

Big Red- $\Delta 6$

Lab 4-Back to the Flux Capacity



Ceramic
Materials
Workshop

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Big Red

Original

070822-1

G200 EU	23.37
Whiting	27.11
EPK	11.17
Flint	12.73
3134	25.62
Chrome Oxide	0.10
Tin Oxide	8.00
Water	60



1-3 Second Dip



2-3 Second Dips



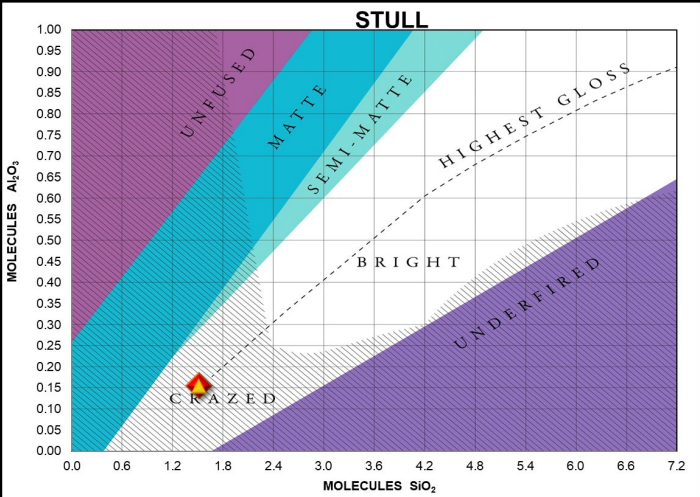
Reduction



Oxidation

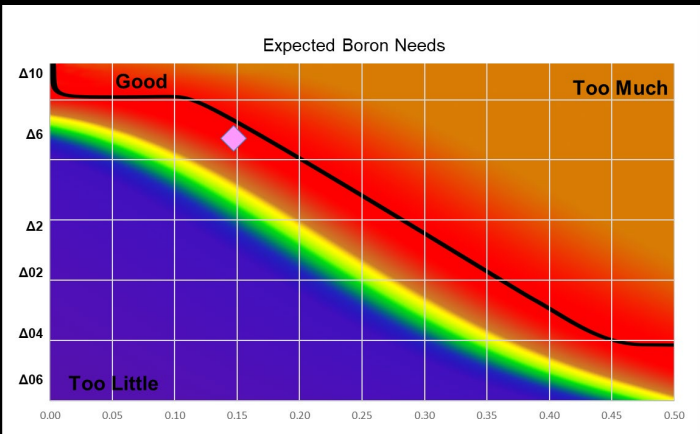
UMF

SiO ₂ :Al ₂ O ₃ Ratio 9.75 : 1		Alkali Metals 0.17		Alkaline Earths 0.83	
SiO ₂ 1.69	Collective "Al ₂ O ₃ " 0.17	Na ₂ O 0.11	K ₂ O 0.06	MgO 0.00	CaO 0.82
B ₂ O ₃ 0.16	Al ₂ O ₃ 0.17	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	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



EUMF

SiO ₂ :Al ₂ O ₃ Ratio 9.75 : 1		Alkali Metals 0.26		Alkaline Earths 0.74	
SiO ₂ 1.52	Collective "Al ₂ O ₃ " 0.16	Na ₂ O 0.10	K ₂ O 0.05	MgO 0.00	CaO 0.74
B ₂ O ₃ 0.15	Al ₂ O ₃ 0.15	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂ 0.10	ZnO	FeO 0.00
Cr ₂ O ₃ 0.00	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



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Lab 4-Alkali Metals-Oxidation



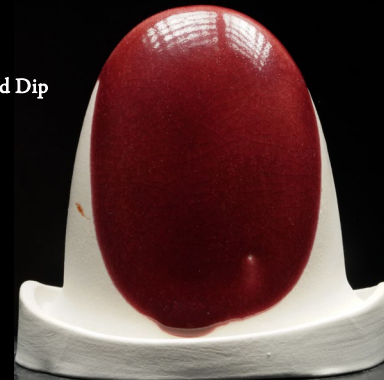
070822-1



070822-X1



070822-35



070822-36



070822-37



070822-38

1-3 Second Dip



2-3 Second Dips



Original (G200 EU)

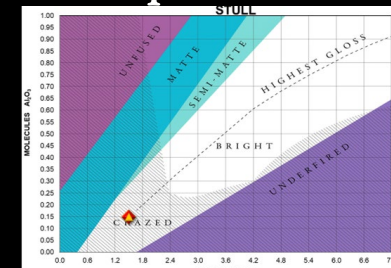
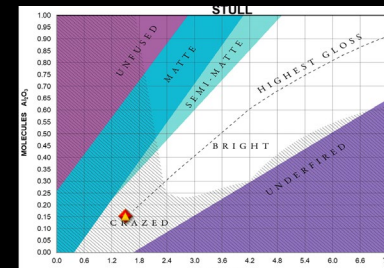
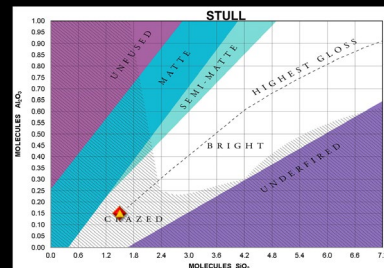
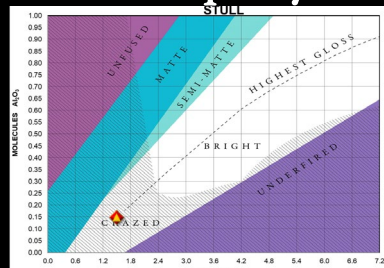
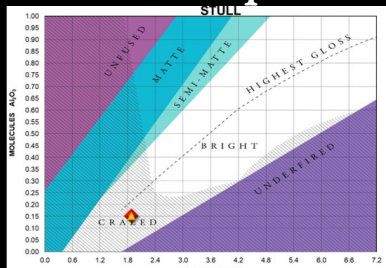
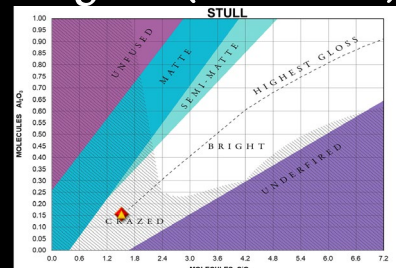
w/Minspar

w/Neph Sy

w/Custer

w/Mahavir

w/Spodumene



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Lab 4-Alkali Metals-Oxidation



070822-1



070822-40



070822-42

1-3 Second Dip



Original (G200 EU)

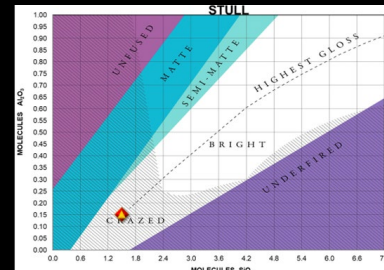
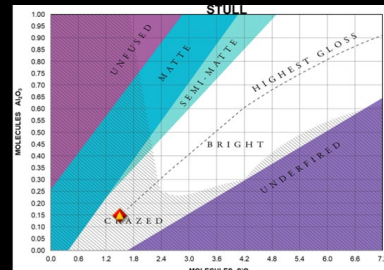


w/Frit 3110



w/Lithium Carb

2-3 Second Dips



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Lab 4-Alkali Metals-Reduction



070822-1

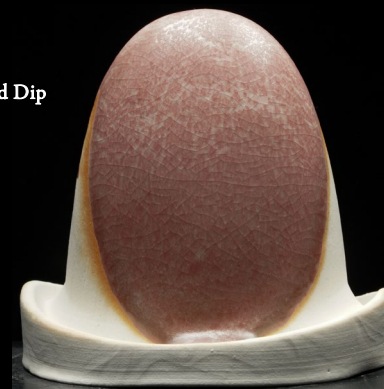


070822-X1



070822-35

1-3 Second Dip



070822-36



070822-37



070822-38



Original (G200 EU)

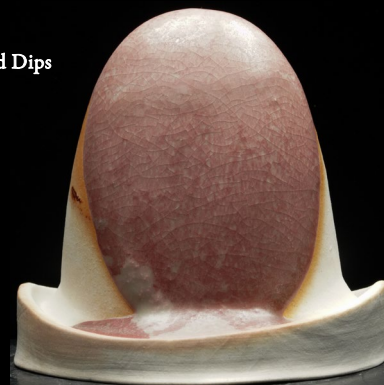


w/Minspar

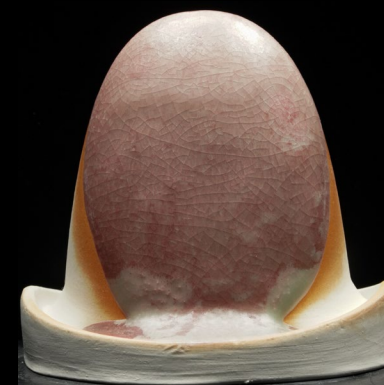


w/Neph Sy

2-3 Second Dips



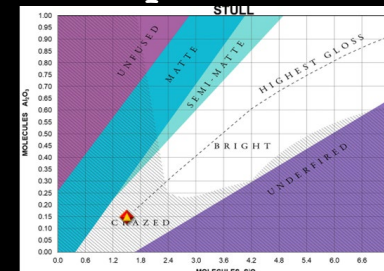
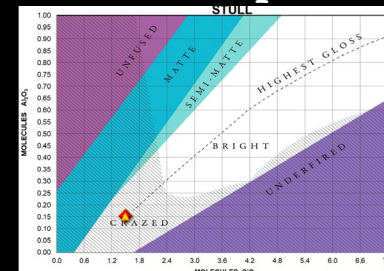
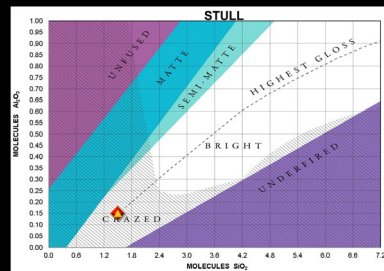
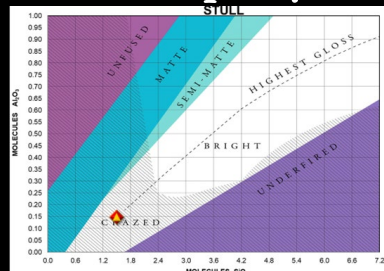
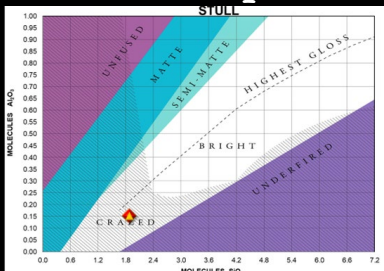
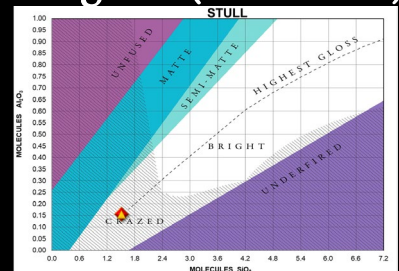
w/Custer



w/Minspar



w/Spodumene



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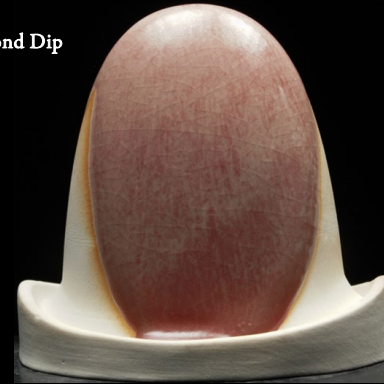
Lab 4-Alkali Metals-Reduction



070822-1



070822-40



070822-42

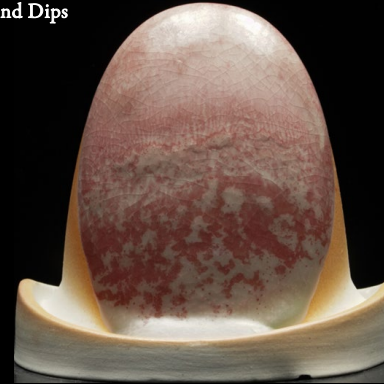
1-3 Second Dip



Original (G200 EU)

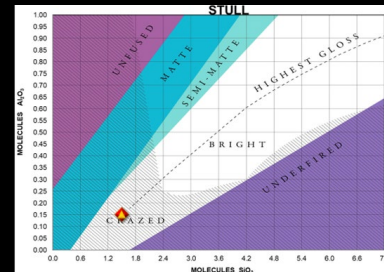
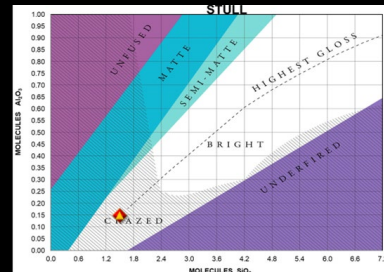
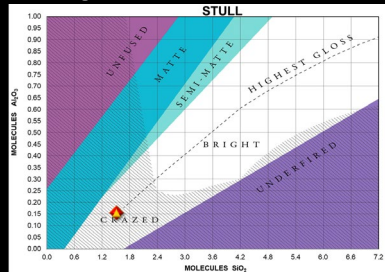


w/Frit 3110



w/Lithium Carb

2-3 Second Dips



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Lab 4-Alkaline Earth-Oxidation



070822-1



070822-43



070822-44



070822-45



070822-46



070822-47

1-3 Second Dip



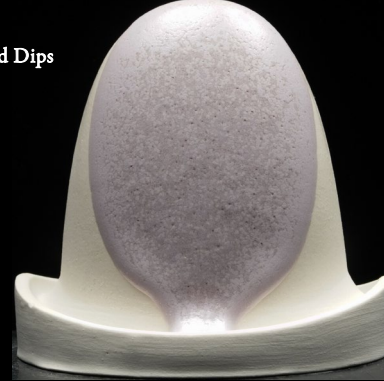
Original (W)



w/Talc



w/Mag Carb



w/Dolomite

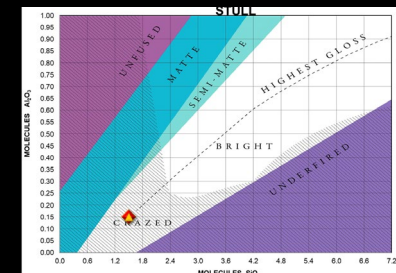
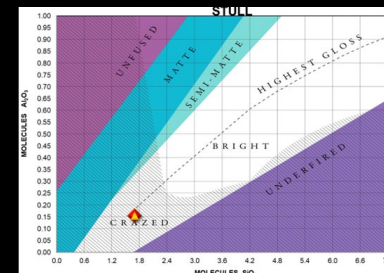
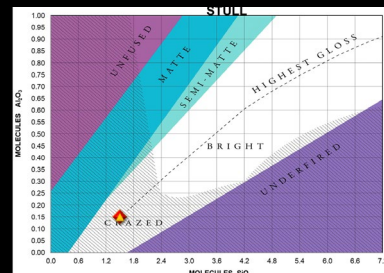
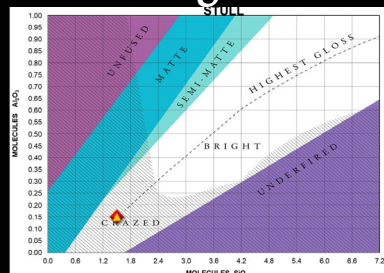
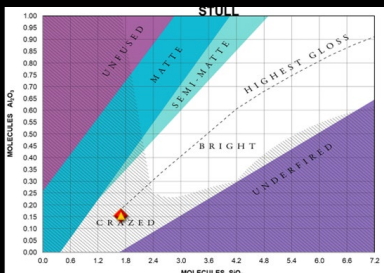
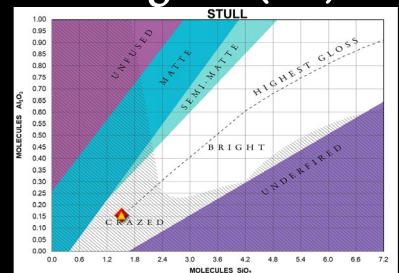


w/Wollastonite



w/Strontium Carb

2-3 Second Dips



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Lab 4-Alkaline Earth-Oxidation

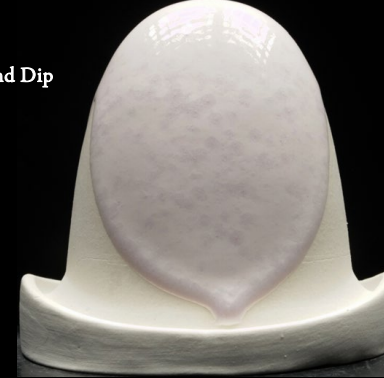


070822-1



070822-48

1-3 Second Dip



070822-49



070822-50



Original (W)



w/Barium Carb

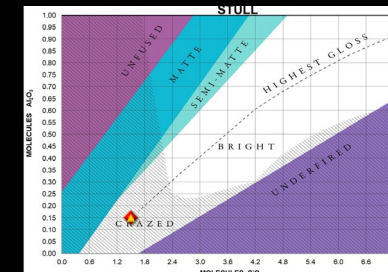
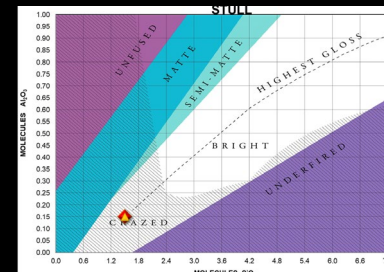
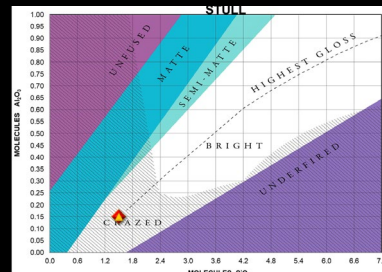
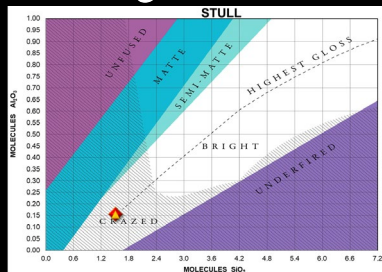
2-3 Second Dips



w/Zinc Oxide



w/Bone Ash



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Lab 4-Alkaline Earth-Reduction



070822-1



070822-43



070822-44

1-3 Second Dip



070822-45



070822-46



070822-47



Original (W)

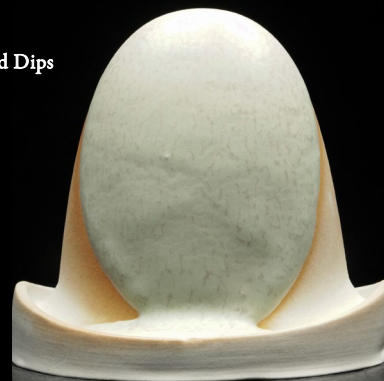


w/Talc



w/Mag Carb

2-3 Second Dips



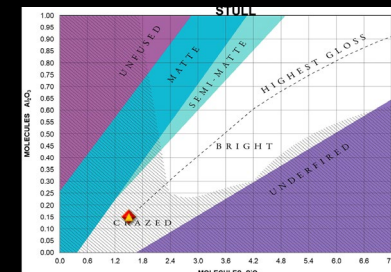
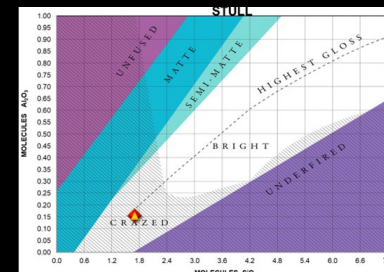
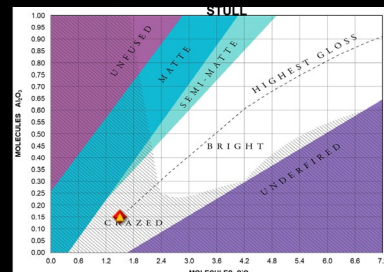
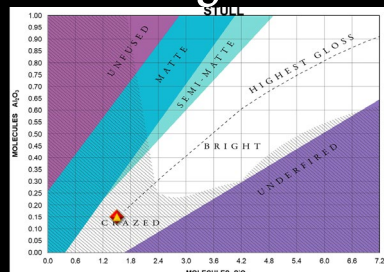
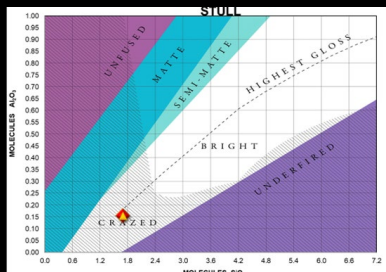
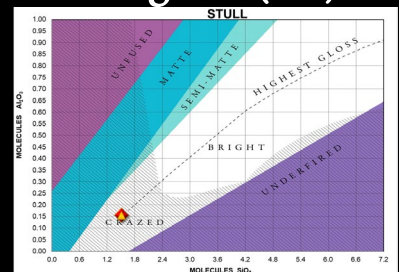
w/Dolomite



w/Wollastonite



w/Strontium Carb



Ceramic
Materials
Workshop

Lab 4-Alkaline Earth-Reduction



070822-1



070822-48



070822-49



070822-50

1-3 Second Dip



Original (W)



w/Barium Carb

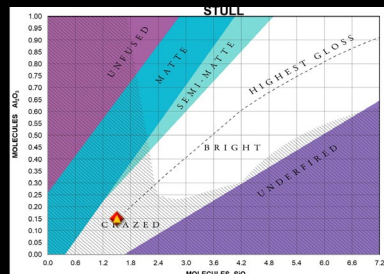
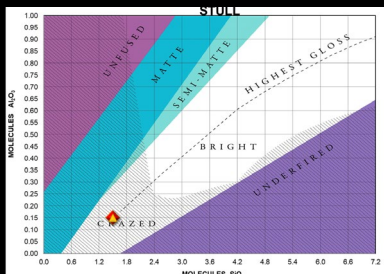
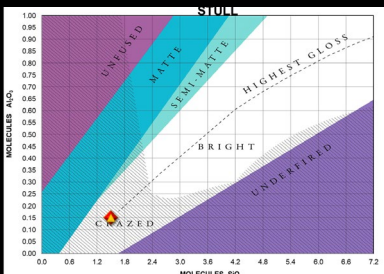
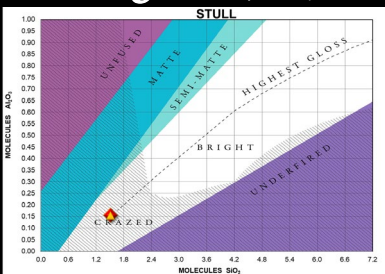


w/Zinc Oxide



w/Bone Ash

2-3 Second Dips



Ceramic
Materials
Workshop

Big Red

Original

070822-1

G200 EU	23.37
Whiting	27.11
EPK	11.17
Flint	12.73
3134	25.62
Chrome Oxide	0.10
Tin Oxide	8.00
Water	60



1-3 Second Dip



2-3 Second Dips



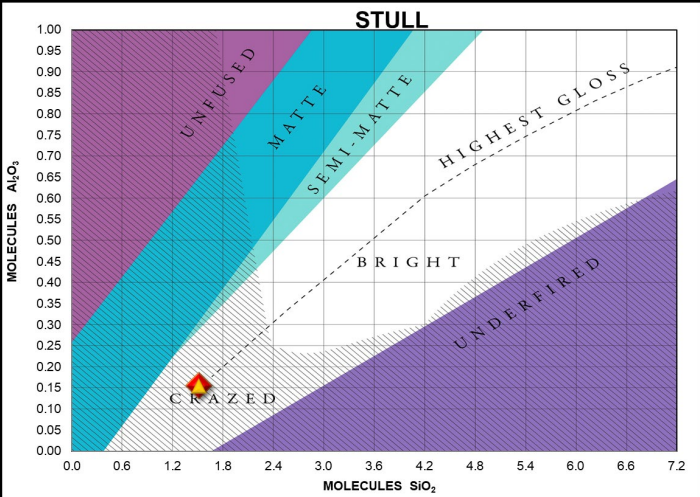
Reduction



Oxidation

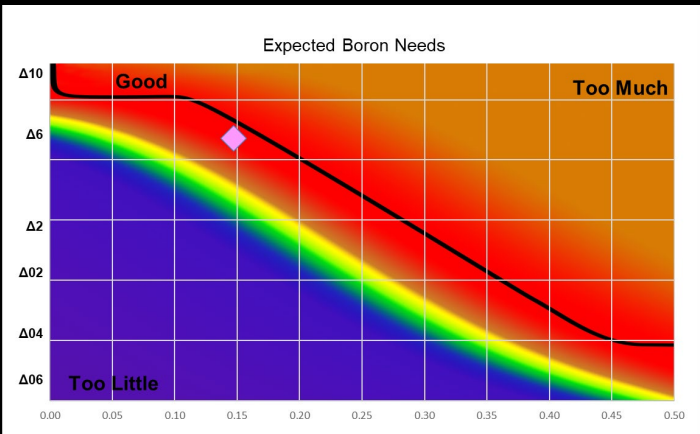
UMF

SiO ₂ :Al ₂ O ₃ Ratio 9.75 : 1		Alkali Metals 0.17		Alkaline Earths 0.83	
SiO ₂ 1.69	Collective "Al ₂ O ₃ " 0.17	Na ₂ O 0.11	K ₂ O 0.06	MgO 0.00	CaO 0.82
B ₂ O ₃ 0.16	Al ₂ O ₃ 0.17	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	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



EUMF

SiO ₂ :Al ₂ O ₃ Ratio 9.75 : 1		Alkali Metals 0.26		Alkaline Earths 0.74	
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B ₂ O ₃ 0.15	Al ₂ O ₃ 0.15	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂ 0.10	ZnO	FeO 0.00
Cr ₂ O ₃ 0.00	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



Ceramic
Materials
Workshop

Big Red

Chemical Match
Minspar
070822-X1

Minspar	20.73
Whiting	24.05
EPK	9.91
Flint	22.59
3134	22.72
Chrome Oxide	0.11
Tin Oxide	8.70
Water	60



1-3 Second Dip



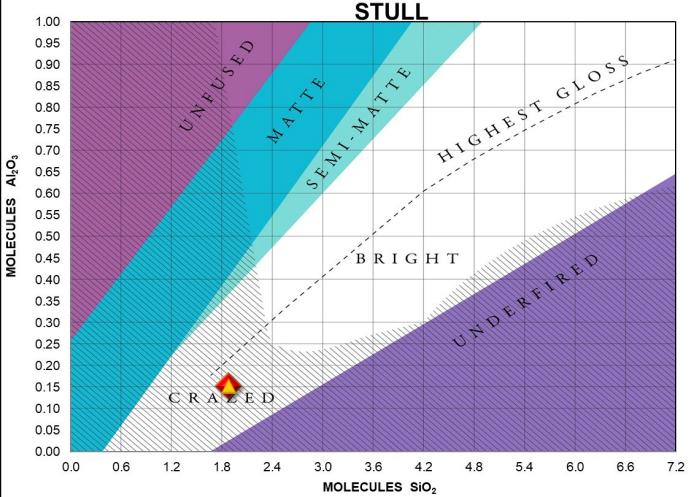
2-3 Second Dips



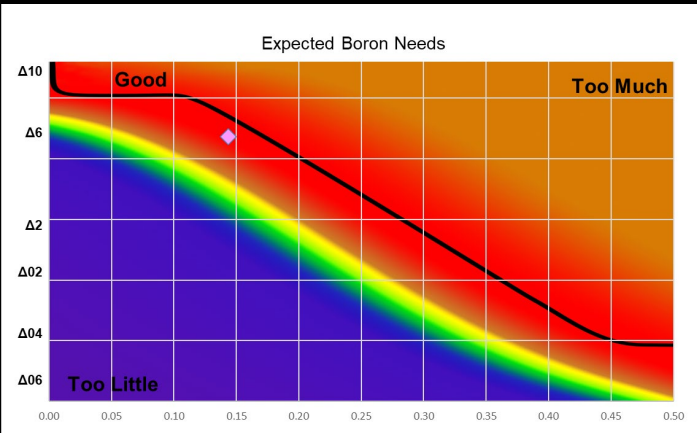
Reduction



SiO ₂ :Al ₂ O ₃ Ratio 12.29 : 1		Alkali Metals 0.17		Alkaline Earths 0.83	
SiO ₂ 2.15	Collective "Al ₂ O ₃ " 0.17	Na ₂ O 0.11	K ₂ O 0.06	MgO 0.00	CaO 0.82
B ₂ O ₃ 0.16	Al ₂ O ₃ 0.17	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



SiO ₂ :Al ₂ O ₃ Ratio 12.29 : 1		Alkali Metals 0.28		Alkaline Earths 0.72	
SiO ₂ 1.88	Collective "Al ₂ O ₃ " 0.15	Na ₂ O 0.10	K ₂ O 0.05	MgO 0.00	CaO 0.72
B ₂ O ₃ 0.14	Al ₂ O ₃ 0.15	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂ 0.13	ZnO	FeO 0.00
Cr ₂ O ₃ 0.00	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



Ceramic
Materials
Workshop

Big Red

Chemical Match
Nepheline Syenite
070822-35

Neph Sy	17.21
Whiting	26.75
EPK	11.02
Flint	17.83
3134	27.18
Chrome Oxide	0.11
Tin Oxide	8.70
Water	70



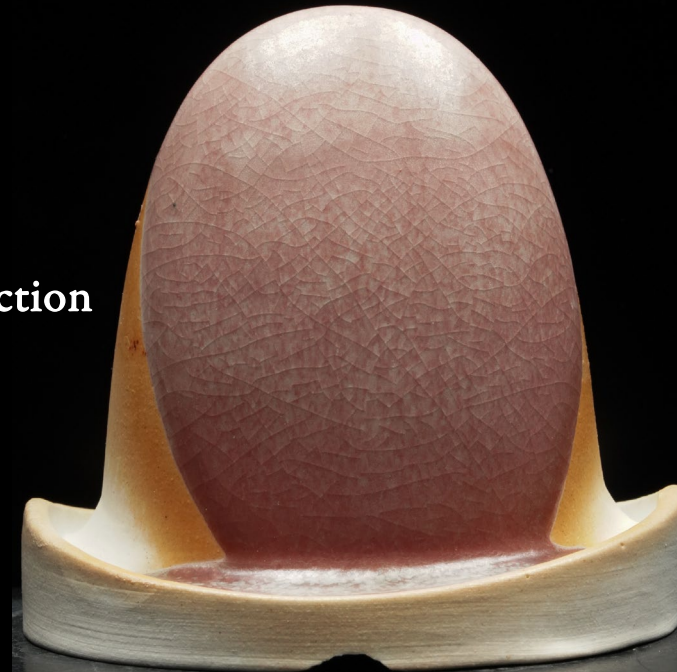
1-3 Second Dip



2-3 Second Dips



Reduction



Oxidation

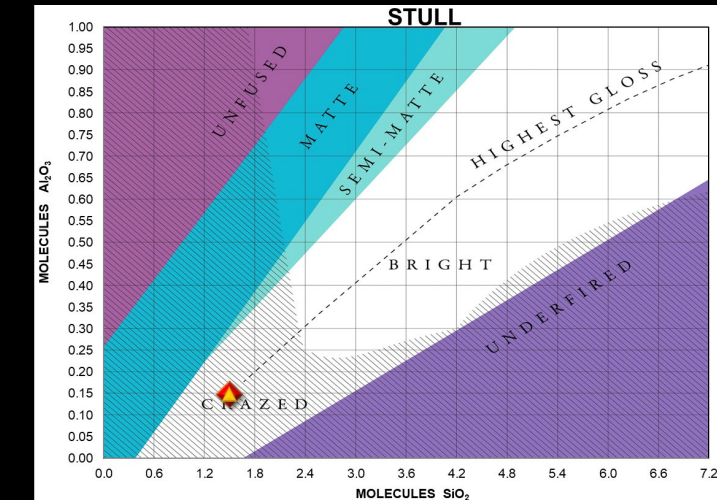


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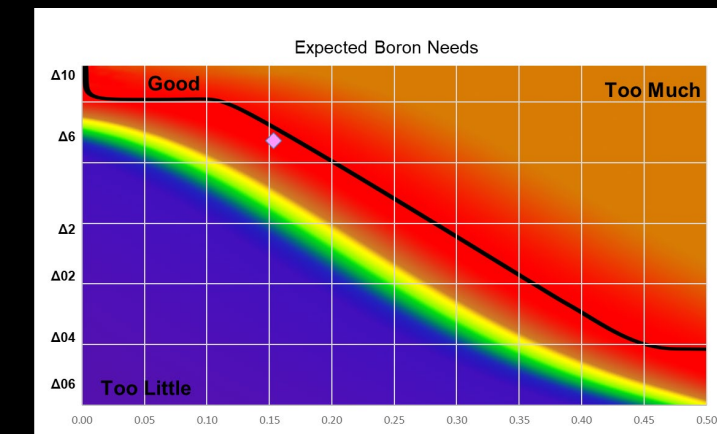
UMF

SiO ₂ :Al ₂ O ₃ Ratio 10.06 : 1		Alkali Metals 0.18		Alkaline Earths 0.82	
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B ₂ O ₃ 0.17	Al ₂ O ₃ 0.17	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	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



EUMF

SiO ₂ :Al ₂ O ₃ Ratio 10.06 : 1		Alkali Metals 0.27		Alkaline Earths 0.73	
SiO ₂ 1.50	Collective "Al ₂ O ₃ " 0.15	Na ₂ O 0.14	K ₂ O 0.02	MgO 0.00	CaO 0.72
B ₂ O ₃ 0.15	Al ₂ O ₃ 0.15	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂ 0.11	ZnO	FeO 0.00
Cr ₂ O ₃ 0.00	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



Big Red

Chemical Match
Custer Feldspar
070822-36

Custer	26.37
Whiting	26.61
EPK	9.94
Flint	10.68
3134	26.40
Chrome Oxide	0.11
Tin Oxide	8.70
Water	65



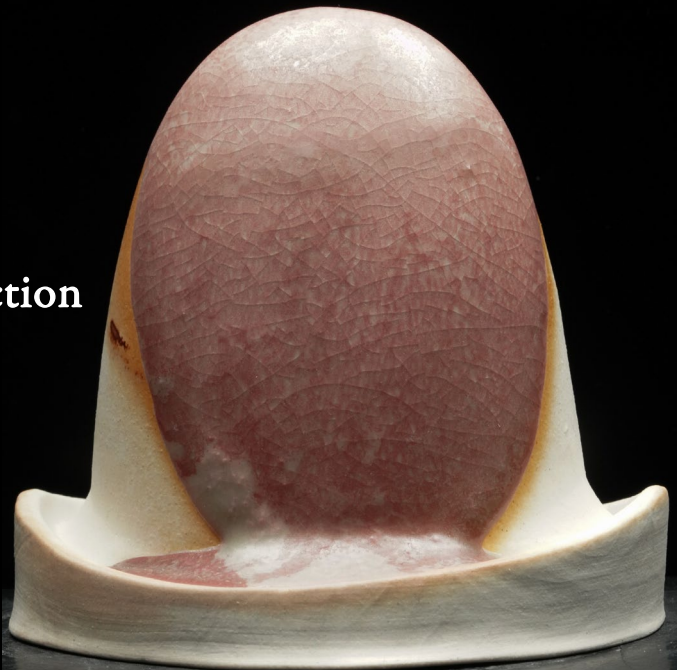
1-3 Second Dip



2-3 Second Dips



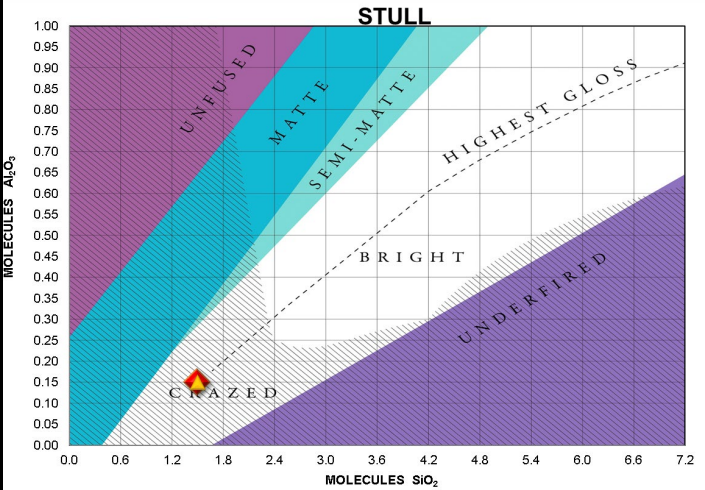
Reduction



Oxidation

UMF

SiO ₂ :Al ₂ O ₃ Ratio 9.89 :1		Alkali Metals 0.18		Alkaline Earths 0.82	
SiO ₂ 1.69	Collective "Al ₂ O ₃ " 0.17	Na ₂ O 0.12	K ₂ O 0.06	MgO 0.00	CaO 0.81
B ₂ O ₃ 0.17	Al ₂ O ₃ 0.17	Li ₂ O 0.00	CuO 0.00	SrO 0.00	BaO 0.00
TiO ₂ 0.00	NiO 0.00	Bi ₂ O ₃ 0.00	SnO ₂ 0.00	ZnO 0.00	FeO 0.01
Cr ₂ O ₃ 0.00	ZrO ₂ 0.00	P ₂ O ₅ 0.00		MnO ₂ 0.00	CoO 0.00



EUMF

SiO ₂ :Al ₂ O ₃ Ratio 9.89 :1		Alkali Metals 0.27		Alkaline Earths 0.73	
SiO ₂ 1.50	Collective "Al ₂ O ₃ " 0.15	Na ₂ O 0.10	K ₂ O 0.06	MgO 0.00	CaO 0.72
B ₂ O ₃ 0.15	Al ₂ O ₃ 0.15	Li ₂ O 0.00	CuO 0.00	SrO 0.00	BaO 0.00
TiO ₂ 0.00	NiO 0.00	Bi ₂ O ₃ 0.00	SnO ₂ 0.11	ZnO 0.00	FeO 0.01
Cr ₂ O ₃ 0.00	ZrO ₂ 0.00	P ₂ O ₅ 0.00		MnO ₂ 0.00	CoO 0.00



Ceramic
Materials
Workshop

Big Red

Chemical Match
Mahavir Feldspar
070822-37

Mahavir	22.93
Whiting	26.60
EPK	10.96
Flint	13.16
3134	26.35
Chrome Oxide	0.11
Tin Oxide	8.70
Water	65



Ceramic
Materials
Workshop



1-3 Second Dip

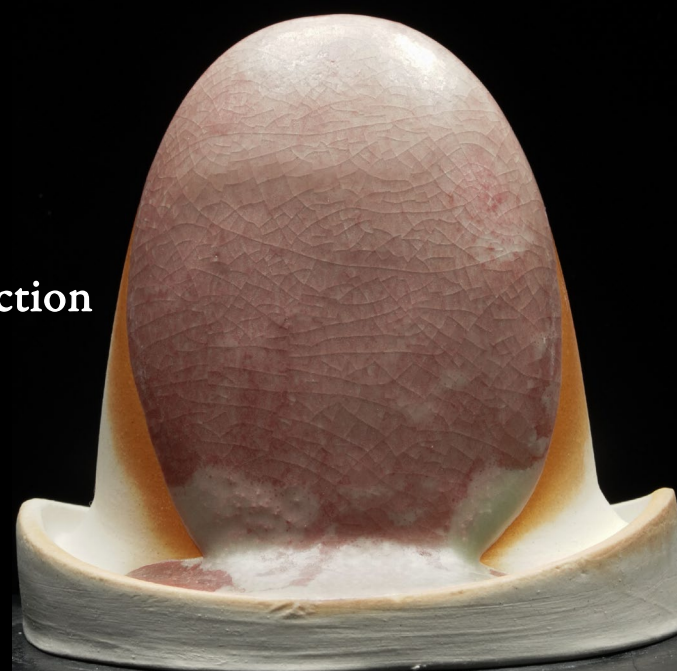


2-3 Second Dips

Oxidation



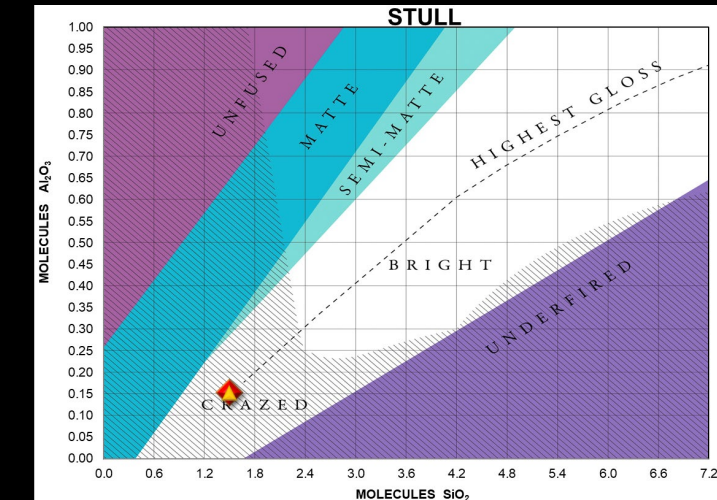
Reduction



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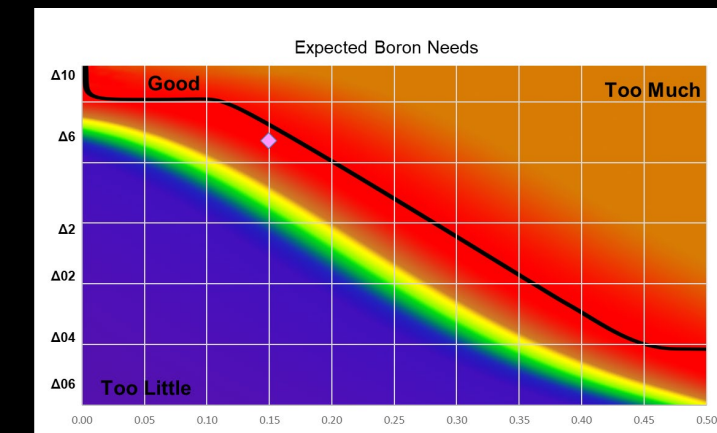
UMF

SiO ₂ :Al ₂ O ₃ Ratio 9.79 : 1		Alkali Metals 0.18		Alkaline Earths 0.82	
SiO ₂ 1.69	Collective "Al ₂ O ₃ " 0.17	Na ₂ O 0.12	K ₂ O 0.06	MgO 0.00	CaO 0.81
B ₂ O ₃ 0.17	Al ₂ O ₃ 0.17	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	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



EUMF

SiO ₂ :Al ₂ O ₃ Ratio 9.79 : 1		Alkali Metals 0.27		Alkaline Earths 0.73	
SiO ₂ 1.50	Collective "Al ₂ O ₃ " 0.15	Na ₂ O 0.11	K ₂ O 0.06	MgO 0.00	CaO 0.72
B ₂ O ₃ 0.15	Al ₂ O ₃ 0.15	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂ 0.11	ZnO	FeO 0.00
Cr ₂ O ₃ 0.00	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



Big Red

Chemical Match
Spodumene
070822-38

Spodumene	14.33
Whiting	27.54
EPK	11.34
Flint	19.88
3134	26.92
Chrome Oxide	0.11
Tin Oxide	8.71
Water	65



Ceramic
Materials
Workshop



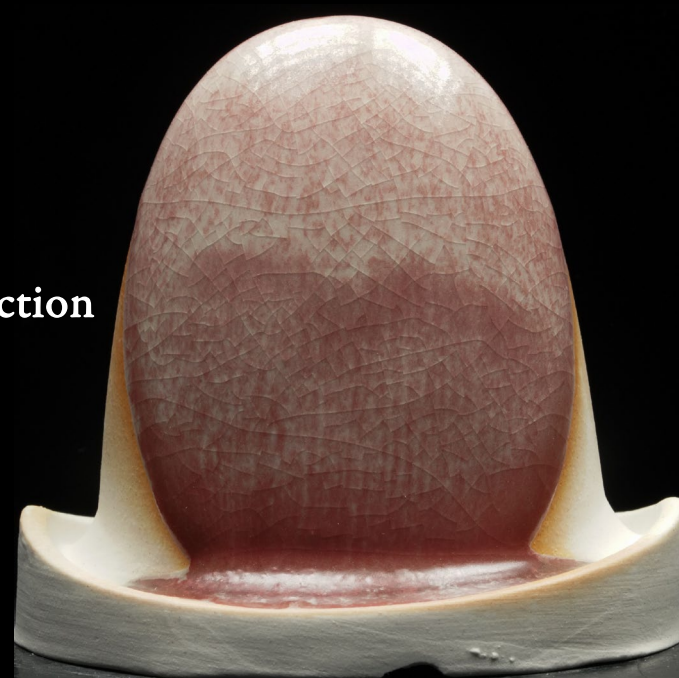
1-3 Second Dip



2-3 Second Dips



Reduction

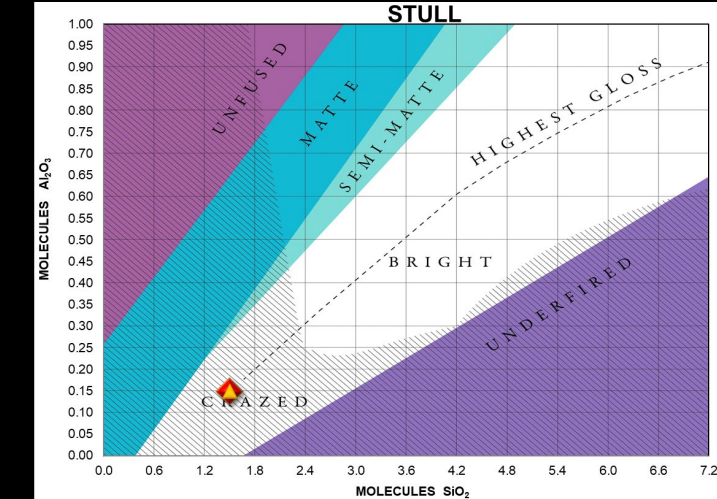


Oxidation

ceramicmaterialsworkshop.com

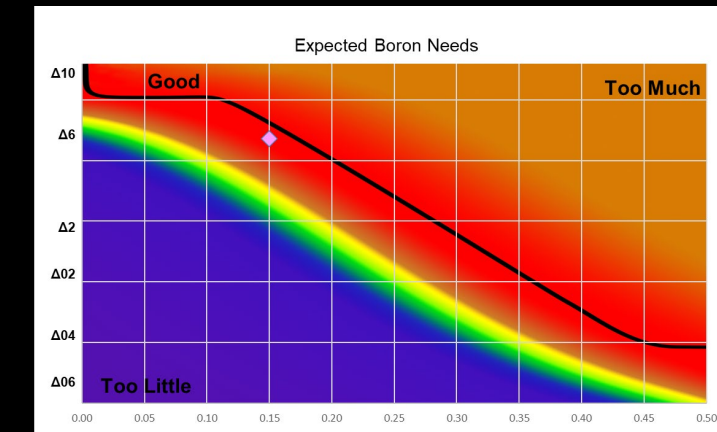
UMF

SiO ₂ :Al ₂ O ₃ Ratio 10.03 : 1		Alkali Metals 0.18		Alkaline Earths 0.82	
SiO ₂ 1.69	Collective "Al ₂ O ₃ " 0.17	Na ₂ O 0.10	K ₂ O 0.00	MgO 0.00	CaO 0.82
B ₂ O ₃ 0.17	Al ₂ O ₃ 0.17	Li ₂ O 0.08	CuO 0.00	SrO 0.00	BaO 0.00
TiO ₂ 0.00	NiO 0.00	Bi ₂ O ₃ 0.00	SnO ₂ 0.00	ZnO 0.00	FeO 0.00
Cr ₂ O ₃ 0.00	ZrO ₂ 0.00	P ₂ O ₅ 0.00		MnO ₂ 0.00	CoO 0.00



EUMF

SiO ₂ :Al ₂ O ₃ Ratio 10.03 : 1		Alkali Metals 0.27		Alkaline Earths 0.73	
SiO ₂ 1.50	Collective "Al ₂ O ₃ " 0.15	Na ₂ O 0.09	K ₂ O 0.00	MgO 0.00	CaO 0.73
B ₂ O ₃ 0.15	Al ₂ O ₃ 0.15	Li ₂ O 0.07	CuO 0.00	SrO 0.00	BaO 0.00
TiO ₂ 0.00	NiO 0.00	Bi ₂ O ₃ 0.00	SnO ₂ 0.11	ZnO 0.00	FeO 0.00
Cr ₂ O ₃ 0.00	ZrO ₂ 0.00	P ₂ O ₅ 0.00		MnO ₂ 0.00	CoO 0.00



Big Red

Chemical Match
Frit 3110
070822-40

3110	15.31
Whiting	25.75
EPK	20.21
Flint	14.40
3134	24.33
Chrome Oxide	0.11
Tin Oxide	8.70
Water	65



1-3 Second Dip



2-3 Second Dips



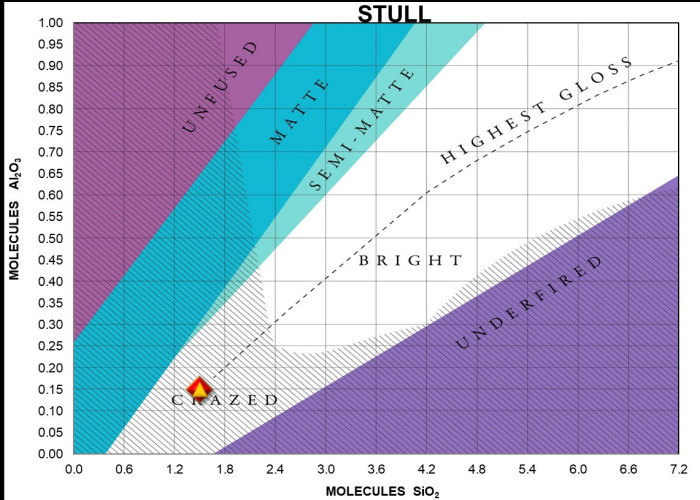
Reduction



Oxidation

UMF

SiO ₂ :Al ₂ O ₃ Ratio 9.91 : 1		Alkali Metals 0.18		Alkaline Earths 0.82	
SiO ₂ 1.69	Collective "Al ₂ O ₃ " 0.17	Na ₂ O 0.17	K ₂ O 0.01	MgO 0.00	CaO 0.81
B ₂ O ₃ 0.17	Al ₂ O ₃ 0.17	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 9.91 : 1		Alkali Metals 0.27		Alkaline Earths 0.73	
SiO ₂ 1.50	Collective "Al ₂ O ₃ " 0.15	Na ₂ O 0.15	K ₂ O 0.01	MgO 0.00	CaO 0.72
B ₂ O ₃ 0.15	Al ₂ O ₃ 0.15	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂ 0.11	ZnO	FeO 0.01
Cr ₂ O ₃ 0.00	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



Ceramic
Materials
Workshop

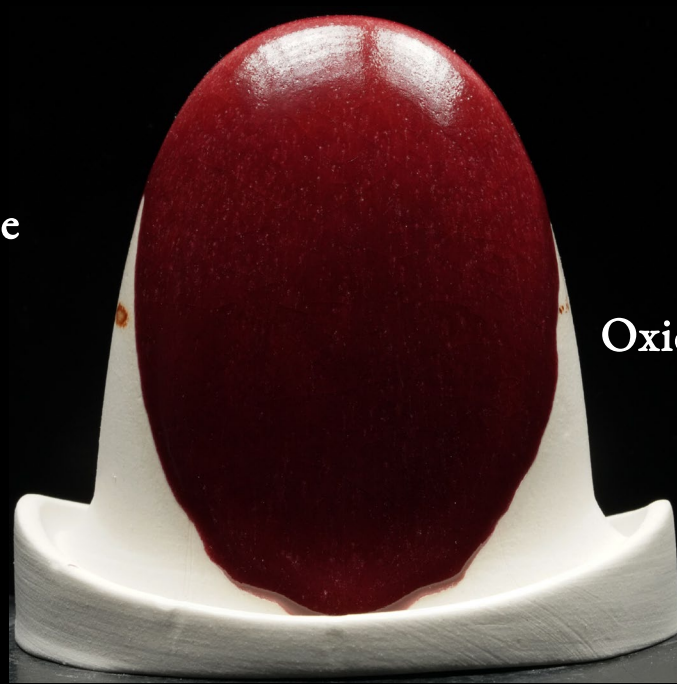
Big Red

Chemical Match
Lithium Carbonate
070822-42

Lithium Carb	2.73
Whiting	26.81
EPK	21.75
Flint	23.39
3134	25.33
Chrome Oxide	0.11
Tin Oxide	8.71
Water	60



Ceramic
Materials
Workshop



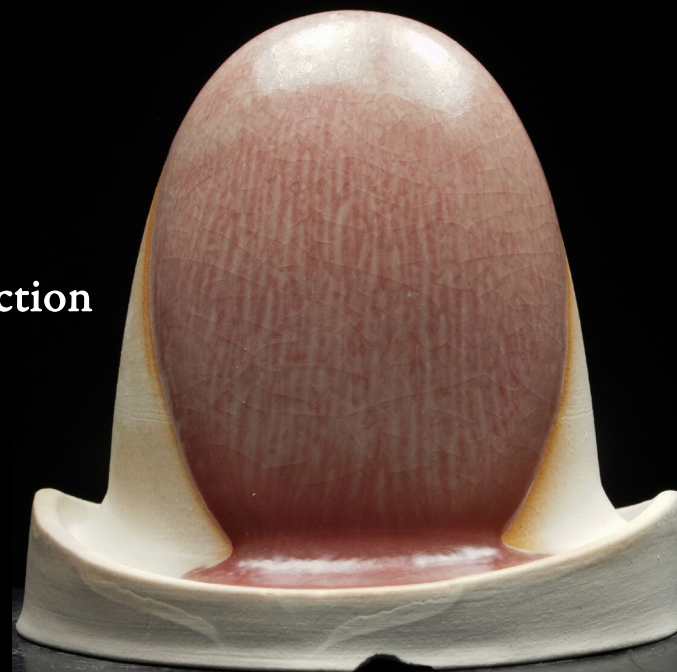
1-3 Second Dip



2-3 Second Dips



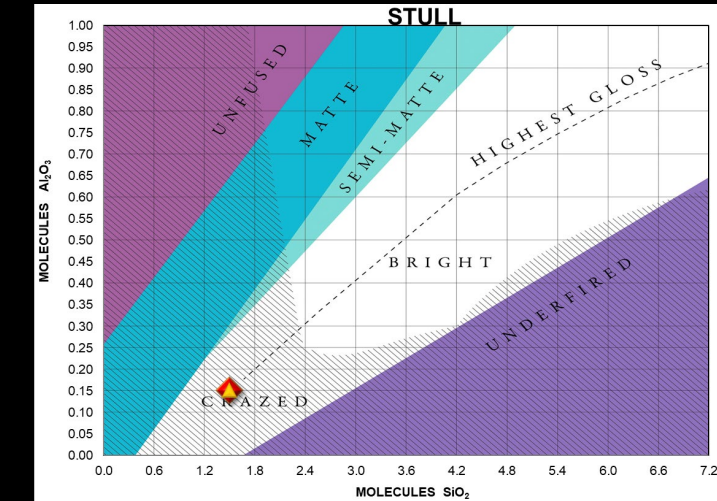
Reduction



Oxidation

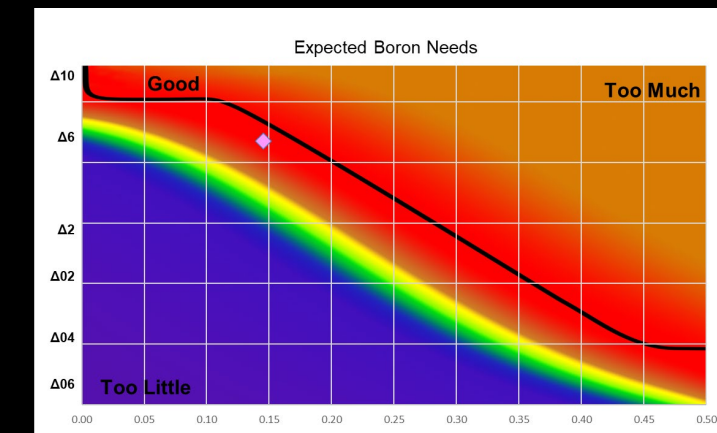
UMF

SiO ₂ :Al ₂ O ₃ Ratio 9.80 : 1		Alkali Metals 0.18		Alkaline Earths 0.82	
SiO ₂ 1.69	Collective "Al ₂ O ₃ " 0.17	Na ₂ O 0.09	K ₂ O 0.00	MgO 0.00	CaO 0.81
B ₂ O ₃ 0.16	Al ₂ O ₃ 0.17	Li ₂ O 0.08	CuO 0.08	SrO 0.00	BaO 0.00
TiO ₂ 0.00	NiO 0.00	Bi ₂ O ₃ 0.00	SnO ₂ 0.00	ZnO 0.00	FeO 0.01
Cr ₂ O ₃ 0.00	ZrO ₂ 0.00	P ₂ O ₅ 0.00		MnO ₂ 0.00	CoO 0.00



EUMF

SiO ₂ :Al ₂ O ₃ Ratio 9.80 : 1		Alkali Metals 0.27		Alkaline Earths 0.73	
SiO ₂ 1.50	Collective "Al ₂ O ₃ " 0.15	Na ₂ O 0.08	K ₂ O 0.00	MgO 0.00	CaO 0.72
B ₂ O ₃ 0.15	Al ₂ O ₃ 0.15	Li ₂ O 0.07	CuO 0.00	SrO 0.00	BaO 0.00
TiO ₂ 0.00	NiO 0.00	Bi ₂ O ₃ 0.00	SnO ₂ 0.11	ZnO 0.00	FeO 0.01
Cr ₂ O ₃ 0.00	ZrO ₂ 0.00	P ₂ O ₅ 0.00		MnO ₂ 0.00	CoO 0.00



Big Red

Chemical Match
Talc

070822-43

G200 EU	25.79
Talc	34.60
EPK	11.33
Flint	
3134	28.27
Chrome Oxide	0.11
Tin Oxide	8.71
Water	70



1-3 Second Dip



2-3 Second Dips



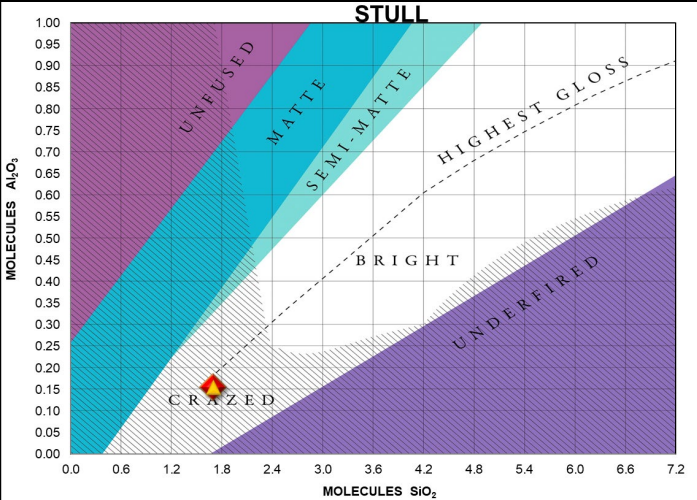
Reduction



Oxidation

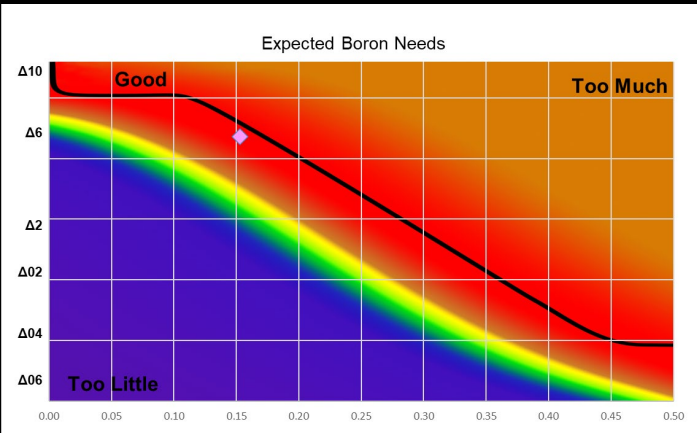
UMF

SiO ₂ :Al ₂ O ₃ Ratio 10.92 : 1		Alkali Metals 0.18		Alkaline Earths 0.82	
SiO ₂ 1.90	Collective "Al ₂ O ₃ " 0.17	Na ₂ O 0.12	K ₂ O 0.07	MgO 0.53	CaO 0.28
B ₂ O ₃ 0.17	Al ₂ O ₃ 0.17	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 10.92 : 1		Alkali Metals 0.27		Alkaline Earths 0.73	
SiO ₂ 1.70	Collective "Al ₂ O ₃ " 0.16	Na ₂ O 0.10	K ₂ O 0.06	MgO 0.47	CaO 0.25
B ₂ O ₃ 0.15	Al ₂ O ₃ 0.15	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂ 0.11	ZnO	FeO 0.01
Cr ₂ O ₃ 0.00	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



Ceramic
Materials
Workshop

Big Red

Chemical Match
Magnesium Carbonate
070822-44

G200 EU	29.47
Mag Carbonate	23.21
EPK	8.84
Flint	11.53
3124	26.95
Chrome Oxide	0.11
Tin Oxide	8.69
Water	130



Ceramic
Materials
Workshop



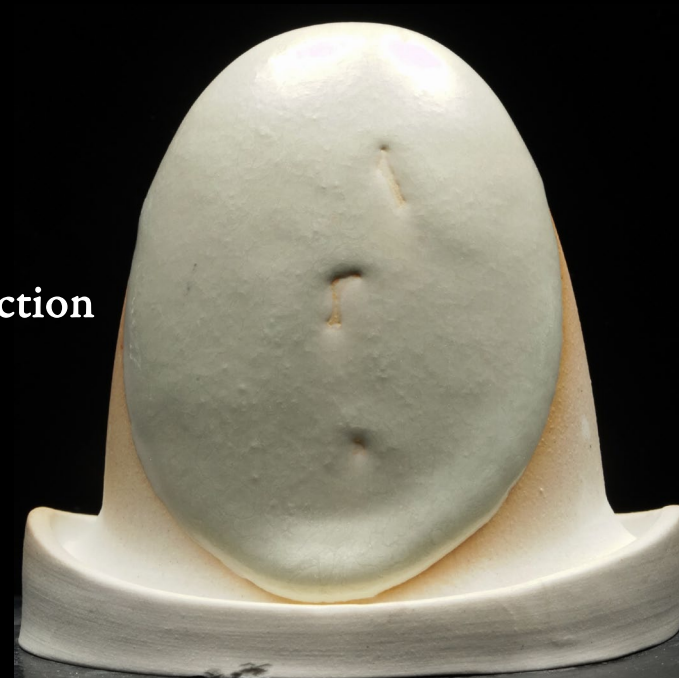
1-3 Second Dip



2-3 Second Dips



Reduction

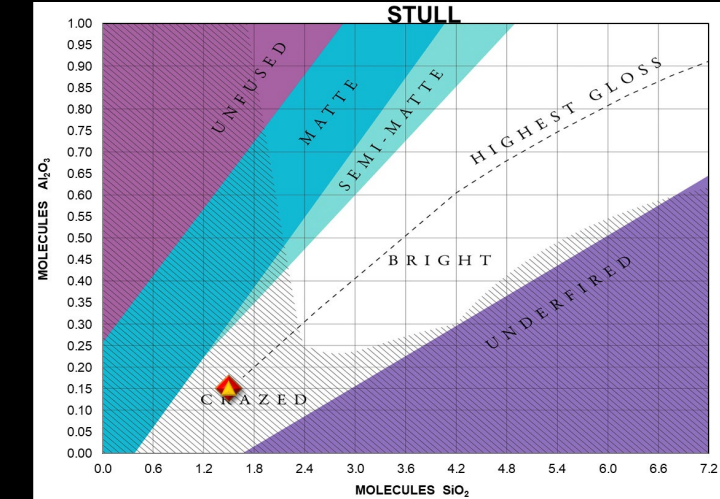


Reduction

Oxidation

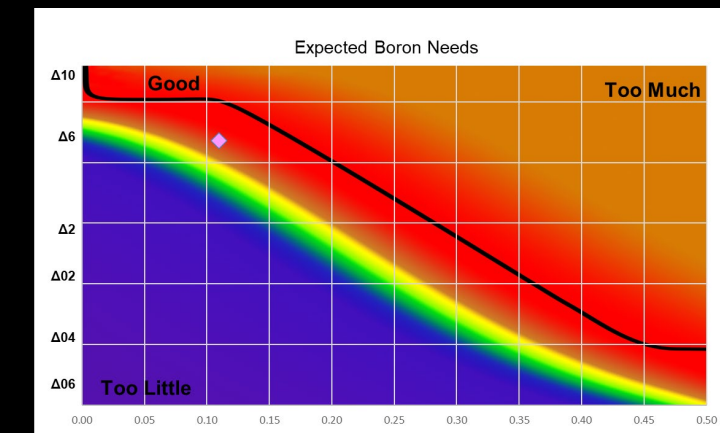
UMF

SiO ₂ :Al ₂ O ₃ Ratio 7.88 : 1		Alkali Metals 0.17		Alkaline Earths 0.83	
SiO ₂ 1.97	Collective "Al ₂ O ₃ " 0.25	Na ₂ O 0.09	K ₂ O 0.09	MgO 0.66	CaO 0.16
B ₂ O ₃ 0.12	Al ₂ O ₃ 0.25	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	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



EUMF

SiO ₂ :Al ₂ O ₃ Ratio 7.88 : 1		Alkali Metals 0.27		Alkaline Earths 0.73	
SiO ₂ 1.74	Collective "Al ₂ O ₃ " 0.22	Na ₂ O 0.08	K ₂ O 0.08	MgO 0.58	CaO 0.14
B ₂ O ₃ 0.11	Al ₂ O ₃ 0.22	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂ 0.12	ZnO	FeO 0.00
Cr ₂ O ₃ 0.00	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



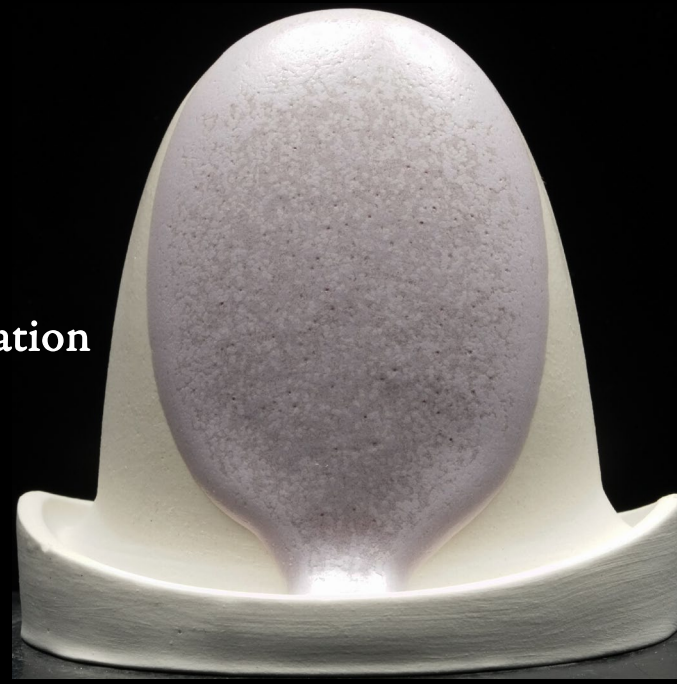
Big Red

Chemical Match
Dolomite
070822-45

G200 EU	22.49
Dolomite	23.23
EPK	9.96
Flint	11.56
3134 (Frit)	24.66
Chrome Oxide	0.10
Tin Oxide	8.00
Water	60



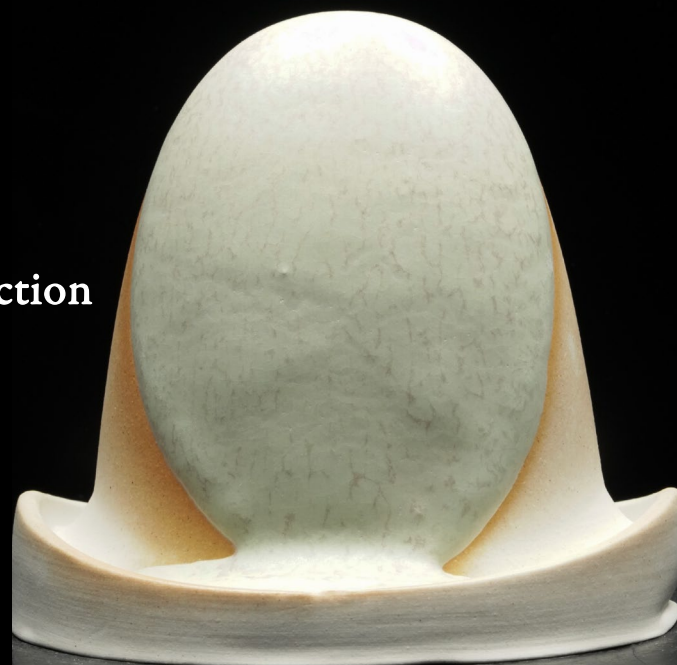
1-3 Second Dip



2-3 Second Dips



Reduction



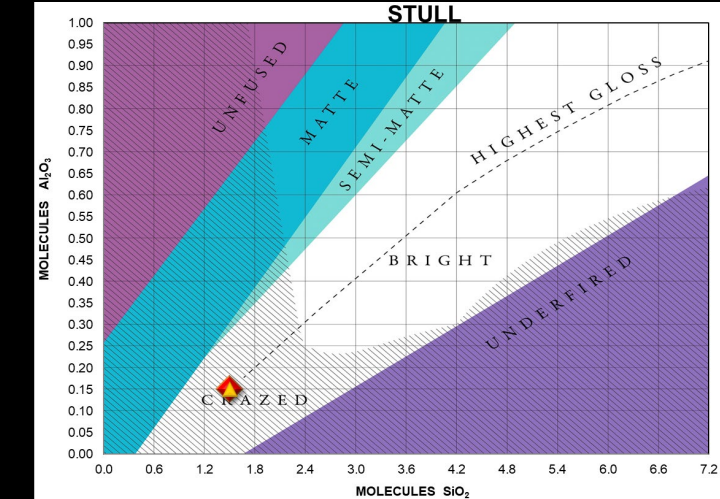
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Oxidation

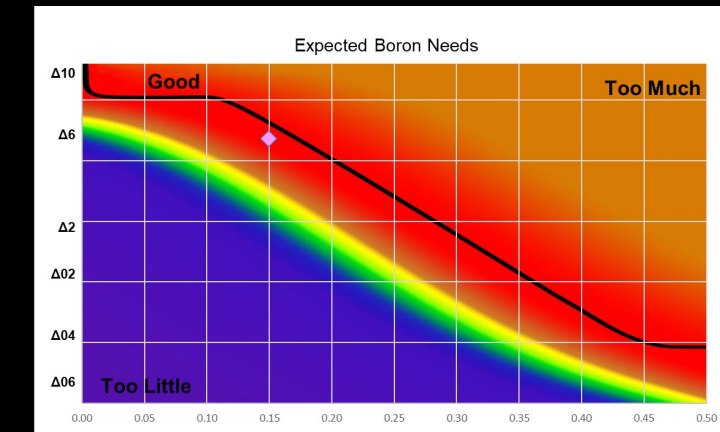
UMF

SiO ₂ :Al ₂ O ₃ Ratio 9.88 : 1		Alkali Metals 0.18		Alkaline Earths 0.82	
SiO ₂ 1.69	Collective "Al ₂ O ₃ " 0.17	Na ₂ O 0.11	K ₂ O 0.06	MgO 0.30	CaO 0.52
B ₂ O ₃ 0.17	Al ₂ O ₃ 0.17	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	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



EUMF

SiO ₂ :Al ₂ O ₃ Ratio 9.88 : 1		Alkali Metals 0.27		Alkaline Earths 0.73	
SiO ₂ 1.50	Collective "Al ₂ O ₃ " 0.15	Na ₂ O 0.10	K ₂ O 0.06	MgO 0.26	CaO 0.47
B ₂ O ₃ 0.15	Al ₂ O ₃ 0.15	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂ 0.11	ZnO	FeO 0.00
Cr ₂ O ₃ 0.00	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



Big Red

Chemical Match
Wollastonite
070822-46

G200 EU	26.12
Wollastonite	34.39
EPK	10.85
Flint	
3134	28.64
Chrome Oxide	0.11
Tin Oxide	8.71
Water	65



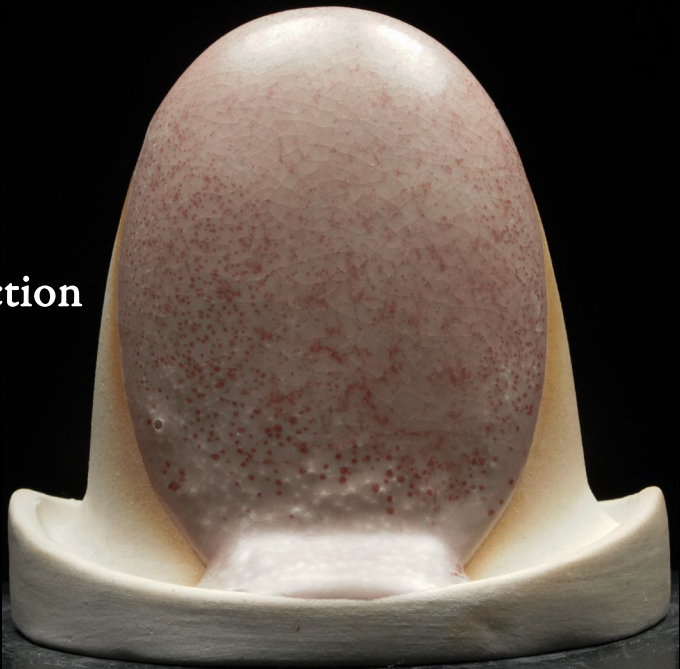
1-3 Second Dip



2-3 Second Dips



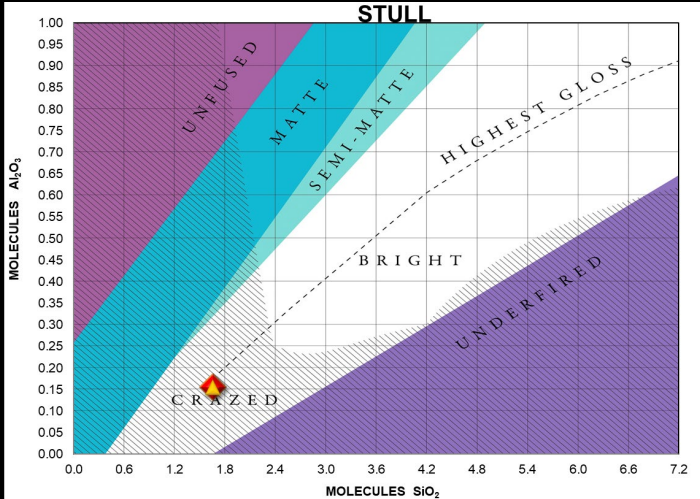
Reduction



Oxidation

UMF

SiO ₂ :Al ₂ O ₃ Ratio 10.66 : 1		Alkali Metals 0.18		Alkaline Earths 0.82	
SiO ₂ 1.86	Collective "Al ₂ O ₃ " 0.17	Na ₂ O 0.12	K ₂ O 0.06	MgO 0.02	CaO 0.78
B ₂ O ₃ 0.17	Al ₂ O ₃ 0.17	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 10.66 : 1		Alkali Metals 0.27		Alkaline Earths 0.73	
SiO ₂ 1.66	Collective "Al ₂ O ₃ " 0.16	Na ₂ O 0.10	K ₂ O 0.06	MgO 0.02	CaO 0.70
B ₂ O ₃ 0.15	Al ₂ O ₃ 0.15	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂ 0.11	ZnO	FeO 0.01
Cr ₂ O ₃ 0.00	ZrO ₂	P ₂ O ₅		MnO ₂	CoO

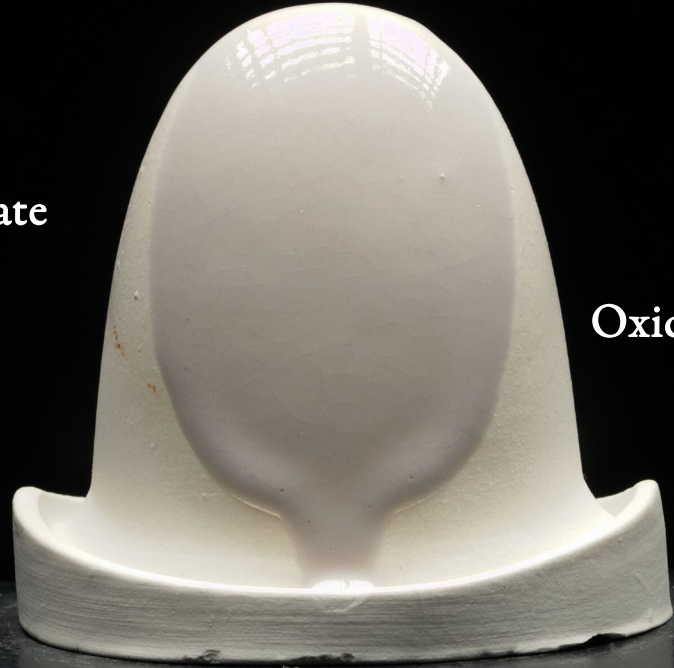


Ceramic
Materials
Workshop

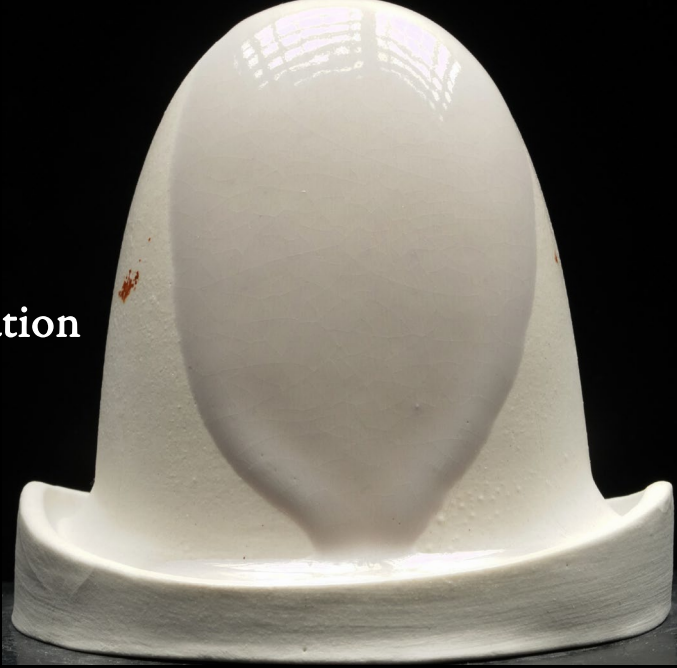
Big Red

Chemical Match
Strontium Carbonate
070822-47

G200 EU	17.44
Strontium Carb	35.19
EPK	11.23
Flint	12.87
3134	23.27
Chrome Oxide	0.11
Tin Oxide	8.70
Water	65



1-3 Second Dip



2-3 Second Dips



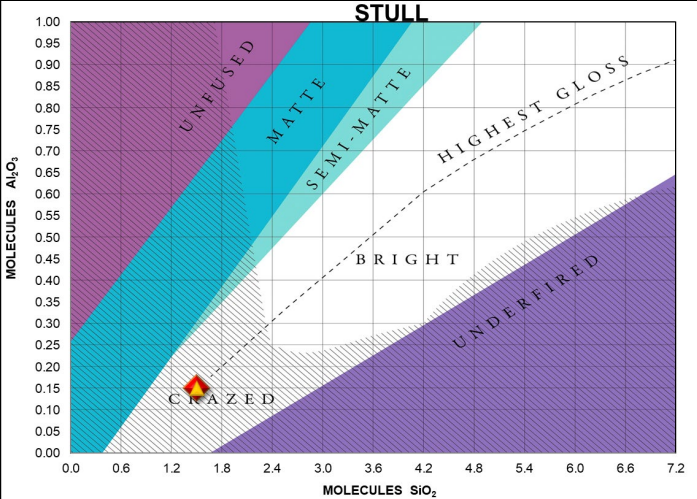
Reduction



Oxidation

UMF

SiO ₂ :Al ₂ O ₃ Ratio 9.90 : 1		Alkali Metals 0.16		Alkaline Earths 0.84	
SiO ₂ 1.72	Collective "Al ₂ O ₃ " 0.17	Na ₂ O 0.11	K ₂ O 0.05	MgO 0.00	CaO 0.23
B ₂ O ₃ 0.17	Al ₂ O ₃ 0.17	Li ₂ O	CuO	SrO 0.60	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 9.90 : 1		Alkali Metals 0.27		Alkaline Earths 0.73	
SiO ₂ 1.50	Collective "Al ₂ O ₃ " 0.15	Na ₂ O 0.10	K ₂ O 0.05	MgO 0.00	CaO 0.20
B ₂ O ₃ 0.15	Al ₂ O ₃ 0.15	Li ₂ O	CuO	SrO 0.52	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂ 0.13	ZnO	FeO 0.00
Cr ₂ O ₃ 0.00	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



Ceramic
Materials
Workshop

Big Red

Chemical Match
Barium Carbonate
070822-48

G200 EU	11.40
Barium Carb	42.18
EPK	12.09
Flint	13.45
3134	20.88
Chrome Oxide	0.11
Tin Oxide	8.70
Water	80



Ceramic
Materials
Workshop



1-3 Second Dip



2-3 Second Dips

Oxidation



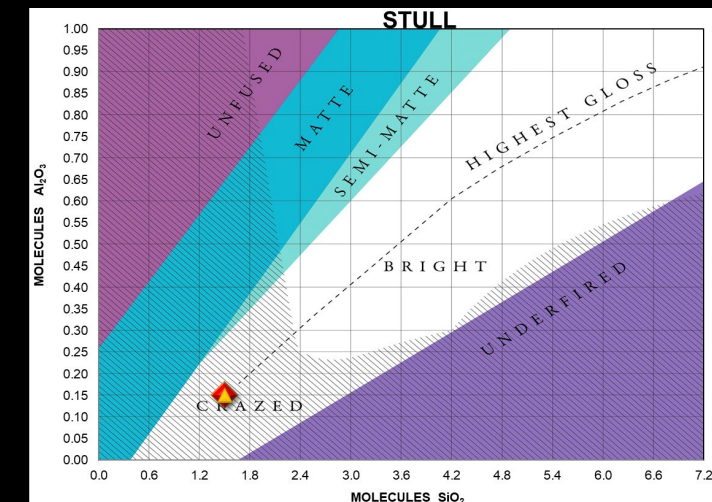
Reduction



ceramicmaterialsworkshop.com

UMF

SiO ₂ :Al ₂ O ₃ Ratio 9.88 : 1		Alkali Metals 0.15		Alkaline Earths 0.85	
SiO ₂ 1.75	Collective "Al ₂ O ₃ " 0.18	Na ₂ O 0.11	K ₂ O 0.04	MgO 0.00	CaO 0.24
B ₂ O ₃ 0.17	Al ₂ O ₃ 0.18	Li ₂ O	CuO	SrO	BaO 0.61
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

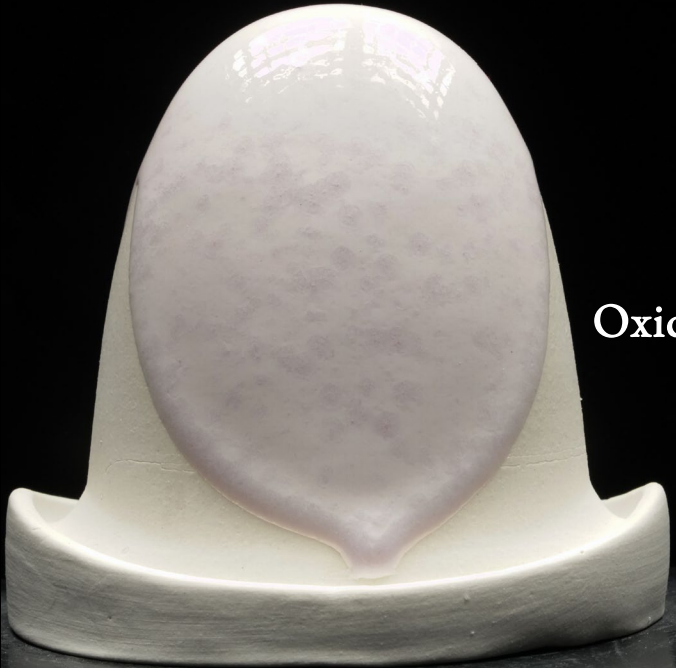
SiO ₂ :Al ₂ O ₃ Ratio 9.88 : 1		Alkali Metals 0.27		Alkaline Earths 0.73	
SiO ₂ 1.50	Collective "Al ₂ O ₃ " 0.15	Na ₂ O 0.09	K ₂ O 0.03	MgO 0.00	CaO 0.20
B ₂ O ₃ 0.15	Al ₂ O ₃ 0.15	Li ₂ O	CuO	SrO	BaO 0.52
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂ 0.14	ZnO	FeO 0.00
Cr ₂ O ₃ 0.00	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



Big Red

Chemical Match
Zinc Oxide
070822-49

G200 EU	27.80
Zinc Oxide	22.92
EPK	9.92
Flint	11.89
3134	27.46
Chrome Oxide	0.11
Tin Oxide	8.70
Water	65



1-3 Second Dip



2-3 Second Dips

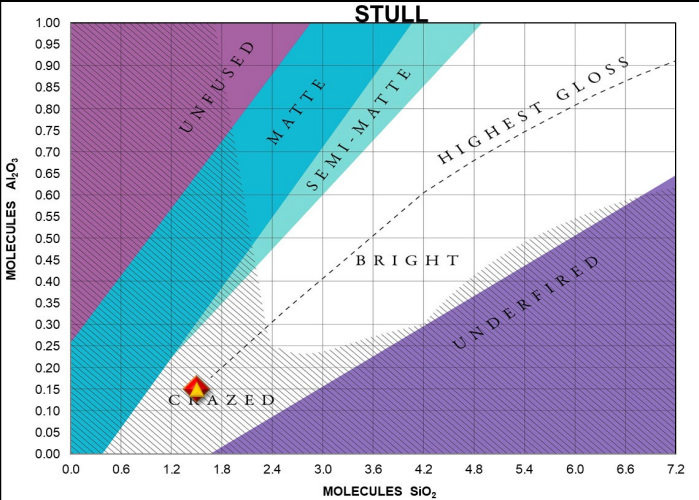


Reduction



UMF

SiO ₂ :Al ₂ O ₃ Ratio 9.90 : 1		Alkali Metals 0.18		Alkaline Earths 0.82	
SiO ₂ 1.68	Collective "Al ₂ O ₃ " 0.17	Na ₂ O 0.11	K ₂ O 0.07	MgO 0.00	CaO 0.23
B ₂ O ₃ 0.17	Al ₂ O ₃ 0.17	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.58	FeO 0.00
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



EUMF

SiO ₂ :Al ₂ O ₃ Ratio 9.90 : 1		Alkali Metals 0.27		Alkaline Earths 0.73	
SiO ₂ 1.50	Collective "Al ₂ O ₃ " 0.15	Na ₂ O 0.10	K ₂ O 0.06	MgO 0.00	CaO 0.20
B ₂ O ₃ 0.15	Al ₂ O ₃ 0.15	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂ 0.11	ZnO 0.52	FeO 0.00
Cr ₂ O ₃ 0.00	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



Ceramic
Materials
Workshop

Big Red

Chemical Match

Bone Ash

070822-50

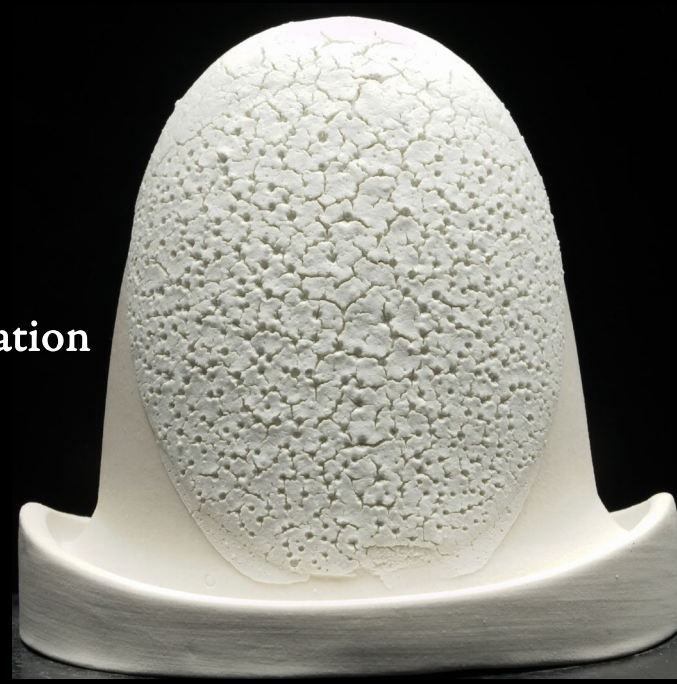
G200 EU	18.29
Bone Ash	34.11
EPK	11.15
Flint	12.74
3134	23.71
Chrome Oxide	0.11
Tin Oxide	8.70
Water	80



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1-3 Second Dip



2-3 Second Dips

Oxidation

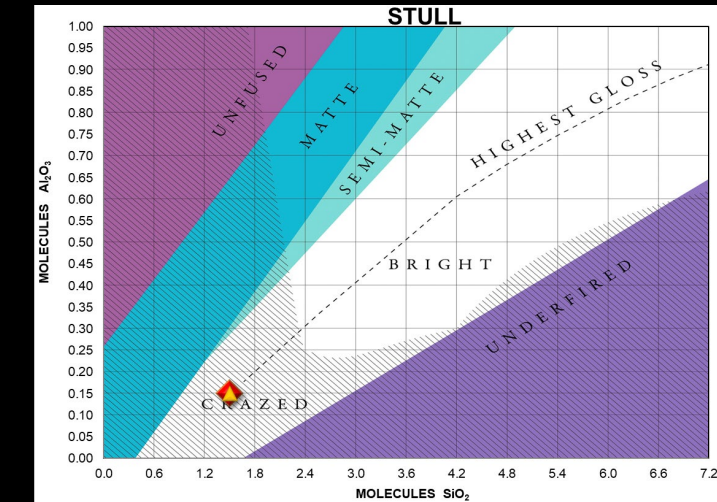


Reduction

ceramicmaterialsworkshop.com

UMF

SiO ₂ :Al ₂ O ₃ Ratio 9.91 : 1		Alkali Metals 0.17		Alkaline Earths 0.83	
SiO ₂ 1.71	Collective "Al ₂ O ₃ " 0.17	Na ₂ O 0.11	K ₂ O 0.05	MgO 0.00	CaO 0.82
B ₂ O ₃ 0.17	Al ₂ O ₃ 0.17	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 0.33		MnO ₂	CoO



EUMF

SiO ₂ :Al ₂ O ₃ Ratio 9.91 : 1		Alkali Metals 0.27		Alkaline Earths 0.73	
SiO ₂ 1.50	Collective "Al ₂ O ₃ " 0.15	Na ₂ O 0.10	K ₂ O 0.05	MgO 0.00	CaO 0.72
B ₂ O ₃ 0.15	Al ₂ O ₃ 0.15	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂ 0.12	ZnO	FeO 0.01
Cr ₂ O ₃ 0.00	ZrO ₂	P ₂ O ₅ 0.29		MnO ₂	CoO

