ O ₃ " 1.19	Na ₂ O 0.73	K ₂ O 0.21	MgO 0.02	CaO 0.03
B ₂ O ₃	Al ₂ O ₃ 1.19	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	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 6.48 : 1		Alkali Metals 0.94		Alkaline Earths 0.06	
SiO ₂ 9.33	Collective "Al ₂ O ₃ " 1.44	Na ₂ O 0.66	K ₂ O 0.19	MgO 0.01	CaO 0.03
B ₂ O ₃	Al ₂ O ₃ 1.08	Li ₂ O	CuO 0.09	SrO	BaO
TiO ₂ 0.36	NiO	Bi ₂ O ₃	SnO ₂	ZnO	FeO 0.02
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



Freckles

w/o Kaolin

071022-4

Neph Sy	41.05
Whiting	9.47
Zinc Oxide	17.90
EPK	
Flint	29.47
Bentonite	2.11
Copper Carbonate	1.48
Light Rutile	4.01
Water	60



1-3 Second Dip

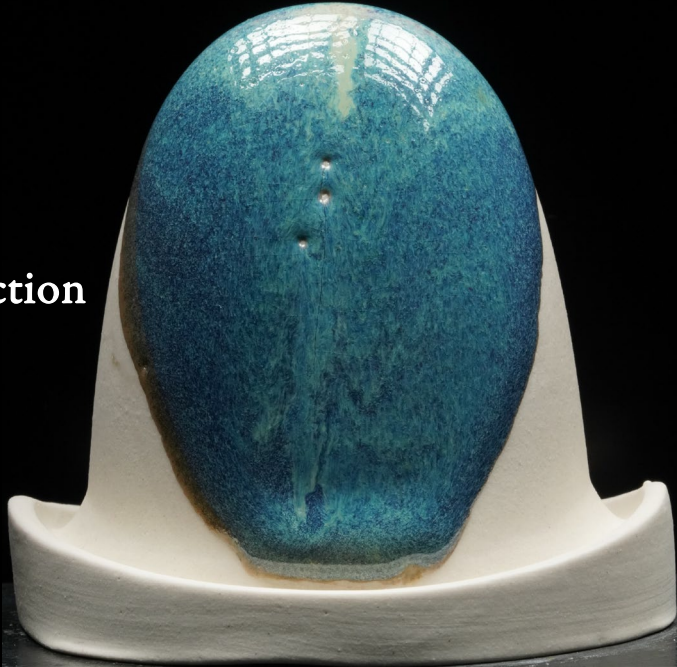


2-3 Second Dips

Oxidation



1-3 Second Dip

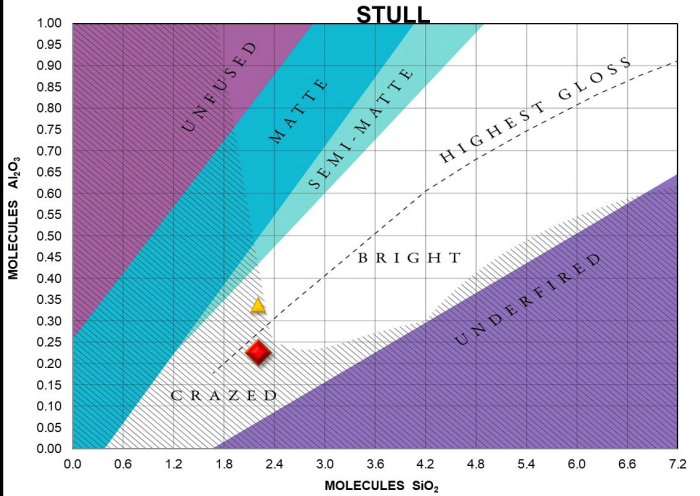


2-3 Second Dips

Reduction

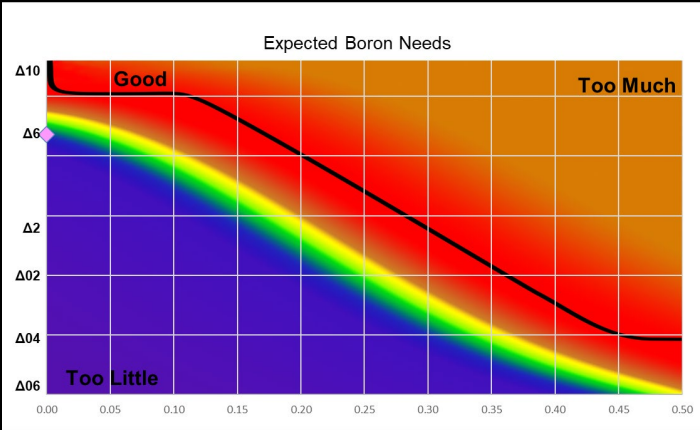
UMF

SiO ₂ :Al ₂ O ₃ Ratio 9.81 : 1		Alkali Metals 0.22		Alkaline Earths 0.78	
SiO ₂ 2.28	Collective "Al ₂ O ₃ " 0.23	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.24
B ₂ O ₃	Al ₂ O ₃ 0.23	Li ₂ O	CuO	SrO	BaO
TiO ₂	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.54	FeO 0.00
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



EUMF

SiO ₂ :Al ₂ O ₃ Ratio 6.52 : 1		Alkali Metals 0.24		Alkaline Earths 0.76	
SiO ₂ 2.21	Collective "Al ₂ O ₃ " 0.34	Na ₂ O 0.16	K ₂ O 0.05	MgO 0.00	CaO 0.23
B ₂ O ₃	Al ₂ O ₃ 0.23	Li ₂ O	CuO 0.03	SrO	BaO
TiO ₂	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.52	FeO 0.00
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



Ceramic
Materials
Workshop

Freckles

w/o Silica

071022-5

Neph Sy	54.54
Whiting	12.59
Zinc Oxide	23.77
EPK	6.99
Flint	
Bentonite	2.11
Copper Carbonate	1.48
Light Rutile	4.01
Water	60



1-3 Second Dip



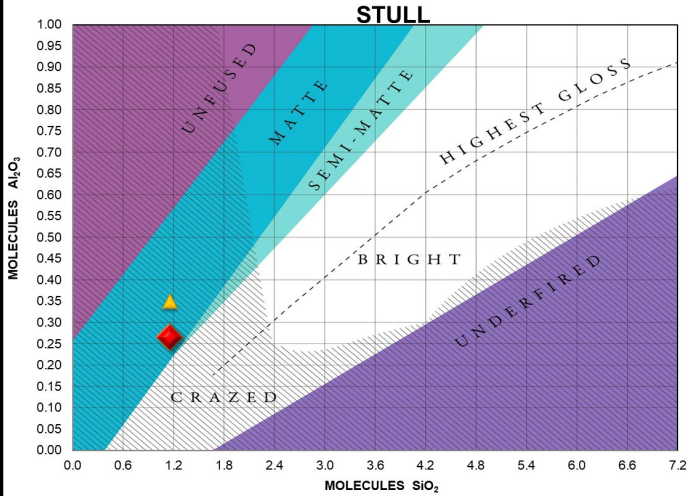
2-3 Second Dips



Reduction

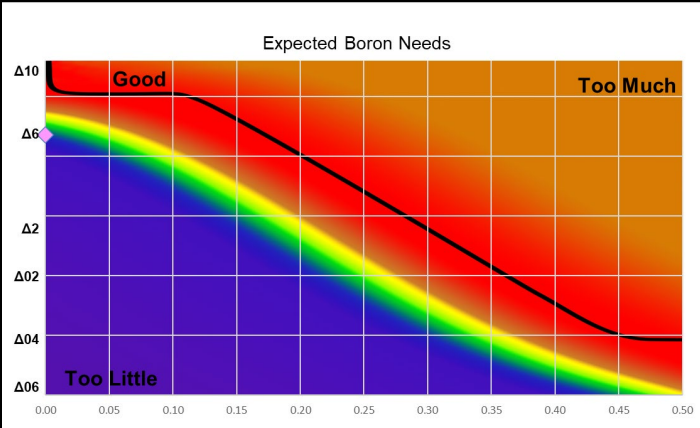
UMF

SiO ₂ :Al ₂ O ₃ Ratio 4.37 : 1		Alkali Metals 0.22		Alkaline Earths 0.78	
SiO ₂ 1.18	Collective "Al ₂ O ₃ " 0.27	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.24
B ₂ O ₃	Al ₂ O ₃ 0.27	Li ₂ O	CuO	SrO	BaO
TiO ₂	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.54	FeO 0.00
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



EUMF

SiO ₂ :Al ₂ O ₃ Ratio 3.30 : 1		Alkali Metals 0.23		Alkaline Earths 0.77	
SiO ₂ 1.16	Collective "Al ₂ O ₃ " 0.35	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.23
B ₂ O ₃	Al ₂ O ₃ 0.27	Li ₂ O	CuO 0.02	SrO	BaO
TiO ₂	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.53	FeO 0.00
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



Ceramic
Materials
Workshop

Freckles

w/o Colorants

071022-6

Neph Sy	39.00
Whiting	9.00
Zinc Oxide	17.00
EPK	5.00
Flint	28.00
Bentonite	2.00
Copper Carbonate	
Light Rutile	
Water	60



1-3 Second Dip

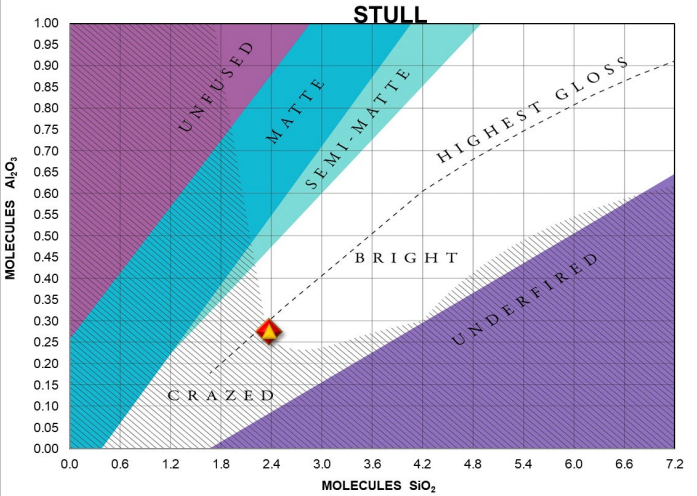


2-3 Second Dips



Reduction

SiO ₂ :Al ₂ O ₃ Ratio 8.59 : 1		Alkali Metals 0.22		Alkaline Earths 0.78	
SiO ₂ 2.38	Collective "Al ₂ O ₃ " 0.28	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.24
B ₂ O ₃	Al ₂ O ₃ 0.28	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.54	FeO 0.00
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



SiO ₂ :Al ₂ O ₃ Ratio 8.59 : 1		Alkali Metals 0.22		Alkaline Earths 0.78	
SiO ₂ 2.38	Collective "Al ₂ O ₃ " 0.28	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.24
B ₂ O ₃	Al ₂ O ₃ 0.28	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.54	FeO 0.00
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



Ceramic
Materials
Workshop